ORGANICS & REGENERATIVE AGRICULTURE

September 5th, 2017

PRESENTERS

Drew Katz - Transition Services Coordinator, Oregon Tilth
Andre Leu - Steering Committee, Regeneration International
President, IFOAM Organics International
Dag Falck - Organic Program Manager, Nature's Path
Chris Kerston - Director of Events and Public Outreach, Savory Institute

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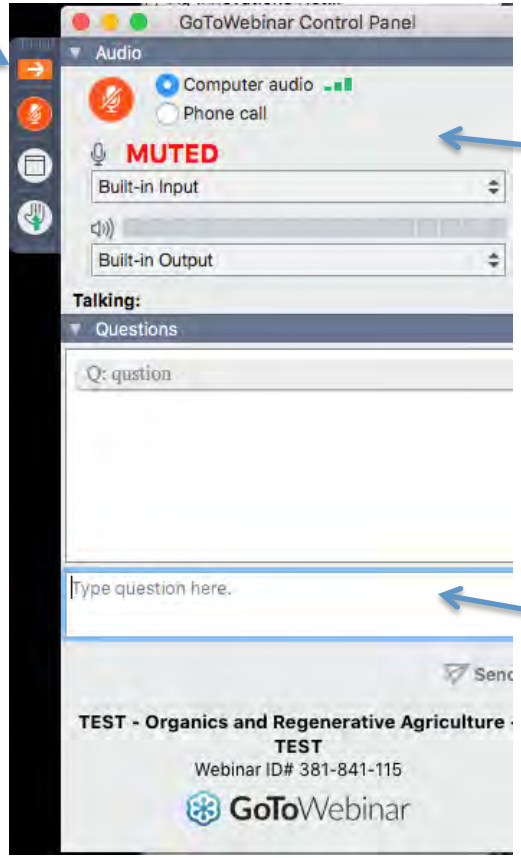
WEBINAR LOGISTICS

Collapse control panel



Change your audio setting

Ask a question

WEBINAR AGENDA

- Background & Aim
- What is Regenerative Agriculture?
- Stakeholder Perspectives
  - Dag Falck - Nature's Path
  - Chris Kerston – Savory Institute
- Q+A

BACKGROUND AND AIM

WHAT IS REGENERATIVE AGRICULUTRE?

Andre Leu
Steering Committee Member, Regeneration International;
President, IFOAM Organics International

Regenerative Organic Agriculture

Regenerating Soil Organic Matter, Climate Change, Food Security, Adaptation and Mitigation

IFOAM – Organics International

The global umbrella body for the whole organic sector.

People

950 member organizations in 125 countries worldwide.

Webcast

September, 5, 2017

Andre Leu, President

Introduction

There are a range of definitions of **Regenerative Agriculture**

The most basic is:

- **Regenerative Agriculture** describes the numerous systems that regenerate soil organic carbon/matter
- Other definitions also include regenerating the environment, health, communities, democracies etc
- There is a need to fully define it so it isn't greenwashed like sustainable agriculture.

Climate Change

Just adopting renewable energy and stopping emissions will not stop climate change

If a boat is sinking we have to do more than just plug the leak – we have to bail out the water.

- The world reached 400 ppm CO_2 in 2016
- This will mean 3.5 to 5 degrees warmer
- 450 ppm is regarded as catastrophic climate change
- CO_2 increases by 2 ppm per year
- We will reach the tipping point in 2041 (25 years)

Climate Change

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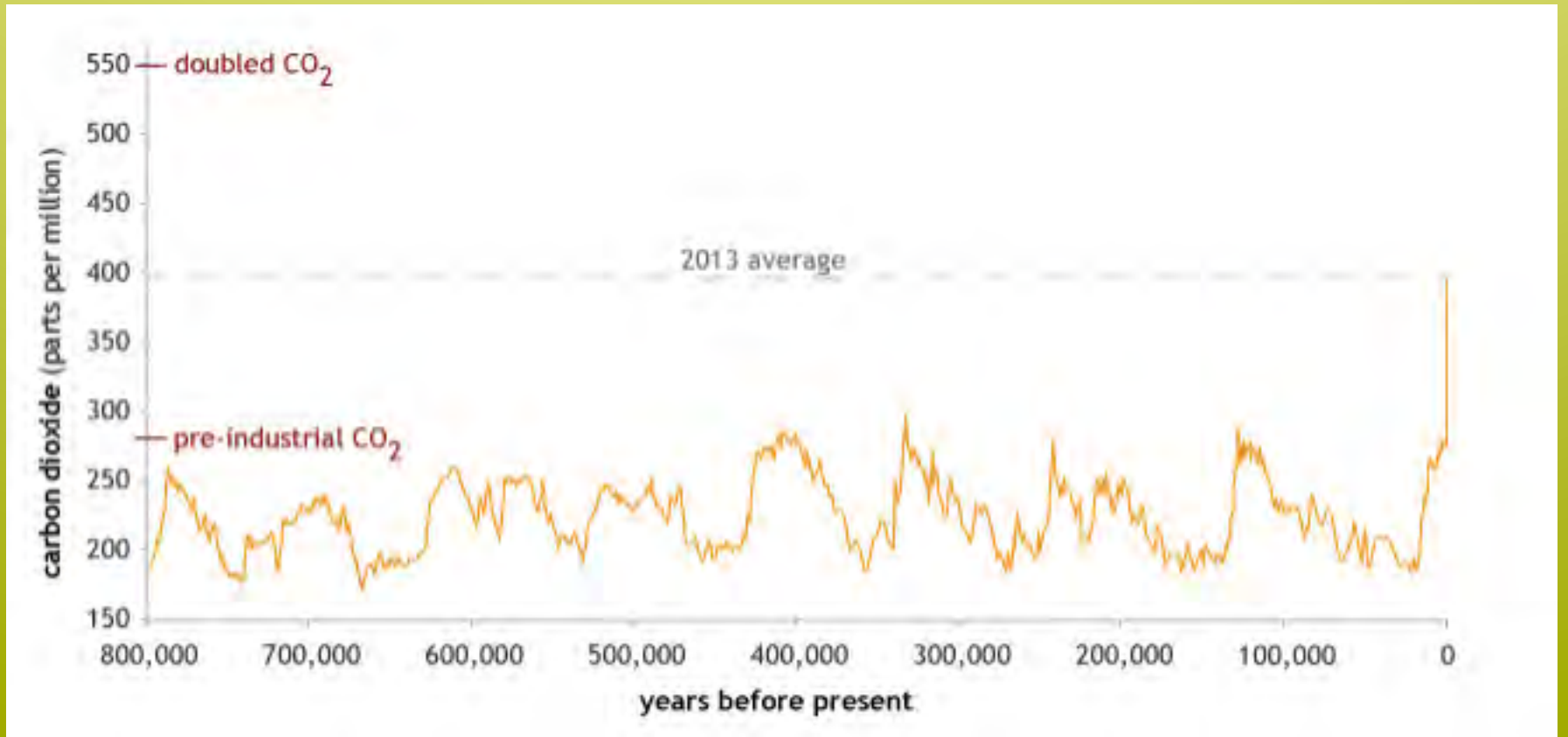


Climate Change

Stopping Emissions is NOT Enough

According to WMO Secretary-General Michel Jarraud

- "Carbon dioxide remains in the atmosphere for hundreds of years and in the ocean for even longer. Past, present and future emissions will have a cumulative impact on both global warming and ocean acidification. The laws of physics are non-negotiable"

- The extra heat becomes a huge amount of extra energy fuelling our planet's weather systems.
- It means weather events such as storms, droughts and floods become more intense and more frequent.
- **Extreme 1 in 30 years events are now 1 in 5 years**

We need to draw the excess CO_2 out of the atmosphere

Stopping Emissions is NOT Enough

- **350 ppm means 2 degrees or more of warming**
- Global sea levels rises will cause the atoll island countries, large parts of Bangladesh, Netherlands, coastal USA, New York, New Orleans, Miami, London, Manila, Bangkok, Jakarta, Shanghai and other low lying areas to go under water, causing a huge refugee crisis for hundreds of millions of people
- It will mean increased frequency and severity of droughts, floods and storms causing food shortages and more humanitarian crises
- **Consequently Paris set a goal of less than 2ºC (1.5ºC)**

We reached 1.25ºC warmer in 2016

IFOAM ORGANICS INTERNATIONAL

- What does '4 per 1000' mean?

- An annual growth rate 4 parts per thousand in global agricultural soil carbon stocks would make it possible to stop the present increase in atmospheric CO_2

The UNFCC recognizes this initiative by French Government as part of the Lima – Paris accord

Many Countries, regions, FAO,IFAD, GEF, CGIAR and numerous NGOS have signed on

We Must Stabilize CO_2 Now!

- The immediate goal must be to stabilize the amount CO_2 in the atmosphere, to prevent any further increases
- Ideally, this should be done by capping current emissions and adopting a combination of renewable energy and energy efficiency
- However under the Paris agreement a reduction of GHGs will not start until 2030 at the earliest
- If we wait until then we will reach 430 ppm - just below the tipping point of 450 ppm

We Must Stabilize CO_2 Now!

- Currently CO_2 levels are increasing by 2 ppm per year.
- 1 ppm CO_2 = 7.76 Gt CO_2
- Need to remove 15.52 Gt of CO_2 per year from the atmosphere to stabilize
- Further scaling up to reduce CO_2 levels
- We are using the word **Regenerative Agriculture** to describe the numerous systems that regenerate soil organic carbon/matter
- The following are published peer-reviewed examples from **Regenerative Organic Agriculture** – these methods can be adopted by other systems

Soil Carbon Sequestration

Agriculture, Ecosystems & Environment Journal study:
24 comparison trials from Mediterranean Climates in Europe, the USA and Australia. organic systems sequestered 3559.9 kg of CO2/ha/yr. (Aguilera et al., 2013)

The Rodale FST manured organic plots sequestered 3,596.6 kg of CO2/ha/yr.

Sekem, Egypt, has sequestered 3,303 kgs of CO_2 per hectare per year

If extrapolated globally, these practices can sequester around 17 Gt per year

Soil Carbon Sequestration

The Rodale Compost Utilization Trial sequestered 8,220.8 kg of CO_2/ha/yr.

- (Total Agricultural Land 4,883,697,000 ha x 8,220.8 kg of CO_2/ha/yr)

If extrapolated globally would sequester

40 Gt of CO_2

Regenerative Grazing

- ‘In a region of extensive soil degradation in the southeastern United States, we evaluated soil C accumulation for 3 years across a 7-year chronosequence of three farms converted to management-intensive grazing.’

- ‘Here we show that these farms accumulated C at 8.0 Mg ha−1 yr−1, increasing cation exchange and water holding capacity by 95% and 34%, respectively.’ (Machmuller et al. 2015)

- 8.0 Mg ha−1 yr−1 = 8,000 kgs of Carbon being stored in the soil per hectare per year.

- Soil Organic Carbon x 3.67 = CO_2, means that these grazing systems have sequestered 29,360 kgs (29.36 metric tons) of CO_2/ ha/yr

- Grasslands: 3,356,940,000 ha x 29.36 = 98.5 gt CO_2/yr

If these regenerative grazing practices were implemented on the world’s grazing lands they would sequester 98.5 gt CO_2/yr

Soil Organic Matter Adaptation & High Yields

Regenerating Soil Organic Matter

Higher Yields in Climate Extremes

- **Organic systems have higher yields** than conventional farming systems in weather extremes such as heavy rains and droughts. (Drinkwater, Wagoner and Sarrantonio 1998; Welsh, 1999; Lotter 2004)
- The Wisconsin Integrated Cropping Systems Trials found that organic yields were higher in drought years and the same as conventional in normal weather years. *(Posner et al. 2008)*
- The Rodale FST showed that the organic systems produced 30 per cent more corn than the conventional system in drought years. *(Pimentel D 2005, La Salle and Hepperly 2008)*

Improved Efficiency of Water Use

Research Shows that Regenerative Systems use Water More Efficiently

Volume of Water Retained per Acre (to 12 inches) in relation to soil organic matter (SOM)

- **1 % SOM = 16,640 (common level Africa, Asia, Aust)**
- **2 % SOM = 33,280 Gallons**
- **3 % SOM = 49,920 Gallons**
- **4 % SOM = 66,560 Gallons (levels pre farming)**
- **5 % SOM = 83,200 Gallons (levels pre farming)**
- **6 % SOM = 99,840 Gallons (levels pre farming)**

Adapted from Morris, 2004.

Organic Corn - 1995 Drought

High Yield Regenerative Organic Agriculture

IFOAM ORGANICS INTERNATIONAL

The average corn yields during the drought years were from 28% to 34% higher in the two organic systems.

The yields were 6,938 and 7,235 kg per ha in the organic animal and the organic legume systems, respectively, compared with 5,333 kg per ha in the conventional system (Pimentel et al. 2005)

Lbs per Acre = Kg per ha (close enough)

STAKEHOLDER PERSPECTIVES

Dag Falck
Organic Program Manager, Nature's Path

ALWAYS Leave THE EARTH BETTER THAN YOU FOUND it.

RUPERT STEPHENS

Organics and Regenerative Agriculture

- Dag Falck, Organic Program Manager
- Nature's Path Foods Inc.

Organic and regenerative practices

How do we commit to them?

- *Next generation*
- *Grow, to regrow*
- *Protect*

Spreading alfalfa

Growing alfalfa in one field
spreading alfalfa in another

Returning Residues

If soil was a bank, it would be bankrupt


Returning
something fresh

What is, and what is not?

Organic is known by what it is not

Regenerative is known by what it is

Protecting soil and life

Balancing act

Every farming operation is a balance between building and harming.

Regenerative and organic agriculture aims at an overall system with an overwhelming building effect.

Organic versus Regenerative practices

- **The Principle of Health** - Organic agriculture should sustain and enhance the health of soil, plant, animal and human as one and indivisible.
- **The Principle of Ecology** - Organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.
- **The Principle of Fairness** - Organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.
- **The Principle of Care** - Organic agriculture should be managed in a precautionary and responsible manner to protect the health and well being of current and future generations and the environment.

Organic versus Regenerative practices

- Increase **soil fertility**
- Work with wholes, not parts
- Progressively **improve whole agro-ecosystems** (soil, water, and biodiversity)
- Connect the farm to its larger agroecosystem and bioregion
- Create context-specific designs and make holistic decisions that express the essence of each farm
- Express the unique irreplaceable essence of each person, farm and place
- Make holistic decisions aimed at specific **systems change**
- Ensure and develop just and reciprocal relationships amongst all stakeholders
- Design for non-linear, multi-capital reciprocity
- Continually grow and evolve individuals, farms, and communities to express their innate potential
- Continually evolve agro-ecological processes and cultures
- Agriculture shifts the world

https://en.wikipedia.org/wiki/Regenerative_agriculture

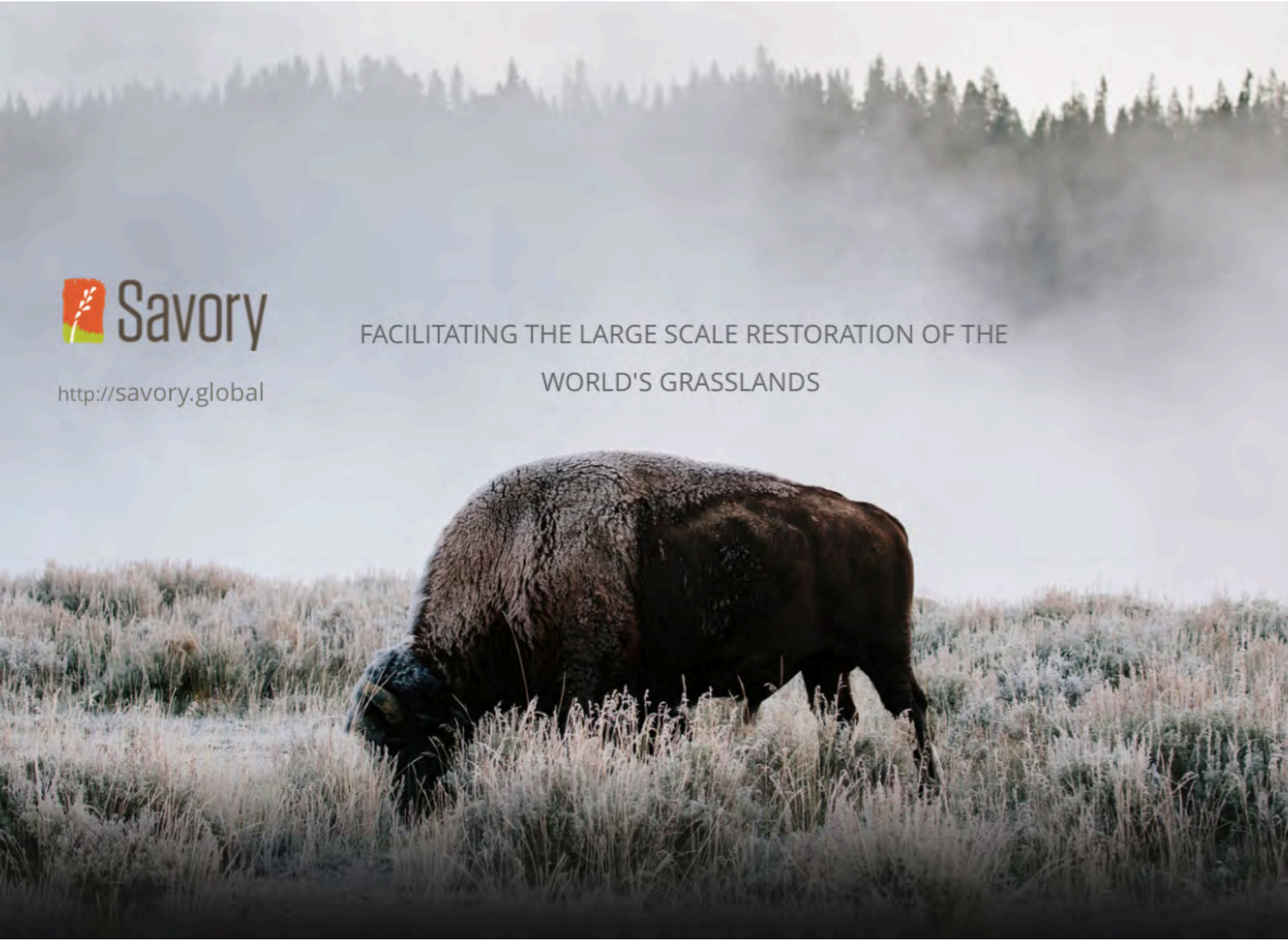
Regenerative Agriculture Driving Organic

Organic Agriculture Driving Regenerative

Always leave the earth better than you found it Rupert Stephens

STAKEHOLDER PERSPECTIVES

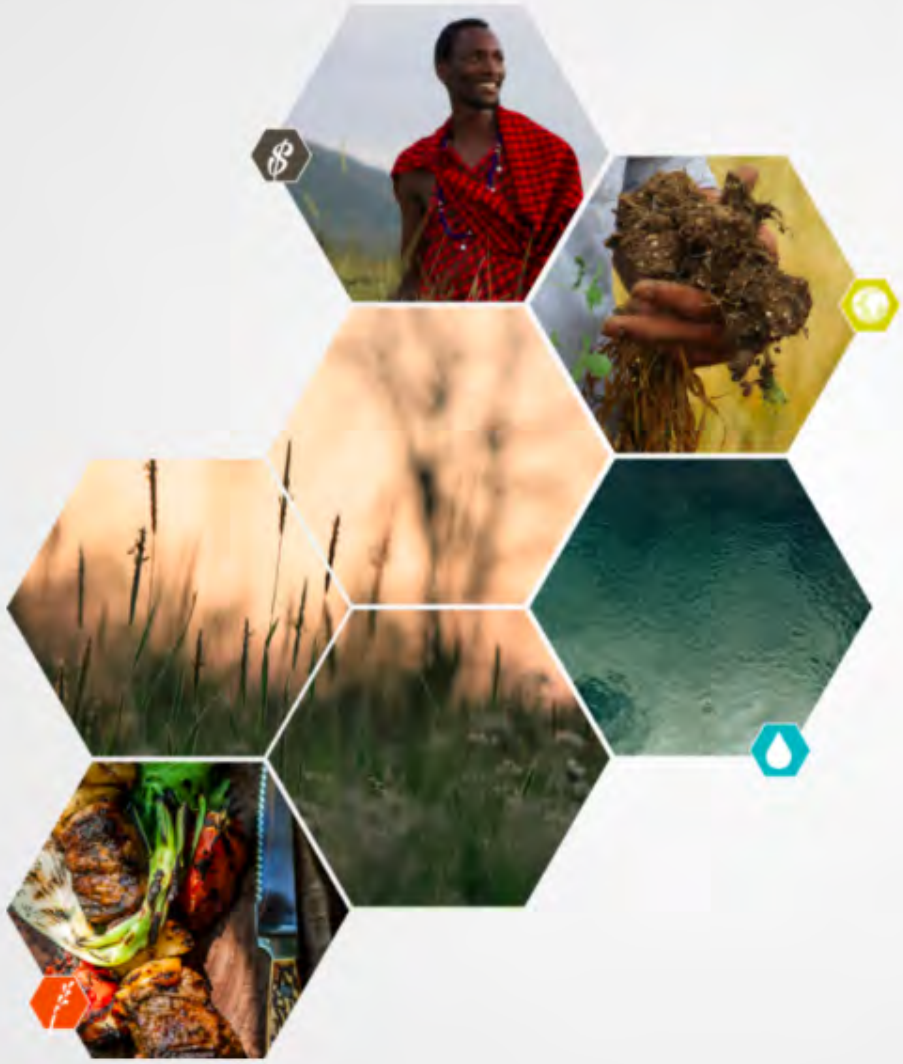
Chris Kerston
Director of Events and Public Outreach,
Savory Institute


Savory
http://savory.global
FACILITATING THE LARGE SCALE RESTORATION OF THE
WORLD'S GRASSLANDS


Savory

Ultimately, the only wealth that can sustain any community, economy or nation is derived from the photosynthetic process – green plants, growing on regenerating soil.

- Allan Savory



Carbon

Water

Food

People

1/3

Grasslands are 1/3 of the earth's land surface.

70% of the earth's
Grasslands are degraded


"Only grazing animals can save civilization as we know it."
— Allan Savory
PROPERLY MANAGED CATTLE CAN DO THESE THINGS
1. Break capped soil with their hoofs, fertilize it with dung and urine, then trample plant material, which results in covered ground allowing for seed germination and enhanced water infiltration.
2. Provide high quality, nutrient-rich protein to billions of undernourished people around the world.
3. Allow time for plants and soil to recover between grazing episodes. This optimizes photosynthesis and microbial activity, which are key to drawing atmospheric carbon into the soil and help mitigate climate change.
4. Build prosperity for a billion pastoralists who derive their livelihoods from rearing livestock.
HOLISTIC PLANNED GRAZING
A planning process that enables people to manage livestock so they are in the right place, at the right time, with the right behaviour and for the right reason to ensure regeneration of the land and all life.
"ALLAN SAVORY BELIEVES RUMINANT ANIMALS REVERSE DESERTIFICATION. "THIS IS SO COUNTER-INTUITIVE," HE CLAIMS, "THAT IT WILL NOT BE WIDELY UNDERSTOOD TILL YEARS AFTER I AM DEAD."
According to climatologists, our climate is changing due to the increased atmospheric presence of three gases – carbon dioxide, methane and nitrous oxide – produced by livestock. Used to mimic the behavior of herds of wildlife, completing the biological cycle of life in the grasslands, feeding the soil, and preventing desertification.
Stock carbon particulate matter. Both of these come from fossil fuels and the rest from agriculture. In reasonably dry environments, the only feet able to regenerate soil, in preparing

Regenerative Solar Farming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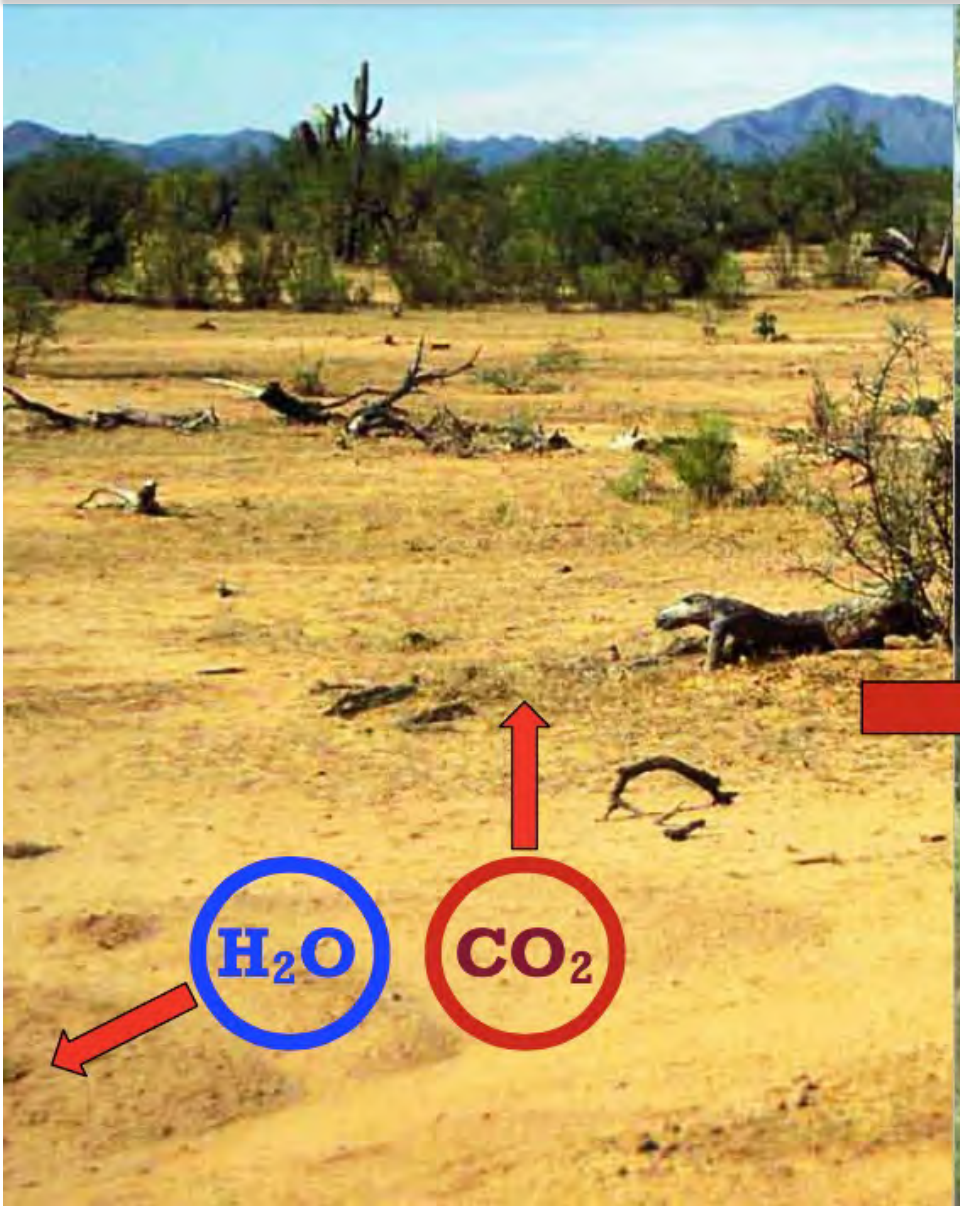
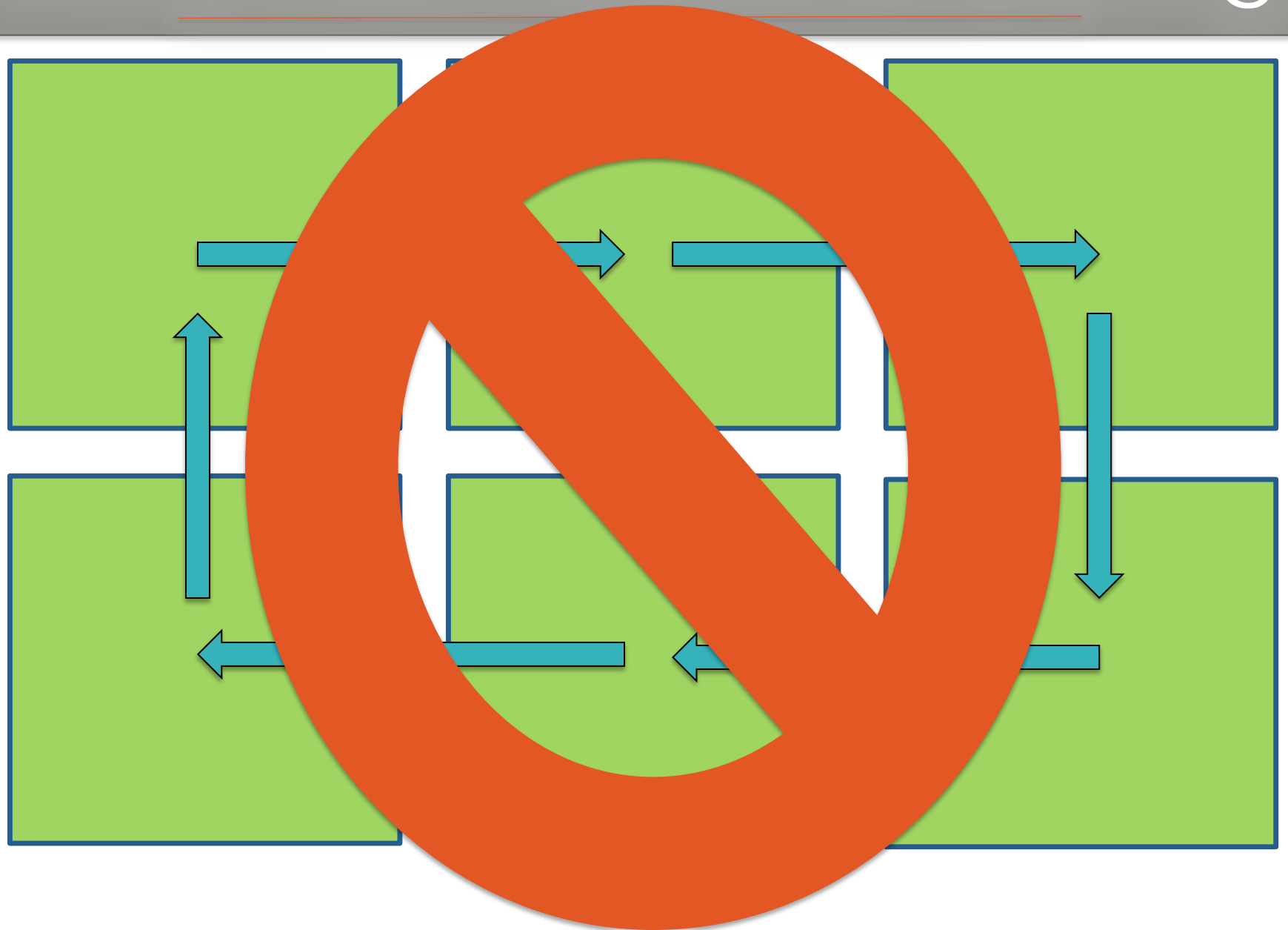
Ineffective vs. Effective



More Than Rotational Grazing

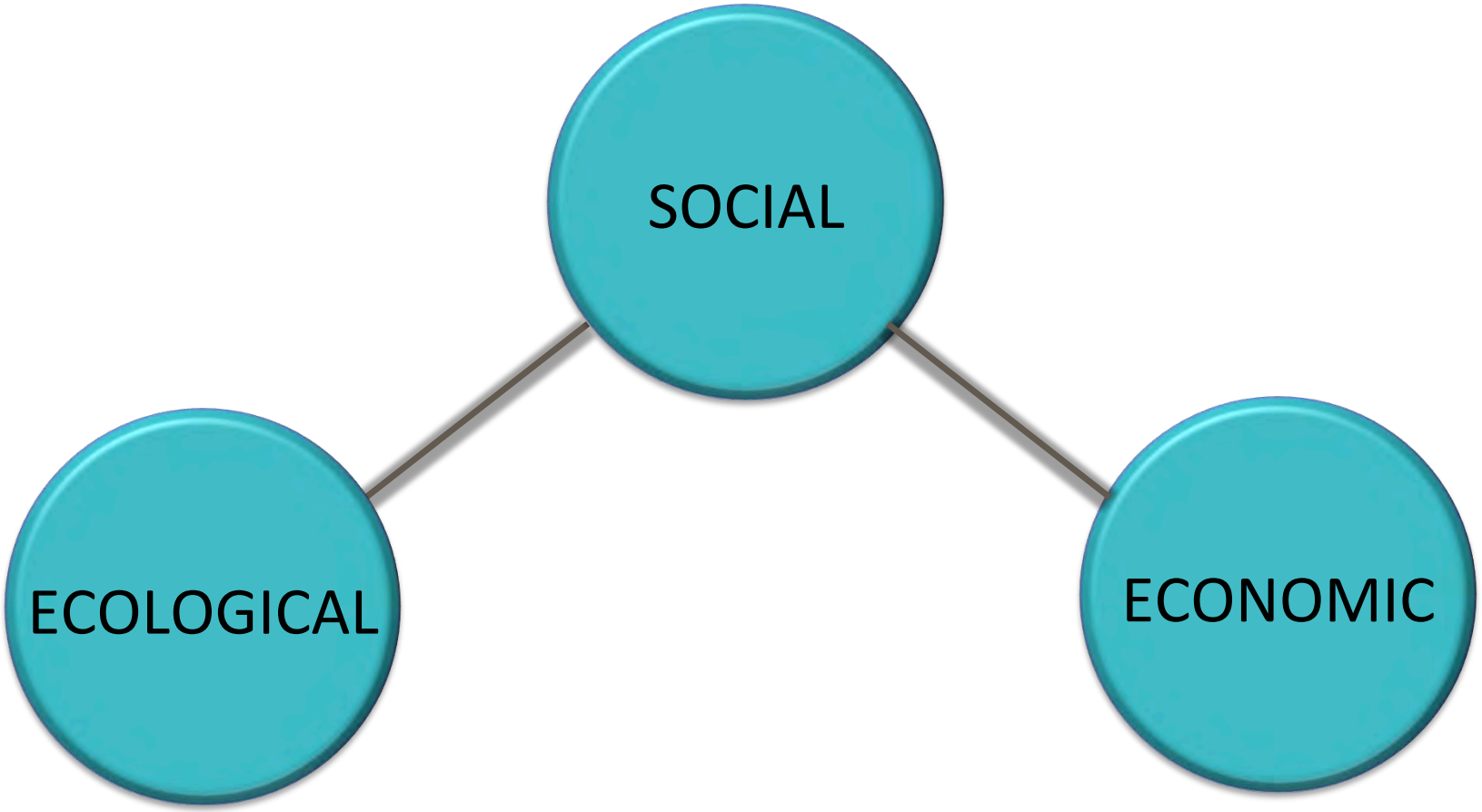


Holistic Planned Grazing

Plan For:

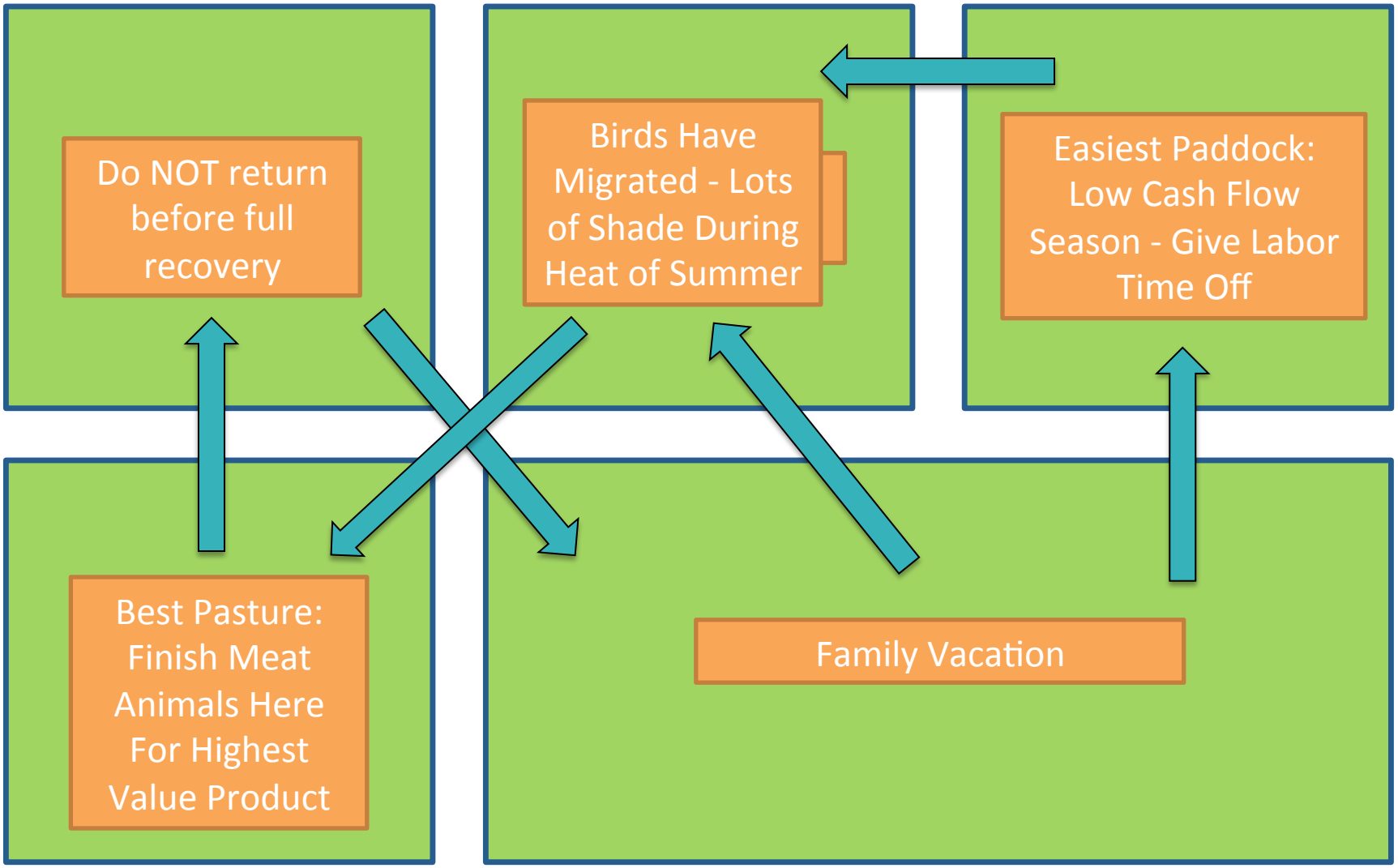
- Forage Production
- Livestock Needs
- Other Wildlife Species
- Crop Production
- Cash Flow
- Plan your Profit
- Vacations/Holidays
- Family Time

Molecule of Well-Being



Can you manage the hydrogen in this glass of water?

Holistic Planned Grazing




Grazing Plan & Control Chart
Year 2010
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

Scalable

- Uses resources already in place
- Doesn’t cost money it makes money
- Completely applicable to small or large landscapes
- Has the ability to positively impact the vast areas of the world that are suitable for little other than grazing

SAVORY GLOBAL

A collaborative, entreprenurial approach to facilitating large-scale restoration of the world's grasslands through Holistic Management.

HOLISTICALLY MANAGED LAND LEADS TO
regenerated soils and restored grasslands.

an intentionally different business model

Land Manager
Hub
Increased Profits
Market Incentive
Certified Producer

“Land degradation costs an estimated $40 billion USD annually worldwide”

- *UNFAO*

Savory

The estimated cost of the mismanagement of all natural assets to the world economy today is at around $6.6 trillion USD a year, equal to 11 percent of global GDP

– *UNCCD*

Savory

The annual loss of 75 billion tons of soil costs the world about $400 billion USD per year.

- Dr. Rattan Lal

Savory

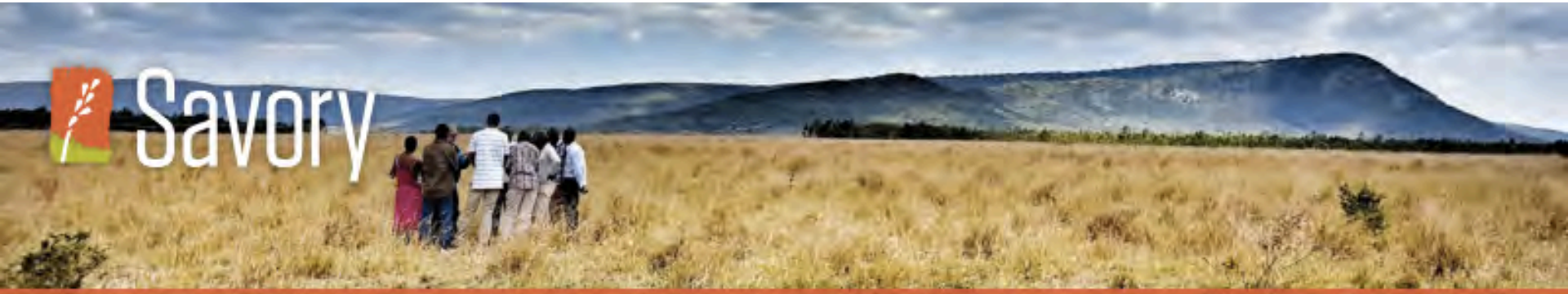
Savory Institute Philosophy

Hub Strategy

SAVORY GLOBAL NETWORK HUBS

HUBS OFFER

- Professional training and accreditation
- Project consulting and management
- Monitoring services
- Coordinating Savory Champions
- Educational programs
- Services and Land to Market Program Facilitation
- Scientific research
- Entrepreneurial incubator
- Ecological Outcomes Verification Services and Land to Market Program Facilitation
- Scientific research
- Entrepreneurial incubation



WHAT IS A SAVORY GLOBAL NETWORK HUB?

Hubs create a flexible and quick-moving global network of entrepreneurial people who are driven to create abundance for the people and places of their region and in their context.

BENEFITS

- Leading Holistic Management training and projects in a region
- Achieving large-scale restoration of grasslands
- Empowering communities
- Connecting to Holistic Management and regenerative agriculture leaders throughout the world


SINCE 2013
30
HUBS ESTABLISHED
6,500,000
HECTACRES OF GRASSLAND INFLUENCED
3,131
LAND MANAGERS TRAINED
OUR GOAL
1 BILLION
HECTARES OF LAND AND
100 HUBS
2025
GLOBAL IMPACT
Climate Change Mitigation
Water Security
Food Security
Decreased Poverty
savory.global


Savory


Savory

Savory has a 50 year history of regenerating landscapes & livelihoods.

Savory | Land to Market

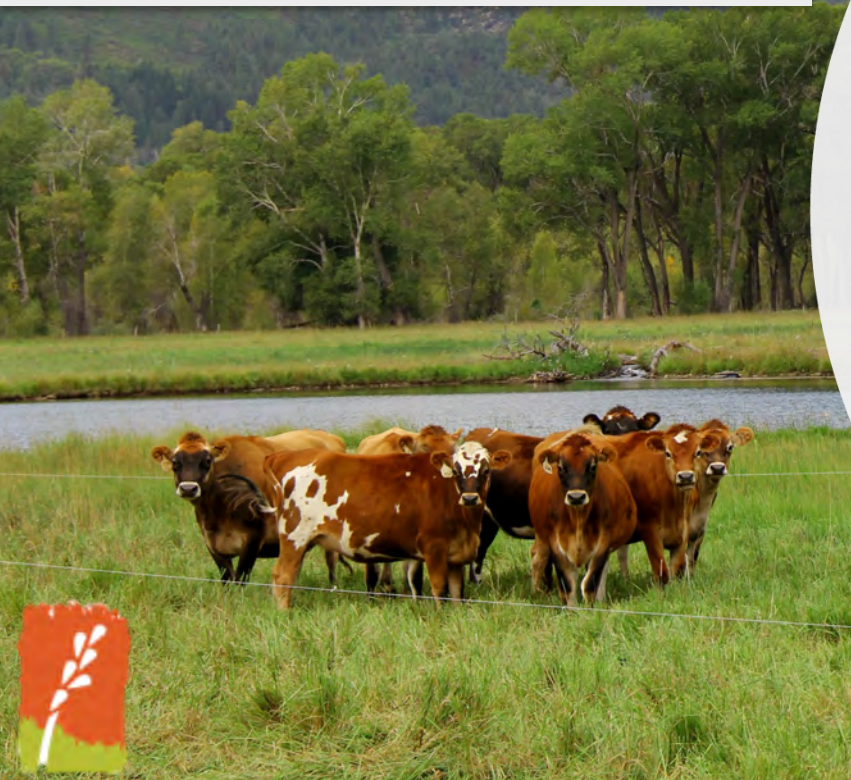
Land to Market

- An accelerator of the Savory Global mission
- Connect regenerative land managers with the conscious end user
- Displace existing conventional livestock supply chains – less relevance in the marketplace

Market Status

- Regenerative producers struggle to position their products advantageously
- The market is DESPERATELY looking for transparency and traceability
- We are building the tools to provide that for producers of
  - Meat
  - Dairy
  - Wool
  - Leather

The world's first verified regenerative supply chain



PRODUCERS

Receive Ecological Outcomes Verification, join the regenerative supplier roster, and get preferential access to brands and retailers.

BRANDS & RETAILERS

Source from the verified regenerative supplier roster, publicize their involvement in Land to Market, and build consumer loyalty and demand.

CONSUMERS

Choose health and wholeness for themselves and for the land through their food and fiber purchases. Demand for regenerative products increases.

HUBS

Meet growing consumer demand by training, supporting and verifying producers in their regions. The regenerative agricultural footprint grows.

REGENERATING LAND

Biological Monitoring

- For decades Holistic Management practitioners have been doing biological monitoring and tracking trends
- Until now, there has been no way for that data to be aggregated on a larger scale or utilized past the ranch gate in the market

Ecological Outcome Verification

A robust ecological monitoring methodology that measures data points such as:

- Soil water infiltration & holding capacity
- Soil organic matter (SOM)
- Percentage of bare ground
- Soil carbon levels
- Wildlife populations
- Soil microbiology

EOV Contributors

The Nature Conservancy

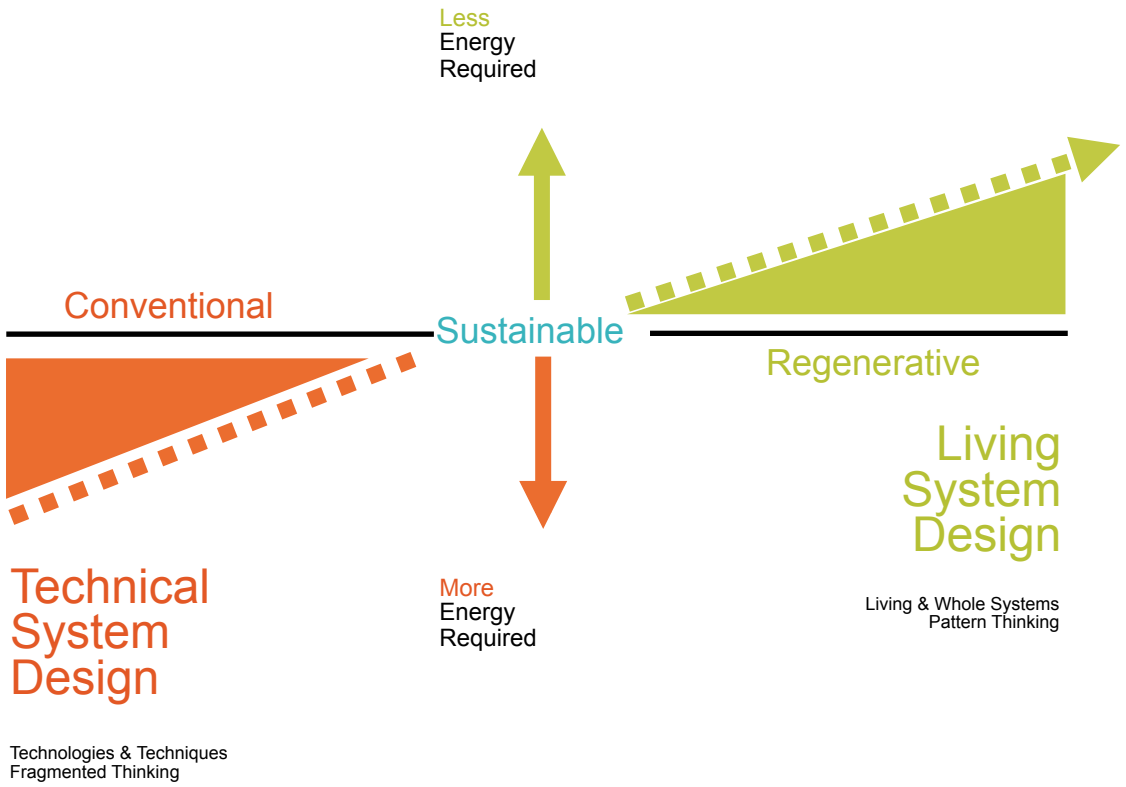
Michigan State University — Founded 1855

The Texas A&M University System — 1876

OVis 21 — Regeneración y Rentabilidad


Each property gets a score called a Ecological Health Index
Savory

Sustainability is a bridge. Regenerative is the destination.



Hubs deploy our regenerative vetting standard

Land to Market

- Scientifically Robust
- Outcome based – Producers Must Qualify BEFORE
- Low Cost
- Low Bureaucracy
- Transparency and Traceability
- Create access to markets and premiums for a truly distinguishable product

Consumer

This program is designed for consumers that are committed to making a difference.

- Help to Identify products that align with their values for:
  - Environmental restoration
  - Thriving local economies & communities
  - Healthy products for them and their families.
- A role to finally TRULY vote with the dollar
- A chance to participate – be part a movement that will change the world!

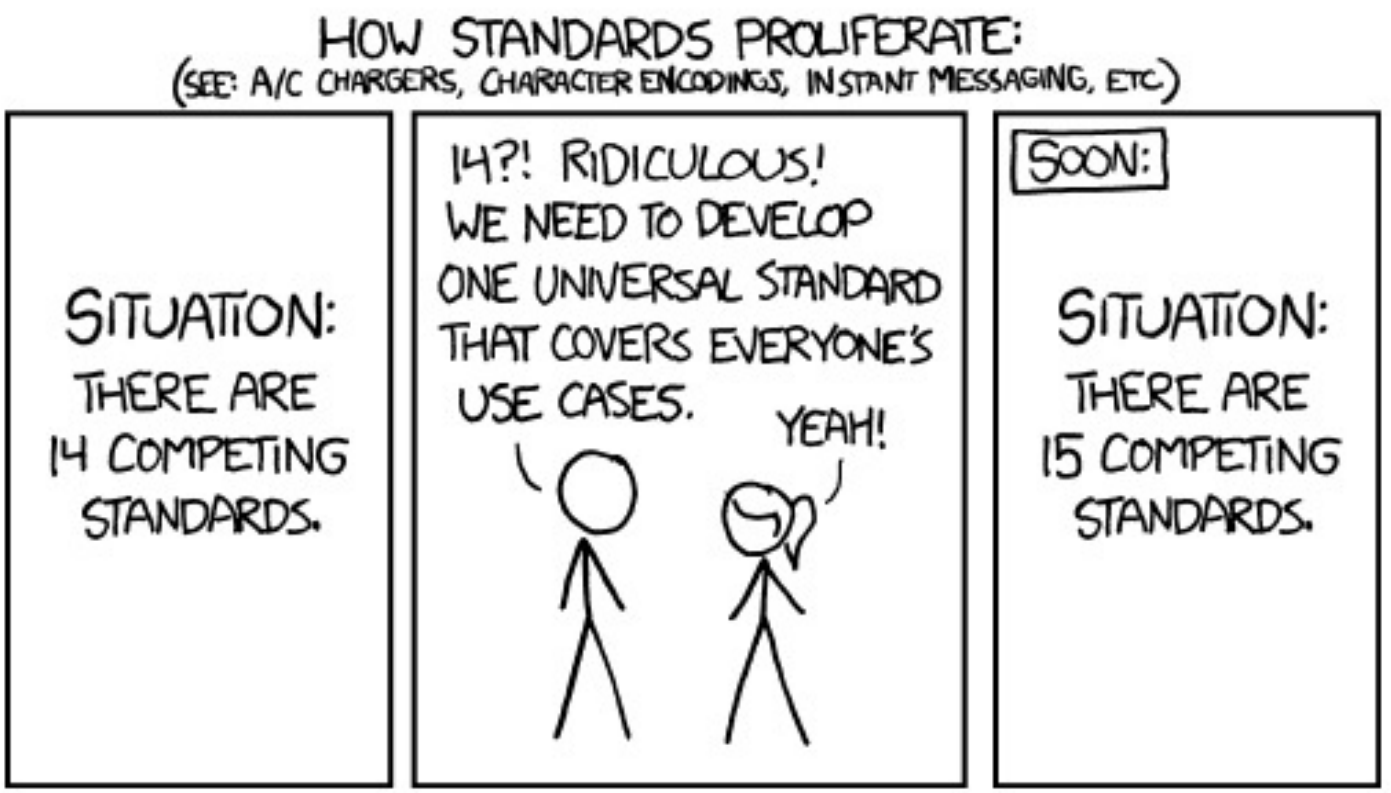
Rollout Timeline

- 2017 is prototyping year
- 14 Hubs with 20 Producers each
- Transects – data collection
- Finalize seal & branding
- Working with partners across the spectrum of stakeholders to finalize business plan and rollout

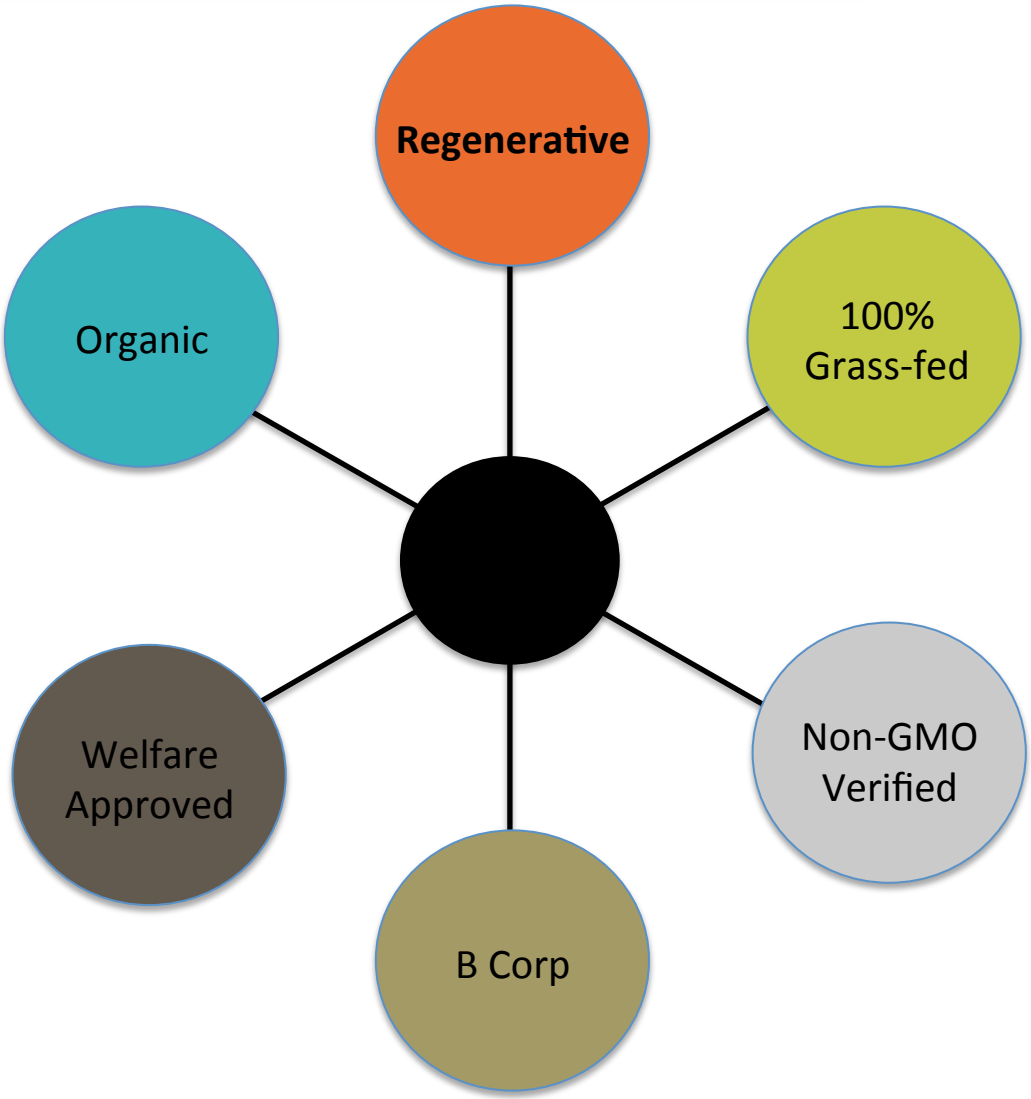
Look for the New Seal

- We will be testing products in stores this year
- You should the seal become more widely available in 2018
- Next year there will be open opportunities for more producers to participate

Certification Development



Collaboration

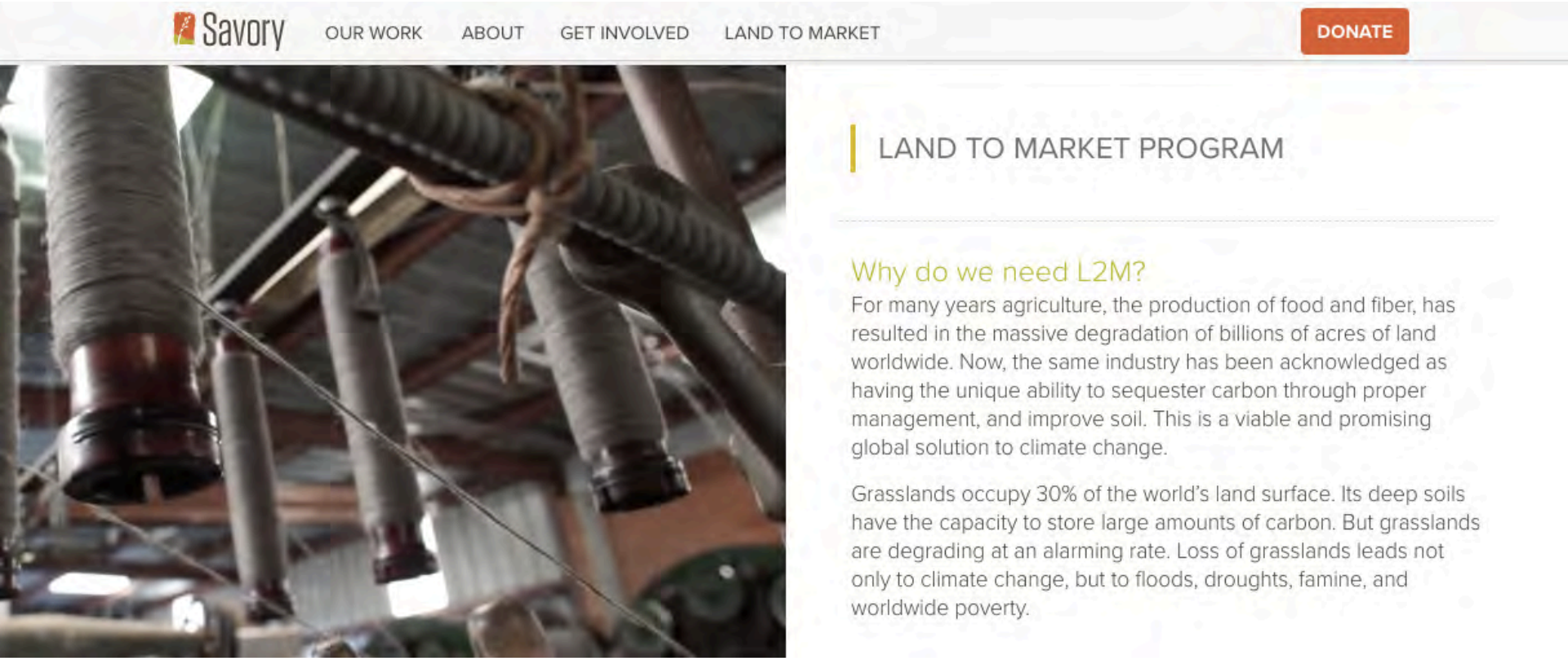


Consumer Revolution

"Eat Wear It Regenerate It" launched last November. It's based upon the premise that large-scale change and policy overhauls can only be achieved when a critical mass of population demand it.


eat
WEAR
REGENERATE
IT
IGNITING A CONSUMER REVOLUTION
WHAT WE EAT AND WHAT WE WEAR
CAN CHANGE THE STORY OF SOIL, WATER, AND AIR.
#CONSUMERREVOLUTION

Savory.global/landtomarket/



Imagine if the food you eat and clothes you wear could improve the world's soil, water, and air.

#CONSUMERREVOLUTION

http://savory.global/earthday

We invite you to partner with us

Visit your local Hub


Canada
Mexico
Brazil
Russia
China
India
Australia
NO
DE
PL
FR
UA
KZ
MN
UZ
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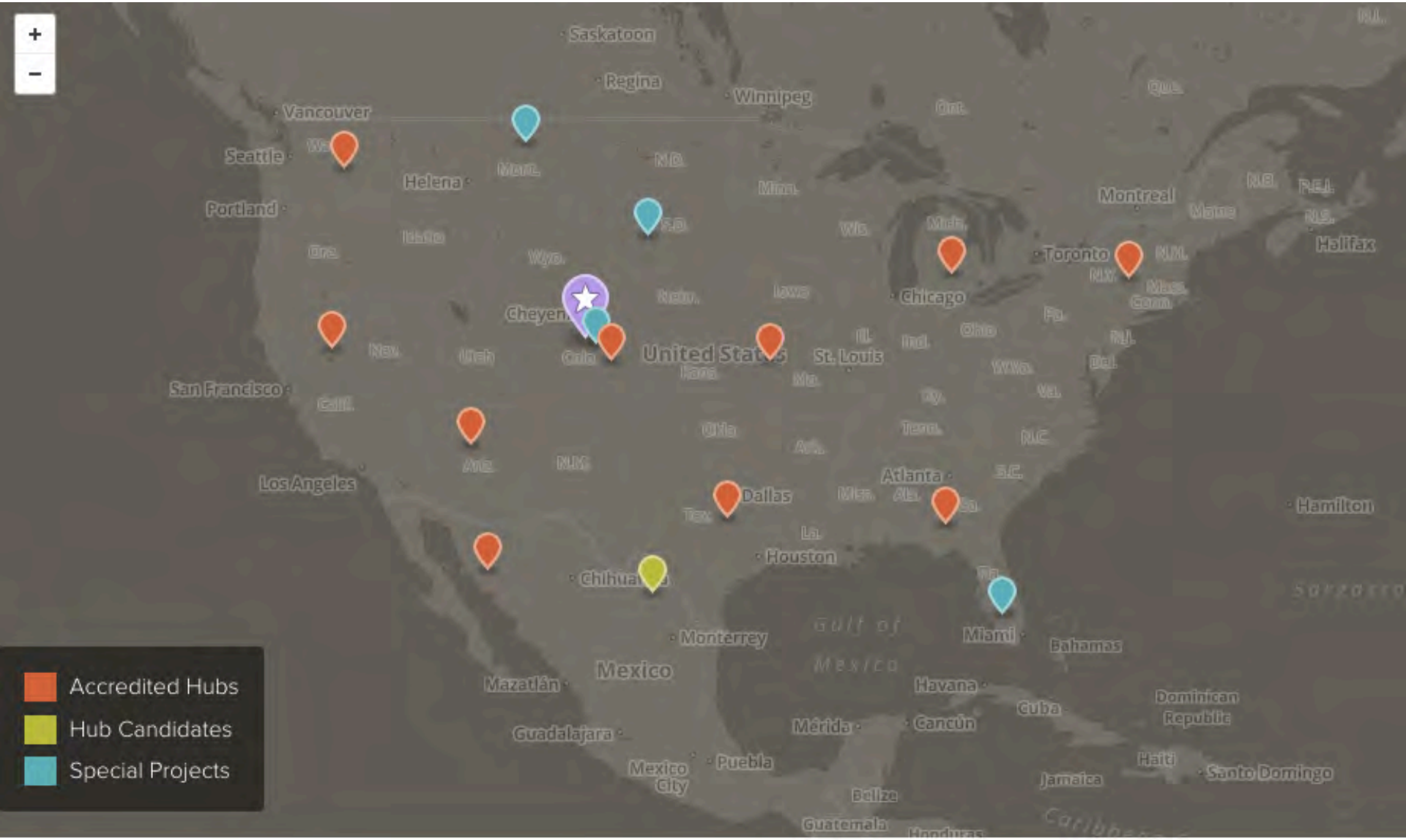
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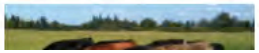
San Francisco
Los Angeles
Atlanta
Dallas
Houston
Hamilton
Chihuahua
Monterrey
Mexico
Gulf of Mexico
Miami
Bahamas
Mazatlán
Havana
Cuba
Dominican Republic
Guadalajara
Mérida
Cancún
Mexico City
Puebla
Haiti
Santo Domingo
Jamaica
Belize
Guatemala
Honduras
Accredited Hubs
Hub Candidates
Special Projects

Roots of Resilience

Home | Support Cowgirl Camp | About | Upcoming Workshops | News | Our Team | Consulting, Training, and Facilitation Services | FAQ | Contact Us | Resources

Rejuvenating Grasslands and Healing the Planet

Welcome to **Roots of Resilience**, formerly the **Pacific Northwest Center for Holistic Management (PNCHM)**. We are part of a global network of organizations created to promote the large-scale restoration of the world's **grasslands.**



Be a cowgirl's hero. Support The New Cowgirl Camp.

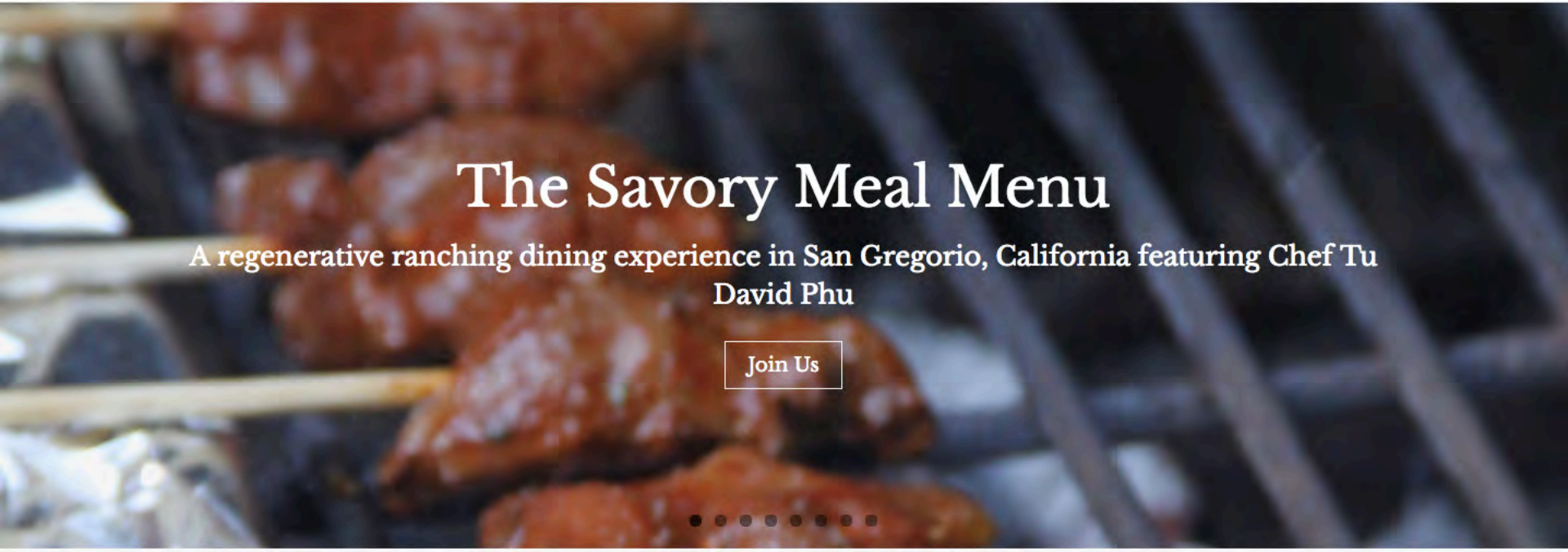
Learn more on the Cowgirl Camp page or donate now.

Yes! I'll donate

Welcome to Roots of Resilience - the Pacific Northwest Center for Holistic Management. Follow our blog on the What's New page for training, news and updates.

Recent Posts

- Marketing Sessions at Northwest Grazing Conference 2017
- Grazing Conference Early Registration Deadline Extended



The Savory Meal: Eating well for a whole world

Join us!

October 21, 2017: SAN GREGORIO, CALIFORNIA- The Savory Meal is a regenerative ranching dining experience hosted by The Jefferson Center and prepared by Chef Tu David Phu, a 2017 San Francisco


savory
network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What do we want???

Thriving Grasslands

Thriving Animals

Thriving People


Join us on this journey...
Savory

Q&A – PLEASE TYPE IN YOUR QUESTIONS

Andre Leu

- Regeneration International: http://regenerationinternational.org/
- IFOAM Organics International: https://www.ifoam.bio/

Dag Falck

- Nature's Path http://us.naturespath.com/

Chris Kerston

- Savory Institute Land to Market Program: https://www.savory.global/landtomarket/

THANK YOU!

Drew Katz
Transition Services Coordinator, Oregon Tilth
drew@tilth.org
(541) 740 6747

WWW.TILTH.ORG