

# Climate Resilience – Battelle

Karen Boyd

March 29<sup>th</sup>, 2023

**THE ONLY**  
**FARMER-OWNED**  
**AND FARMER-DRIVEN**  
**SUSTAINABILITY**  
**PROGRAM IN THE U.S.**

Truterra™ Platform connects agriculture with precision conservation results.

# Truterra is the sustainability business of Land O'Lakes



## Crop Inputs & Insights

Agricultural products, data, technology tools and services

*Extensive network of nearly 1,000 ag cooperatives*



## Animal Nutrition

Solutions that enhance performance and well-being

*100 patents in animal feed innovation*



## Sustainability

Environmental stewardship and farm profitability solutions

*Agronomic and environmental data insights and grower decision support*



## Dairy Foods

Milk-based products and ingredients

*#1 Butter retail brand in the US*



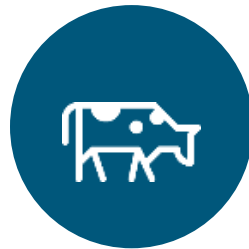
Technology & Insights



Crop Inputs



Seed



Animal Nutrition



Primary Processing



R&D/  
Manufacturing



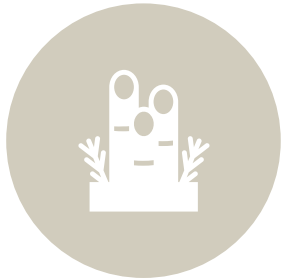
B2B/Industrial Marketing & Sales



Branded Goods  
Marketing & Sales

Production ..... FARM to FORK ..... Consumer

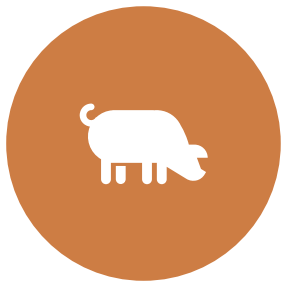
# The Land O'Lakes network touches



**50%** of the harvested acres in the US



**25%** of all row crop farmers



**30%** of all animal protein



**90%** of grocery store shelves



**INFRASTRUCTURE** *for* **SUSTAINABILITY**  
*from the soil up*

**1,900**

Farmers



**1.8**

Million acres



**19**

States



**FARMER-OWNED**

**RETAILER-DRIVEN**

**SUSTAINABILITY-FOCUSED**

*“Land O’Lakes is invested in stewarding the land – our member-owners depend on it for their livelihood. Our collective, shared future depends on it. Through our Truterra team, we are making real change at the field level and supporting our ag supply chain partners with their climate goals and sustainability success.”*

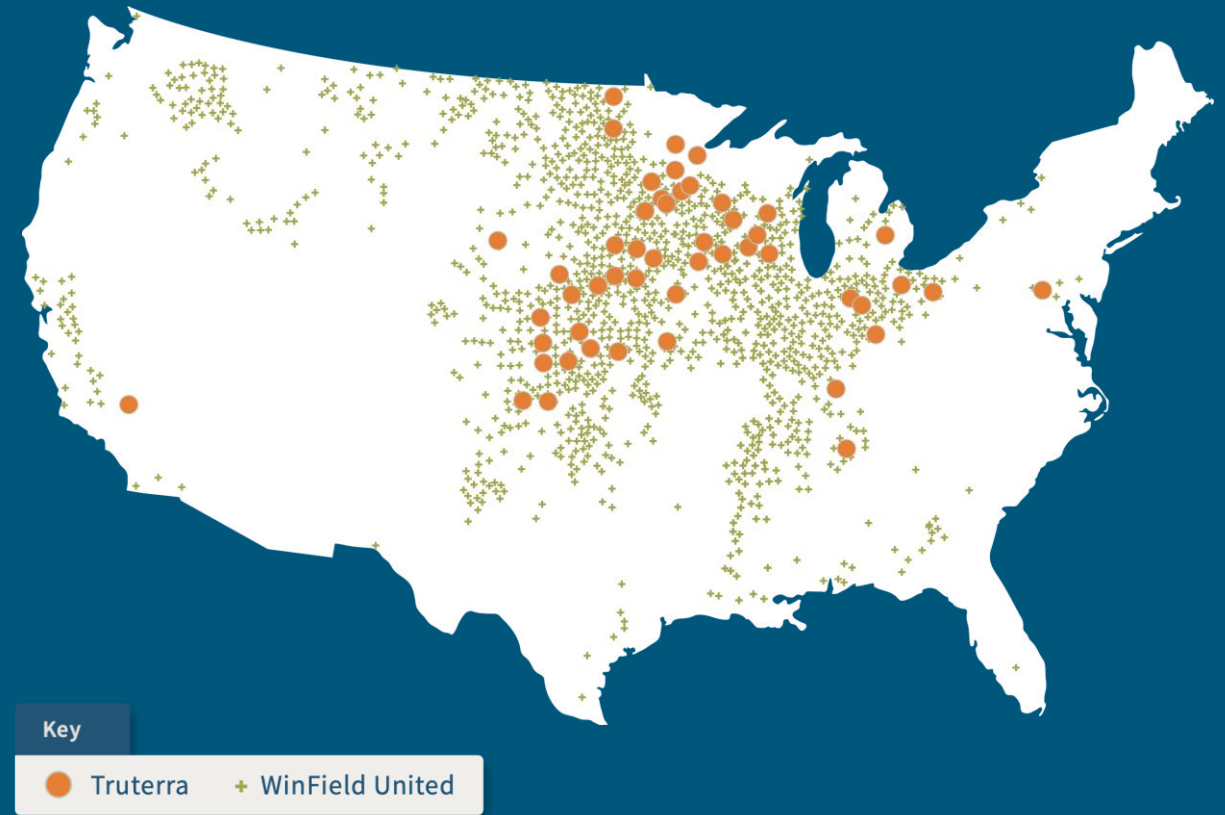
**Beth Ford**

President and CEO, Land O’Lakes, Inc.  
Board Member, PACCAR, Business  
Roundtable



# Our Local Expertise Delivers National Reach

- Truterra influences production decisions on over **25,000 fields** and nearly **2 million acres annually**
- We have boots on the ground with an affiliated network of **trusted, local farm advisors** delivering data-driven insights
- By leveraging this network, **Truterra can expand our influence to reach up to 50% of U.S. harvested acres**



# Truterra is leading the way to a more sustainable future

Listed on **Fortune's** *"Change the World" List* for the Truterra™ Insights Engine

Listed on **Forbes** *101 Companies Committed To Reducing Their Carbon Footprint*

MAGAZINE • CHANGE THE WORLD

## Fortune's 2019 Change the World List: Companies to Watch

By [Matthew Helmer](#) and [Erika Fry](#) August 19, 2019



## 101 Companies Committed To Reducing Their Carbon Footprint

### Agriculture

1. Land O'Lakes. The large co-op provides resources to agriculture startups and gives them resources to follow eco-friendly farming practices.
2. John Deere. The farming equipment company aims to recycle 85% of materials and reduce carbon emissions on 90% of new products to create sustainable inventory.
3. Cargill. The company maps emissions to lower carbon output through the entire supply chain and has a goal to lower greenhouse gas emissions by 10% by 2025.



# How does agriculture fit into the equation?

## The amount of soil organic carbon in your soil.

*Organic matter contributes significantly to soil function by improvement of soil quality and soil structure, while also reducing erosion.*

## Carbon Sequestration

The process of photosynthesis removing CO<sub>2</sub> from the atmosphere and storing it in plant biomass or soil organic matter.

CO<sub>2</sub> that is sequestered in plants or the soil is not trapping heat in the atmosphere as a greenhouse gas.

# Farming Carbon



*Bushels* of grain



*Tons* of Carbon

# TruCarbon™ Program

Unlocking the soil carbon supply by putting farmers and retailers at the center

- the process of -  
**TRANSFORMING ON-FARM STEWARDSHIP**  
into **FARM-GENERATED CARBON CREDITS**



**1 // PRACTICES**

Farmer implements practices to increase soil carbon levels.



**2 // AGGREGATION**

Aggregator collects field-level data to quantify soil carbon.



**3 // VERIFICATION**

Soil carbon amounts confirmed via soil testing, farmer interviews, other data sources.



**4 // CERTIFICATION**

Verified data is evaluated against carbon market certification standards plus any buyer requests.



**5 // PURCHASE**

Certified carbon credits owned by farmer or aggregator are made available to buyer(s) and purchase is transacted.



**6 // MAINTENANCE**

Farmer maintains stewardship records.



INFRASTRUCTURE *for* SUSTAINABILITY  
*from the ground up*

# Connecting the food chain for sustainability impact

We partner with forward-thinking farmers, value chain companies, conservation organizations and ag retailers to help better deliver the future of on-farm sustainability.

## Farm-To-Fork Expertise

We've worked with all aspects of the food chain—from producers to ag retailers to grain suppliers to consumer-packaged goods companies.

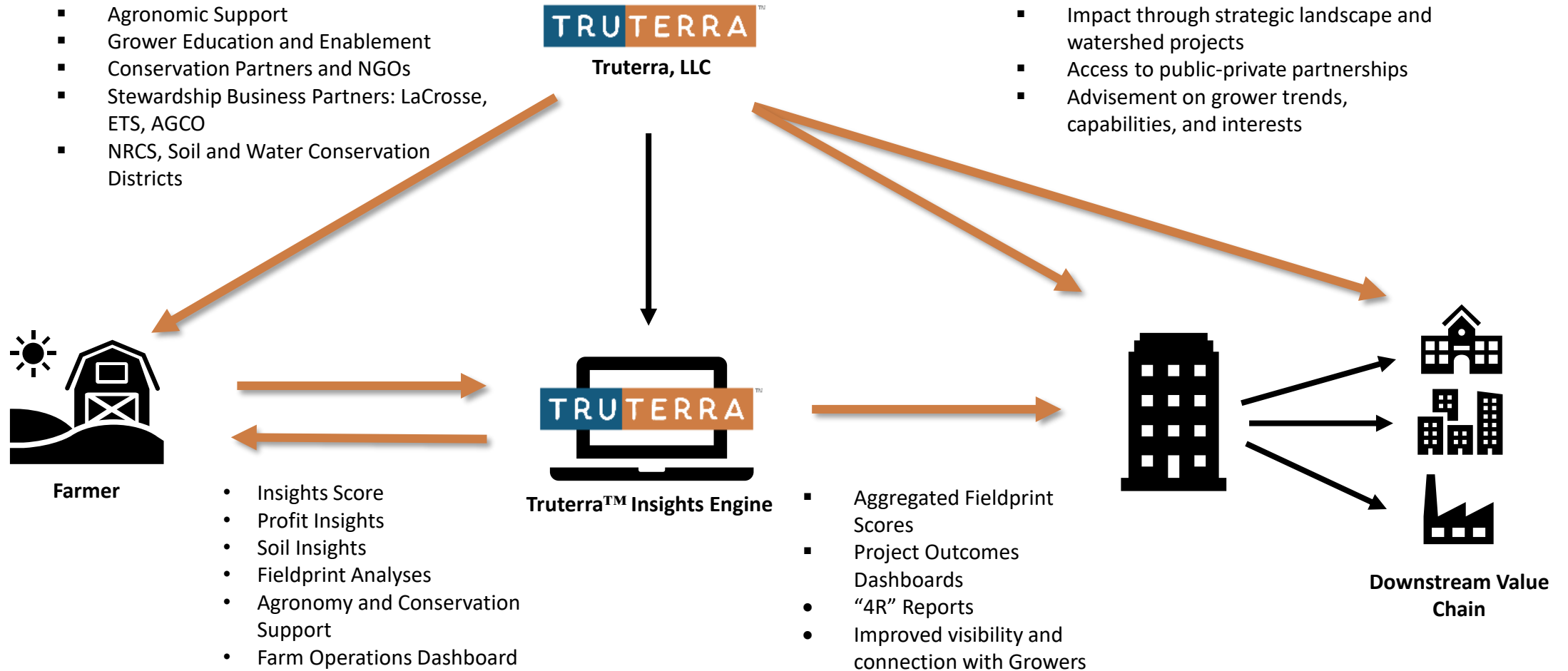
## Leading Analytics

Truterra leads the industry in evaluating and assessing conservation impacts at the field level through our Truterra™ Insights Engine sustainability tool.

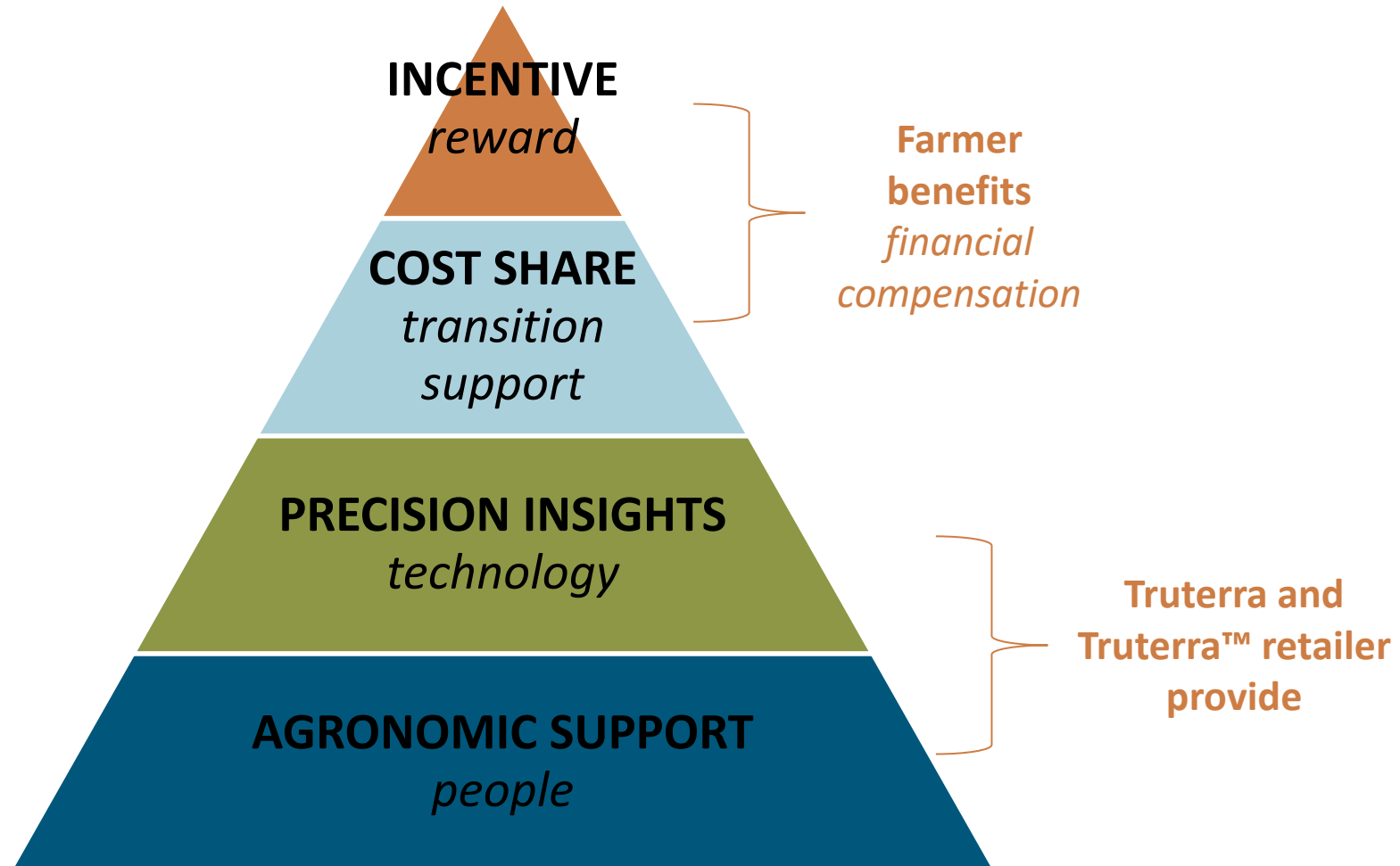
## Collaborative Solutions

We're hands-on consultants, engaging with all of our collaborators to identify opportunities and solutions in sustainability.

# An Ecosystem of Sustainability Solutions



# Creating sustainable change



**TRUTERRA**<sup>TM</sup>

**INFRASTRUCTURE** for **SUSTAINABILITY**  
*from the soil up*

*Consulting services and reporting fueled by the*  
**Truterra<sup>TM</sup> Insights Engine**

Helping farmers boost their  
profitability & stewardship while  
meeting sustainability demands  
from the value chain



### **TruCarbon<sup>TM</sup> Program**

The services offered in our TruCarbon<sup>TM</sup> program help unlock the soil carbon supply by putting farmers and retailers at the center.



### **TruWater<sup>TM</sup> Program**

The services offered in our TruWater<sup>TM</sup> program help reward farmers and retailers for their water quality efforts



### **TruGrain<sup>TM</sup> Program - future**

The services offered in our TruGrain<sup>TM</sup> program will offer new value-added opportunities for farmers and grain buyers

**FLEXIBLE, FARMER- AND RETAILER-CENTERED APPROACH**



# For Farmers

*Insights facilitating continuous improvement in sustainability*

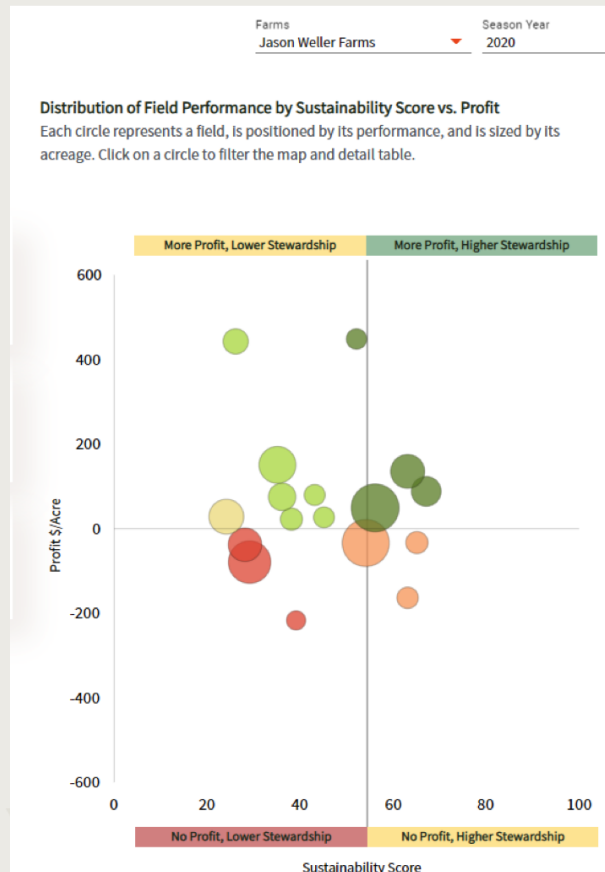
We help farmers optimize their practices for maximum profit potential

- Identify and optimize the best practices for each field
- Maximize productivity on the best acres
- Improve stewardship on the less productive acres

### FARMERS PERFORMANCE

**Farmer Average for Stewardship Indicators**  
Select an Indicator to view detailed field-level performance for that metric.

<b>PROFITABILITY</b> <b>\$47.19</b> <small>average profit/acre</small>	<b>SUSTAINABILITY SCORE</b> <b>44</b> <small>average sustainability score</small>
<b>SHEET &amp; RILL EROSION</b> <b>2.2</b> <small>average t/ac/year</small>	<b>WIND EROSION</b> <b>TRACE</b> <small>average t/ac/year</small>
<b>SOIL QUALITY TREND</b> <b>0.34</b> <small>average soil conditioning index</small>	<b>NET GHG EMISSIONS</b> <b>1,675</b> <small>average lbs CO2e/ac/year</small>
<b>NITROGEN USE EFFICIENCY</b> <b>0.76</b> <small>average lbs N/bushel</small>	



Crops: Soybeans, Corn | **RESET** | **PDF** | **BULK REPORT**

#### Field Locations

View the geographic distribution of currently selected fields.

Colored by Profit & Stewardship: No Profit, Lower Stewardship (Red) to More Profit, Higher Stewardship (Green)

Counties

#### Field Details

View the details for the selected fields. Click on the Indicators to link out.

FARM ↑	FIELD ↑	SEASON	CROP ↑	ACRES ↓
Robert Hedges Farms	SE Minnesota	2020	Corn	273.47
Jim Anderson Farms	Carroll Co IA Brushy Creek	2020	Soybeans	266.05
Rachel Hanson Farms	Dunkin co MO	2020	Corn	225.87
Jason Weller Farms	Brown Co KS contour	2020	Corn	175.72

## Building carbon markets from the soil up.

Our TruCarbon™ program is the **ONLY FARMER-CENTRIC, AG RETAILER-DRIVEN CARBON PROGRAM.** We are unlocking the soil carbon supply with farmers and ag retailers at the center and are the **TRUSTED CONNECTION AT ALL STAGES OF THE VALUE CHAIN,** from farmers and ag retailers to consumer good companies.



# Land O'Lakes, Inc and Truterra are proactively engaging with state and federal policy makers to discuss opportunities to support a private, voluntary carbon market.

- ✓ Public-private collaboration
- ✓ Leverage & improve existing programs
- ✓ Science-based
- ✓ Incentives
- ✓ Connectivity



# USDA Investment Accelerates our Ability to Scale

## USDA 'Partnerships for Climate-Smart Commodities' program

- Truterra awarded up to \$90 million to connect public + private resources to help scale climate-smart commodities production
- Grant will fund a wide variety of programs to help producers adopt more regenerative ag practices
- These producer programs will help accelerate the decarbonization of key ag commodity supply chains



U.S. DEPARTMENT OF AGRICULTURE



# Questions?

## Karen Boyd

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[truterraag.com](https://truterraag.com)

[Sustainability Business Truterra's CO2 Removal Project](#)

