Field to Market®
The Alliance for Sustainable Agriculture
9.6B People in 2050 - Challenges

- 50-70% in middle class
- Purchasing more protein rich foods
- Doubling agricultural output
- Facing a changing climate
- Decreased rainfall
- Extreme weather patterns
- 70% of land use
- 37% of fresh water used
- 1/3 edible food lost or wasted
US consumers’ changing tastes

- **80%** Consumers want more sustainable options
- **75%** Want companies to better explain product impacts
- **60%** Millennials are willing to pay more for sustainability
Corporate Sustainability Commitments

- Reduce GHG emissions across value chain by 25% by 2020
- Reduce GHG emissions across value chain by 28% by 2025
- Halve the GHG impact of products across the lifecycle by 2020
- Fertilizer optimization on 14 Million acres of U.S. farmland by 2020
Field to Market: The Alliance for Sustainable Agriculture focuses on defining, measuring and advancing the sustainability of food, fiber and fuel production
Membership Sectors

Grower  Agribusiness  Brand and Retail  Civil Society  Affiliate
How We Define Sustainable Agriculture

Meeting the needs of the present while improving the ability of future generations to meet their own needs by:

• Increasing productivity to meet future food and fiber demands
• Improving the environment
• Improving human health
• Improving the social and economic well-being of agricultural communities
Guiding Principles

- Emphasis on continuous improvement
- Science based
- Outcomes based
- Technology neutral
- Engage the full supply chain including producers

- Commitment to individual grower data privacy
- Measure broad-scale trends and field-scale outcomes
- Focus on commodity crops with unique supply chains and traceability issues
Field to Market Crops

- **Current**
  - Corn
  - Soy
  - Wheat
  - Cotton
  - Rice
  - Potatoes

- **Proposed**
  - Alfalfa
  - Sugar beets
  - Corn silage
  - Barley
  - Peanuts
  - Sorghum
  - Oats
Environmental Indicators

- Land use
- Soil erosion
- Soil carbon
- Water use
- Energy use
- Greenhouse gas emissions
- Water quality
- Biodiversity (in pilot phase)
Program Goals

• Field to Market seeks to engage 50 million acres in its supply chain program by 2020 in order to:
  – Improve land use efficiency
  – Improve water quality
  – Improve irrigation water use efficiency
  – Improve energy use efficiency
  – Reduce GHG emissions per unit of output
  – Reduce soil erosion
FTM’s Supply Chain Sustainability Program

- Benchmarking Sustainability Performance
- Catalyzing Continuous Improvement
- Enabling Sustainability Claims
Third Edition of the National Indicators Report

• New for 2016
  – Include barley, corn silage, peanuts and sugar beets for the first time
  – Include discussion of trends for biodiversity, soil carbon and water quality
• Available from: www.fieldtomarket.org/report
What is the Fieldprint Platform?

• An online education tool for row crop farmers that indexes their agronomics and practices to a Fieldprint
• Helps growers evaluate their farming decisions and compare their sustainability performance

– **In the areas of:**
  • Land use
  • Soil conservation
  • Soil carbon
  • Water use
  • Energy use
  • Greenhouse gas emissions
  • Water Quality
  • Biodiversity (in development)

– **Comparing against:**
  • Their own fields
  • Previous year’s performance
  • Regional, state and national averages
64 Fieldprint Projects Across 32 States

Supported by partnerships among Field to Market members and participating farmers, Fieldprint Projects provide:

- Shared learning
- Anonymous peer-to-peer benchmarking
- Education for improving crop production and natural resource management
- Demonstrate the value of the Fieldprint Platform in promoting education and continuous improvement.
Example of Fieldprint Project Output

Corn Greenhouse Gas per Bushel - Crete NE - Irrigated 2009

(CO2 Eq per bushel)
Supply Chain Sustainability Claims

Field to Market is finalizing protocols and processes that enable downstream companies to characterize the sustainability of their sourcing regions and make supply chain sustainability claims.

- **Participation**: Member in good standing
- **Measurement**: Project level engagement with 1-4 years of data
- **Impact**: Quantifying improvement over time with minimum 5 years of data
Big Data and Sustainability
Challenges and Opportunities
What is Big Data?

• Often defined by its dimensions:

  – **Volume**: how much data we get – a lot
  – **Velocity**: the speed at which we get data - fast
  – **Variety**: data types and sources - many
Big Data in Agriculture

- The 3 Vs are present in modern day agriculture:
  - A lot of data coming quickly from a variety of sources.
  - Data related to seeding, planting, application of fertilizer and protectants, irrigation, yields.
  - Data related to soil, weather, imagery, sensors, economics, marketing, insurance.
Fieldprint Platform – Growth of Data

• The Fieldprint Platform will see an increase in data growth with rapid scale needed to reach 50 million acres by 2020.
  – Field to Market has 129 members – a 36% increase over last year
  – 64 Fieldprint® Projects across 32 states have been reported to Field to Market – and growing
  – 2.4M estimated enrolled acres in Field to Market Fieldprint Projects – and growing
  – Over 2,000 growers using – and growing
Fieldprint Platform – Version 2.0

➢ Primary interface for Calculator is web-based.
Fieldprint Platform – Version 2.5 (current)

➢ Application Programming Interface (API) added for integration with farm management software.
Fieldprint Platform – Version 3.0 (2018)

➢ Technology refresh; improved agronomics, data management, analytics, and API Services; functionality to support claims and verification.
NOW AVAILABLE
Field to Market’s Sustainability Metrics and Algorithms Now Integrated into Leading Precision Agriculture, Decision Support and Farm Management Software Solutions
Value from Big Data

• Big Data is really about the value we get - from insights, trends, understanding, or patterns extracted from the data, made possible through advanced analytics and modern infrastructure (software, hardware)
• Analytics generally fall into three categories:
  – Descriptive (what happened)
  – Predictive (what could happen)
  – Prescriptive (what to do)
Big Data Value for Field to Market

- Big data can lead to **improve sustainability outcomes** by helping farmers make better agronomic decisions – leading to greater precision, improved efficiencies, higher yields, and reduced environmental impact.
- At the Program level we can leverage anonymized and aggregate-level data to provide valuable insights to the supply chain and help improve the Program.
Big Data Value for Field to Market

• What questions can we ask?
  – Where are the greatest improvements for sustainable row crop production in the US?
  – What conservation practices seem to drive the most improvement at the field level?
  – What other trends or patterns might appear with the aid of advanced analytic tools?
  – Are there opportunities to pair our data with other public or open data sources to additional insights?
Big Data Challenges for Field to Market

• As our data and analytic needs grow, so do our challenges:
  – Need to modernized infrastructure and implement advanced analytics tools (Version 3.0)
  – Need to be ever mindful of stewardship – ownership, privacy and security; continue to promote the portability of grower data.
  – Requirement for stronger management policies
  – Need to improve data quality control
  – Increased use of spatial data and outside data sources.
Value of Field to Market
A Common Sustainability Framework
Value of the Field to Market approach

• **Brands and retailers** can access aggregated data in a pre-competitive fashion to make sustainable sourcing claims.

• **Agribusinesses** have a business opportunity to provide relevant decision support tools, technologies, programs and initiatives to growers.
Value of the Field to Market approach

- **Ingredient processors** can report the sustainability of their sourcing areas through a single platform rather than responding to multiple, competing surveys that may not have the same degree of supply chain support or recognition.

- **Conservation organizations** have full confidence in a sustainability framework that can become the focal point of their agricultural work and goals for production and supply chain sustainability.
Value of the Field to Market approach

• **Farmers** can benefit from an outcomes-based, technology neutral sustainability platform that will help ensure market access while reducing or eliminating a proliferation of supply chain surveys.

• **Commodity organizations** have opportunities to partner with the agricultural supply chain in communicating sustainability messages to the general public.