

Citizens Climate Lobby Northwind Regional Conference, Lake Okoboji, 3-25-17  
Climate Stabilization: Soil, Food & Farmland

Introduced by Stan Sattinger

Panelists: George Boody, Land Stewardship Project

Donna Buell, organic farmer from Lake Okoboji

Liz Garst, White Rock Conservancy, Coon Rapids, Iowa

RedHeart, moderator from Redwing, mixed use farmer

GB: while some carbon emissions statistics put the contribution from agriculture at 9% of US total, when you include all aspects from production, distribution, and consumption the fraction of emissions is closer to 30%

DB 40% of food purchased is wasted; current industrial scale production is energy intensive yielding more emissions from fuel required to move grass into barns and distribute manure back on fields vs. allowing cattle to graze and naturally distribute their manure. No fuel required.

LG: ½ of Iowa topsoil eroded from lands cleared just 150 years ago. Of what remains there is ½ as much organic matter as had been present with continuous cover of native prairie. Net effect is that 75% is missing. Takes a long time to rebuild soil health/organic matter.

GB: if we provide continuous cover with a variety of crops instead of relying on corn and soybeans we would have healthier soil and less erosion.

What is the potential of soil to absorb carbon?

DB: healthy soil includes a whole community of organisms that work with the green plants above ground. Microbes in the soil are fed by sugars produced by plants. The plants benefit from nutrients collected by this microbial collaboration.

LG: imagine an elephant/acre of this biological activity underground, ~1,000 pounds / acre that are the living organisms that create this healthy soil. More study is needed to better understand what needs to be measured to find the best techniques to enhance this activity. Plants survive stresses like drought more easily when there is more organic matter and this soil microbial activity.

CRP probably not the best way to ensure improved soil carbon. Permanent conservation easements on the most vulnerable portions of farms would be better.

Played video: Center for Food Safety on "Soil Solutions to Climate Problems"

Emphasized how little we know about the soil microbes. France has a goal of increasing soil OM by 0.4% / yr. If that could be done world-wide it would capture 75% of all CO2 emissions.

GB: value of cover crops, some being developed by Forever Green at U of MN

Kernza perennial wheat grass good for brewing and some limited markets. General Mills working it into their product mix over the next 10 years. Small amount of acreage, but will be many more new products developed to provide year round cover as their roots build soil carbon, fixing CO2 emissions.

Iowa State also doing pivotal research into the value of conservation cropping combined with intensively managed grazing can achieve 100% of carbon soil can hold.

LG: important to address how deep in the soil those roots go, where the carbon is stored. She promoted the concept of rotating 3-5 crops in succession on the same field vs. 2 most common practice today. Small

grains are one alternative crop with little demand now unless we return to machines pulled by horses. Animals grazing the land best way to convert the native grasses.

DB: addressing the question is regenerative ag more expensive than current industrial/extractive practices? Only if you don't count external costs of pollution. Prairies can fix more C than forests. One audience member promoted biochar.

Possible progress with more farm to market opportunities. Current Farm Coop advisors locked into the old model. Yet, where examples show the value farmers shift their practices: heavy rain event washed away corn in traditionally tilled field vs. none where cover crops were grown between corn crops. Other farmers saw that and switched.

DB: change the narrative from feeding the world to feeding our own soil. Get more young farmers on the land.

GB: question on carbon fee impact on farmers: not sure of impact at this point. Farmers could be paid for social benefit of fixing carbon. Farm bill subsidy greatest for commodities and crop insurance.

LG: if you receive crop insurance you should agree to standards related to soil health. Same with anyone renting their land.

Impressive turnout of State Senators and Reps. In the audience.