

Noble Land Stewardship:

The Case for an Ecosystem Service Market

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ACES 2018 – A Community on Ecosystem Services
December 6, 2018 || Session 68, Grand Ballroom Salon DE



ESM Program

MISSION

To advance ecosystem service markets that incentivize farmers and ranchers to improve soil health systems that benefit society





**“No civilization has
outlived the usefulness
of its soils. When the
soil is destroyed, the
nation is gone.”**

- Lloyd Noble



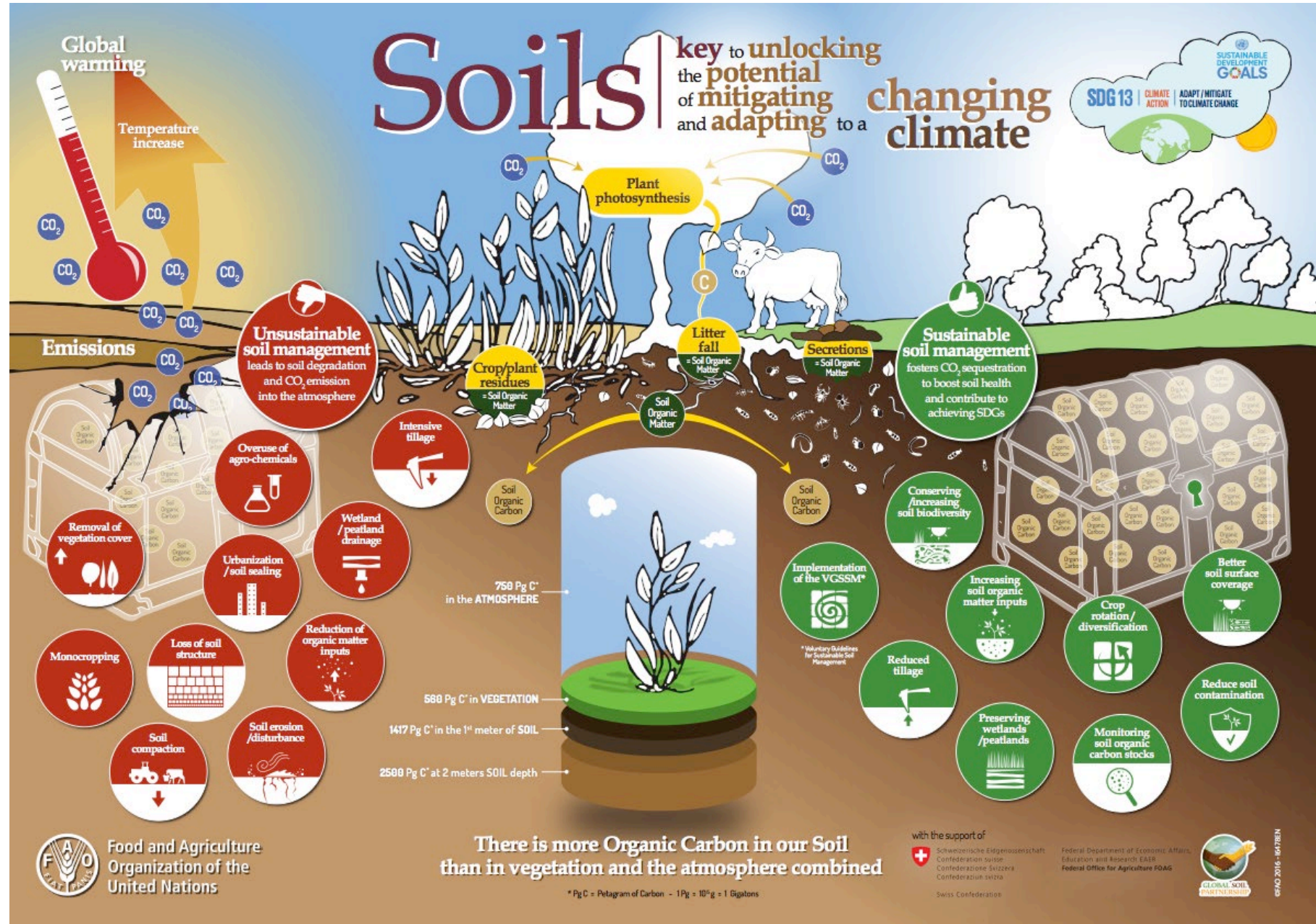
“Humanity loses another 0.3% of our global food production capacity each year to soil erosion and degradation”

-UN Global State of the Soil Assessment, 2015



Photo: Bryan Nichols

There is **MORE ORGANIC CARBON** IN THE **TOP 1 METER OF OUR SOIL** than in vegetation and the atmosphere combined.



Scientists Call For Eight Steps To Increase Soil Carbon For Climate Action And Food Security

On Dec 3, 2018

ATMOSPHERIC SCIENCE



International coordination and financing essential



COMMENT · 03 DECEMBER 2018

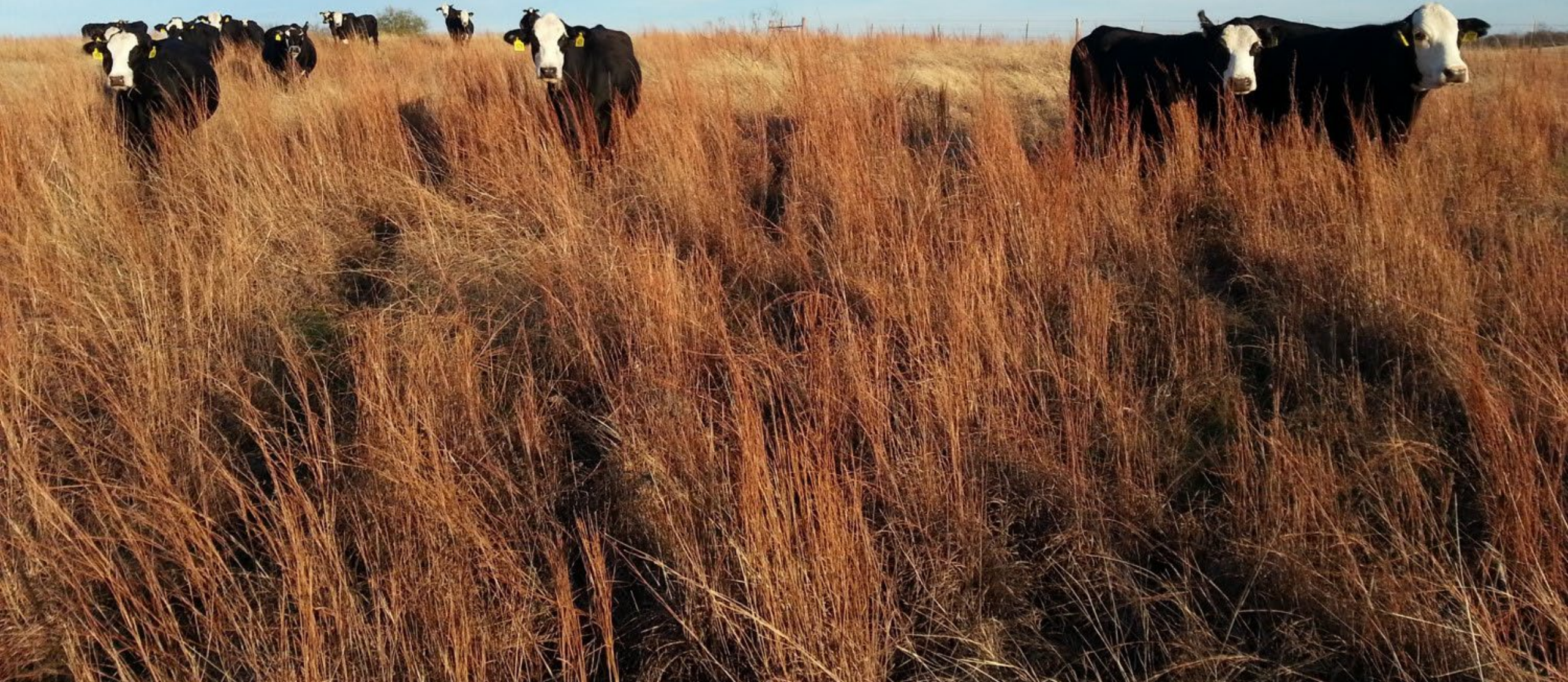
Put more carbon in soils to meet Paris climate pledges

Take these eight steps to make soils more resilient to drought, produce more food and store emissions, urge Cornelia Rumpel and colleagues.

Cornelia Rumpel, Farhad Amirasiani, Lydie-Stella Koutika, Pete Smith, David Whitehead & Eva Wollenberg



The answer is literally staring at us. More than two-thirds of the land area in the United States is privately owned, with 914 million acres in farms or ranches. Opportunity knocks...



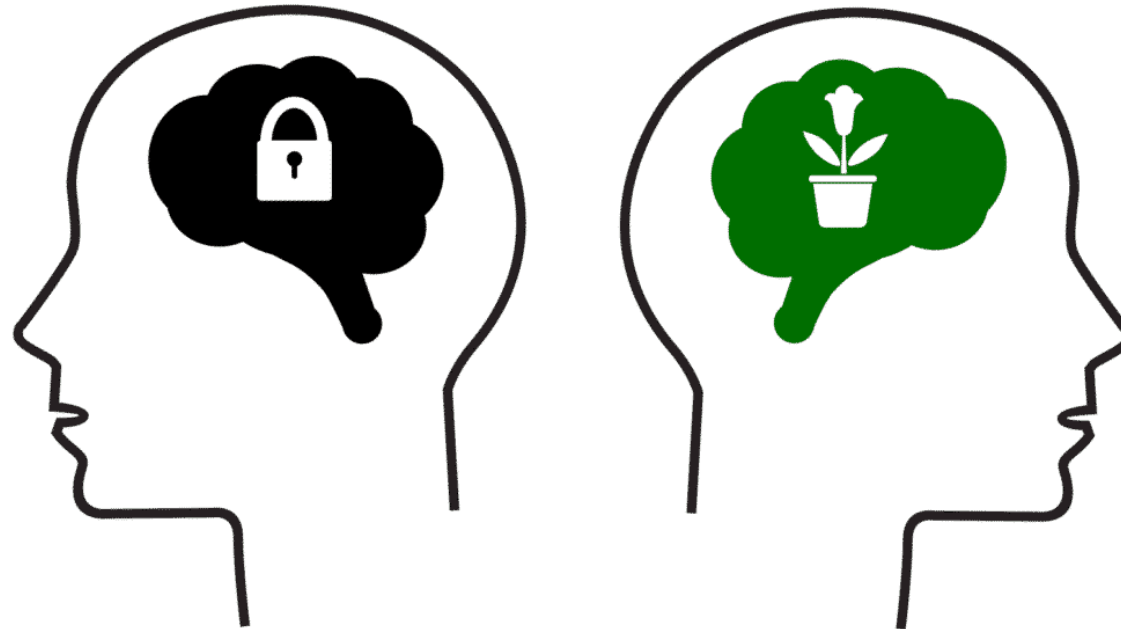
**Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest.”
*Aldo Leopold, Conservation Economics- 1934***





More Practice Adoption...More Practice Change!
If we would just plant more cover crops...

The first change is mindset...



Ecological problems are resolved with
Principles not Practices...





Five Principles to Improve Soil Health

1. Keep the Soil Covered
2. Optimize Disturbance
3. Increase Plant Diversity
4. Keep a Living Root Year Round
5. Proper Livestock Integration

5.3 inch Rainfall Event

Management of Soil Health Principles

- No-till Crop Rotation
- Cover Crops
- Planned Grazing Management

Infiltration Rate= 6 in/hr

143,906
gallons of water/Ac
Stored

Conventional Management:

- Conventional Tillage
- Small Grains
- No Cover Crops
- No Grazing

Infiltration Rate= 0.6 in/hr

16,507
gallons of water/Ac
Stored

The science is the easy part...



We are living in a world of missed opportunities!

- We are so caught up in the rules that we miss the carbon for the dirt.
- C is being sequestered everyday on working lands and we do not have a framework to account nor incentivize it.



BARRIERS:
Permanence and
Additionality

Permanence should not be a legal document, rather permanence should be a mechanism that ensures the principles that sequester carbon continue.



This is
Permanence.

5 Generations of
Stewardship



A close-up photograph showing two hands holding two distinct clumps of dark brown soil. The soil is moist and crumbly, with numerous fine, white roots visible throughout both samples. The hands are positioned on either side of the soil, with fingers gripping the edges. The background is slightly out of focus, showing green grass and a blue fabric, possibly a shirt. The overall scene suggests a comparison or examination of soil quality or root density.

The Carbon doesn't
Care...

Change the paradigm of ecosystem services

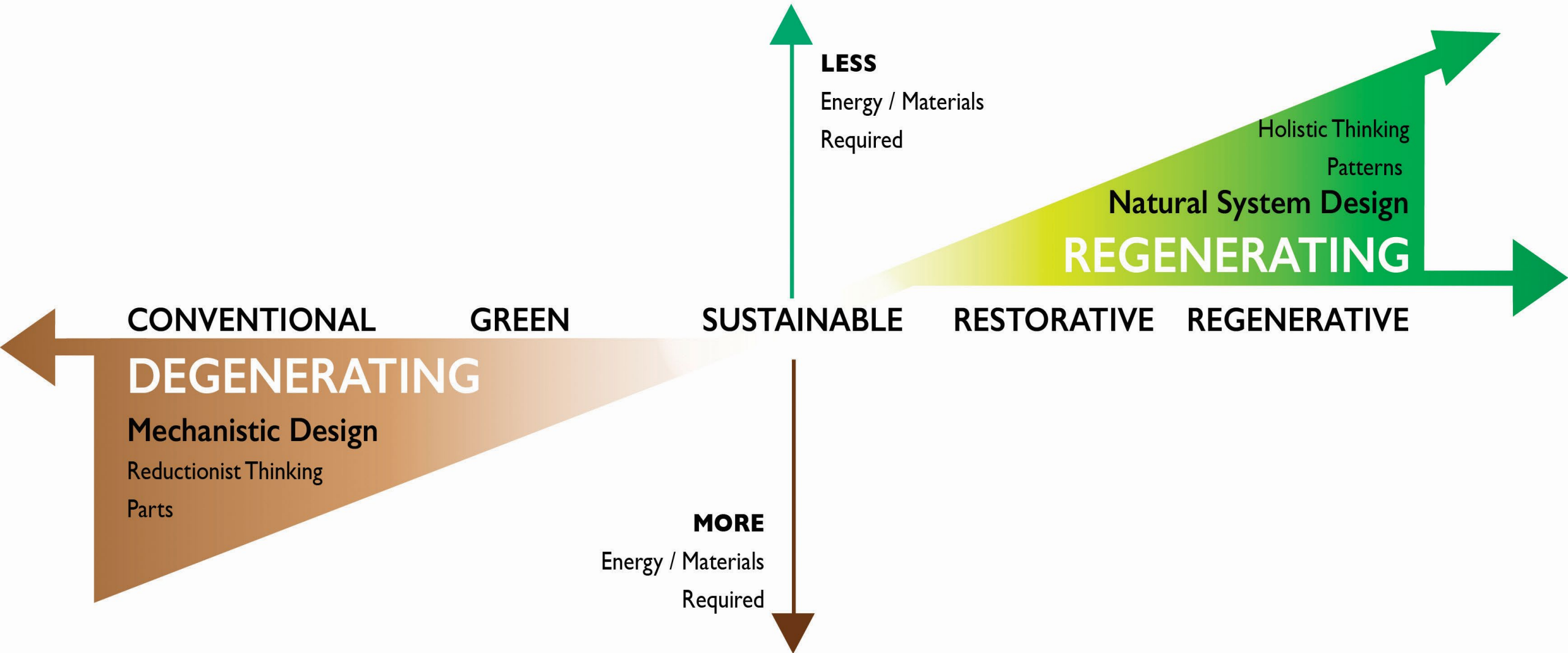


They don't just occur....Lets hire producers to provide them

Where is our focus?

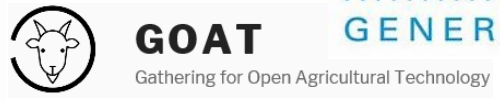
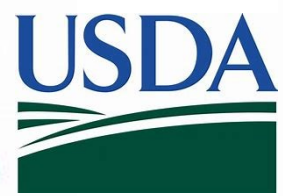
AN ECONOMY

Place - Culture - Enterprise - Government - Commons





The key is developing a framework to drive
LAND STEWARDSHIP
outcomes while enhancing producer livelihoods
and public benefit.





NOBLE
RESEARCH
INSTITUTE