

# Soil and Agro-ecosystem Carbon: Markets and Opportunities

**Rural Week, World Bank**

**March 3<sup>rd</sup>, 2009**

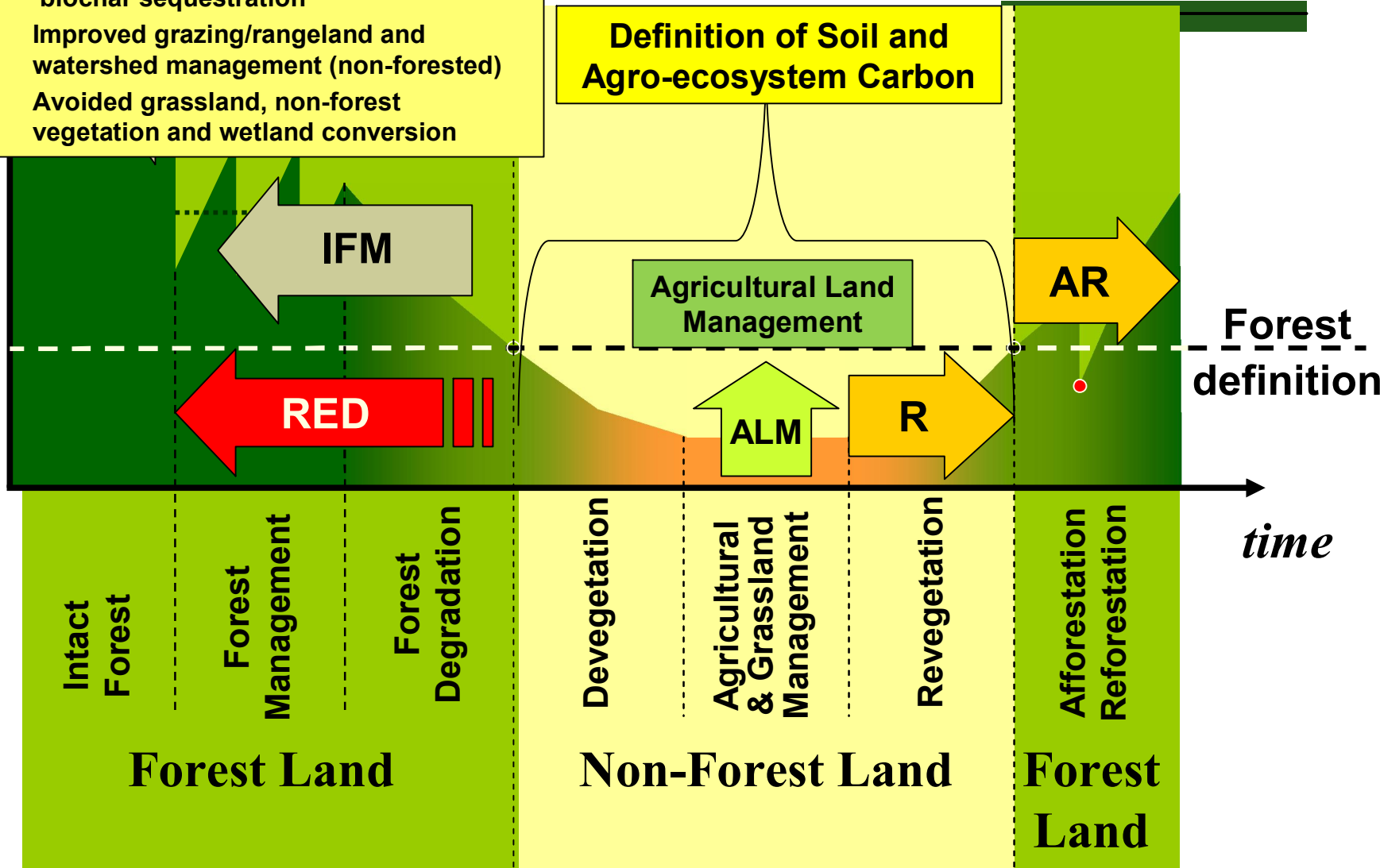
**Ken Newcombe, CEO, C-Quest Capital**

[www.cqcllc.com](http://www.cqcllc.com); [knewcombe@cqcllc.com](mailto:knewcombe@cqcllc.com)

# Possible Activities

## What should be included in Soil/Agroecosystem Carbon Offset Asset Class?

1. Conservation tillage
2. Mulching, in-situ composting, use of cover crops in fallow cycle
3. biochar sequestration
4. Improved grazing/rangeland and watershed management (non-forested)
5. Avoided grassland, non-forest vegetation and wetland conversion



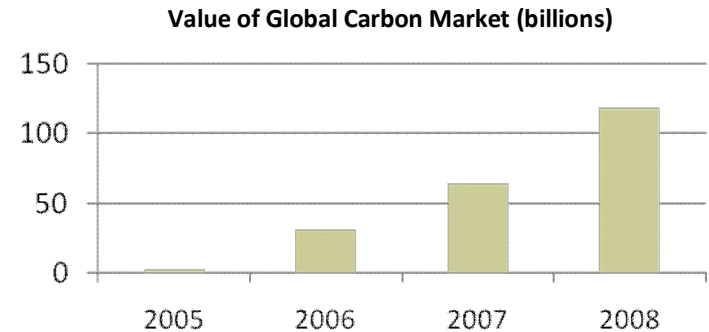
# Global Carbon Market

February 2009

## ■ Continued Growth

- Value of global carbon market continued to grow and reached \$118 billion in 2008, up from \$64 billion in 2007 and \$31 billion in 2006
- EU ETS is still the largest market segment, with a value reaching \$94 billion in 2008 (79% of the global market), up from \$50 billion in 2007
- Primary CERs was the only market segment that fell in 2008 to \$5.8 billion from \$7.4 billion in 2007

Source: New Carbon Finance



## ■ Outlook for 2009 and remainder of Phase II

- Trends in the energy complex
- Current recession will impact emissions
- Is Phase II of the EU ETS short, balanced or long?
  - Deutsche Bank and Daiwa reported the market is long
  - SocGen and Barclays still consider the market as short
- EUA prices last 3 weeks: Euro 8-11

# Voluntary Carbon Market

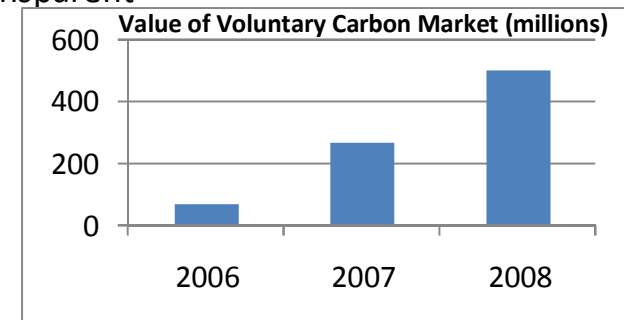
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## ■ Definition

- Market created by demand from entities with no reasonable expectation of being regulated under future GHG emissions legislation
- Not regulated, not commoditized and largely non-transparent

## ■ Continued Growth and Price Discrepancies

- Estimated growth to \$500 million in 2008, up from \$265 million in 2007 and \$70 million in 2006 (New Carbon Finance)
- Price lower in late 2008/early 2009 in line with compliance markets and energy
- Significant price variations as a function of standard and individual projects
  - Gold Standard: \$7-9, renewable energy and energy efficiency only
  - Voluntary Carbon Standard: \$4-6, global
  - Chicago Climate Exchange: \$1-2.40



## ■ No Soil/Agro-ecosystem carbon outside of CCX

## ■ Outlook for 2009

- Prices are expected to be impacted by broader economic trends
- Is carbon neutrality a luxury?

# Current Agro-Ecosystem Carbon Market: Kyoto Markets – Developing Countries

- **Of LULCF/AFOLU activities:**
  - only Aforestation and Reforestation (A/R) activities covered in CDM and only as temporary credits
  - **Soil Carbon pools are captured by A/R methodologies** but
  - Soil carbon augmentation and conservation is not eligible independent of A/R
  - A/R is excluded from compliance trade by regulated entities in the EU ETS and Japan, but Sovereigns can use A/R for compliance purposes
  - Largest source of A/R Sovereign compliance credits is the BioCF
- **Negligible Value in Trade in Developing Country Soil Carbon Offset Development:**
  - Non-Kyoto developing country Soil Carbon Projects are probably ~\$5-10 million worldwide, and mostly BioCF, World Bank

# Current Agro-Ecosystem Carbon Market: US, Canada and Australia

## ■ Chicago Climate Exchange - Voluntary Carbon

### ■ Methodologies for:

- **Conservation tillage:** Minimum five year contractual commitment (2006-2010) to continuous no-till, strip till or ridge till.
- **Grass planting:** projects initiated on or after January 1, 1999 in CCX eligible counties
- **Rangeland management:** using sustainable stocking rates, rotational grazing and seasonal use in eligible locations. Eligible rates vary from 0.12 to 0.52 metric tons of CO<sub>2</sub> per acre per year

### ■ Volume registered: ~16 million tons over past 4 years, active market, growing rapidly

- Thorough practice-based protocols for defining eligible emissions reductions but no rigorous additionality test, hence extensive NGO criticism. Agribusiness and Ag Co-ops developing improved protocols.

### ■ Major Aggregators:

- **Public Sector:** Farm Bureau in Mid-Western States and agricultural cooperatives;
- **Private Sector:** growing number including SunOne, Tatanka Resources, individuals

## ■ Alberta Environment:

- **Tillage system management Protocol:** technically rigorous, permanence assurance estimates, baseline assessments by region

## ■ Australia – Carbon Pollution Reduction Scheme

- Final design still being debated – Government proposes inclusion of Agriculture as offset generator from 2013. Opposition and Farm lobby propose immediate inclusion

# Emerging Opportunities: US Federal and State Regimes

- **US Track Record:**
  - Historically favored AFOLU carbon assets for compliance markets: soil/agro-ecosystem and forest carbon stimulated by and recognized in Farm Bill (1605B), Conservation Reserve Program; Activities Implemented Jointly (AIJ) program
- **Leading Federal Climate Security Bill drafts**
  - **Boxer-Lieberman-Warner:** “the Administrator shall consider including on the list under paragraph (1) –
    - **Agricultural and rangeland sequestration and management practices** including- (i) altered tillage practices; (ii) winter cover cropping, continuous cropping, and other means to increase biomass returned to the soil in lieu of planting followed by fallowing; (iii) conversion of cropland to rangeland on the condition that the land has been in nonforest use for at least 10 years before..
  - **Boucher Draft ( reflecting expedited Waxman Draft???)**
    - **International Offsets For Compliance use:** Definitions under International Forest Carbon Activities: “..means national and sub-national activities ...that are directed at ...(ii) **restoration of degraded land** or forest...”
    - **Domestic Offset categories:** “shall consider adding to the list, at a minimum
      - (i) practices that increase agricultural soil carbon sequestration; conversion of cropland to rangeland or grassland
- **California Climate Action Reserve:** includes a specialized wetland conservation protocol on the list of protocols but no soil or avoided grassland conservation as yet

# World Bank/Development Policy Agenda for the US Cap and Trade Regime

- **Explicitly encourage soil/agro-ecosystem carbon in a US “international forest and sustainable land use” window mobilizing private capital flows for climate management, adaptation and poverty alleviation in the poorest areas of the developing countries.**
  - Explicitly include reference to Soil-Agro-ecosystem Carbon offsets as part of the 10% of obligations allowance for International Forestry (minor definition adjustment to the Boucher draft;
  - Adopt VCS AFOLU and/or equivalent national domestic offset standards (e.g. US Climate Leaders program; international/generic versions of DoA protocols under development for the US) equivalent as an acceptable standard for compliance with obligations under UNFCCC Post-Kyoto regime.
- **Broaden capacity-building provisions in partnership with CGIAR for Agro-ecosystem carbon market development under a Climate Security Bill for International Forest Carbon to:**
  - include building analytical, monitoring and reporting capability for establishing credible baselines across a broad range of intensively managed production landscapes ,
  - Defining practice-based proxies for carbon increments to use in methodologies and protocols,
  - Support ongoing research and field-level monitoring of actual carbon augmentation from defined practices to enable carbon markets to work for sustainable land use and agriculture in developing countries

# World Bank Policy Agenda for UNFCCC Post-Kyoto Negotiations

- **Objective:** provide balance in global efforts to manage and adapt to climate change through the global carbon market by making biological sequestration of all kinds equivalent in compliance and economic value to CDM mitigation offsets
- **Policy measures:**
  - **Inclusion:** Include all AFOLU assets including soil/agro-ecosystem carbon, in CDM,
  - **Flexibility:** Accept nationally accredited non-CDM Standards (national, industry, sovereign-approved voluntary market standards) in absence of CDM Methodologies for agro-ecosystem carbon
  - **Equalizing Value of Sequestration and Mitigation Carbon in Trade:** Apply the Voluntary Carbon Standard (VCS) “buffer reserve” to address impermanence risk and equilibrate prices of mitigation and sequestration assets in Post-Kyoto CDM offset markets OR
  - **Activity Based Additionality:** Use conservative Performance Standards by agro-ecosystem and cropping zone and not project-by-project (“farm-by-farm”) approaches to establish baselines and additionality
  - **Research and Market Infrastructure for Trade:** Mobilize UNFCCC Parties commitment to and donor support for World Bank led consortium (CGIAR, FAO, IFAD) to develop baselines, performance standards, practice-based proxies for carbon increment accounting, and agro-ecosystem wide sampling for baseline validation and coefficients of Soil Organic Carbon increments under approved practices

# The Vision and the Opportunity

## ■ The Vision:

- **Use the Global Carbon Market to** incentivize private sector investment to
  - increase resilience and adaptation to climate change in the rural areas of the developing countries;
  - Provide new and additional resources to food security, watershed and water resource management, and add materially to
  - Alleviate poverty for the rural poor in Africa and LDCs.

## ■ The Opportunity

- **Is fast evaporating....**and requires proactive participation of the Bank, the development research community and concerned NGOs to:
  - Advocate and promote this vision in dialogue an debate taking place now in the drafting of the new US Administration's leading Climate legislation where even the fate of the International Forest window is uncertain;
  - Develop a powerful and unassailable voice or reason amongst key Parties and constituents for the rural poor and for a balanced approach to climate management in the run up to the Copenhagen CoP.