GETTING PAST THE POLITICS—

Discussing Strategies For Climate Change Adaptation and Improved Soil Health

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CLIMATE CHANGE
IT'S ALL A MYTH
THAT WHICH MUST NOT BE NAMED......
IT’S A COMMIE PLOT
WE CAN’T DO ANYTHING ABOUT IT SO WHY WORRY?

What, Me Worry?
CLIMATE CHANGE IS REAL...ITS HERE AND WE NEED TO TALK ABOUT IT.
2000 Year Northern Hemisphere Reconstruction of Surface Air Temperatures

Source: Moberg et al Nature 2005
Temperature increases: longer growing seasons, less frost, warmer nights
Precipitation changes: deficits, excesses, timing shifts, changing mix of rain/snow
Increased intensity of precipitation events: more flooding and more droughts
Increasing carbon dioxide concentrations
Effects and Sensitivity Vary by Commodity

- Corn: high nighttime temperatures, high temperatures during pollination, water stress
- Soybean: water stress, high temperatures
- Wheat and small grains: extreme events, frost during flowering, water stress
- Rice: temperature extremes during pollination, water management
- Cotton: high temperatures during boll fill
- Pasture and rangeland: water stress
- Fruit trees: chilling requirements not met, high temperatures during fruit development
- Specialty crops: water stress, high temperatures
Livestock Production is Vulnerable

- **Feed Grain & Forage**
  - Quantity & *Quality Decrease*
  - *Production Cost Increase*

- **Animal Heat & Humidity Stress**
  - Reduces growth, reproduction, production (meat, dairy, eggs)
  - Climate control costs increase

- **Disease & Pests**
  - Frequency, intensity, distribution
  - Abundance and/or distribution of competitors, predators, & parasites of vectors themselves
Cattle and Calves - Change in Inventory: 2007 to 2012

1 Dot = 1,000 Cattle and Calves Increase
1 Dot = 1,000 Cattle and Calves Decrease

United States Net Decrease -6,353,244
Figure 1: Average County Target Premium Rates for the Federal Crop Insurance Program by Groups of 20 Percent, 2013

Note: To identify areas with higher crop production risks, we determined the average of each county’s 2013 county target premium rates for the five major crops—corn, soybeans, wheat, cotton, and grain sorghum. These averages were weighted by crop, crop type, and practice based on county premium dollars. The white areas on the map represent counties that did not have target rates for any of these crops.

Sources: GAO analysis of USDA’s Risk Management Agency crop insurance data; MapInfo (map). | GAO-15-215

Legend:
- 20.09% or higher
- 13.40% to 20.09%
- 9.19% to 13.39%
- 5.31% to 9.19%
- 0.00% to 5.31%
WHAT DOES CLIMATE CHANGE MEAN?

- Crazy weather just gets crazier
- Droughts longer and hotter
- Rain events heavier and more violent
- What we think of as “extreme events” become more the norm
- There is no normal
WE HAVE BEEN THIS WAY BEFORE
THE CLIMATE HAS CHANGED BEFORE AND ALWAYS WILL CHANGE—WE ARE JUST HELPING THINGS ALONG

- Climate Change happens naturally
- Soil erosion happens naturally
- Dust Bowl of the 1930’s was a natural process that was “sped up” by humans
- Climate Change is a natural process that has been “sped up” by humans
- We addressed the Dust Bowl in the 1930’s through land treatment, we can help address climate change the same way
“We Americans have been the greatest destroyers of land, of any race or people, barbaric or civilized.”

Hugh Hammond Bennett
WE NEED TO MEET THE PRODUCERS WHERE THEY ARE

- Know your audience
NOT EVERYONE BELIEVES IN CLIMATE CHANGE, BUT

- They believe in droughts
NOT EVERYONE BELIEVES IN CLIMATE CHANGE

BUT

- They believe in floods
WE CAN ADDRESS CLIMATE CHANGE THROUGH VOLUNTARY, LOCALLY-LED CONSERVATION

- Secretary Vilsack’s climate change building blocks
- 10 points
- Includes “low hanging fruit” in soil health, nitrogen stewardship and grazing and pasture land management
To adapt to climate change we need producers to “harden” their farming and ranching operations to extreme weather events.

We need producers to reduce erosion, hold on to more soil moisture, improve pasture conditions and control soil temperature.

We need producers to increase organic matter.
A 1% increase in organic matter can triple the soils water holding capacity.

Same practices that increase organic matter reduce erosion.

It all goes back to the soil.
In Oklahoma we lose 3 lbs. of soil for every pound of wheat produced.

Iowa loses 2 lbs. of soil for every pound of corn grown.

That’s over 12 thousand acres lost to erosion each year in Oklahoma alone.

What is land selling for in your area? How much money are we losing?
WHAT DO WE WANT THEM TO DO TO HARDEN THEIR FARMS?

- No-till
- Plant cover crops
- Better pasture management
- Plant grass on highly erodible land
WHAT CAN FARMERS DO TO MITIGATE CLIMATE CHANGE’S CAUSES?

- No-till
- Plant cover crops
- Better pasture management
- Plant grass on highly erodible land
Organic Matter?

- 50% to 60% organic carbon
- Carbon dioxide sucked out of the air through photosynthesis
- No-till can sequester around .5 metric tons of carbon dioxide per acre per year
- No-till uses less fuel, thus avoids emissions
- WorldWatch Institute estimates we can reduce current CO2 levels by 25% just through improved land use practices
PRODUCERS WANT TO REDUCE COSTS

- In Oklahoma no-till takes 3 gallons of diesel less per acre per year to grow wheat
- Nitrogen stewardship keeps you from throwing good money away
- A 1% increase in organic matter can make available up to $700 worth of additional nutrients per acre for growing crops
WHY WOULD A FARMER CHANGE HIS PRACTICES?

Money

Money

Money
FIND WHAT MOTIVATES THE PRODUCER

- Money is important but not everything
- Stewardship ethic
- Fear of the future
- Concern over water quality, endangered species, water quantity, whatever
- Producers are more comfortable with USDA than other agencies
- Keep it local
Oklahoma has taken nearly 50 streams off the 303d list
- Oklahoma has enrolled nearly 50,000 acres in a state run carbon sequestration program
- All done through voluntary, locally-led conservation programs that meet producers need
- If you can do it in Major County Oklahoma, you can do it anywhere
TALK TO THE PRODUCER IN A WAY THEY UNDERSTAND

- Understand that the same practices that help agriculture adapt to climate change also help mitigate climate change
- Producers don’t have to believe in man made climate change or climate change at all to believe in extreme weather
- Who cares why they change as long as they change?
Climate change is just another natural resource challenge that we have to deal with.

We have dealt with natural resource challenges before—we can deal with this one too.

We have the tools already.

Every Journey starts with a small step. Get folks in the door by meeting them where they are at.
FOLKS MIGHT BE SURPRISED BY YOUR STORY...
WHAT IF IT IS A HOAX????