Getting Carbon Right for Agriculture
Carbon, Bundled Values and Supply Chains

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Global Trends—Agriculture and Carbon

- Tracing Carbon in the Agricultural Supply Chain
  - Tillage, deforestation, livestock, energy use
  - Requiring an input to make a product makes a company “responsible”

- In time of price volatility, if a company pays more for a product what else can it get
  - Can it purchase other values
  - Ensure dedicated suppliers
  - Guarantee access
  - Gain market access or license to operate
embedded impact
Where Does Carbon Responsibility Begin & End?

- Traceability—if a company knows where a raw material comes from is it responsible for how it is produced?
- If they don’t know what does it say about them?
- So, what does a carbon responsible company do?
  - Understand/build consensus around key carbon impacts
  - Target the most significant and work with suppliers to reduce them
  - Agree on methodology to track results
  - Be transparent about targets
- Can commodities deliver carbon values?
Traditional Supply Chains—What do They Deliver?
Values Chains

- Standardized products – 1851
- Standards for grain – 1873
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- Trade first regulated – 1980s
Values Chains

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- Trade first regulated – 1880s
- US Grain Standards – 1916
Values Chains

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- Standards for grain – 1873
- Trade first regulated – 1880s
- US Grain Standards – 1916
- Bushel weight defined – 1918
Values Chains

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- Bushel weight defined – 1918
- Color defined – 1966
Values Chains

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- Color defined – 1966
- Organic corn – 1970s
Values Chains

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- Standards for grain – 1873
- Trade first regulated – 1880s
- US Grain Standards – 1916
- Bushel weight defined – 1918
- Color defined – 1966
- Organic corn – 1970s
- GM (and non-GM) corn – 1997
Values Chains

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- Standards for grain – 1873
- Trade first regulated – 1980s
- US Grain Standards – 1916
- Bushel weight defined – 1918
- Color defined – 1966
- Organic corn – 1970s
- GM corn – 1997
- Food miles – 2007
physical values

weights and measures
quality
color
foreign matter
health and safety

intangible/certified values

organic
non-GMO
carbon
water
poverty alleviation
no child labor
Carbon Sequestration and Bundled Values

- Packaging
- Tree crops, e.g. coffee, tea or palm oil
- Growing soil carbon through no-till, e.g. soy, cotton or corn
- Reduced water use and pumping
- Improved animal diets
- Rehabilitated or reclaimed land with soy, palm oil, meat or dairy
- Bivalve shells and pet food
Coke—Supply Chain Issues and Larger Business Strategies

- Sugar supply in a “perfect storm”
- Locking in sugar purchases (volumes) through contracts
- Higher prices for multiple values
- Using sugar sourcing to address other corporate issues
  - Carbon footprint
  - Water footprint
  - Poverty alleviation
  - Investment strategies
New Services, Old Businesses

- **Monsanto**
  - Give away the seed
  - Retain the right to the carbon and water saved through no-till
  - Avoided carbon loss through improved yields per input

- **Syngenta**
  - No loss of natural habitat to agriculture
  - Focus on tropical crops
  - Address climate change issues (water stress, etc.)
  - Rehabilitate degraded lands
New Services, New Businesses

- **Mars**
  - Substitute oysters and clams from aquaculture for finfish
  - Retain the right to the carbon in the shell (83%)

- **Chilean Salmon Producers**
  - Produce oyster and clam seed and give to local communities
  - Use clams and oysters to clean the water, reduce stress and mortalities
  - Improve relationships with neighbors
  - Retain the rights to the carbon in the shell to offset food miles
New Services, New Businesses, Joint Ventures

**DuPont**
- Sulfuric acid
- GHG service
- Waste to Product

**Yara**
- Nitrogen
- GHG service
- Waste to product
- Poultry
New Services, New Businesses, Joint Ventures

Cargill and Sime Darby
- Peat Soils
- Existing Plantations
- New Plantations
- Land tenure/business models

Public Entities
- Peat Swamps
- Avoided Carbon Loss
- Concessions or Carbon
Verification and Credibility Issues

- Traditional models—chain of custody, full traceability, mixed product
- New models—Green Energy
- Book and Claim Advantages
  - “Value” to producers
  - Simplicity of system
  - Reduced points of fraud
  - Consumer education needed