Carbon sequestration and trading: Implications for agriculture

François FALLOUX
Eco-Carbone
Presentation to International Policy Council
Stratford, October 14, 2007
1. Carbon sequestration: Global Context
# Global carbon flows

## Annual Carbon Flows (GtC)

<table>
<thead>
<tr>
<th>Source</th>
<th>Flow (GtC)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Atmospheric increase of CO2</strong> (translated in C)</td>
<td>3.4</td>
</tr>
<tr>
<td><strong>Sources</strong></td>
<td></td>
</tr>
<tr>
<td>Fossil fuels</td>
<td>6.4</td>
</tr>
<tr>
<td>Land use change</td>
<td>1.1</td>
</tr>
<tr>
<td>Tropical deforestation</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>Sinks</strong></td>
<td></td>
</tr>
<tr>
<td>Terrestrial in temperate regions</td>
<td>2.0</td>
</tr>
<tr>
<td>Oceans</td>
<td>2.0</td>
</tr>
<tr>
<td>“Missing”</td>
<td>1.7</td>
</tr>
</tbody>
</table>

30% of the carbon flows are represented by tropical deforestation.
Carbon Sequestration => win win

Environmental benefits

- increased water holding capacity and use efficiency
- increased cation exchange capacity
- reduced soil erosion
- improved water quality
- improved infiltration, less runoff
- decreased soil compaction
- improved soil tilth and structure
- reduced air pollution
- reduced power requirement
- reduced machinery wear

- reduced fertilizer inputs
- increased soil buffer capacity
- increased biological activity
- increased nutrient cycling and storage
- increased diversity of microflora
- increased adsorption of pesticides
- increases land value and gives soil aesthetic appeal
- increase capacity to handle manure and other wastes
- more wildlife

Source: USDA
Brazil

No tillage in the State of Santa Catarina
Agro-Ecosystem/ Farming System Carbon Sequestration Project Concept

- **Investment Phase**
- **Above-Baseline Phase**
- **"Self-Sustaining Phase"**

- 40 tC/ha increment at 15 years
- 70 tC/ha increment at 24 years
**Expected Impact of the Kyoto Protocol**

- **GHGs**
  - **Without Kyoto**
  - **With Kyoto**

**Time**

- **Only interest: get started!**
- **More constrained future, hence stronger C market**
What’s next after KP

- **What should be done**: IPCC => recommend to divide GHGs emissions by a factor 2 or 3 to avoid going beyond double CO2 atmosphere (540 ppm)

- **What is being considered**: European decision: from -8% reduction (under Kyoto) to –20% by 2020, or –30% if USA join.

- **What is still missing**: Commitment to carbon sequestration
Emerging CO2e markets:
Forecast compared to real

$30billion expected in 2007

2. C sequestration in CO2e markets
Marginal position of C sequestration

As a share of volumes contracted in 2006
Barriers to C sequestration in CO2e markets

- A bad start with an exclusive focus on energy and industry sector
- Key international NGOs not very supportive
- Debate on carbon sinks vs. Sources
- Difficulty in terms of methodologies and carbon monitoring plans
- Lack of advocacy from agriculture and forestry sectors
5. Recommendations
8 recommendations

- **R1**: need to inform the international debate on carbon sequestration in agriculture and forestry
- **R2**: need for training and capacity building to promote carbon sequestration in agriculture and forestry in developing countries
8 recommendations (cont’d)

- **R3**: need to scale up agricultural and forestry projects with carbon sequestration
- **R4**: need to start developing carbon sequestration in developed countries
- **R5**: need to promote no-tillage as one of the best ways to enhance soil carbon sequestration
8 recommendations (cont’d)

- **R6**: need to combine carbon sequestration with biomass energy in agro-forestry projects
- **R7**: need to simplify methodologies for baseline scenarios and carbon measuring and monitoring
- **R8**: need to incorporate deforestation avoidance in carbon sequestration projects in developing countries
Conclusions

- Win-Win => carbon sequestration market incentive to contribute to enhancing agricultural productivity and sustainability
- Enhance carbon sequestration in both developed and developing countries through projects, policy and measures
8 recommendations (cont’d)

- **R6**: need to combine carbon sequestration with biomass energy in agro-forestry projects
- **R7**: need to simplify methodologies for baseline scenarios and carbon measuring and monitoring
- **R8**: need to incorporate deforestation avoidance in carbon sequestration projects in developing countries