Private Financial Markets and Climate Change - forestry perspectives

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“All wood bits and pieces including cones will increase in value”

"Kaikki risut ja kävyt nousevat kyllä arvoonsa."

Jorma Ollila
Chairman of Board, Royal Dutch Shell
Suomen Kuvalehti 18/2008
TWO ISSUES

1) Bioenergy – the role of **direct** forestry carbon credits remains limited (status quo)
2) Forestry carbon credits (REDD, Kioto follow-up etc)
Replacing only one percent of the total primary energy consumption in EU27 (about 1,800 million tons of oil equivalent) would require over 90 million m³ of wood corresponding to about 1/8 of the Net Annual Increment (NAI) of Europe’s forests.

Source: UNECE/FAO
Two 200kt plants would be able to produce enough biodiesel to account for about 9% of road traffic fuel consumption in Finland, closely matching the EU biofuel target of 10% by 2020.

-> 7-8% of the average domestic wood use by the forest industries.
Global Process of Climate Change, Carbon and Forests

**Current Carbon Market**
- Forestry credits: 1%
- Other credits: 99%
- **Total: EUR 120.2bn**

**Carbon Market in 2030**
- Reforestation: 13%
- Reduced deforestation: 21%
- Other credits: 66%
- **Total: about 2 X the current volume**

- **Forestry Credits EUR 39bn** *

⇒ Potential for substantial additional forest revenue, especially in the emerging market
⇒ Forest project IRRs up by 2-3% with wide scale of projects, new investment opportunities

*Assumes carbon price of EUR 15 per ton. Source: [UNFCCC 2008](#)
1) REDD Company – scarcely existing as a concept
   - Credible history
   - Forest (carbon) property rights/land title
   - Owners (entrepreneurs) and mission
   - Financial, social, environmental auditing – no governance rules existing

2) Market
   - Carbon markets for REDD – to be established
   - Secondary market for REDD assets – not existing as yet
   - Third-party independent evaluation - no arrangement
   - Attractive prospects
Investable REDD – private equity prerequisites (con’d)

3) Technology – *apparently good prospect*

- Entry barriers

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**Average cost of opportunities**
up to 17 Gt = €0/t (if benefits of left hand side fully captured)

- Reduced intensive agriculture conversion
- Solar PV
- Grassland management
- Organic soil restoration
- Pastures and afforestation
- Nuclear
- Biomass
- Wind (high penetration)
- Wind (low penetration)
- Solar conc.
- Rice management
- Shift coal to burn gas
- Electricity from landfill gas
- New waste recycling
- Cars ICE improvement
- Cars aerodynamics improvement
- Retrofit building envelope (commercial)
- Lighting – switch to LED (residential)
- Uncategorised

**Breakdown by abatement type**
- 9 Gt for terrestrial carbon (forestry and agriculture)
- 6 Gt for energy efficiency
- 4 Gt for low carbon energy supply

Source: McKinsey Global GHG Abatement Cost Curve v2.0
Investable REDD – private equity prerequisites (con’d)

3) Competition
   o Competitive advantages
   o Scale of competition (No of similar projects etc)

4) Business Strategy
   o Carbon vs other products
   o Stakeholders

5) Operations Plan
   o Team – who is doing and what

6) Business Potential
   o Market size, Company share, Financials
   o Exit strategy
Overview of Global Timberland Regions and Expected IRRs (Gross)

North America: 8% - 12%
Western Europe: 6% - 10%
Eastern Europe: 7% - 15%
South America: 10% - 15%
Africa: 15% - 25%
Asia: 15% - 22%
Australia/NZ: 8% - 12%

Percentage of land area by country:

Mature timber markets
Emerging timber markets
Historical Sources of Timberland Return

- Biological growth: 65-75%
- Timber price changes: 25-35%
- Land value changes: 2-5%
Biological Growth – the case of Finland

Source: Finnish Forest Research Institute
1 a) Biological Volume Growth

- Biological volume growth contributes 3%-15% return on capital

- Finnish Pine ~5 m3/ha/a
- Spanish Eucalyptus 12-14 m3/ha/a
- Ecuadorean Teak Plantation 14-18 m3/ha/a
- Brazilian Eucalyptus 35-50 m3/ha/a
1 b) Biological *Value* Growth (In-Growth)

- When a tree grows, it turns into higher value products
- Some European hardwoods and the best tropicals species reach as high prices as EUR 250 per m³
- **Biological value growth contributes 2%-10% return on capital**

- Energy wood: 10-15 €/m³
- Spruce pulpwood: 17 €/m³
- Spruce logs: 48 €/m³
- Teak, Oak logs: 75-250 €/m³
Sustainable Timberland Investment.

Wood Prices => Timing

Korean War, Vietnam War begins, First Oil Crisis, Second Oil Crisis, Soviet Union collapse, W.E. mkt recession, Russian export tariffs, first "bioboom"

Slightly positive slope
Land Prices – robust track as an inflation hedge

“Buy land, they’re not making it anymore.”
- Mark Twain

NCREIF Farmland Index (real)

+3.6%/a
Global Consumption of Industrial Roundwood, 1965–2030

Source: FAO 2009, Unpublished Draft
Correlations of selected asset class indices to the NCREIF Timberland Index

Source: SAM & Indufor 2010, data from Bloomberg
Correlations of selected asset class indices to inflation (US CPI)

Source: SAM & Indufor 2010, data from Bloomberg
Efficient frontier of investment portfolio with and without forest assets

Definitions

- Sustainable assets: sub-set of CTIUS-index, consisting of selected cleantech and clean energy companies, as well as the sustainable provision of vital commodities such as water.
- Forest assets: assets in Uruguay, US (NCREIF), US South, Finland.

Source: Dasos Capital 2009
Kiitos!

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