Agriculture Industry’s Role in Developing Metrics for Improving Soil Health

Debbie Reed
Executive Director, Coalition on Agricultural Greenhouse Gas (C-AGG)
Board of Directors, Field to Market: The Alliance for Sustainable Agriculture

C-AGG
Presentation Overview

• Describe C-AGG and Field to Market
  • Key similarities and differences in our goals, outcomes, approaches and our respective roles in the marketplace
  • Relative processes of engaging the agricultural sector in sustainable agriculture opportunities, and in (harmonized) metrics development
  • Key to developing effective metrics & quantification methodologies for metrics
  • *Harmonized* metrics are important to link and scale sustainability opportunities for agriculture
Monetizing GHG Emission Reductions
Impacts of On-Farm Conservation & Management Activities

**Mission:** to create market-based opportunities for agriculture sector to reduce GHG emissions and provide environmental services to society

Graphic: Amy Swan
CSU NREL
Coalition on Agricultural Greenhouse Gases (C-AGG)

• 150+ member multi-stakeholder coalition

• Create financial incentives and value for the agricultural sector to reduce GHG emissions and deliver ecosystem services at scale:
  • Policies, Programs
  • Tools, Calculators
  • Protocols, Decision support systems

• Build sustainable agriculture and climate change mitigation capacity by accelerating change across organizations, sectors and regions.
Coalition on Agricultural Greenhouse Gases (C-AGG)

- 3 national C-AGG meetings/year, numerous workshops
- C-AGG members and participants: scientists/academia, agricultural sector, government agencies, agribusiness, project developers, ngo’s, investors
- Catalyze change, drive progress at national and subnational levels
Coalition on Agricultural Greenhouse Gases (C-AGG)

**C-AGG Governance:** 10-member Steering Committee Reflects Key Constituencies

- 4 members from Agricultural Sector
- 2 from conservation/environmental ngo sector
- 2 from investment and markets sector
- 2 from academia, government, project developers

‡ Thomas Driscoll, NFU; Nick Goeser, NCGA; Chad Frahm, ICUSD
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**C-AGG Operation & Governance:**

- C-AGG Members and Participants (‘General Assembly’) operate in parallel to C-AGG, and come together at meetings to identify common obstacles and challenges, and resolutions.
- Forum for sharing learning, making progress across the spectrum of market-based opportunities, and to “lift all boats”
C-AGG Operation & Governance

Steering Committee
Comprised of Key Constituencies

Members, Participants, Stakeholders

Working Groups

Agriculture
Conservation NGO
Academia, Government
Carbon Registries, Project Developers
Field to Market

• *Field to Market: The Alliance for Sustainable Agriculture* is a collaborative, multi-stakeholder organization comprised of a diverse group of 120 food and retail companies, agribusinesses, conservation groups, and grower associations.

• Goal to define, measure, and promote continuous improvement in food, fuel and fiber sustainability for U.S. agriculture.
Field to Market

• Creating a platform and a community for the agricultural sector to achieve continuous improvements in ag sustainability at scale:
  • *Working through the agriculture supply chain*
  • Tools, Calculators
  • Processes, Decision support systems

• Build sustainable agriculture capacity by accelerating change across organizations, sectors and regions – operating through Field to Market.
Field to Market Operation & Governance

Board of Directors
Comprised of Key Constituencies

General Assembly

Affiliate
Agribusiness
Brands & Retailers
Civil Society
Grower Organizations

Advisory Councils
Standing Committees
Field to Market’s Fieldprint® Platform

• Field to Market Metrics are each designed to measure a specific environmental outcome:
  • That is important for ensuring environmental sustainability at a scale relevant to a farm operation
  • That is responsive to changes in farm management where robust scientific understanding supports high confidence in modeled results
  • Where available tools balance robustness and simplicity for broad usability by farmers and their advisors
Field to Market’s Fieldprint® Calculator

Calculates sustainability outcomes at the field scale for eight metrics:

Direct Impact/Measure of Soil Health:
1. Soil conservation
2. Soil carbon

Indirect Impact/Measure of Soil Health:
3. Land use
4. Greenhouse gas emissions
5. Biodiversity
6. Water quality
7. Irrigation water use
8. Energy use

**FTM is looking to add a specific soil health metric.**
Comparison of *Processes* to Develop Metrics

- Protocols and metrics developed by market registries, C-AGG role is sharing, testing, feedback, consensus.
- C-AGG functions to form project partnerships, but project development occurs outside, C-AGG role is sharing, testing, feedback, consensus.
- Committees develop protocols, metrics and seek approval through FTM governance structure.
- Projects developed through FTM partnerships, FTM tools calculators, educational materials.
Comparison of Market-Based Outcomes

- C-AGG goal is to monetize credits for farmers & ranchers: financial instruments, payments for environmental services
- Farmers & ranchers benefit by improvements in sustainable outcomes, payments through environmental markets

- FTM goal is to enable sustainability claims by companies or growers or other members in food and agriculture supply chains
- Farmers benefit by continuous improvements in sustainable outcomes, market value through participation, claims
Coalition on Agricultural Greenhouse Gasses (C-AGG)

How C-AGG Engages Policymakers to Develop and Promote Market-based Opportunities for the Agricultural Sector

• State Level: California
• National Level: USDA
Coalition on Agricultural Greenhouse Gasses (C-AGG)

How C-AGG Engages Policymakers to Develop and Promote Market-based Opportunities for the Agricultural Sector

• State Level: California
• National Level: USDA
C-AGG Case Study: CA Rice Offset Protocol Development

• C-AGG helped develop first crop-based agriculture protocol developed for use within the CA mandatory cap-&-trade market

• Effective agricultural and multi-stakeholder engagement process: *policy & technical level*

• Open, transparent stakeholder engagement with CA policymakers – scientists, agricultural and rice producers, ngo’s, project developers, carbon registries to help craft workable approach
C-AGG Case Study: CA Rice Protocol Development

• Facilitated ~3-yr process:
  • Stakeholder alignment to guide policy engagement
  • Open, inclusive, transparent, multi-sectoral meetings*
  • Engaged the agricultural sector (rice +)
  • Hosted regular meetings to discuss challenges, identify solutions
  • Supplemental workshops to work through specific challenges or obstacles
C-AGG Case Study: CA Rice Protocol Development

- Facilitated ~3-yr process:
  - Socialized concepts and solutions in other fora
  - Engaged in CA public and other scoping activities by providing action-oriented targeted comments in writing
  - Provided guidance to state agency offset working groups (CDFA and ARB)
  - Participated on state agency technical working groups
Outcomes of CA engagement:

- Critical knowledge shared with CA policymakers:
  - ARB acknowledges differences between point-sources of GHG and non-point agricultural sources
  - ARB understands role of cost-effective measurement approaches for agriculture: process models which are scalable
  - ARB understands need for constructive engagement of agricultural sector, seeks continued guidance, C-AGG role
C-AGG Case Study: CA Rice Protocol Development

Implications of CA engagement:
CA is viewed globally as a critical test case for the success of agricultural offsets in other regulatory or compliance markets

- The World is Watching
- C-AGG has documented and is sharing (+)ve & (-)ve outcomes from the CA approach: what to replicate, what to avoid
- Learnings applicable to other markets: regulatory and voluntary markets
Coalition on Agricultural Greenhouse Gasses (C-AGG)

How C-AGG Engages Policymakers to Develop and Promote Market-based Opportunities for the Agricultural Sector

• State Level: California

• National Level: USDA
C-AGG Case Study: Voluntary Market Protocol Development

• USDA NRCS awarded in 2010 the first-ever round of GHG CIG projects to develop agricultural offset protocols, develop and implement offset projects in carbon markets, generate and sell or trade carbon credits
• C-AGG provided cash match to convene the entire cohort of 8 projects, for a 3 year period, at each of our 3 annual meetings & at dedicated workshops
• This dedicated network and forum catalyzed progress and accelerated success across organizations, regions, and the agricultural sector
C-AGG Case Study: Voluntary Market Protocol Development

• Given the success of the C-AGG convening model, USDA NRCS has now adopted this approach to convening cohorts of CIG projects

• C-AGG continues to provide guidance and to help coordinate the GHG CIG project cohort as well as the Innovative Conservation Finance cohort and the Environmental Services/Water Quality Trading Network cohorts of USDA CIG projects
C-AGG Case Study: Voluntary Market Protocol Development

**Outcomes of federal level engagement:**

- Catalyze success across projects
- Identified critical *new* areas for federal level investment via CIGS: innovative conservation finance, environmental service markets
- Furthered market development
- Bringing together cohorts/communities (carbon, water quality trading, others) to develop environmental service markets, collaborate across communities, share learning, and harmonize metrics
Keys to Effective Metrics, Quantification Methodologies

- Fully engage key stakeholders from the start
- Understand market/program/regulatory requirements that drive data needs, including rigor of measurements/estimations, & verification

Accurate
Cost effective
Easy to use
Scalable?
Verifiable for Regulatory or Program or Market Requirements
Which Market or Program?

C-AGG: Environmental Markets
FTM: Sustainable Supply Chains
Environmental Services Programs Available to Ag

• To highlight & analyze incentive opportunities for producers, C-AGG has developed a schematic showing the spectrum of ecosystem service programs available to the agriculture sector.

• The spectrum analyzes each program by:
  • current opportunity level, potential incentives
  • data needs to participate
  • acceptable level of quantification uncertainty
  • level of verification required
  • status of metrics and methods development, and
  • highest priority needs to successfully scale programs
### Incentive Based Environmental Market Opportunities for US Agriculture

#### Spectrum of Programs & Opportunities

<table>
<thead>
<tr>
<th>Data Requirements</th>
<th>Conservation Programs</th>
<th>Supply Chain Program</th>
<th>Payment for Ecosystem Services</th>
<th>Voluntary (Carbon) Markets</th>
<th>Compliance (Carbon) Markets</th>
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<tbody>
<tr>
<td>Low-None</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
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#### Harmonized Metrics Can Reduce Burdens, Help Scale Programs, and Link Sustainability Opportunities for Agriculture

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Note: only 3 categories of requirements shown here, for brevity.
Contact Information:
Debbie Reed, C-AGG
Washington, DC
dreed@drdassociates.org
www.c-agg.org
(M) 202-701-4298
(O) 571-312-6139