The Kyoto Protocol, the forest and wood products: a reflection.

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Forewords

The Kyoto Protocol (KP) is a:

- **Complex** issue, linking science, industry, the economy, politics, administrations and many aspects of everyday life
- **Global** issue: No frontiers for Green House Gas (GHG)
- **Recent** issue: We are in the early stages. Very little has been done up to now with respect to forestry
- **Uncertain** issue in some respects: Developed nations have yet to communicate their options in matter of management of existing forests and, what after 2012? Recognition of storage in wood products?

After a very short synthesis of what is the Kyoto Protocol we shall concentrate strictly on its possible impact:

- on the **forest resource**
- and the **wood products trade**
Highlights

• Too soon to quantify the impact of the Kyoto Protocol (KP) on world forests.
• For the time being the impact seems fairly small.
• Anyhow KP will reinforce the need and interest to protect and develop forests.
• Production of commercial timber is not a goal of KP projects.
• More production of energy from fuelwood will be the first and biggest impact.
• In developed countries, competition for fiber between energy producers and wood processing will be increasingly tougher.
• More energy efficient houses = more forest products in construction.
• Building products consuming less energy = more wood.
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At the beginning: UNFCC (1992-94)
UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

Objective:

To stabilize atmospheric concentration of greenhouse gases (GHG)
“at a level that would prevent dangerous anthropogenic
[human-induced] interference with the climate system”.

In this presentation we shall refer to **CO2**

**CO2** is not the only GHG,
but the biggest one
and the most important for forestry.
Deforestation: a major source of CO2

CO2 Emissions from Fossil Fuel and Land Use Change

- Emissions from Fossil Fuel
- Emissions from land use change


Mainly Deforestation ≈ 20%

GtC / year

?
The Kyoto Protocol

The Kyoto Protocol went into effect on February 16, 2005 after Russia ratified the treaty.

The Kyoto Protocol: international agreement ratified by 141 countries

The protocol was developed to meet the objective of UNFCCC, through quantified emission targets within a specified time frame. (-5,2 % GHG for industrialized countries in the 2008-2012 period compared with 1990)
KP Commitment Period

“Commitment Period”: Range of years within which the parties to the Kyoto Protocol are required to meet their GHG emissions reduction target. The rules have been fixed only for the first commitment period (2008-2012)

And then?

The rules for the following commitment periods will be revised.

For foresters and investors, timing and duration of the first commitment as well as uncertainties on what will follow make decisions difficult to take.

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Kyoto and forestry activities

- Forests can play an important role for mitigation of CO2 (90% of carbon stocked in vegetation) and may allow time for other options to be further developed and implemented.

- Over the next 50 years up to 10-20% of human-generated net CO2 emissions could be offset by biological sinks.

- 1 m³ of industrial roundwood, density 0.45 ton/m³, and carbon content 50%,
  
  = 0.22 ton of carbon
  
  = 0.45 ton of carbon in forest
  
  = 1.5 ton of CO2 in forest
Kyoto and forestry activities

• All forest are **Carbon Reservoirs**, when their Carbon Stock increases > **Carbon Sinks**
  When their Carbon Stock decreases > **Carbon Sources**
  The relevant data for KP is **Stock Variation**

• The **cost** of using forestry to sequester carbon is modest when compared to most other approaches if a forest is not considered to be only a carbon credit generator, but essentially a producer of wood products and/or various services and other products.

• The forest’s potential is precious in the near term thereby "buying time" to allow for more fundamental non-fossil fuel, or carbon-free or controlled energy technologies to develop.*

  * R. Sedjo

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Kyoto and Forest Carbon Management (FCM)

Under KP, industrial countries can deduct from their greenhouse gas emissions certain forestry activities. These activities are limited to defined operations including:

- afforestation,
- (re)forestation
- deforestation

carried after 1990, and accounted for in the 2008-2012 period.

Very few studies have yet been carried out regarding the prospective impact of KP on forests.
A Definition: "Kyoto Forest"

A “Kyoto Forest” is an area ≥ 0.05-1.0 hectare with tree crown cover ≥ 10-30 % with trees with a potential to reach a height ≥ 2-5 m at maturity.

Each country will define and declare within these brackets its forested areas.
The Kyoto Protocol

KP Impact

Direct

Induced
Three ways to curb CO2 emissions and their impact on forest and forest products

CO2 Emission Reduction

- Energy Conservation
- Carbon Sequestration
- Use Non-fossil Energy
Three ways to curb CO2 emissions and their impact on forest and forest products

- Energy efficient houses = Better insulation = More Wood Based Construction (If efficiently promoted)
- Production and use of low energy materials = Wood based products can claim superior eco-efficiency (Wood is the best Kyoto material!)

CO2 Emission Reduction

Energy Conservation

Carbon Sequestration

Use non-fossil energy
Three ways to curb CO2 emissions and their impact on forest and forest products

**CO2 Emission Reduction**

**Energy Conservation**
- More Forestation and (re)Forestation, Less De-forestation
- Carbon Forest Management

**Carbon Sequestration**
- Prolonged sequestration of carbon through use of wood based products (Not accounted yet by KP, most likely to be accounted for after 2012)
- Maximum recycling before energy use to maximize carbon retention

**Use non-fossil energy**

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Three ways to curb CO2 emissions and their impact on forest and forest products

- CO2 Emission Reduction
  - Energy Conservation
  - Carbon Sequestration

Use non-fossil energy

Wood Fuel
- From existing or planted forest
- From wood industry by-products
The Kyoto Protocol
Flexibility Mechanisms

Three market-based mechanisms to make it easier and cheaper to meet GHG emission targets. Reductions can be made where costs are lowest.

- EMISSIONS TRADING
- JOINT IMPLEMENTATION
- CLEAN DEVELOPMENT MECHANISM
Emissions Trading (ET)

Allows countries to transfer parts of their “allowed emissions” (assigned amount units) to other countries.

The main trading office (European Trading Scheme, ETS) does not currently trade forest sink credits.

Carbon sinks have been a contentious issue at UN level for several reasons:
- no technology transfer
- possibility of being temporary and reversible
- some uncertainty about their efficiency as emission absorbers *

and they are strongly criticized by many NGOs

* Source: EU Commission, 2003
Joint Implementation (JI)

Investment

Industrialized Country 1  Industrialized Country 2


For the time being, it seems that most Joint Implementation projects will not be dealing with forest.
Clean Development Mechanism (CDM)

Investment

Industrialized Country 1

C.E.R. CER = “Certified Emission Reductions”

Developing Country

Some countries exclude sinks from CDM
Very few CDM projects are directly connected to forest
CDM includes afforestation and (re)forestation
and excludes “Avoided Deforestation”
Land Use, Land-use Change and Forestry (LULUCF)

There are still some ambiguities in LULUCF rules.

More negotiations will be needed to reach a real consensus on land use and land use change.

Forestry (LULUCF) activities should be considered in the next commitment period.
Carbon Sinks (Plantations)

Theoretically, the KP flexibility mechanisms would have the potential to intervene in forest (in CDM only afforestation and (re)forestation, for an annual maximum 1% of the buying country’s emissions).

For the global environment, the benefit is the same wherever the forestry project takes place. Criteria are costs and productivity, as long as rules are respected.

Practically, for the time being, some lines of actions have been put aside by some countries e.g. No forest-based CER and ERU for the EU

This position may be reconsidered in the future.
Carbon Sinks: Plantations

For the time being:

- Production of industrial/commercial timber is not a goal of the KP plantation projects in developing countries.
- The wave of commercial plantations feared by some is not going to come soon: Total area of plantation projected is quite small. Most projects will essentially be dedicated to land protection, fuel-wood and others local benefits.
- Today, the biggest single buyer, the Biocarbon Fund (World Bank) lists 21 candidates CDM projects of forest related operations for a total of 110,000 ha and the Prototype Carbon Fund has signed 3 projects for a total of 44,000 ha.

Of course, this is the beginning, and it is the first commitment. However, with current rules, carbon sinks will not be a main result of KP.
Wood as a Renewable Energy Source (RES)

- The use of wood as renewable energy is a contribution to reduce use of fossil fuel.

- The Kyoto Protocol does not take into account the emissions coming from wood combustion, because it is a CO2-neutral operation. Currently, under Kyoto Protocol accounting, **Harvest** of a tree = **Emission** of the CO2 stocked in that tree.

- The Clean Development Mechanism includes projects based on renewable energy (e.g. fuel wood).
Wood: Renewable Material and/or Renewable Energy?

- There should be a strategic/political choice between using wood as a material and using it as a fuel.
- In forested developed countries, the application of KP, as it is worded now, will reinforce competition between wood-based products manufacturers and energy producers.
- The current evolution of the market (oil costs) will act as a further incentive and will accentuate this trend.
- A large part of the (few) proposed CDM plantation projects are dedicated to energy production (acacia, eucalyptus,...) for domestic needs (Africa) or metallurgic charcoal (Brazil).
WOOD as Renewable Energy Source (RES)

Market or Policy ?

• Hierarchy in the use of wood ?
  (wood value chain, functional cascade)
Socio/political considerations:
  - Added-value
  - Employment generation

There is little doubt that the wood-based products industry provides far greater benefits in terms of employment and value added than direct burning of wood.

See CEI-Bois /EPF “Tackle climate change” 2004

• Bio-Mass Energy Policy ?
• Or leave the market alone plays its role ?
Harvested Wood Products: A major issue for wood industries

Carbon sequestration in Wood Based Products is not accounted by KP for first period (2008-2012)

This may change after 2012.

Options now discussed are:

- Current method: Harvest = Emission
- Flow Consumption Method: Based on apparent consumption of each country (Inputs = Credits)
- Flow Production Method: Based on domestic production of each country (Production = Credits)

Questions:
Product lifespan ?, Recycling ?, Evaluation of carbon stock ?

This is an issue of primary importance for wood industries.
Conclusion 1

Up to now, the impact of the Kyoto Protocol on forests may appear modest and carbon values can only be considered a topping up to projects based on economic or social/environmental fundamentals.

The main impact will be in the field of energy.

KP, as enforced now, will induce very limited forestry activity in developing countries. Developed countries have their existing forest laws and, domestically, it will close to business as usual.
Conclusion 2

However, recognition that forests are a key element in climate mitigation is a very positive point for the wood industry.

The next important step will be to obtain full recognition of forest products as carbon storage.

Beyond the technical acknowledgement of their role in carbon storage, this will constitute for the forests and industry a true added value and a strong marketing advantage.

The wood industry must recognize the strategic importance of this opportunity (and challenge) by undertaking major lobbying efforts.
THE END