



Combating
Climate Change
From the Ground Up

The Nature
Conservancy



Pipa Elias

Director of Agriculture, North America

Our Vision:
**A future in which both
people and nature thrive**

The Nature
Conservancy 



Soil Health Practices

Cover
Crops

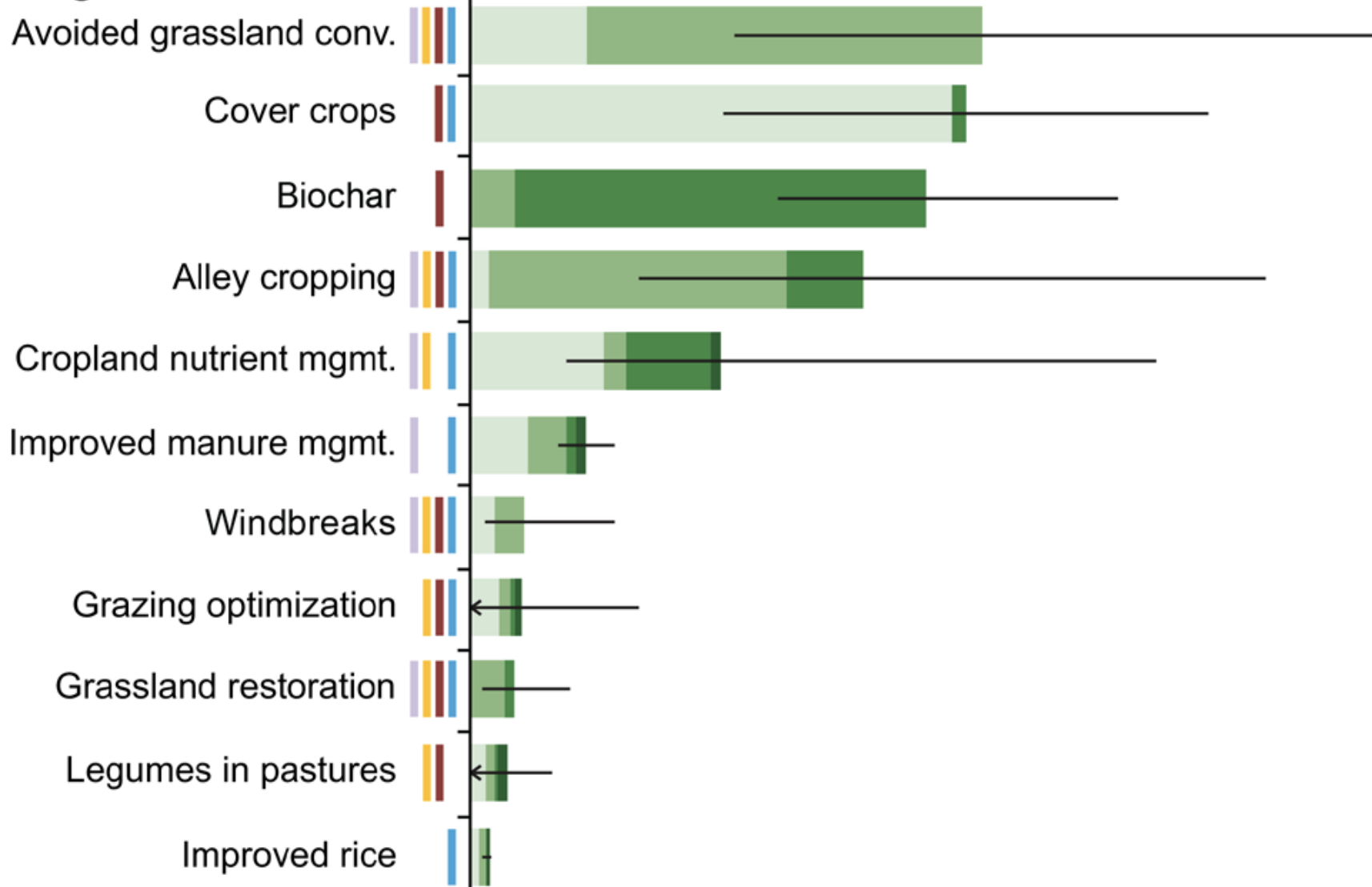
Crop
Rotation

Reduced
Tillage

Nutrient Management

Natural Climate Solutions from Agriculture

Ag. & grasslands



Climate mitigation

- Maximum
- 100 USD Mg CO₂e⁻¹
- 50 USD Mg CO₂e⁻¹
- 10 USD Mg CO₂e⁻¹

Other benefits

- Air
- Biodiversity
- Soil
- Water

Climate mitigation potential in 2025 (Tg CO₂e year⁻¹)
Fargione et al. 2018

Size OF THE PRIZE

**25
million**

metric tons of
greenhouse gas
emissions mitigated



**116
million**

metric tons
of soil erosion
eliminated



**344
million**

pounds of nutrient
loss to the environment
reduced



**3.6
million**

acre-feet of available
water capacity in
cropland soils

Healthy soils help farmers be part of the solution by...

Storing more
carbon, which
increases
fertility

Absorbing
water, making
it more
resilient in a
dry year

Improve water
quality by
retaining more
water, which
reduces runoff



Size^{OF}_{TH} PRIZE^E

Adopting soil health practices on all U.S. corn, soy and wheat croplands could deliver nearly \$50 billion in social and environmental impacts



What's happening today?

Voluntary Action

Corporate Goals

Ecosystem Services Markets

Voluntary Action

3x increase
in cover
crops in 3
years

Growing 4R
certification



Soil Health Helps Drive Corporate Climate Goals

Soil becomes fertile ground for climate action

Holly Secon
Monday, February 25, 2019 - 1:43am



GENERAL MILLS AIMS TO DRIVE REGENERATIVE AGRICULTURE ON 1 MILLION ACRES BY 2030

GM'S SUSTAINABILITY OFFICER SAYS TRAINING, PROGRAMS WILL BOOST SOIL HEALTH AND ECONOMIC RESILIENCE.

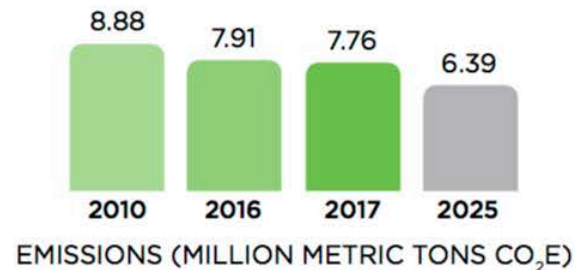
By [Bill Spiegel](#)
3/4/2019



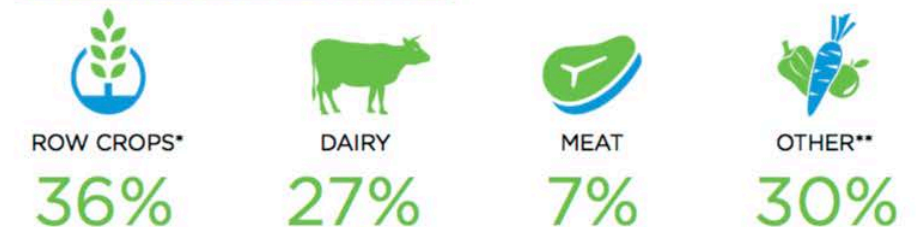
Agriculture and transformation (50% of total value chain GHG emissions)

Growing and transporting crops, and turning them into food ingredients

GENERAL MILLS' LEVEL OF INFLUENCE:
MEDIUM



KEY DRIVERS (% OF PHASE IN FY17)



Benefits of Ecosystem Services Markets

Scale

Producer
Benefits &
Incentives

Scientific
Rigor &
Consistency

Efficiency

Farmers Can Profit from Ecosystem Services Markets



If a market paid \$10 per ton of C, that's
\$160 million back in farmers' pockets
across 122 million acres of cropland in the Midwest.

Ecosystem Services Markets Consortium

MISSION

Advance ecosystem service markets that incentivize farmers and ranchers to improve *soil health systems* that benefit society

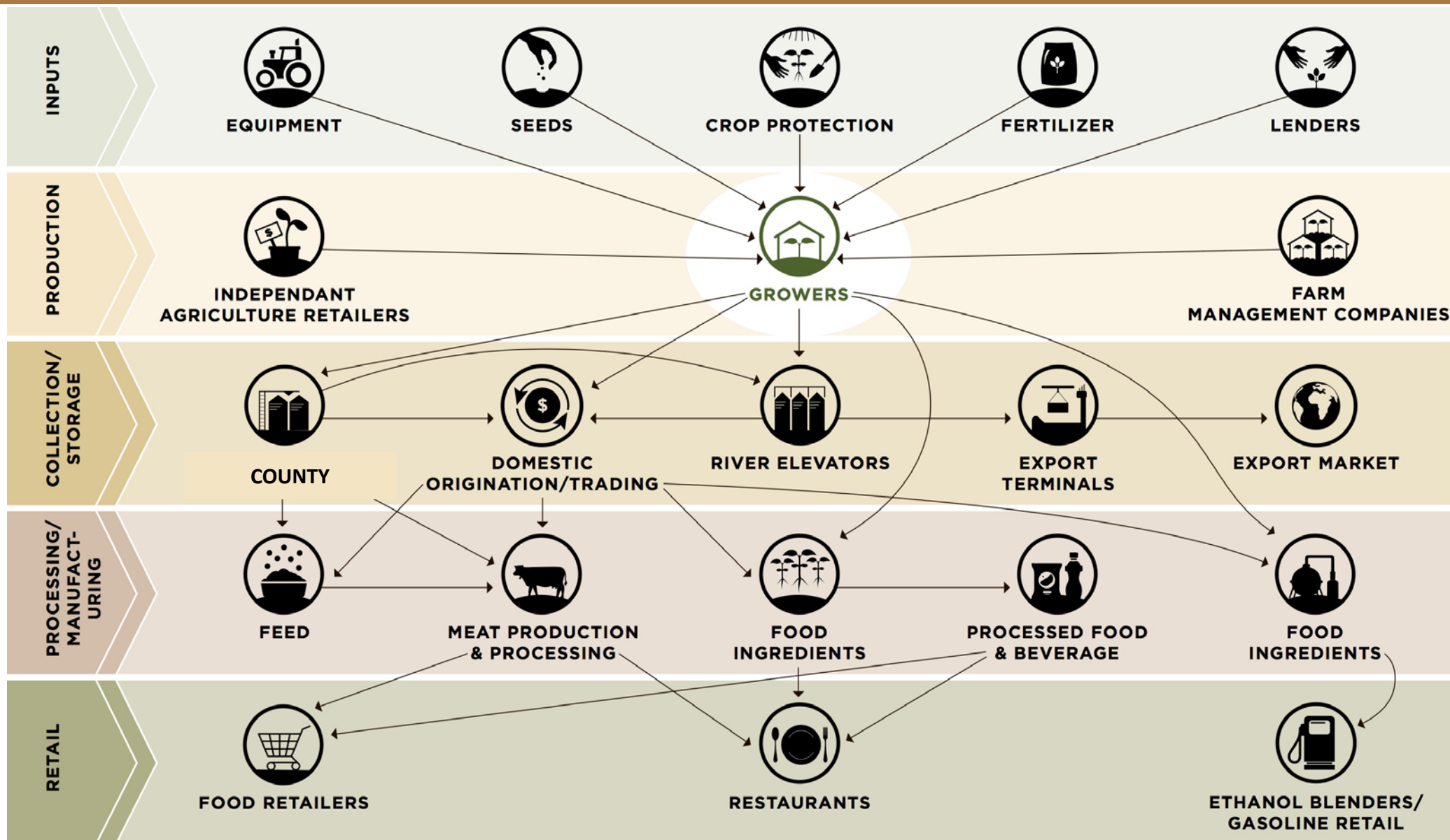
ECOSYSTEM
SERVICES MARKET
CONSORTIUM

<https://ecosystemservicesmarket.org/>

Looking ahead



Supply Chain Stakeholders Are Part of the Solution



reThink Soil

A Roadmap to U.S. Soil Health

SCIENCE AND RESEARCH

Overcome the science and research gap to support expansion of soil health management

1. Create cost-effective soil health measurement standards and tools

Create accurate, accessible, and standardized methods for rapid measurement of key soil health indicators at a scale that impacts management choices by farmers and landowners
LEAD ACTORS: Research institutions, private sector, Soil Health Institute, grower organizations



2. Develop operational management strategies for adaptively integrating soil health practices and systems

Build evidence and understanding among farmers regarding operational strategies locally tailored for integrating multiple soil health practices on a farm, including optimal cover crop programs
LEAD ACTORS: Research institutions, extension, conservation districts, NRCS, grower organizations, agricultural retailers, private sector



3. Advance the science of soil health benefits

Further quantify the economic costs, benefits and environmental impacts of different management practices on soil health, including organic systems, with consideration for different regions, soil types, and cropping systems
LEAD ACTORS: Research institutions, Soil Health Institute

ECONOMIC

Overcome economic obstacles by providing the market systems to secure soil health

4. Align incentives between landowners and farmers

Cultivate understanding among absentee landowners of soil health benefits for society and land value, encouraging new lease arrangements integrating soil health systems and practices
LEAD ACTORS: Landowners, farm management companies, lenders, etc.



5. Leverage technological innovation to overcome operational hurdles

Leverage technological innovations, such as sensors, drones, cover crop seeding equipment, precision agriculture software and hardware to advance adoption and continued implementation of soil health systems and practices
LEAD ACTORS: Public and private research institutions, agricultural retailers



6. Provide broader access to products and services supporting soil health

Develop new business models with agricultural retailers providing broader access to new products and services in order to accelerate the adoption of soil health systems and practices
LEAD ACTORS: Agricultural retailers



7. Create market signals in sustainability programs for soil health

Develop improved indicators rewarding soil health management outcomes in sustainability assessment programs, aligning the incentives of farmers and society
LEAD ACTORS: Field to Market, food companies, agribusinesses, leading sustainability programs and farmers



8. Reward farmers who optimize long-term soil health with lower crop insurance premiums

Advocate for federally subsidized crop insurance programs to value the benefits generated from improved soil health profiles through lower insurance premiums
LEAD ACTORS: Commodity organizations, agri-food sector, conservation organizations seeking to expand constituency, federal and state governments



9. Support policies that enable greater investment in soil health

Support state and federal policy improvements focusing on reducing barriers to soil health practice adoption, targeting priority areas for implementation, and comprehensively assess impacts for societal value
LEAD ACTORS: State and federal governments, conservation organizations seeking to expand constituency




10. Build a more diverse constituency for soil health policy

Build a strong and diverse network of supporters for soil health policy, including farmers, landowners, the agri-food sector, community leaders, and societal interest groups
LEAD ACTORS: Farmers, landowners, agri-food sector, community leaders, societal interest groups

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