

Forest biodiversity protection and the sustainability of the European forest sector

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Outline of the presentation

- Goal of the study
- Methodology
- Scenarios: A1 & B2
- Results: Impacts of forest protection within scenario A1 in 2020
 - EU/EFTA level
 - North, Central and East Europe
 - comparison to scenario B2
- Conclusions

What are the impacts of improving forest biodiversity on other forest sector related sustainability indicators in Europe:

- **Forest industry turnover and profits**
- **Employment**
- **Energy consumption**
- **Carbon sequestration in forests**
- **Self-sufficiency in forest products**
- **Use of recycled paper**

Scenarios explored with EFISCEN and EFI-GTM models

- **EFISCEN** is a forestry simulation model focusing on bio-physical aspects of forest management on a subnational level
- **EFI-GTM** simulates the **interaction of profit-maximizing producers and consumers in competitive global markets** for the forest sector products
- **Scenarios illustrate the differences in the sustainability indicators in the longer term between the cases with and without increased forest conservation.**

How do the baselines A1 & B2 differ in their parametrization chosen ?

A1	B2
Rapid economic growth -Europe 3% average	Moderate growth -Europe around 2% average
Global solutions, free trade -Risks in global investments decrease	Local solutions & protectionism -Russia increases tariffs for roundwood exports 2011
Values materialistic -Consumption of the forest industry products grows as in the past.	Environmental values more important -Waste paper collection rates go up. -Wood favoured as a construction material - Printing and writing paper consumption stagnates in the EU.

Assumptions made on the magnitude of forest conservation (from EFISCEN)

Reduction in *physically sustainable* annual roundwood harvests in Europe by 2020

scenario A1	scenario B2
10 %	6%

A1 scenario

How would the **10% decrease in physically sustainable annual harvests** affect

- economic
 - social
 - environmental
- sustainability indicators ?

ECONOMIC INDICATORS within scenario A1 in 2020

	Change in the indicator value due to forest protection	
Turnover in the forest industries (10 ⁹ €)	-0.6 %	-Forest conservation makes turnover grow less than in the baseline. -Mechanical forest industry production 4% lower than in the baseline !
Variable profits of the forest industries (10 ⁹ €)	-6.7%	Less production at higher fiber costs
Trade Balance (value of exports/value of imports)	-7%	Forest protection makes trade deficit grow more.
Selfsufficiency % -paper and paperboard -sawnwood and panels - pulp -roundwood (production/use)	-0.3% -3.8% -2.6% -0.8%	Europe will not be self-sufficient in any of these in 2020. Higher share of the EU consumption produced abroad when forests conservation is increased.

SOCIAL INDICATORS within scenario A1 in 2020

	Change in the indicator value due to forest protection	
Persons employed in the forest industries (thousands)	-2.5 %	Less employment, in particular in the production of sawnwood and panels (-4%).
Roundwood harvests (<i>proxy for the rural employment</i>) (10 ⁶ m ³)	-5 %	Less employment opportunities in rural areas.

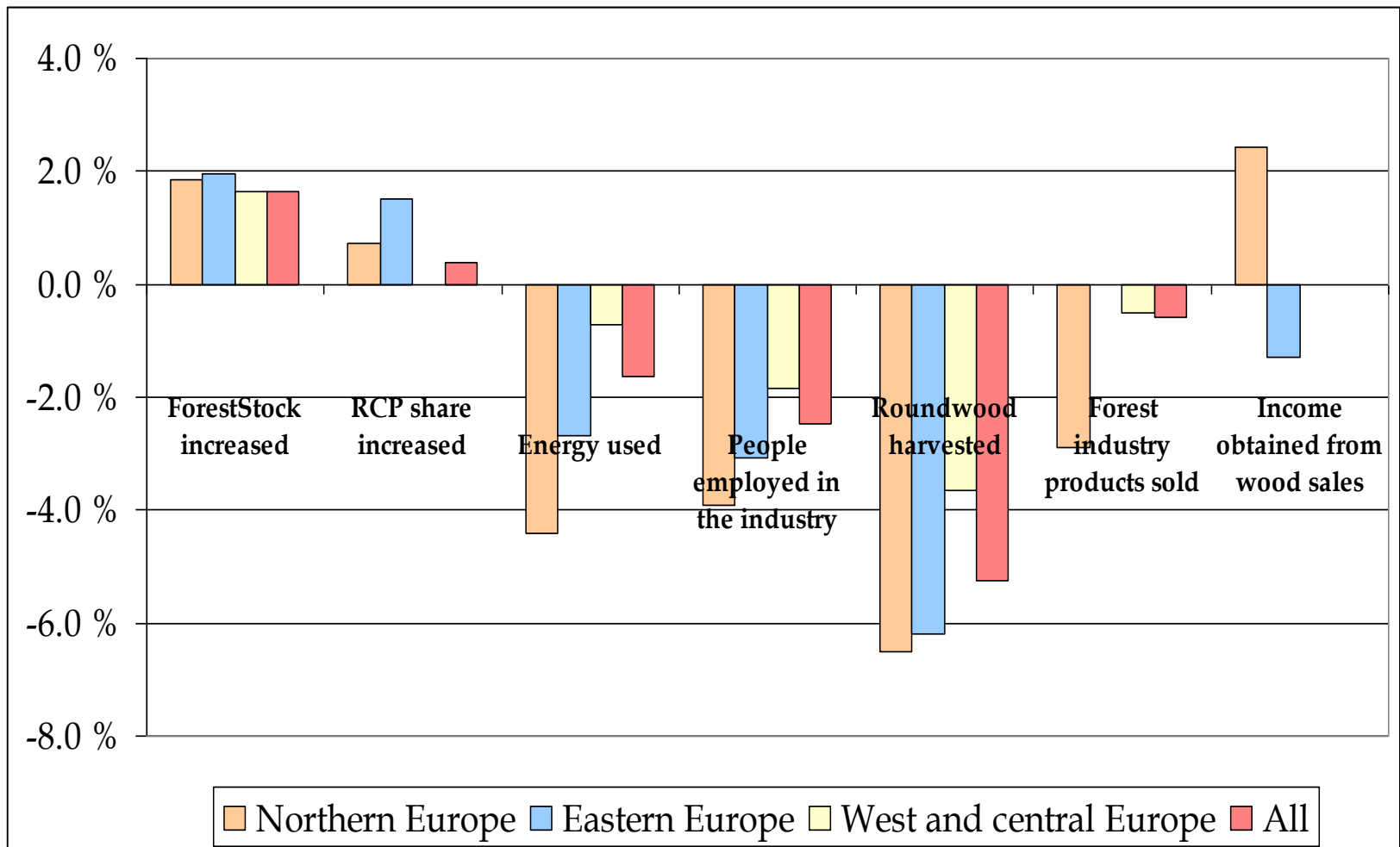
ENVIRONMENTAL INDICATORS within scenario A1 in 2020

	Change in the indicator value due to forest protection	
Energy consumption in the forest industry (TWh)	-1.6 %	Includes only net purchased energy.
Growing stock ($10^9 m^3$)	+1.6%	More carbon sequestered ! Preliminary figure !! To be calculated with EFISCEN.
Recycled paper utilization rate (%)	+0.4%	Reduction in virgin fiber based paper production
Harvests in selected tropical regions with illegal logging problem (in Africa and South-East Asia, $10^6 m^3$)	+0.6%	World total harvests remain the same. Harvests "leak" primarily to boreal regions instead of tropics.

Forest conservation impacts by subregions, A1

Any differences between the Nordic, Eastern and Central European countries ?

YES, there are differences. Nordic countries are most affected !

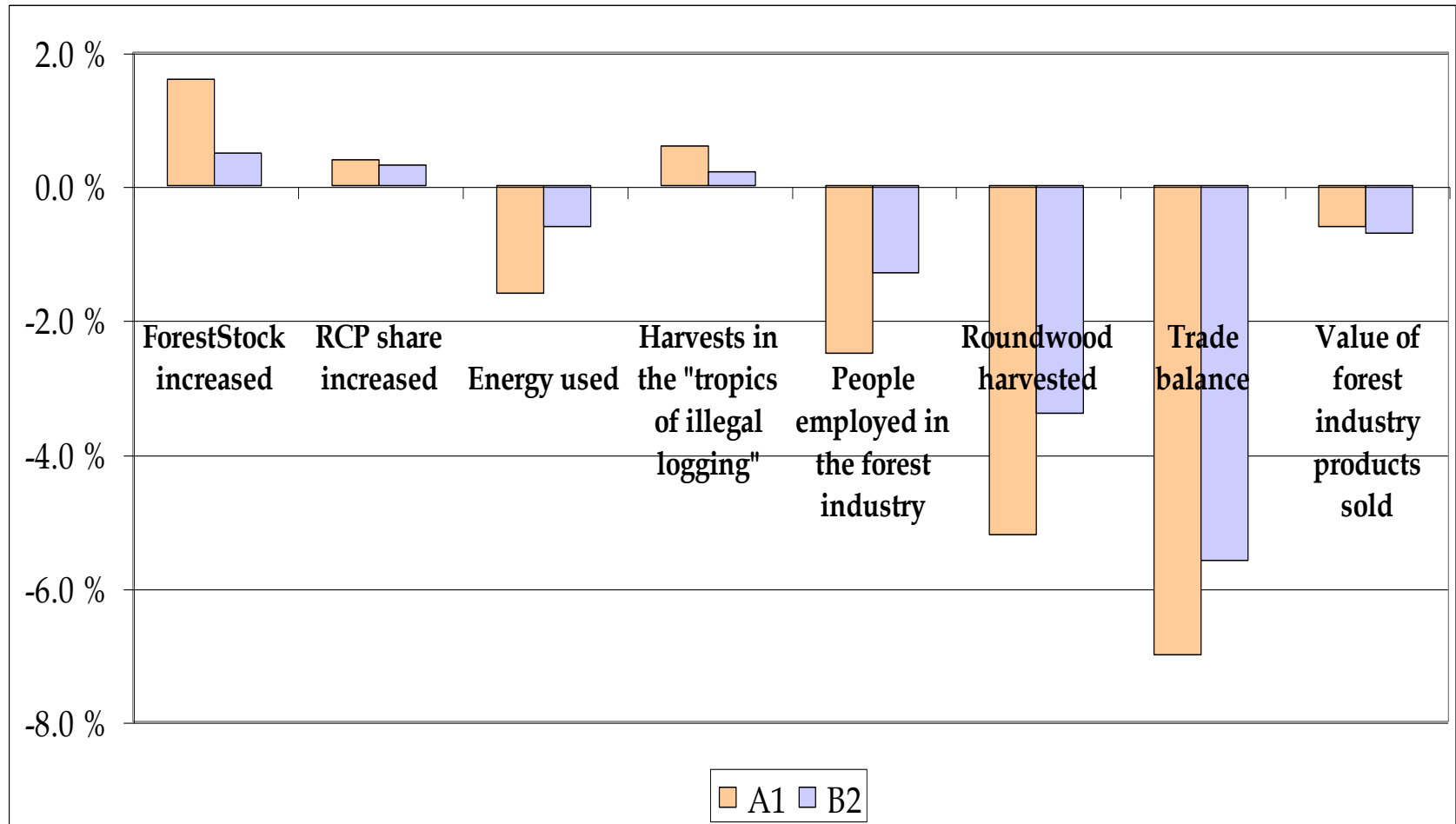


RESULTS for scenario B2

How would a 6% decrease in physically sustainable annual harvests affect the sustainability indicators ?

Does the picture look the same as in A1?

Despite the differences in baseline developments, the differences in conservation impacts largely reflect the differences in assumed declines in sustainable harvest volumes : A1 –10%, B2 –6%.



Improving the forest biodiversity

- declines production and employment in the forest sector
 - makes Europe more dependant on imports of forest products
 - may slightly increase illegal logging.
- + increases carbon sequestration *in European forests*, but due to leakage of harvests to other countries this benefit may be lost in the global scale.
- + decreases energy consumption *in Europe*, but will the substituting forest industry investments go to regions using as or more energy-efficient technologies/environment friendly energy forms ?



Does forest protection improve the sustainability of the forest sector in Europe ?

- Environmental sustainability: *YES !*
- Economic sustainability: *NO !*
- Social sustainability: no conclusion - we only considered employment.

”Total sustainability” in Europe: Depends on how the indicators are valued.

”Total sustainability” in the world:

Do we just the transfer the economic benefits and environmental problems ?? Value issue as well.