



## **WORKGROUP ONE. *Identifying Core Data Needs for Agricultural GHG Measurement***

### **Workgroup Goal:**

The stated goal is to scan the data input requirements for 3 categories of tools that seek to measure agricultural GHG emissions and emissions reductions, (e.g., calculators, guidelines and protocols, and models, and potentially a 4<sup>th</sup> category, supply chain initiatives) to identify the landscape of data requirements, and to identify whether and where common data are being sought or collected across these tools and initiatives.

### **Workgroup Outcomes:**

A variety of outcomes has been identified by the group, including:

- **Identify common data needs:** By developing data point overlays for the various tools (including sensitivity analyses conducted by some of the programs to identify their top or most critical data inputs), it may be possible to begin to narrow or at least better identify common data requirements across the tools.
- **Sensitivity analysis:** sensitivity analyses can be conducted to identify the most critical data inputs for various tools or models, and to establish when measured or actual data is required, versus when look-up or default values can be used.
  - *Example:* Dana Gunders of NRDC has contracted with Terra Global Capital, LLC (Steven DeGryze) to complete a sensitivity analysis of data requirements of DNDC to determine which data inputs are more sensitive to model results than others, to help identify when default values can be used.
- **Categorizing data needs:** the overlays can help identify whether data needs can be categorized according to the level of rigor or accuracy of data required, assuming that some projects require more rigor (greater accuracy) than others.
  - For example, Level One data might encompass data needs for supply chain initiatives; Level Two data may have increased stringency requirements, for USDA conservation programs; and Level Three data might be the most rigorous, required for carbon market offset programs participation.
- **Data (metrics) harmonization:** The results can perhaps lead to better harmonization across programs and initiatives to help reduce ‘audit fatigue’ among producers.
- **Common (or compatible) electronic data collection systems** could be developed to allow producers to input data once, and to enable data migration for other purposes or programs.
  - *Example:* Delta Institute/NWF developed a web-based platform for farmers to enter data needed for the DNDC model, for use in their GHG CIG project. They are working to translate the form into a batch feed system to feed into DNDC. They have offered the platform for adaptation by any other project developers.

- **Data checklists for producers** can be developed (arranged by Levels or Categories), which may serve to increase the accuracy of data collected by preparing farmers for data collection needs.
  - *Examples:* Sue Gammon of the Androscoggin Valley SWCD and Daniela Malin of Sustainable Food Lab shared checklists developed for producers
- **Decision support objective:** a decision support tool to help end-users identify potential applications for each tool or model (or alternatively, to narrow the range of tools for a particular need or use), would be helpful for the agricultural sector.

### **Workgroup Proposed Approach**

The attached Excel Spreadsheet, generated by Marlen Eve at USDA, is a graphic representation of a data collection approach being proposed by this workgroup. (Note that USDA adapted this graphic from work underway that seeks solely to catalog the tools being used in this space, what they are estimating, and where they will be applied. The C-AGG workgroup proposal goes beyond USDA's current activities.) The spreadsheet includes over 100 tools in 3 categories: 40 calculators, 47 guidelines and protocols, and 21 models. *A fourth category of supply chain initiatives could be added.*

A database is proposed to be developed, in *Microsoft Access*, to include:

- specific GHG data/inputs collected by each tool (1<sup>st</sup> set of columns);
- sources of data (2<sup>nd</sup> set of columns)
- identification of data requirements as lookup/default, or user input (3<sup>rd</sup> set of columns).

Additional proposed inputs/opportunities that could be added to this exercise:

- Collect other (non-GHG) data points (add another set of columns);
- data to describe the internal methodology used to calculate changes in GHG emissions (add another column);
- develop a user-friendly interface to allow access to the checkboxes, and hotlinks to available data for ease of use for project developers (this is a parallel to the proposed objective of developing decision support tools for project developers, above); and
- describe the primary goals of each of the 3 (or 4) categories of tools, to better understand the relationships between the categories, and determine if relationships can be established.

Before fully developing the database, it is proposed that a limited number of case studies be first undertaken to better understand the complexities of the undertaking – for instance, the number of necessary data levels that will be involved (granularity of data), and to determine what the *Microsoft Access* database requirements sheet would look like. Four tools have been identified for potential use for the case studies:

- COMET-FARM
- Cool Farm Tool
- DNDC
- Field Print Calculator

A potential approach to complete the case studies is to ask each of the (4) tool developers, or someone familiar with the (4) tools, to populate the data sets, and then have the workgroup participants assess the outcomes. Based on the outcomes of this assessment, the workgroup can revisit the project goal and outcomes, as well as entertain additional proposed objectives, some of which are included in this document.