Sveriges lantbruksuniversitet
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HWP in KP 2
-issues in handling carbon flows

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Background

- Decision 2/CMP.7
  - HWP pool mandatory
  - HWP from domestic forests
  - Three product categories, sawn wood, wood based panels, paper
  - Allocate between FM and ARD
  - HWP from D and HWP put in landfills: Inst. ox.

2013 Revised Supplementary Methods and Good Practice Guidance arising from the Kyoto Protocol

- Tier 1: instantaneous oxidation
- Tier 2: FOD, default product categories and half-lives
- Tier 3: country specific methods

First order decay function

(Pingoud and Wagner 2006)

Carbon pool next year | carbon pool present year | Inflow of new products

$$C(i+1) = e^{-k} \cdot C(i) + \left[\left(\frac{1-e^{-k}}{k}\right)\right] \cdot inflow(i)$$

Remaining fraction | Remaining fraction

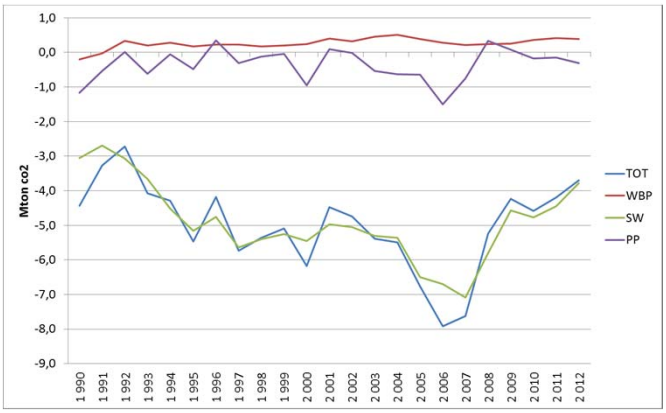
k = ln(2)/half-life

National Tier 3 Method

- Spread sheet model
- National data starting from 1900
  - National Forestry Board
- FOD (eq. 12.1 IPCC GL 2006)
- Default product categories and half-lives
  - Sawn wood (HL 35 years, 420 kg/m^3)
  - Wood based panels (HL 25 years, 650 kg/m^3)
  - Paper products (HL 2 years)
- Equations to exclude imported C at each step along the refinement chain
- Separate calculations for product categories
- Separate calculations for export, domestically consumed

Results

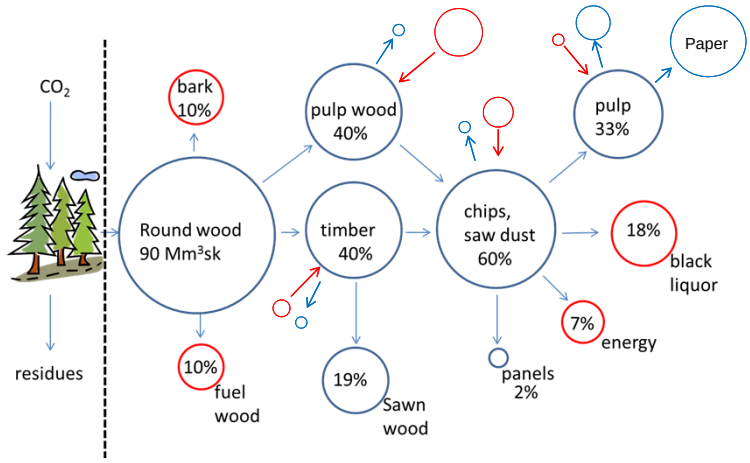
-per product category



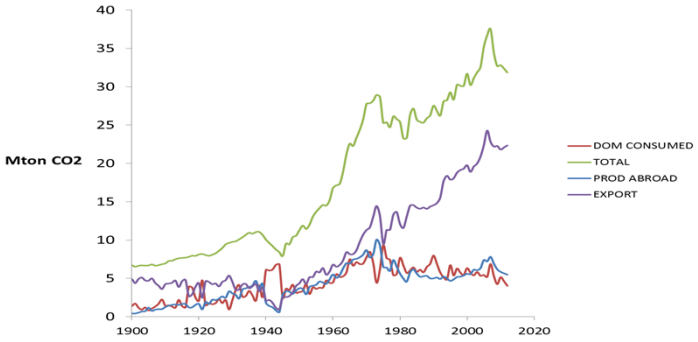
Some inflow issues

- Traded raw material
- Paper produced abroad from recovered paper, originally imported from Sweden?
- Round wood storage?

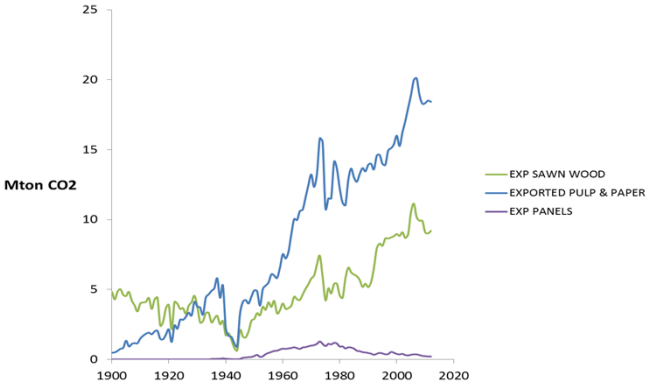
Flows in the forest industry of Sweden
-trade of raw material



… about 85% is exported



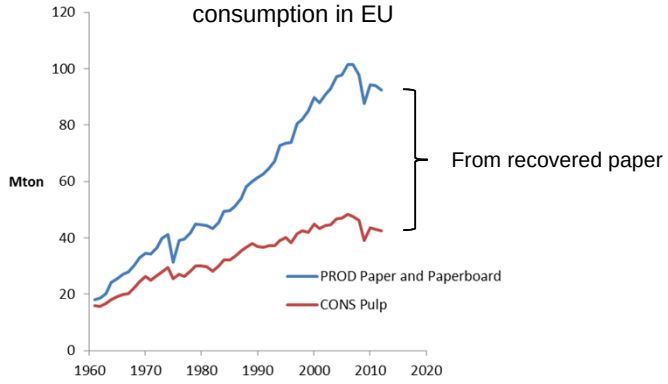
…and a large fraction is pulp and paper



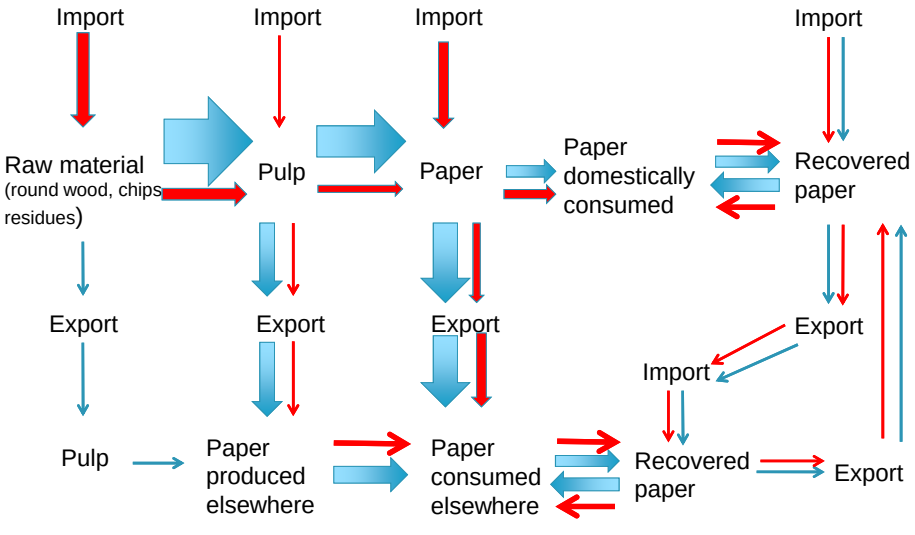
Important to keep track of the export

HWP from recovered raw material?

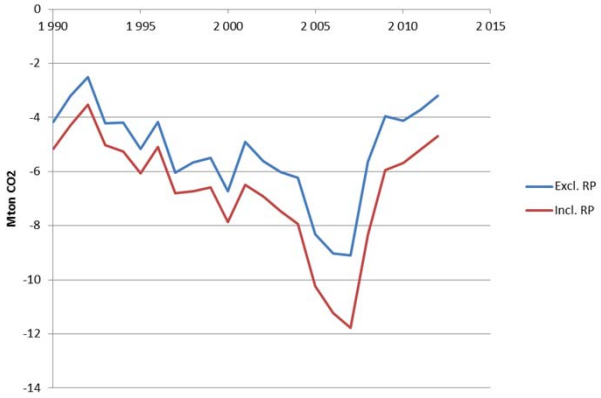
Paper production and pulp consumption in EU



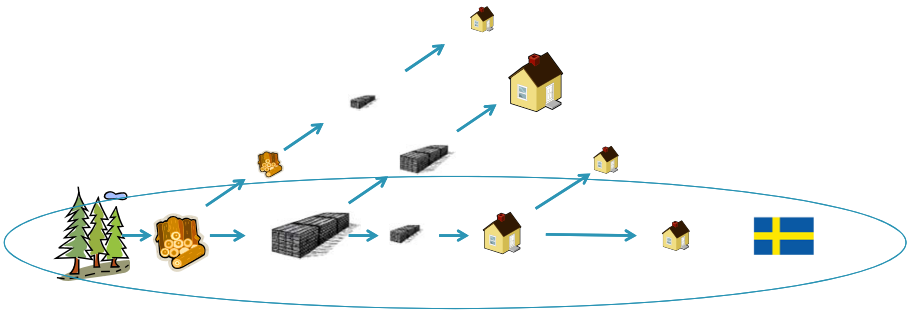
Keeping track of products from domestic harvest – the paper example



Emissions from HWP
-with and without recovered paper

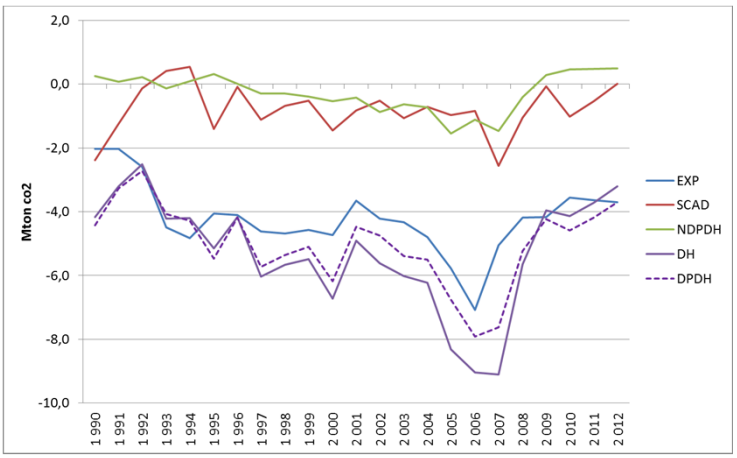


Include exported raw material?

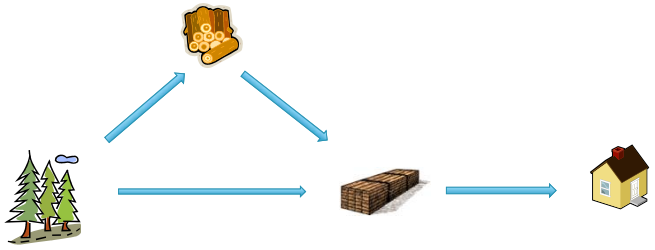


Emissions from the HWP pool

all product categories



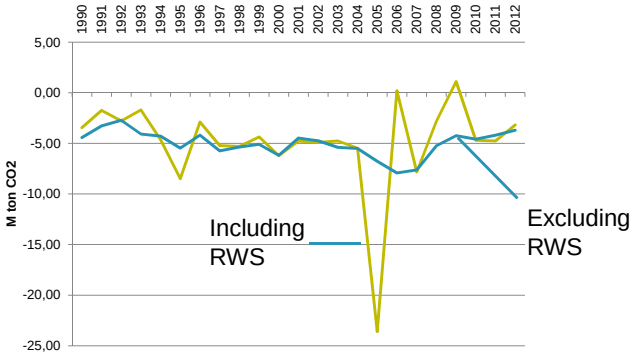
Including Roundwood storage?



- A pool between forest and HWP
- Important to even out large sudden removals

Emissions from the HWP-pool

– effect of including round wood storage (RWS)



Discussion

- Recovered paper?
  - Complex
    - check RP-usage in important import countries?
    - use data on pulp instead and exclude paper made from RP, and adjust the half-life?
    - Apply ratio (RP prod./P cons.) in import countries?
- Exported raw material?
  - Ok, ”provided that transparent and verifiable activity data are available”?
- Round wood storage?
  - Ok, ”provided that transparent and verifiable activity data are available”?

Discussion

- HWP already accounted for during KP 1 by Instantanious oxidation shall not be accounted
  - HWP from harvest prior to the first comitment period?

Thank you!