



# Science Advisory Council

May 18<sup>th</sup>, 2020





# Agenda

- 1:00 pm **Welcome and introductions**
  - COVID update and summer meetings
  - Introducing summer intern
- 1:15 pm **Field to Market Updates for 2020**
- 1:45 pm **Research Database – Planning Discussion**
- 2:30 pm **Research Gaps Discussion and Planning**
  - Communication of Research Gaps
  - N cycle research gaps: Summer intern research project discussion and planning
  - Pest management: Research gaps emerging from report
- 3:45 pm **Looking Ahead**
- 4:00 pm **Adjourn**



# Science Advisory Council Membership

---

<b>Name</b>	<b>Affiliation</b>
Bruno Basso	Michigan State University
Ed Barnes	Cotton, Inc.
Ed Spevak	St. Louis Zoo
Eileen McClellen	Environmental Defense Fund
Kris Johnson	The Nature Conservancy
Linda Prokopy	Purdue University
Mark Tomer	USDA ARS
Marlen Eve	USDA ARS
Marty Matlock	University of Arkansas
Patricio Grassini	University of Nebraska
Tai Maaz	U of Hawaii
Tom Green	IPM Institute

---

- 12-15 members
- 2-year terms
- Renew this year



# Field to Market Updates





# Operations and Meetings

- Introducing Agustin Olivo, Summer Intern
- June Plenary Meeting – Virtual!
- June Cross-Sector Dialogue – Virtual!
- Summer Learning Academy – Virtual!
- Fall meetings - TBD



**Field to Market**<sup>®</sup>



# Cross Sector Dialogues

- **Banking on Solutions: The Emerging Role of Ag Finance and Crop Insurance in Agricultural Sustainability** (June 25 | Virtual)
- **Climate Action 2.0: The Next Decade of Greenhouse Gas Reduction and Climate Resilience Efforts in U.S. Agriculture** (September 10, 2020 | Washington, D.C.)
- **The Human Element: What Social Science Can Teach Us About Building Effective Sustainability Strategies for U.S. Agriculture** (November 2020 | Phoenix, AZ)



# Field to Market In-focus webinars

- Pest Management Report Launch
- Metrics 101 (Public)
- Soil Carbon and Climate Leadership
- Getting Started with the Project Directory & Partnership Portal
- Upcoming:
  - Sustainability claims and sampling
  - Telling your sustainability story
  - Harmonization (public)
  - Field to Market Canada
  - Science topics?????



# New Digital Properties

- New Member Portal for document posting and sharing
  - Sign up and check it out!
- Project Directory listing project plans and reports
- Partnership Portal for “matchmaking” members with common interests or collaboration opportunities



# Continuous Improvement Accelerator Project Directory

Field to Market's Continuous Improvement Accelerator harnesses the power of collaboration across the agricultural value chain to implement locally-led conservation solutions and deliver sustainable outcomes through member-led continuous improvement projects. Explore how our members are supporting farmers on a journey of continuous improvement below.

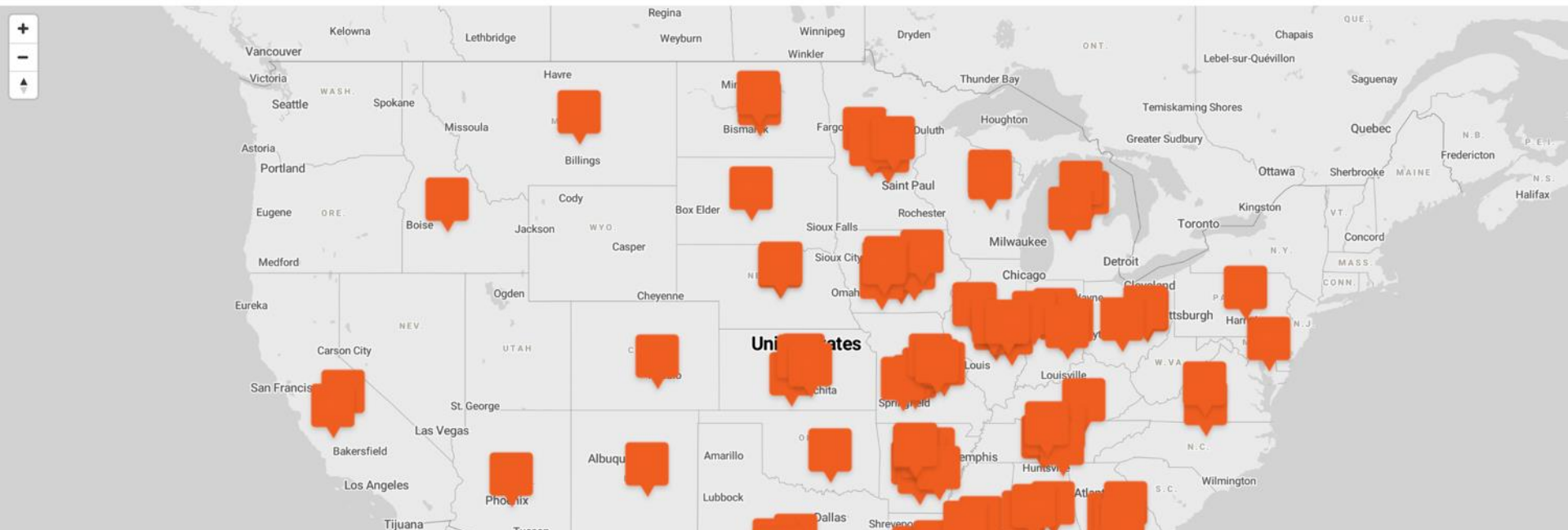


Project Search

Soil Carbon

Apply

See the full results below the map





## STANDARDIZING OUR APPROACH

- Guided by Field to Market's **Process-Based Standard** for accelerating continuous improvement, each project in the Accelerator follows a **standardized approach** to leverage the collective action of the value chain to support resilient ecosystems and enhance farmer livelihoods
- The Process-Based Standard is a **public-facing document** that **concretely defines** to **external stakeholders** Field to Market's approach to advancing sustainable agriculture and communicates how all projects, regardless of pathway, are **credibly enabling change**
- Creating a Standard aligns Field to Market with the approach taken by other sustainable agriculture initiatives and enables us to **support members** in communicating how their approach is **credible** and **impactful**



# Verification Committee

## Process-Based Standard – Trends Claims

- To allow claims of improvement in less than 5 years, the Verification Committee recommends creating a separate claim category.
  - **Trends Claim:** A claim that documents directional improvements or reductions in Field to Market’s outcomes-based metrics during the initial years of a project.

Which is distinct from

- **Impact Claim:** A claim that quantifies actual sustained improvements or reductions over time against Field to Market’s outcomes-based metrics at the conclusion of a multi-year project.



# Process-Based Standard – Trends Claims

Why create a separate claims category?

- Allows Continuous Improvement Projects to show directional improvement within a reduced timeframe without confusing these interim trends with sustained improvements over time (Impact Claims)
- Allows Field to Market to limit the requirement of 3<sup>rd</sup>-Party Verification to Impact Claims



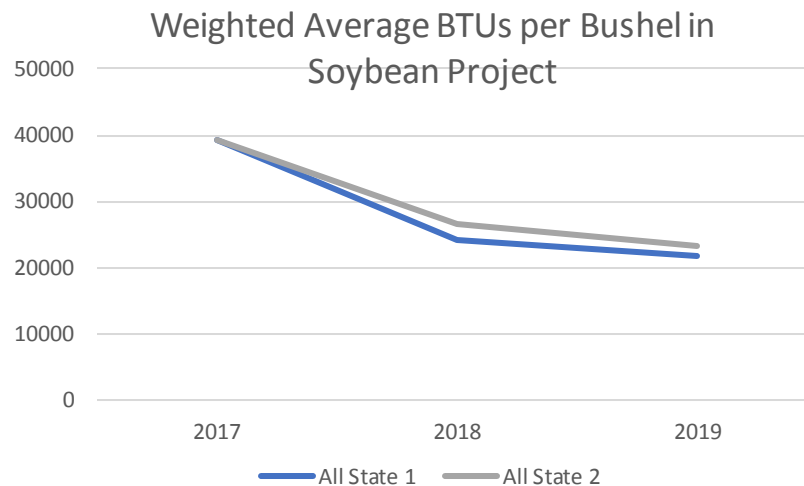
**Field to Market**<sup>®</sup>



# Process-Based Standard – Trends Claims

## Example Only

**“Soybean Company has engaged with 20 growers and collected data on 20,000 unique acres over 3 years, in Indiana and Illinois in a Continuous Improvement Project focused on energy use reduction. The growers saw a reduction in Average BTUs per bushel of 40% in Illinois and 44% in Indiana over the first three years of the project.”**



**Field to Market®**



# Discussion

- Board consideration of Trends Claims tomorrow



**Field to Market®**



# Metrics Committee

- Soil Carbon – Raising funds for a new metric
- Water Quality – Evaluating RSET STEP tool
- Pest Management – Considering a new metric
  - Grower sector input
  - Brands listening session
  
- Launching in June
  - Farm level Biodiversity metric
  - Pilot of 4R Nutrient Management modification to N2O emissions



# Research Database – Next Steps







# Research Database Implementation

- Request detailed quote on implementation cost from Houston Engineering
- Request detailed responses to legal questions from Thompson-Coburn
  - Work with each QDMP on any specific legal issues associated with their individual agreements
- Request input from SAC on science application and review forms and process
- Fundraising for implementation
  - HEI time, legal time, staff time for QDMP support



# Forms review

- Walk through example request and evaluation form



# Sustainable Agriculture Research Gaps Project





# Nitrogen Cycle

- Sub-committee met in April to review/refine some of the questions; revised document circulated
- Many questions revolve around nutrient recommendations- updates, development, how farmers access those
- Summer intern opportunities?



# Topic 1: Fertility recommendations

- Research about fertility recommendations by state to determine:
  - Update process, how is original research started
  - How research findings eventually make it to farmers
  - Collect fertility recommendation links from Universities by state to share with Fieldprint Platform users
- Reach out to Field to Market advisors/farmers to learn where they look for fertility recommendations



## Topic 2: What information is embedded in recommendation models?

- Research about University extensions making N recommendations with models incorporating timing information where the objective is not just mitigating yield losses but also capturing potential productivity at the right times (e.g. when rains typically occur)
- Find prevalence of adoption of management zones for crop inputs (seeding rates, fertilizer applications) and their theoretical/real costs/savings.
- Do organizations/corporations that develop management zones share their methodology and if those include previous/future weather considerations?



## Topic 3: Manure imbalances

- Approaches and technologies needed to address risks associated with issues of manure spatial concentration, imbalances in N:P ratios, and asynchronous timings between manure application and crop uptake



# Nitrogen Cycle – communication opportunities?

- Included in comments submitted to ARS listening session
- Should we be partnering or coordinating with other organizations?
- Need to identify other research programs to engage with (e.g. NIFA, NSF)





# Pest Management

- Draft research gaps from science report
- Connections to the social science gaps – structural change in the operating environment required for greater IPM adoption
- Need a communication plan
  - NRCS Stakeholder group on IPM
  - TSC pest metric development



Field to Market®

# Responsible Pest Management



## Convene Diverse Stakeholders

- Task Force convened in 2018-2019 and produced recommendations
- Cross-sector dialogue in March 2019



## Provide Science-Based Leadership

- **Science report on trends in pesticide use and pest management**
- Metrics Committee consideration of pest management metric (coming in 2020)



## Scale Impact Through Partnerships

- Members can utilize the Incubation pathway in the Continuous Improvement Accelerator to establish partnerships for protecting biodiversity and improving water quality through supporting IPM adoption



## Enable Credible Communications

- Science report provides specific recommendations by sector and will be a public document
- Members can use Incubation Projects to demonstrate commitment and action on responsible pest management



# Goals for today

- While we are still refining some of the research gap questions, we are also finding opportunities to communicate these gaps to different stakeholders and funding organizations
  1. Review the current status and plan for each of the 4 elements
  2. Identify specific areas where additional review of the science is needed before communication
  3. Consider communication opportunities
    - June meeting breakout to update members



# Opportunity – Social Science

- Proposed convening event in partnership with FFAR
- FFAR-USFRA Agriculture Climate Partnership (formerly EarthShot 2030) project tie-in
- Timing and pre-meeting activities currently under discussion
  - FFAR convening on BMP adoption – Fall 2020
  - Cross Sector Dialogue on social science – November 2020



Field to Market®

# Ag Climate Partnership

- Vision: We envision a world where every farmer and rancher deploys climate-smart solutions on every acre.
- Goal: U.S. agriculture is net negative for greenhouse emissions by the year 2030.
- Strategy: Mobilize scientists and farmers to unlock the climate-solving potential of our farmlands.



- \$150 million of public funding, matched with \$180 private sector funds
- 344 partners
- Over 100 grants awarded
- 7 consortia established

- 75 Farmer groups
- 34 states
- Representing 1.6 Million farmers
- 300 active volunteers
- 150 Farmer leaders who are volunteers
- Expanded governance to work with brands and NGOs, now 100 organization participating

- 71 members
- 52 countries, distributed across 6 regions (North America, Latin America and Caribbean, Europe, Africa, Asia and Oceania)
- Representing about 1 billion farmers across the globe

# SCIENCE AND DATA DISCOVERY

CONVENE STAKEHOLDERS

DATA PROTOCOL

SYNTHESIZE AVAILABLE  
RESEARCH AND DATA

TOOLKIT/PLAYBOOK V1

## KNOWLEDGE TRANSFER

## FARMER ADOPTION

### PHASE 1

**Co Create: Toolkit/Playbook V1.0 & 1.1**  
150 Innovators Farms  
18 University and USDA Monitored Farms  
Consortia farmer integrators for feedback and adoption strategies

18 MONTHS

### PHASE 2

**Co Create: Toolkit/Playbook V2.0**  
150 Innovators Farms  
18 University and USDA Monitored Farms

**Deploy: Toolkit/Playbook V1.2**  
1000 Early Adopter farms, or 30M acres  
3% total US acres  
1-2 Integration partners, 7% US acres

24 MONTHS

### PHASE 3

**Co Create: Toolkit/Playbook V3.0**  
150 Innovators Farms  
18 University and USDA Monitored Farms

**Deploy: Toolkit/Playbook V2.1**  
1000 Early Adopters farms  
2,500 Early Majority farms, 60M acres,  
7% US acres  
3-5 Integration Partners, 240M acres,  
26% US acres

**100 Global innovator Farms V1.0**

18 MONTHS

**Co Create: Toolkit/Playbook V4.0**  
150 Innovators Farms  
18 University and USDA Monitored Farms

**Deploy: Toolkit/Playbook V3.0**  
1000 Early Adopters farms  
5,000 Early Majority farms, 130M acres, 15%  
US acres  
5-10 Integration partners 472M-650M acres,  
50% - 70% US acres

**1000 Global Early Adopters V2.0**  
Up to 10 Global integration partners, # TBD V2.0



# Discussion

- Other opportunities?
- Council member potential roles
  - Cross sector dialogue speakers
  - Advisory committee for FFAR convening
  - Recommend convening participants



Field to Market®



# Opportunity – Water Quality

- ESMC developing metrics for a water quality credit market.
  - Planning to use APEX and develop APEX-“lite”; near term focus is implementation in their pilot regions
  - Encountering same limitations as Field to Market encountered in terms of model readiness to expand geographically
- In discussions with ESMC and American Farmland Trust – can we use our collective voice to call for coordinated data repositories, data collection guidelines, priority regions for sampling, etc.
- Quantification Modeling Calibration Strike Team





## Concept: Collaboration in support of a national field-level water quality measurement data repository

- Bring together hydrology and GHG modelers to specify what data they need for model calibration.
- Bring together a collection of data gatherers – ARS, University, Discovery Farms, grower org, NGO – to talk about what is feasible in terms of data collection. The goal would be to try and bring these two things together into a standard set of data variables that are reasonable to collect and can be useful to the modelers.
- Encourage leadership for and help to identify and/or leverage funding for National Ag Library Repository



# Water Quality – Communication opportunities

- Recent and upcoming ARS listening sessions for 5-year plans
- Connections to US Geological Survey? NOAA?
- Discussion this week with ESMC, USDA, FFAR and other government partners on modeling and data



# Looking Ahead





# Science Advisory Council 2020 Activities

- Webinar opportunities: Member or public webinars that go in depth on a metric or issue of relevance.
  - Needs to stay at a high level and include practical guidance, e.g. what does this mean for farmer practices/decisions, can the information be used to help projects work on a specific environmental goal?
  - Farmer adoption of conservation practices, specific to biodiversity/IPM/pollinator concerns (tie into our Biodiversity metric launch)
  - Discussion of nitrogen management, GHGs and water quality (tie into the pilot 4R metric launch)
  - Value/use of field level data for research, and benefit to farmers
- FTM alignment with other sustainability and market programs and potential Council roles



# Upcoming meetings

- Science Advisory Council schedule for rest of year?
- June 24-25<sup>th</sup> Plenary – Virtual
  - Wednesday, June 24
    - **General Assembly meeting | 10:00 a.m. - 12:00 noon (ET)**
    - **Concurrent breakout topics hosted by Standing Committees | 2:00 - 3:00 p.m. (ET)**
  - Thursday, June 25
    - **Cross-Sector Dialogue | 2:00 - 4:30 p.m. (ET)**
- September and November Cross-Sector Dialogues



**Field to Market®**