Harvested Wood Products in the context of climate change policies

Workshop, Geneva Sept. 9th – 10th 2008

HWP versus forest sinks
CO2-effects of Swiss forestry and timber industry

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Based on a study for the Swiss confederation

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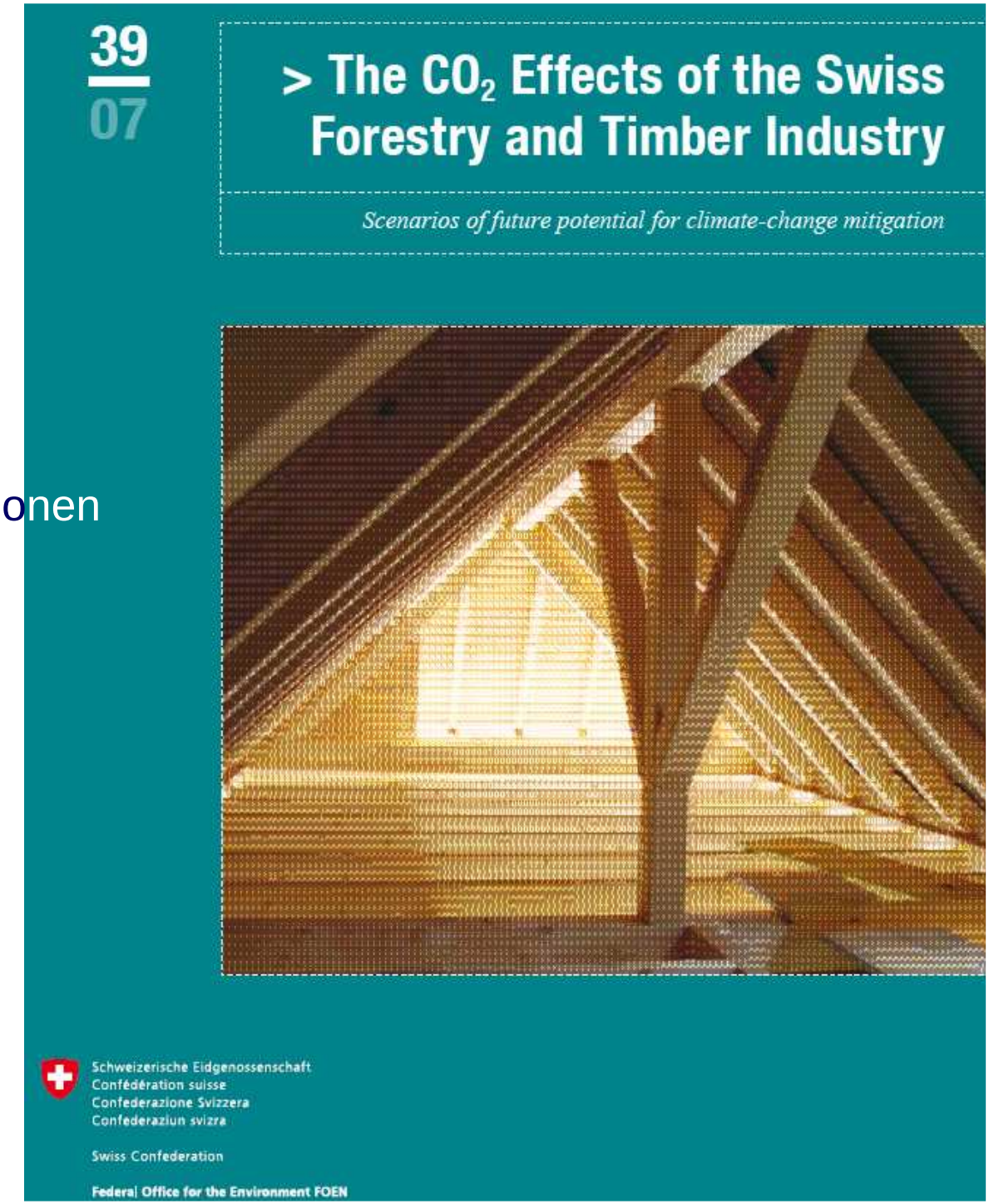
eawag, Swiss Federal Institute of Aquatic Science and Technology

The publication of the study is available at the following address:

www.bafu.admin.ch/publikationen



Geneva, Sept. 9th 2008

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Aims of the Swiss study

Working hypothesis

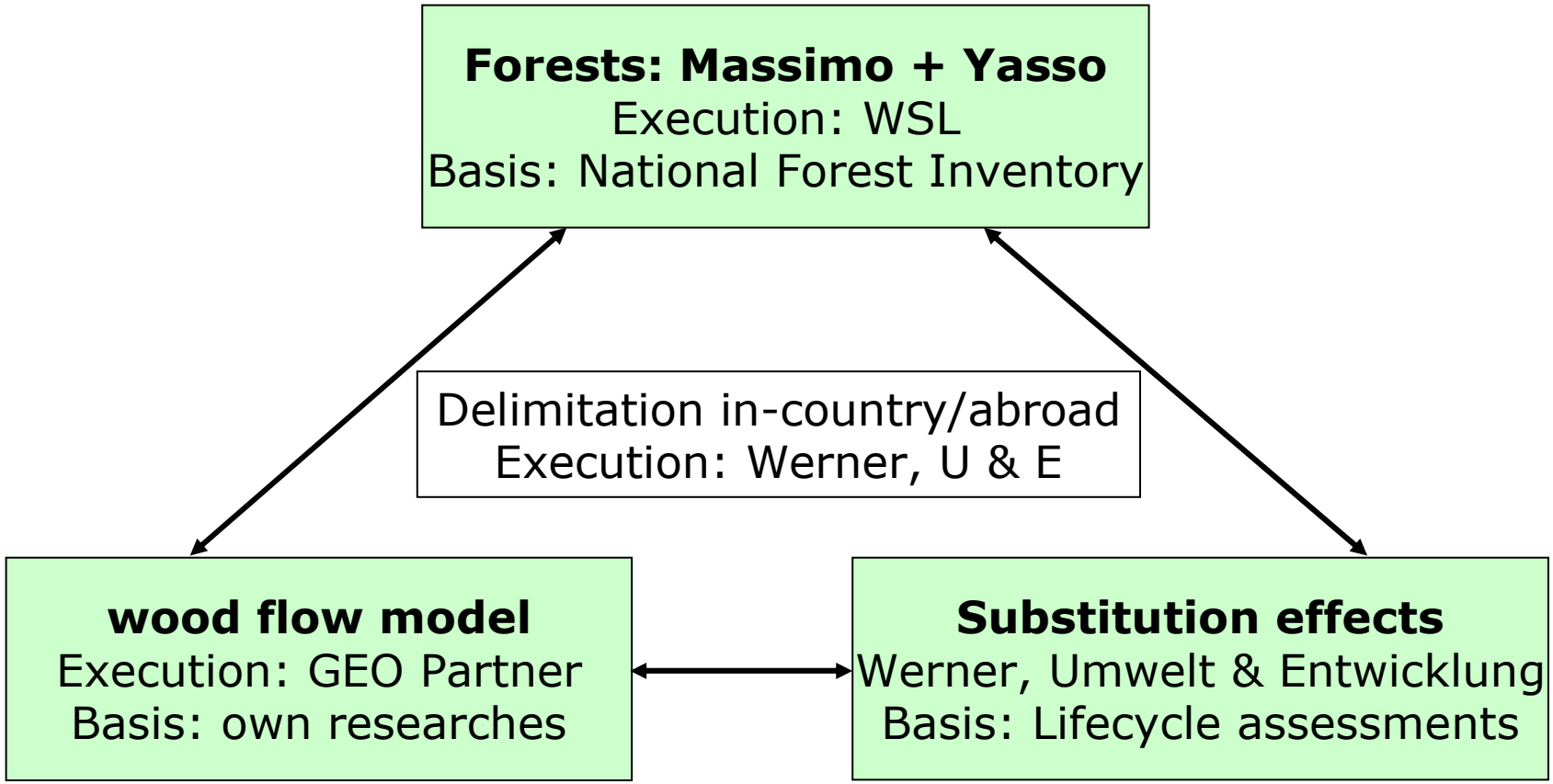
"National greenhouse gas balance will come off best, if

- maximised increment in forests is currently completely harvested,
- converted to long-lived wood products,
- if possible recycled and in the end used as a fuel."

Aim of the study

develop a range of management options for a future CO_2-optimized policy for Switzerland

Methodological Approach



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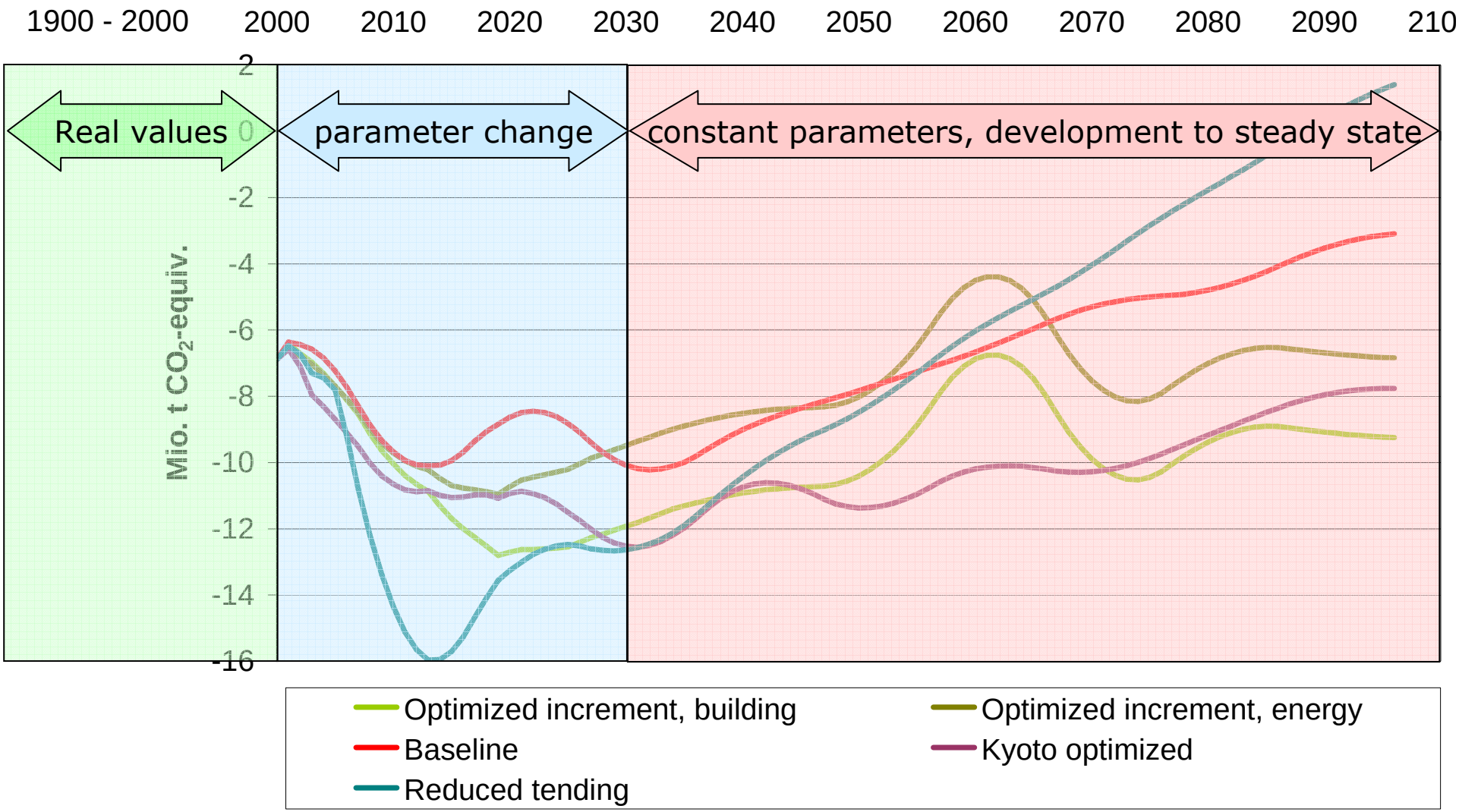
Scenarios and their main elements

Basic principle of scenario building

Scenarios are based on elements of realistic policies as regards harvesting, consumption, domestic wood processing / production.

	Optimized increment [Mio. m^3]		**Kyoto optimized** [Mio. m^3]	**Reduced tending** [Mio. m^3]	**Baseline** [Mio. m^3]
Yield Swiss harvest	9,2 **+ 90%**		8,5 **+ 75%**	3,0 **- 40%**	5,9 **+ 20%**
	Building	Energy	Building		
Consumption HWP (without p&p)	4,5 **+ 80%**	2,5 **+ 0%**	4,5 **+ 80%**	1,9 **- 24%**	3,0 **+ 20%**
Forest fuelwood	2,8 **+122%**	4,9 **+344%**	2,1 **+ 67%**	0,2 **- 81%**	1,5 **+ 20%**
Foreign trade Exports / Imports of wood products	constant	constant	constant	constant	constant

Presentation of the results



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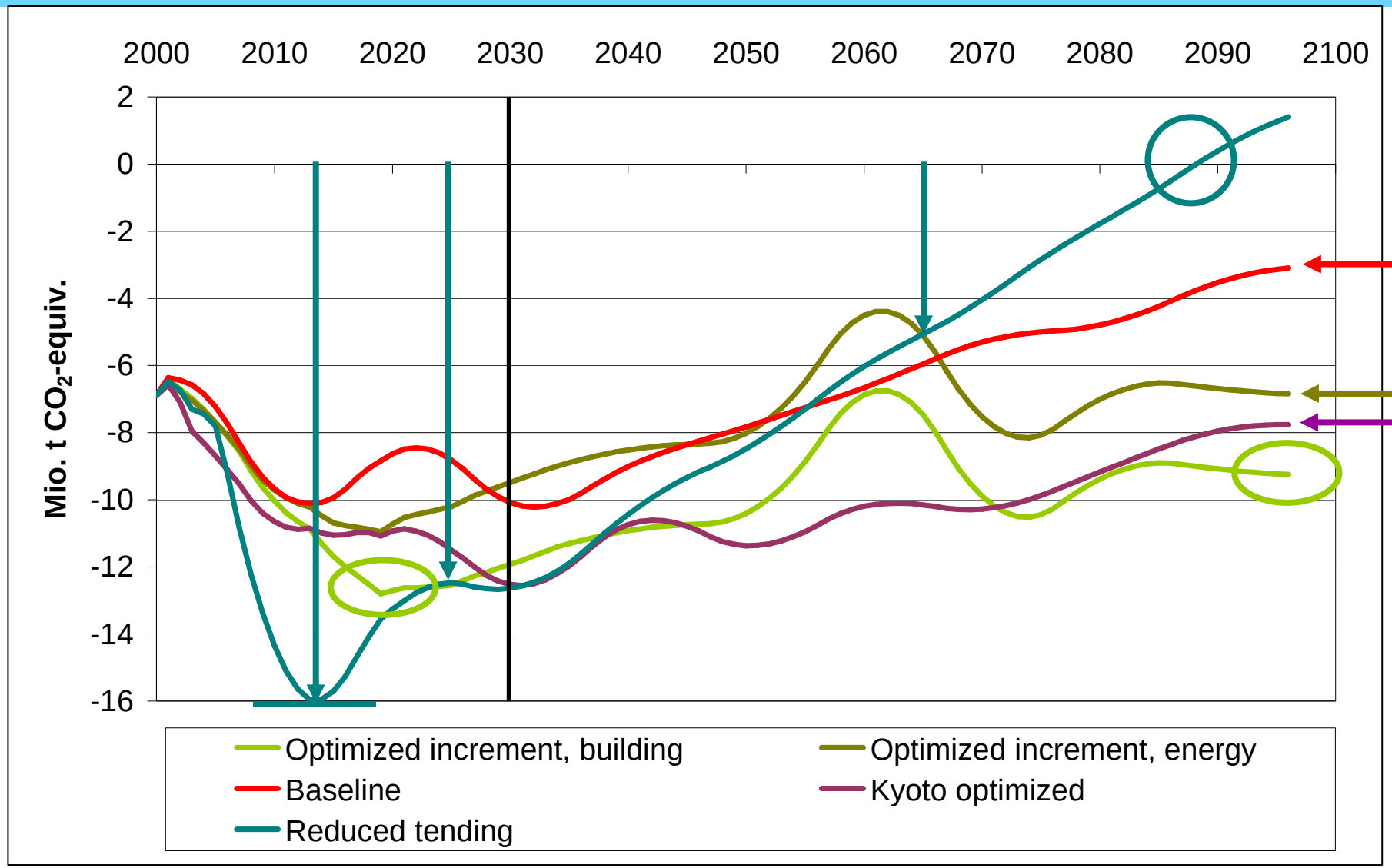
Results: Global effects (in-country and abroad)



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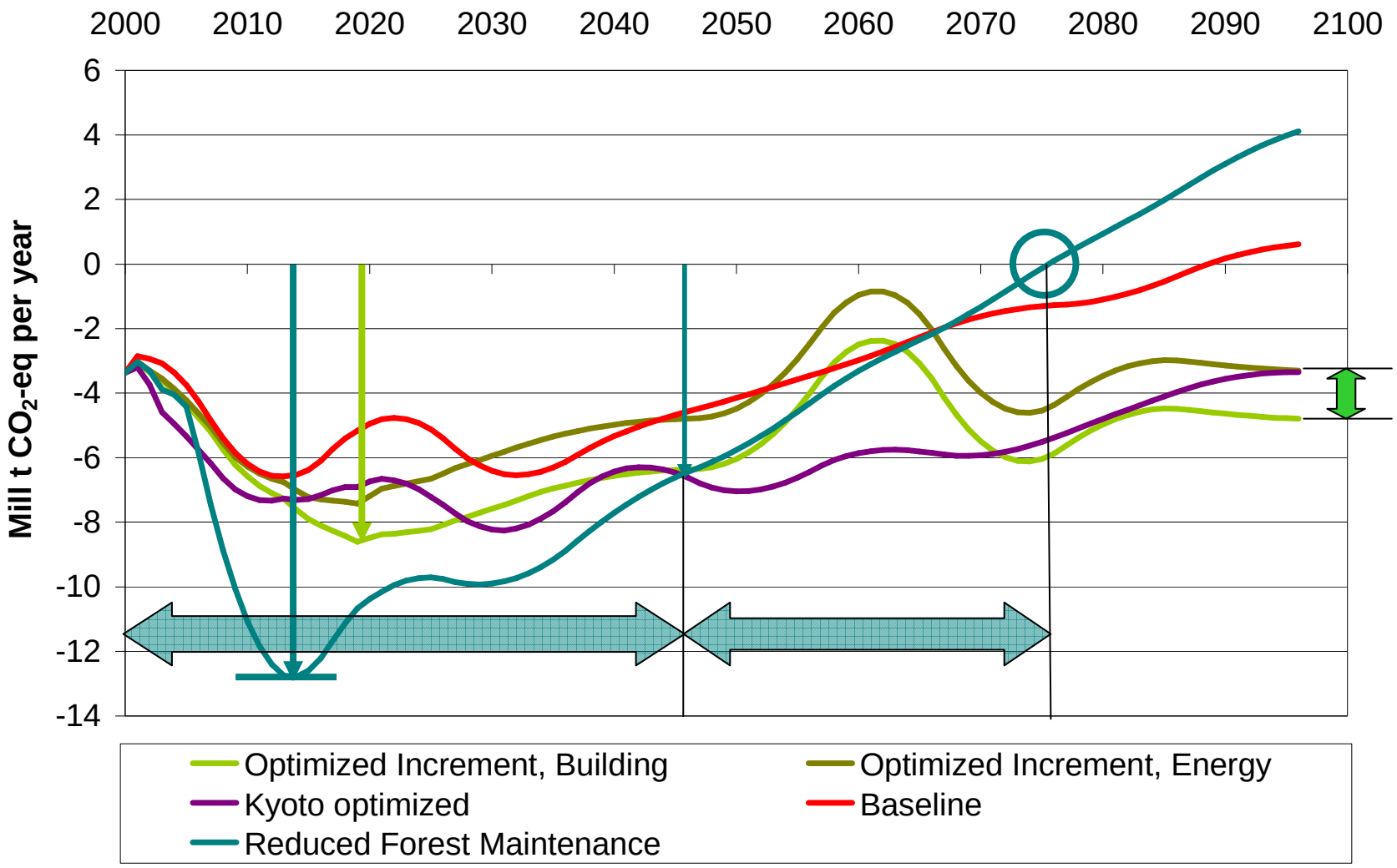
Results: Effects in Switzerland



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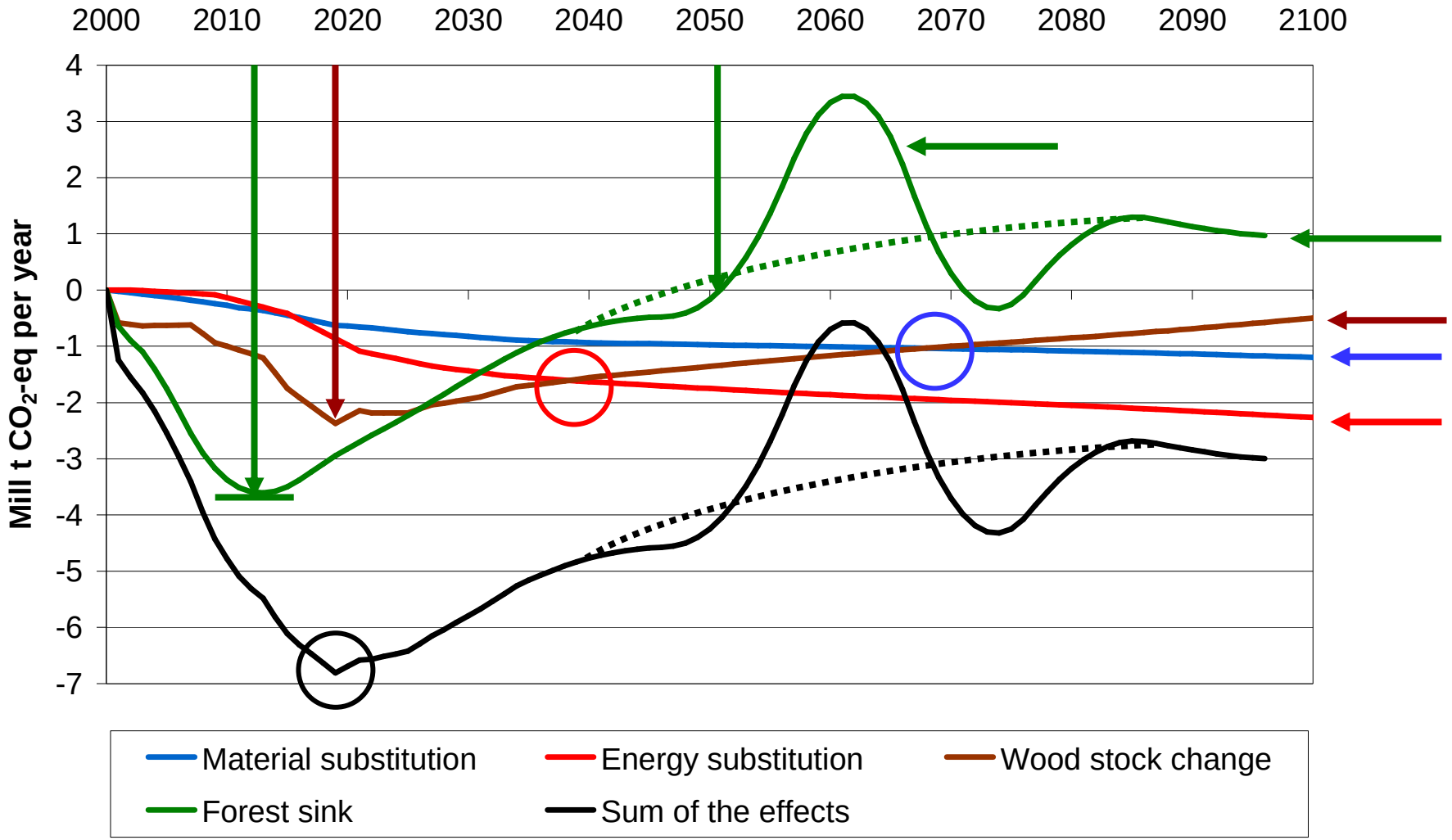
Results: "optimized increment, building" net effects of scenario in Switzerland



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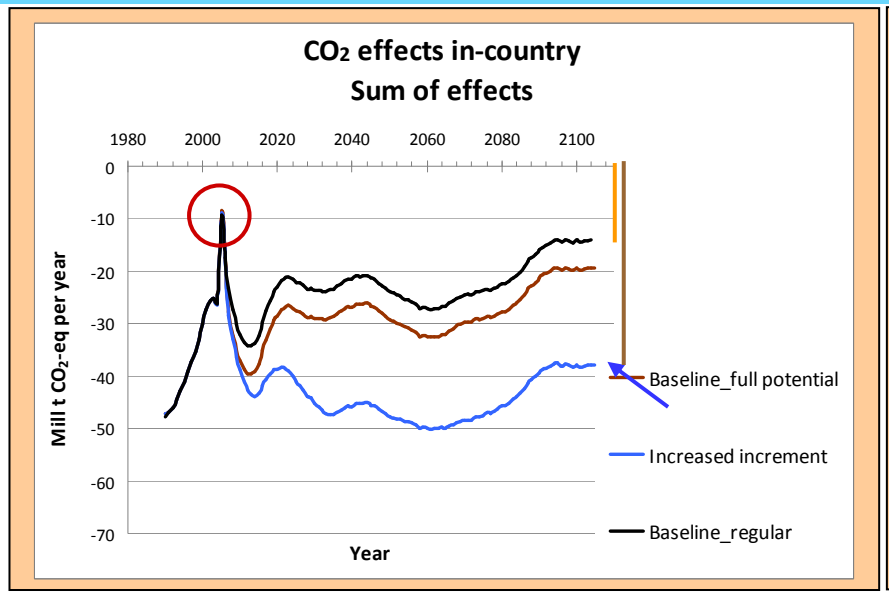
Estimation of employment effect in forest sector 2000 to 2030

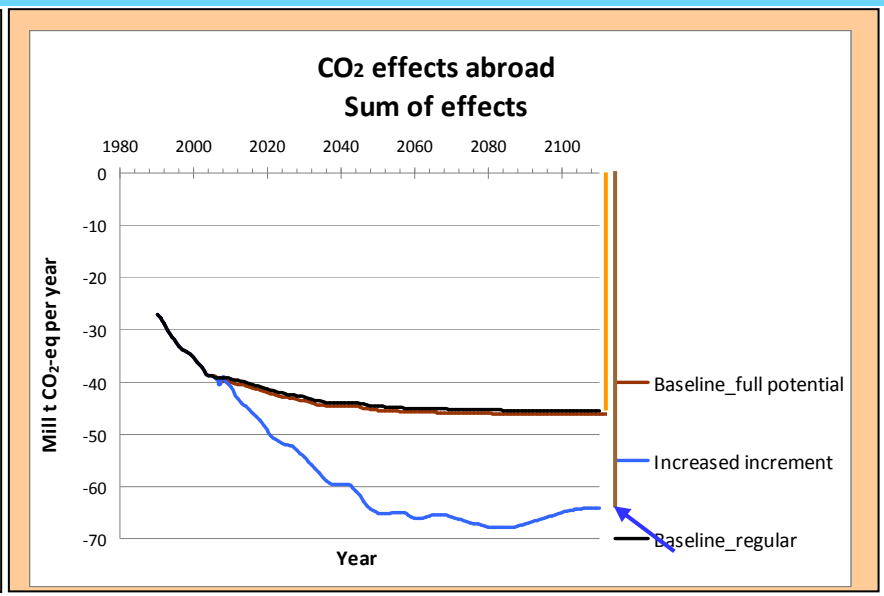
Production sector	Optimized increment Building	Optimized increment Energy	Kyoto optimized	Reduced tending	Baseline
Forestry	2'030	2'030	1'690	-2'900	650
1st process level	1'520	---	1'520	-1'350	760
2nd process level	3'860	---	3'860	-3'430	1'950
3rd process level	20'220	---	20'220	-17'950	8'060
Total	**27'600**	**2'000**	**27'300**	**-25'600**	**11'400**

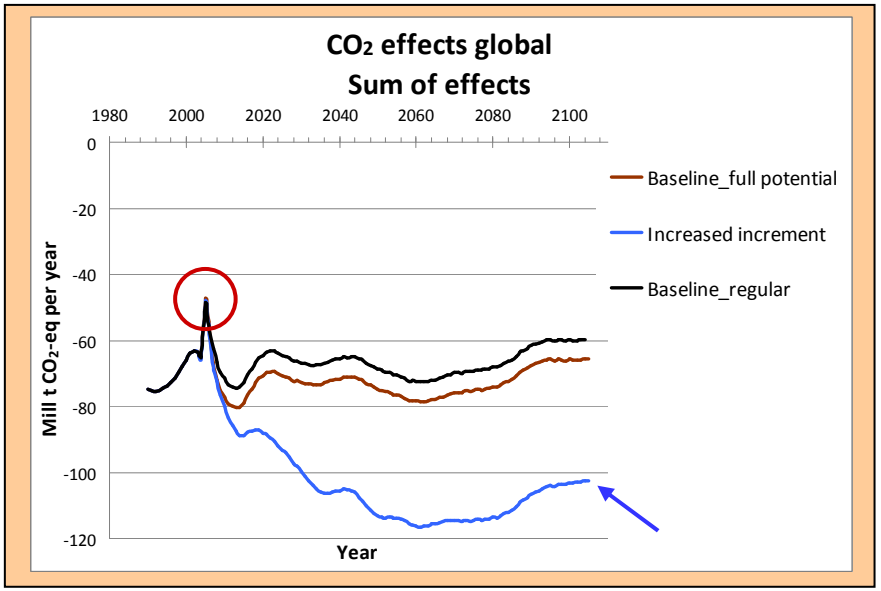
The Swedish study "Forest and Carbon"

(Mill t dm)	2005	Baseline 2035				Increased Increment 2035	
		Regular		Full potential			
Yield							
Compact wood	31.2	35.1	+12%	35.1	+12%	48.6	+56%
Slash	1.6	1.7	+3%	3.8	+140%	3.8	+140%
Stumps	0	0	0%	1.7	New	1.7	New
Consumption							
Building products, other wood prod.	2.3	2.5	+12%	2.5	+12%	3.5	+56%
Paper	2.1	2.3	+12%	2.3	+12%	2.3	+12%
Total fuel wood	8.1	8.8	+8%	12.6	+55%	21.5	+165%
Foreign trade							
Exports wood prod.	7.9	8.9	+12%	8.9	+12%	12.6	+60%
Export of p&p	13.7	15.1	+11%	15.1	+11%	15.1	+11%
Imports wood prod.	7.1	7.1	const.	7.1	const.	7.1	const.
Import of p&p	2.1	2.3	+12%	2.3	+12%	2.3	+12%

Results of the Swedish study
Comparison of the total of annual effects







Best results: Scenario Increased increment

Effects in-country: 14 to 38 Mill t CO_2 eq.

Effects global: 60 to 103 Mill t CO_2 eq.

Effects abroad are higher than in-country

Reduction of growing stock increase in baseline scenarios can only be compensated by substitution effects abroad.

Storm Gudrun is clearly noticeable

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Harvested Wood Products vs. Forest sinks Findings

- It is interesting to invest in forest sinks as long as the average increment can be increased.
- Forest sinks can turn to be sources in case of storms or other forest catastrophes.
- The important CO_2-effects of wood utilization are the material and energetic substitution. The firstly material and secondly energetic use of wood is the most advantageous way.
- Only at the beginning of the period stock change effect of wood products is more important than the substitution effects. In the systems steady state situation it is zero.

Reflexions for the accounting of HWP

- The accounting of HWP is an incentive for the increased utilization of wood products in the phases of growing wood stocks.
- In a long range perspective, wood stock change effect is marginal to zero. Wood stocks in the technosphere are stable. There is low risk, that they are destroyed or reduced on a large scale, as it can happen in forests.
- Substitution effects are reflected in the balance of fossil fuels, though it is indiscernible how much of balance change is due to increased use of wood products.
- The longer the lifetime of the products, the larger the stock capacity. Accounting of HWP should reward long-lived wood products.
- A new accounting approach should give more incentives for creating a high increment in forests than high growing stocks.

Thank you for your attention