

Today's and tomorrow's timber resources: Can we sustainably meet rising demand?

Ed Pepke

Forest Products Marketing Specialist
UNECE/FAO Timber Section, Geneva



Wood Futures Conference
8 November 2007, London



Subjects

- I. Forest resources
- II. Forest products markets
- III. Certified forest products
- IV. Wood energy
- V. Conclusions
- VI. Recommendations
- VII. Questions and discussion



Wood Futures Conference
8 November 2007, London



Main information sources

- UNECE Timber Committee & International Softwood Conference, October 2007
- UNECE/FAO forums on wood energy and mobilization, Jan. and Oct. 2007
- UNECE/FAO/University of Hamburg/EC Study on wood resources: availability, demand, and effects of renewable energy policies, Oct. 2007
- UNECE/FAO Forest resources assessment
- UNECE/FAO Timber database
- UNECE/FAO *Forest Products Annual Market Review*
- FAO Statistics
- *State of Europe's Forests 2007* by Ministerial Conference for the Protection of Forests in Europe, November 2007



Wood Futures Conference
8 November 2007, London

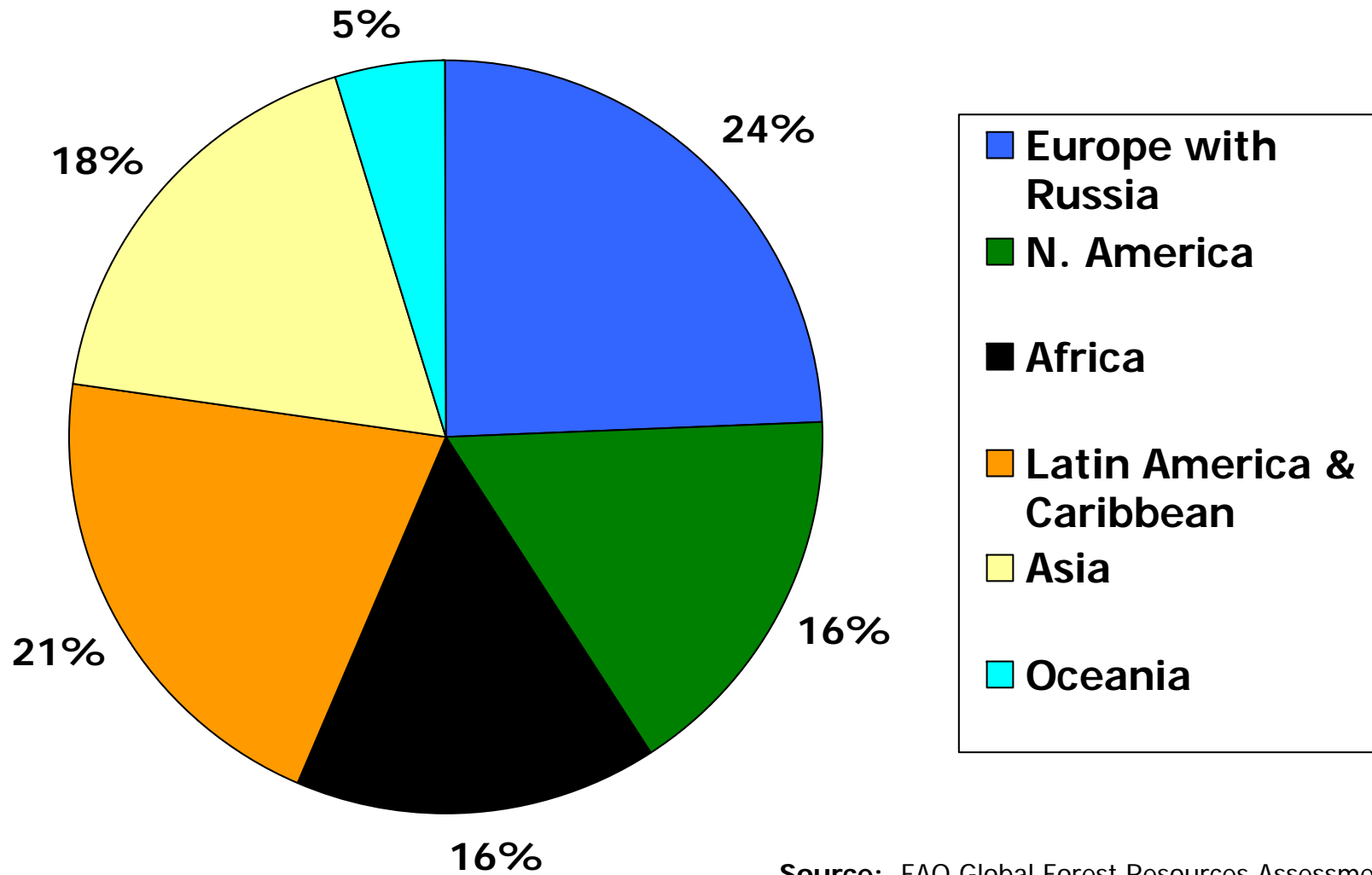


I. Forest resources

Global, then European



Where are the world's forests?



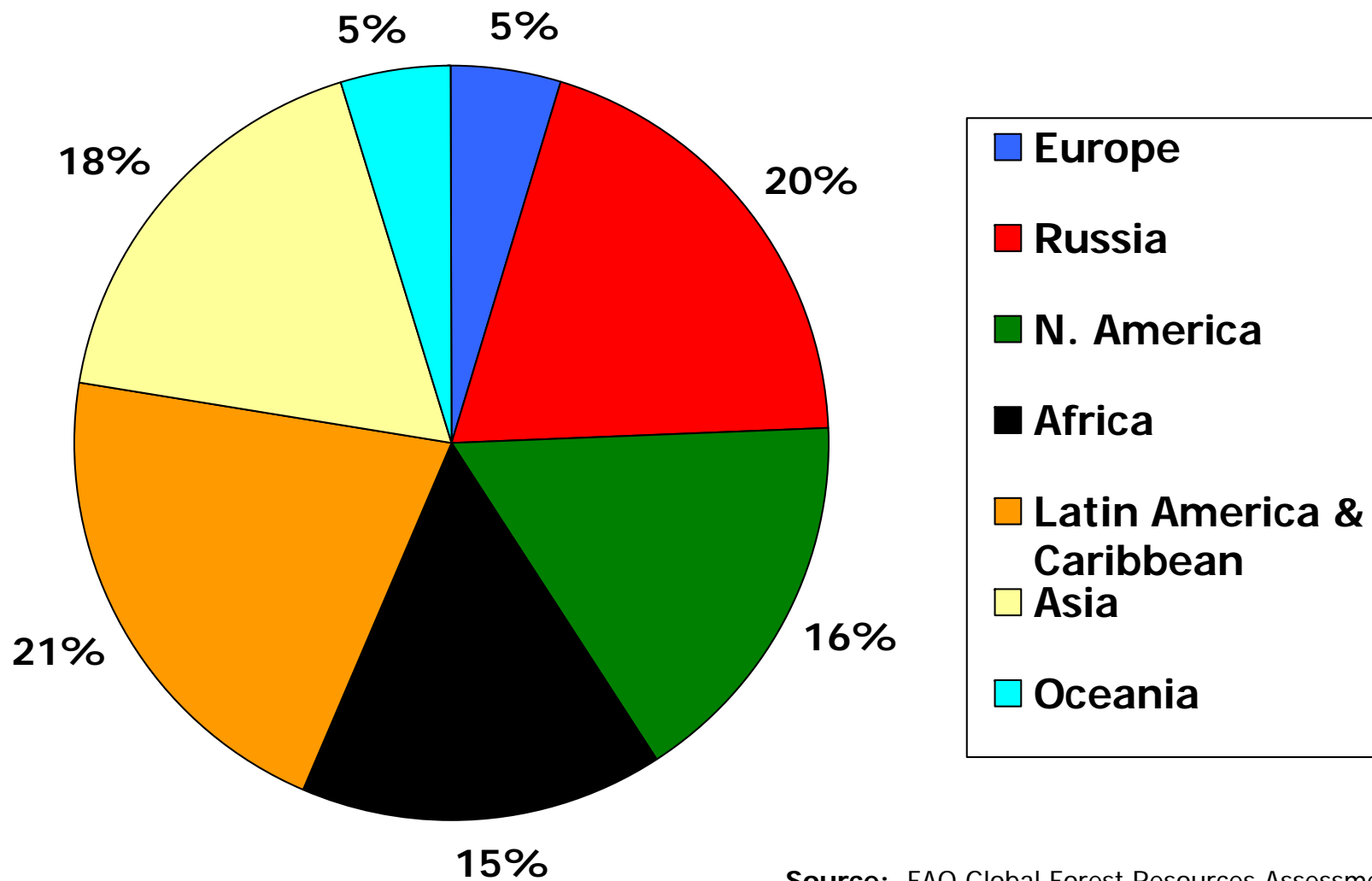
Source: FAO Global Forest Resources Assessment 2006



Wood Futures Conference
8 November 2007, London



World's forests with Russia identified



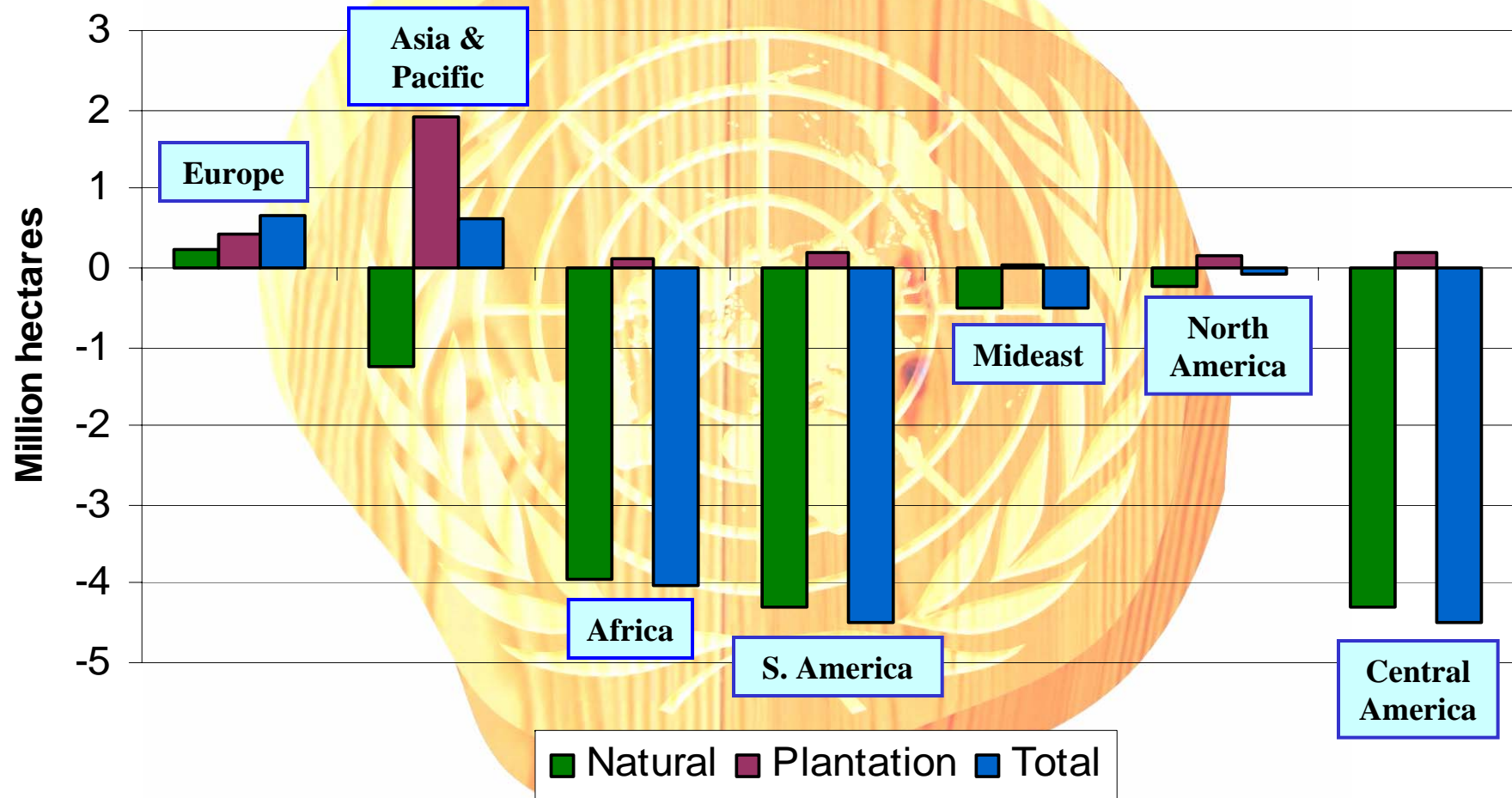
Source: FAO Global Forest Resources Assessment 2006



Wood Futures Conference
8 November 2007, London



Change in annual forest area, 1990-2000



Source: FAO Global Forest Resources Assessment 2000



Wood Futures Conference
8 November 2007, London



Change in annual forest area, 1990-2000 (million hectares)

	Deforestation	Increase	Net change
Tropics	-14.2	+1.9	-12.3
Temperate	-0.4	+3.3	+2.9
World	-14.6	+5.2	-9.4

Note: The change in annual forest area was recalculated at **-7.3** million ha per year from 2000 to 2005 by the FAO Global Forest Resources Assessment in 2005.

Source: FAO Global Forest Resources Assessment 2000



Wood Futures Conference
8 November 2007, London



Causes of deforestation

- Forest conversion
 - Agricultural, including
 - Pastures for animals
 - Bioenergy plantations: palm oil, sugar cane
 - Urbanization
- Unsustainable forest management
 - Poor harvesting practices
 - Insufficient regeneration
 - Fire, insects, disease
 - Over harvest of fuelwood
- Poverty and over population



Forest resources in Europe*

- Only 60% of the annual growth is harvested
- Forest volume increases ~700,000 m³ daily
- Forest area growing: ~700,000 ha annually

* Europe = 43 countries for the UN Economic Commission for Europe

Source: UNECE/FAO Forest Resources Assessment



Wood Futures Conference
8 November 2007, London



State of Europe's forests

- Volume and area increasing
- Concern for health, vitality and fire
- Protected forests (to some degree): 12%
- Productive functions maintained
- Plantations: 3%
- Biodiversity an issue
- Socio-economic functions important



Wood Futures Conference
8 November 2007, London



Increasing forests in the UNECE region: % of annual growth harvested

Europe	60%
Russia	34%
North America	80%

Sources: *State of the World's Forests*, 2007 and UNECE/FAO Forest Resources Assessment



Wood Futures Conference
8 November 2007, London



Summary of forest resources

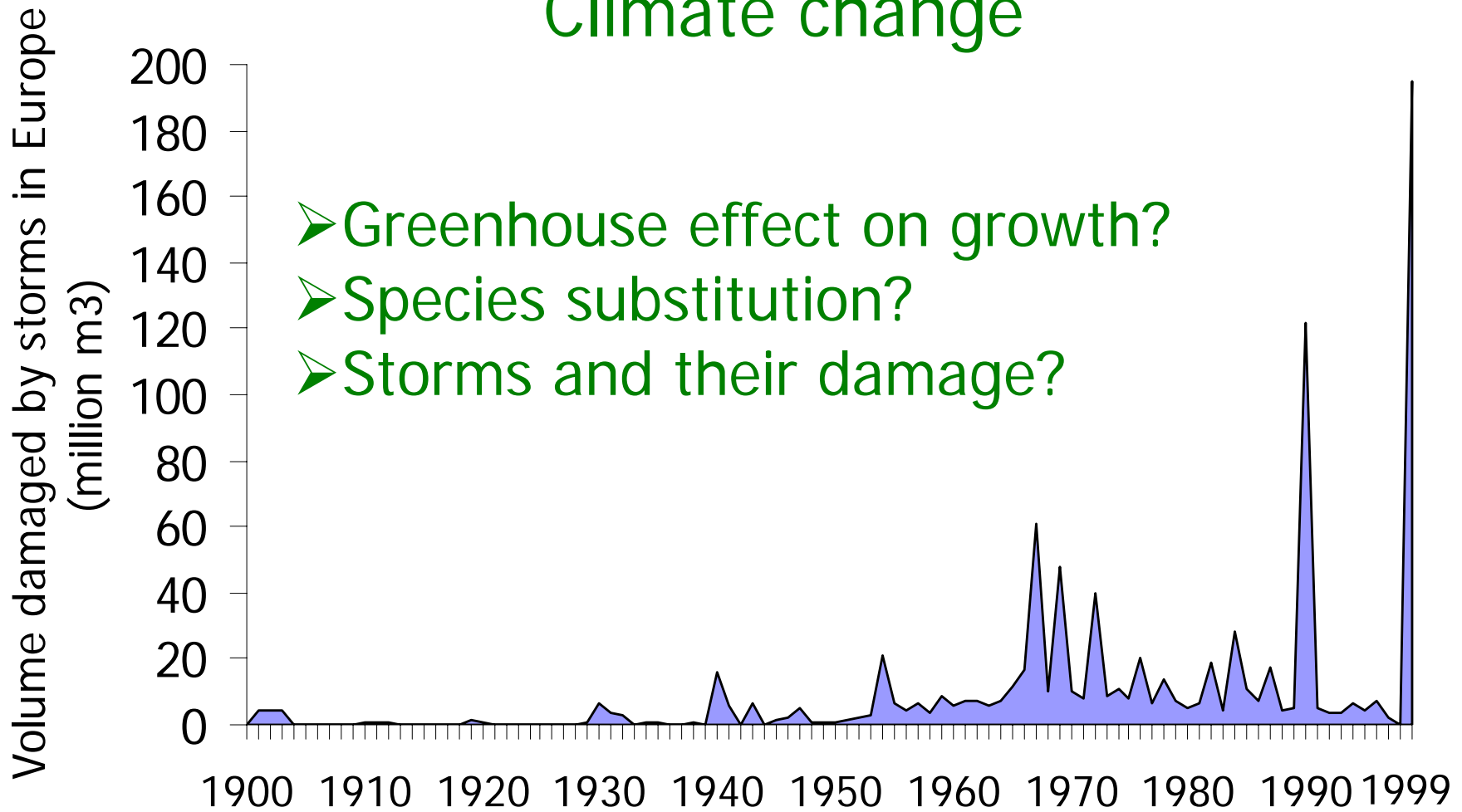
- Temperate forests: Annual harvests below growth, “overproduction” in forests
- Great variation in utilization of annual growth
- Standing timber volume increasing constantly in temperate forests
- Plantations increasing in area and volume
- Deforestation generally in tropical forests; some exceptions
- Increased demands on forests for non-wood products and services, e.g. recreation
- Escalating demand for wood fuels



Wood Futures Conference
8 November 2007, London



Factor "X" for forests: Climate change



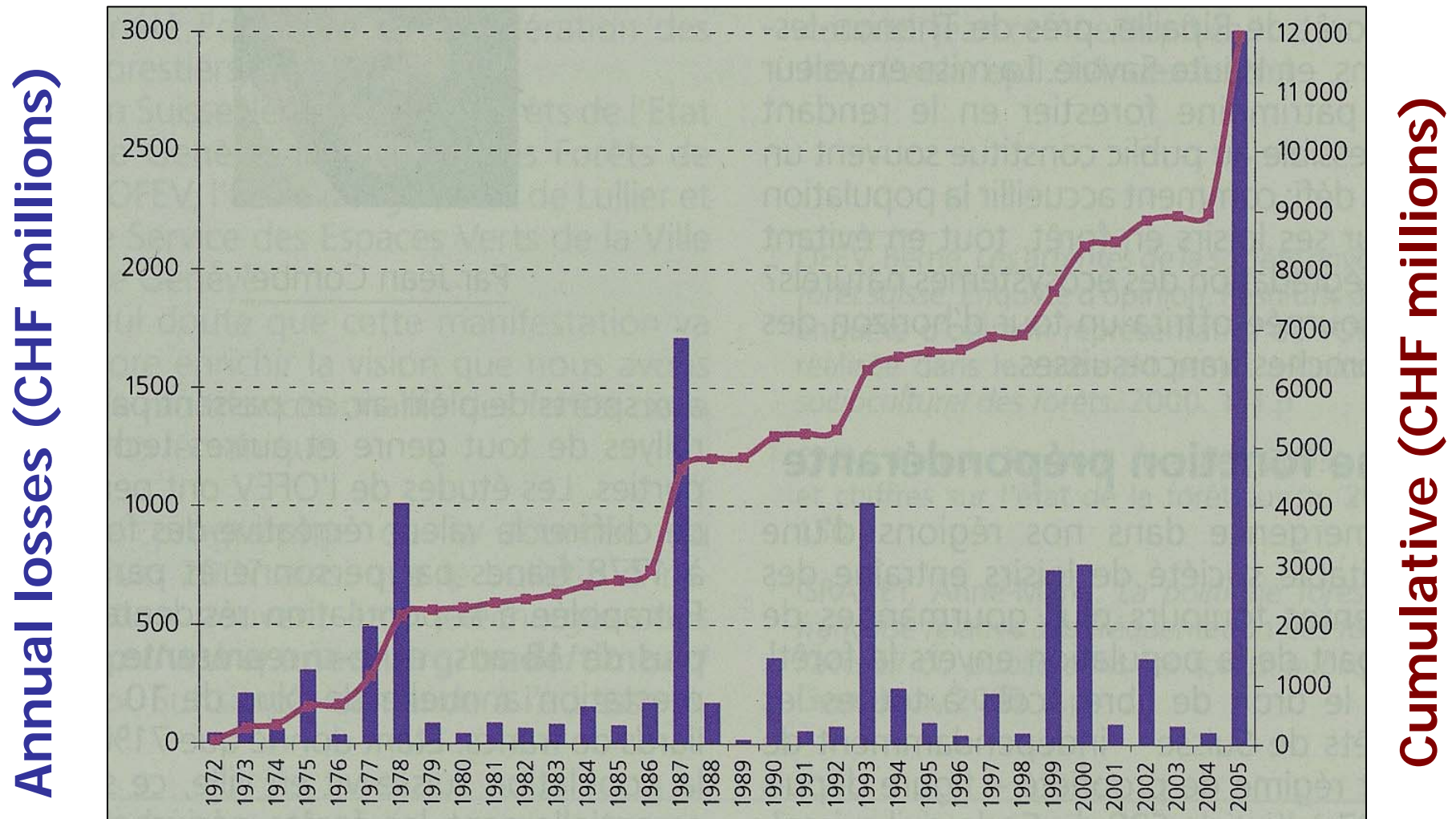
Source: UNECE/FAO *Forest Products Annual Market Review*



Wood Futures Conference
8 November 2007, London



Storm damage in Swiss forests, 1972-2005



Source: Institute fédérale de Recherche Suisse, 2007



Wood Futures Conference
8 November 2007, London





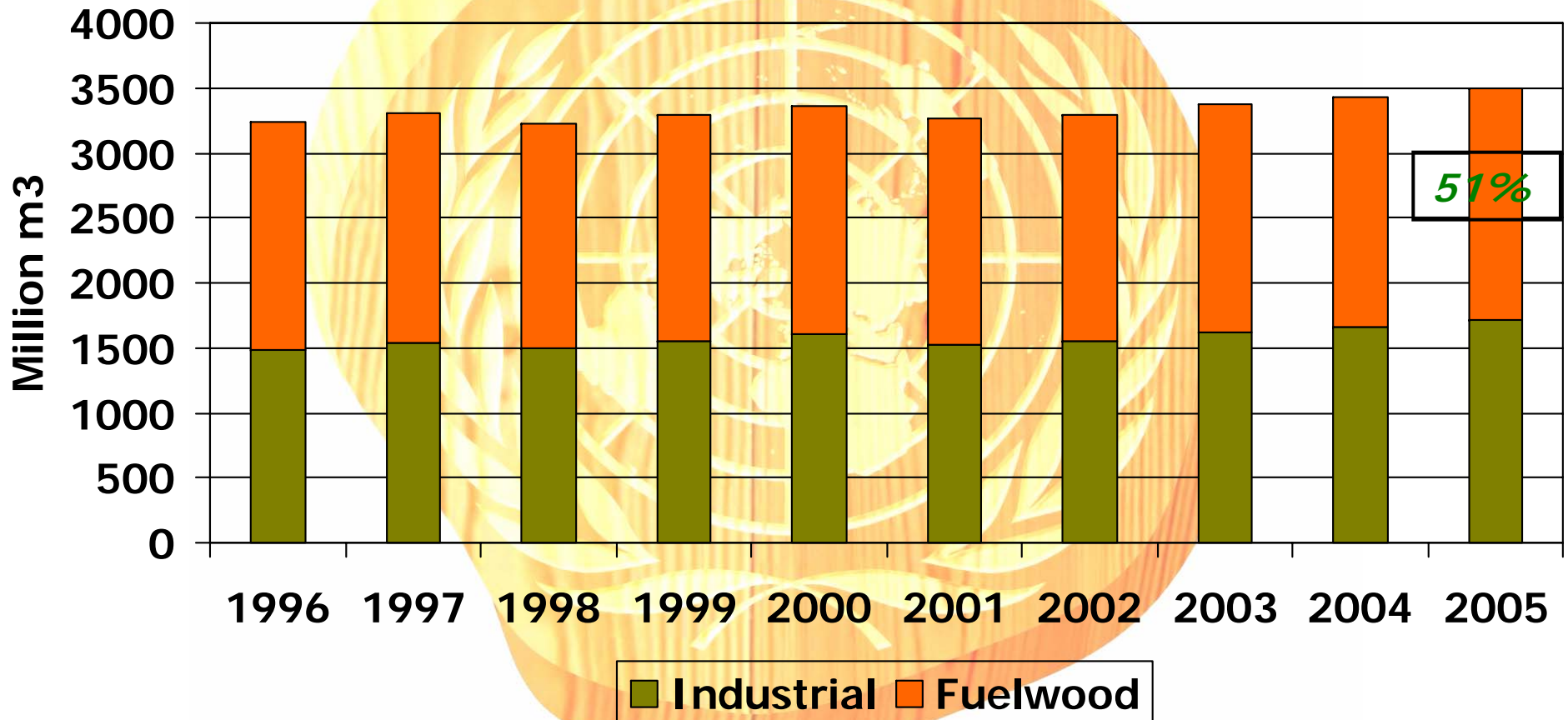
II. Forest products markets



Wood Futures Conference
8 November 2007, London



World roundwood production



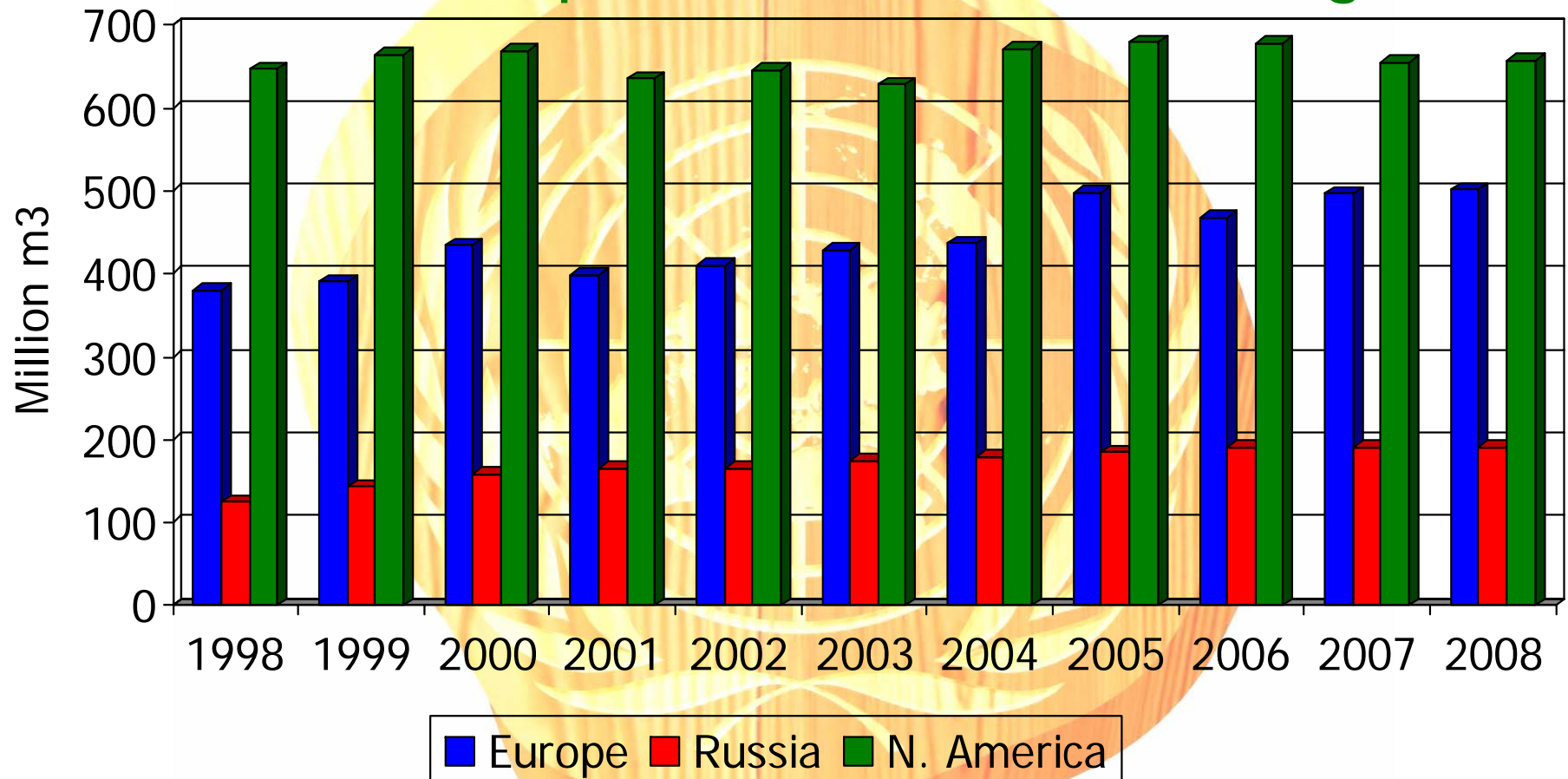
Source: FAO Statistics



Wood Futures Conference
8 November 2007, London



Roundwood production in UNECE region



Total roundwood = logs, pulpwood, fuelwood, other.

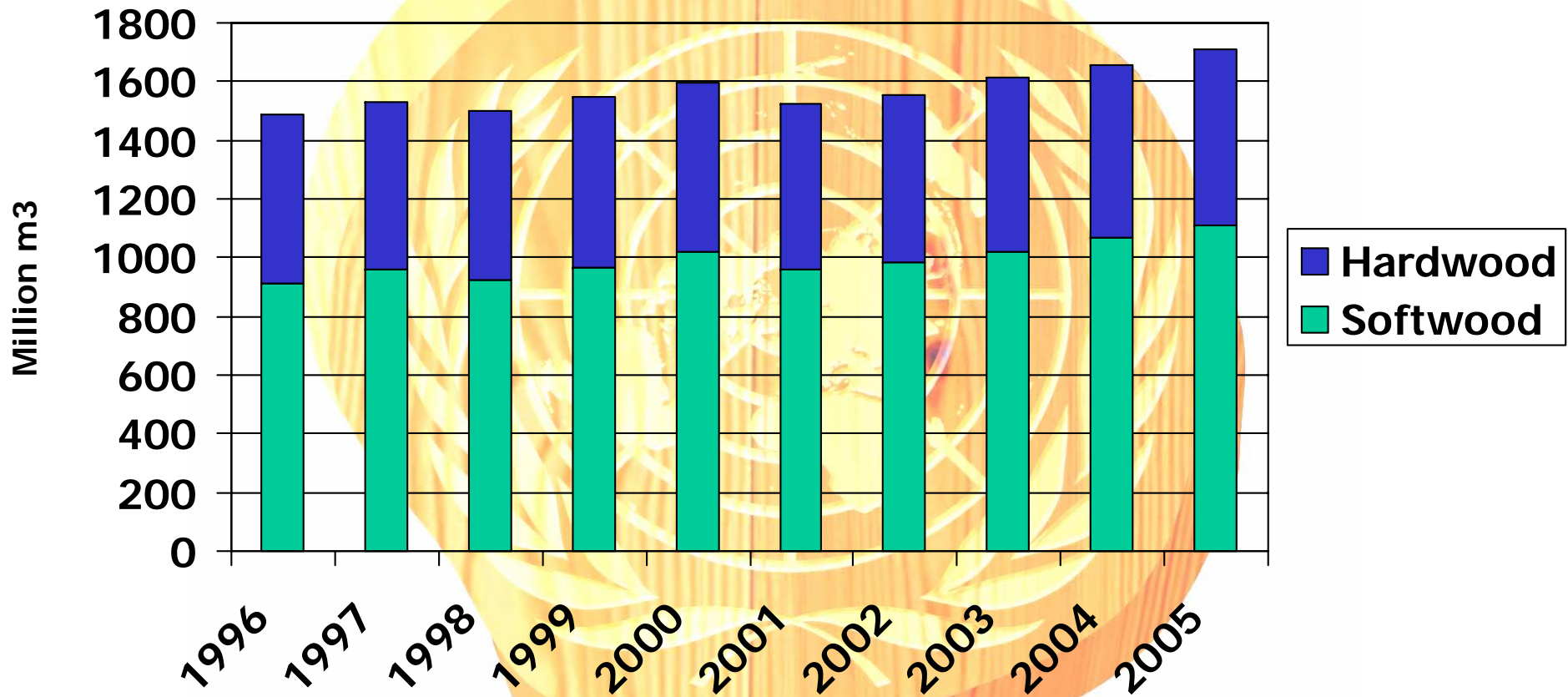
Sources: UNECE/FAO TIMBER database & UNECE Timber Committee Forecasts, October 2007



Wood Futures Conference
8 November 2007, London



World industrial wood production



Industrial roundwood = logs + pulpwood + others
(no fuelwood)

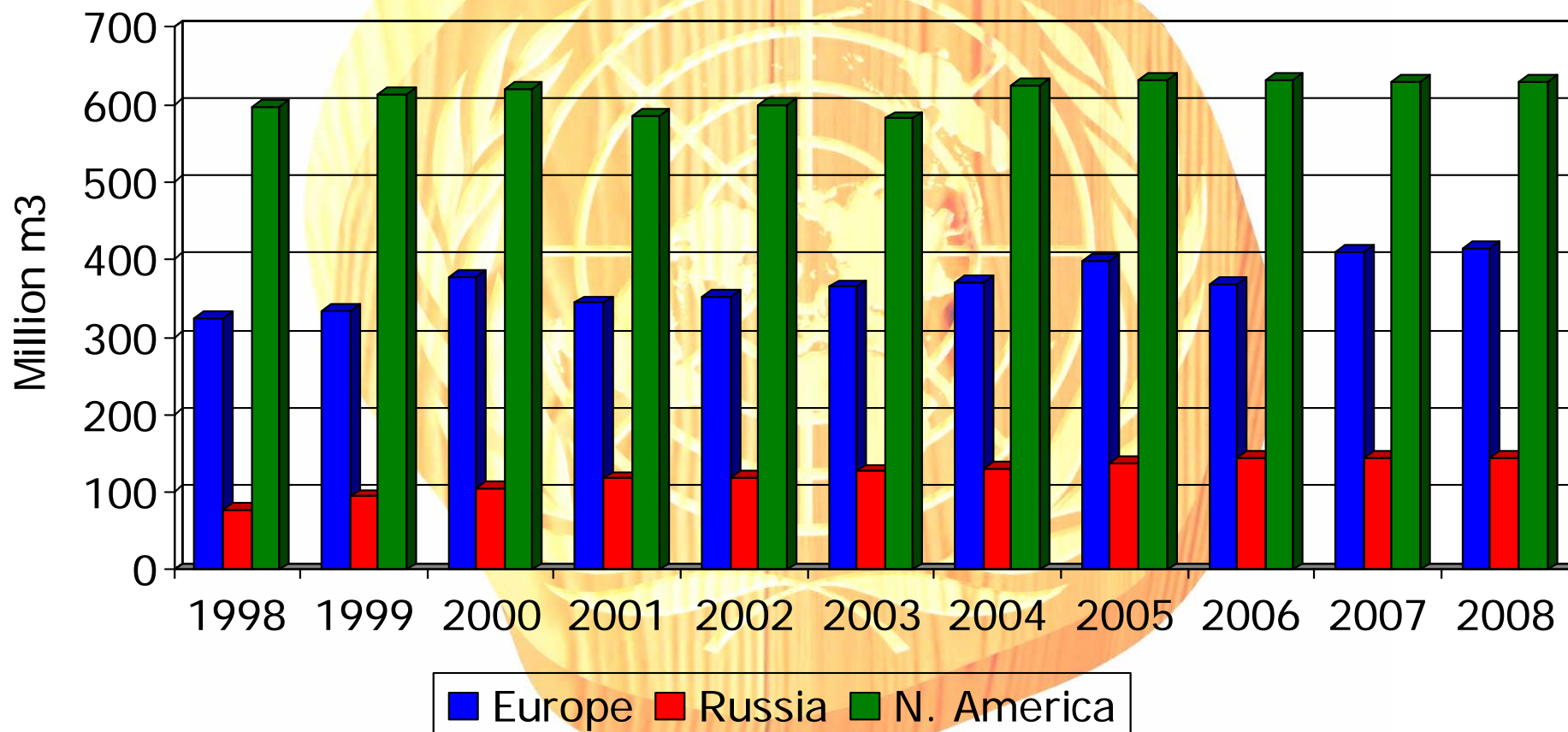
Source: FAO Statistics



Wood Futures Conference
8 November 2007, London



Industrial roundwood production in UNECE region



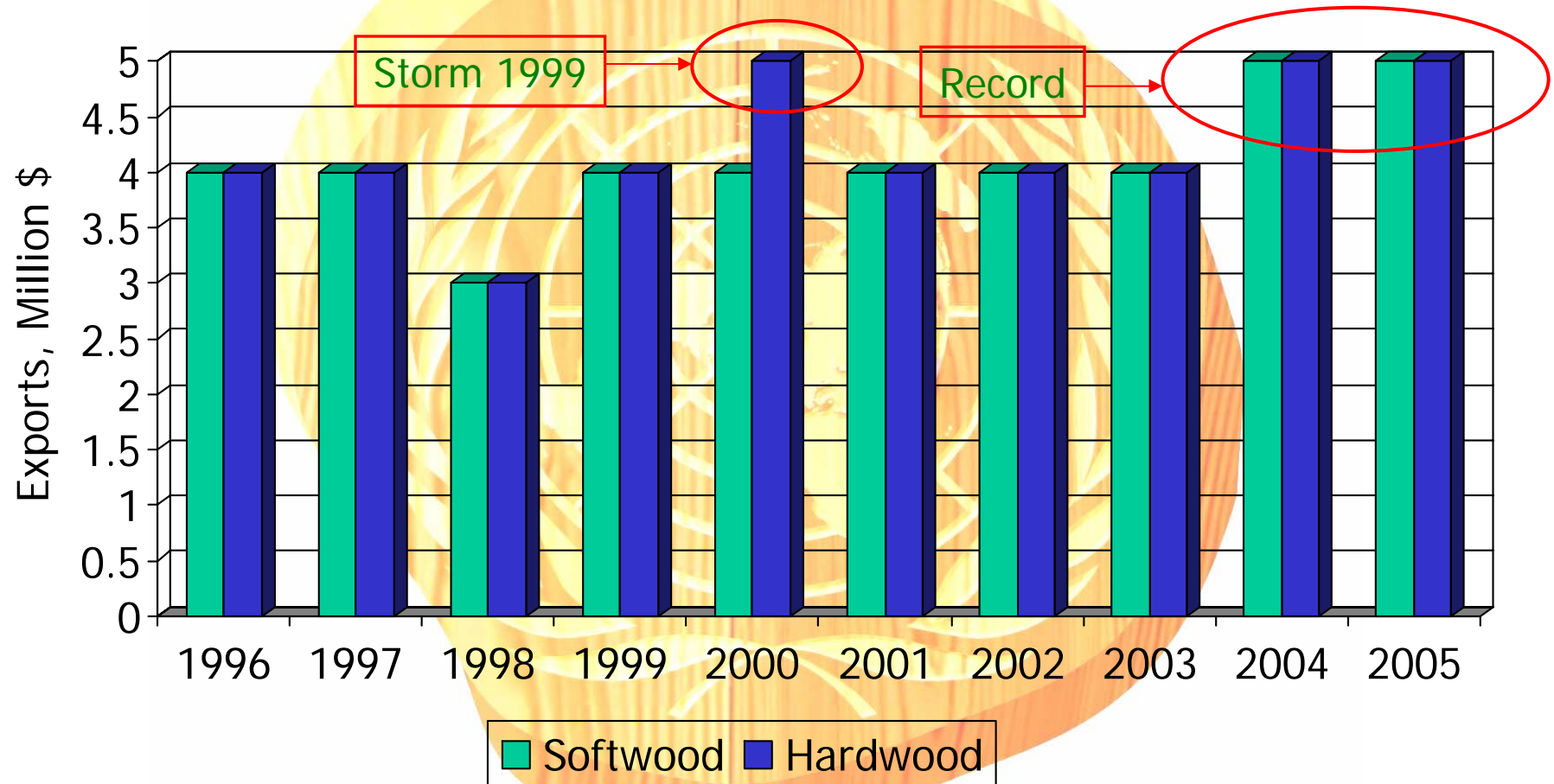
Sources: UNECE/FAO TIMBER database, UNECE Timber Committee forecasts, October 2007



Wood Futures Conference
8 November 2007, London



World trade of industrial roundwood



(Worldwide, exports = imports)

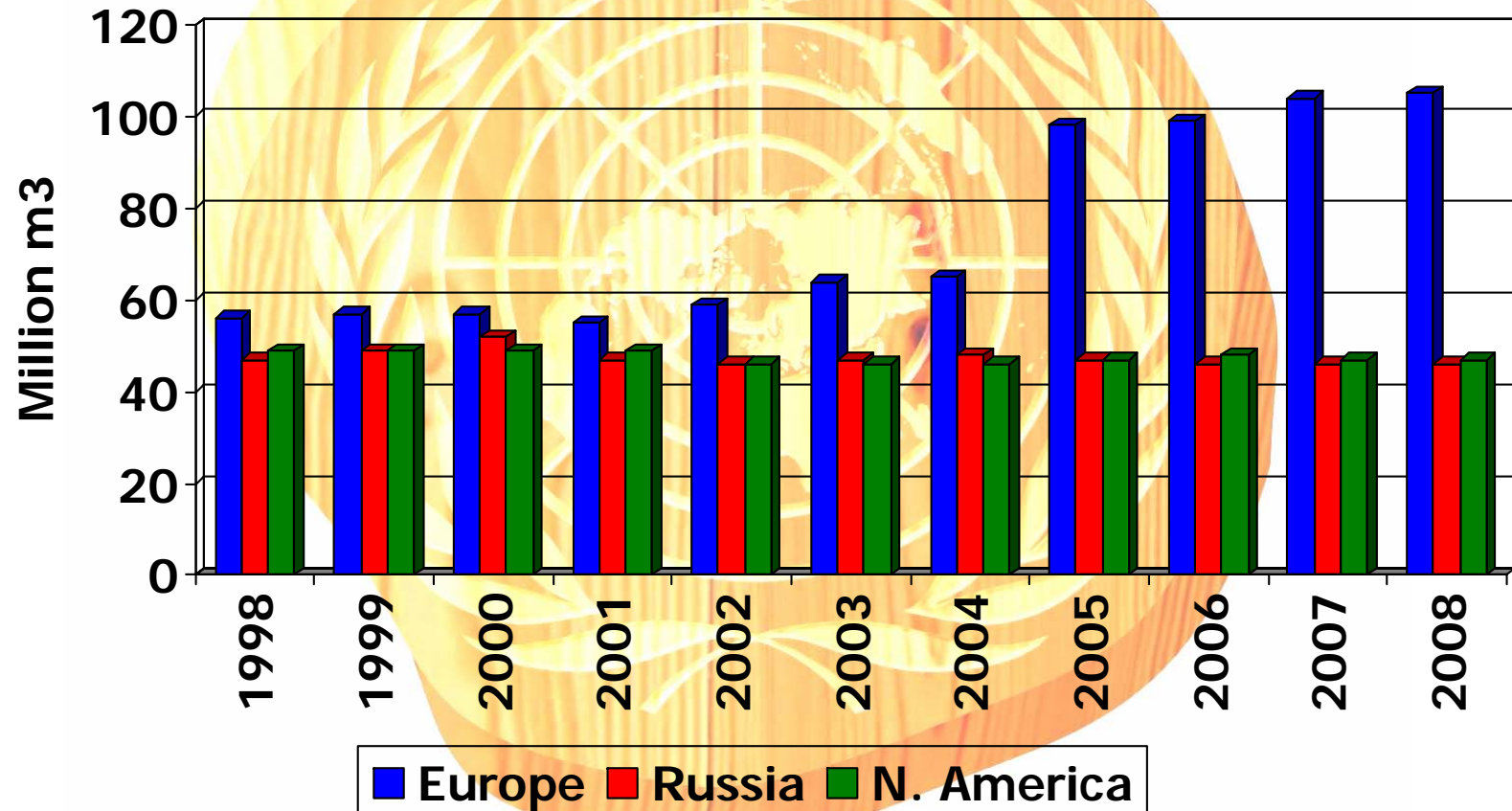
Source: FAO Statistiques



Wood Futures Conference
8 November 2007, London



Wood fuel production



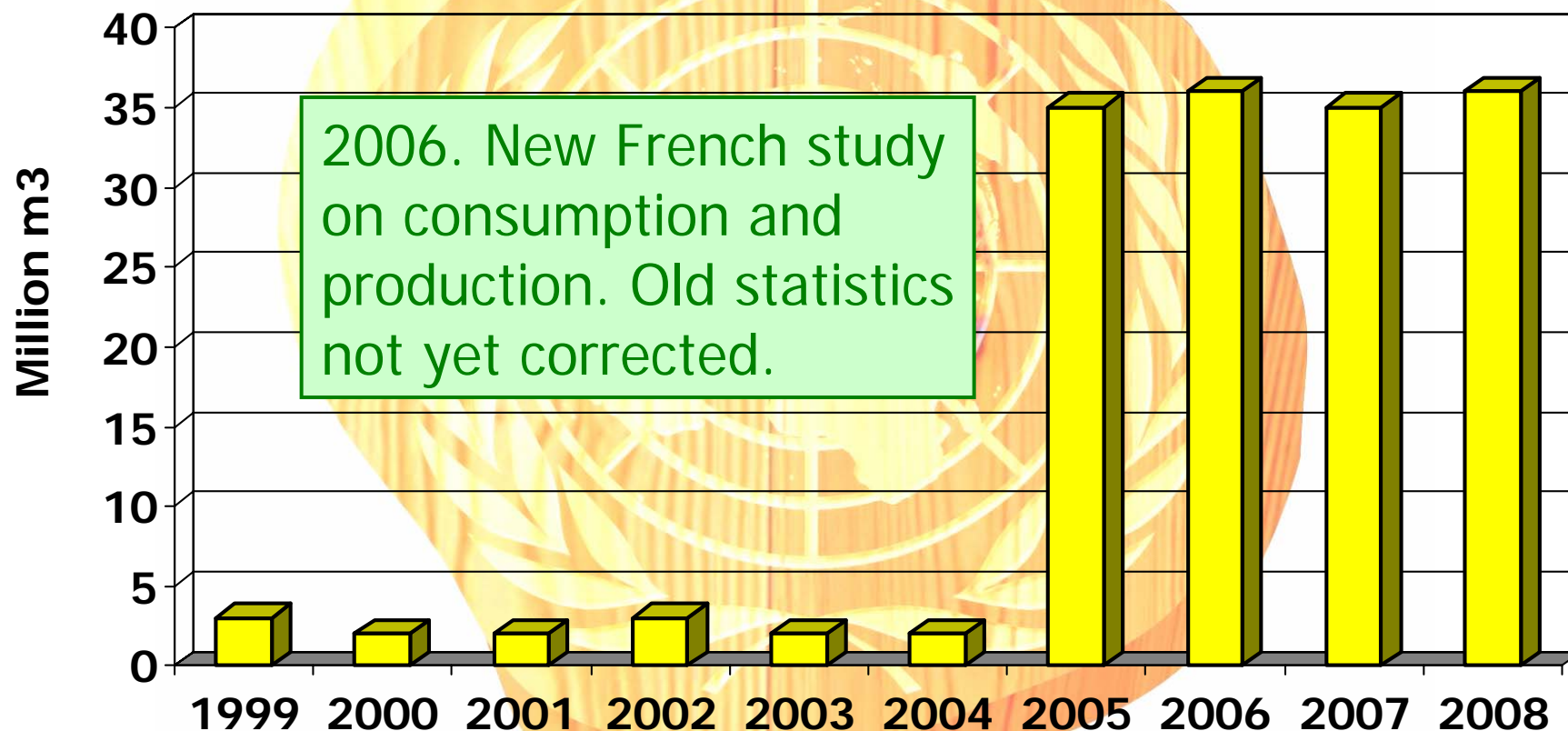
Sources: UNECE/FAO TIMBER database, UNECE Timber Committee forecasts, October 2007



Wood Futures Conference
8 November 2007, London



French fuelwood production



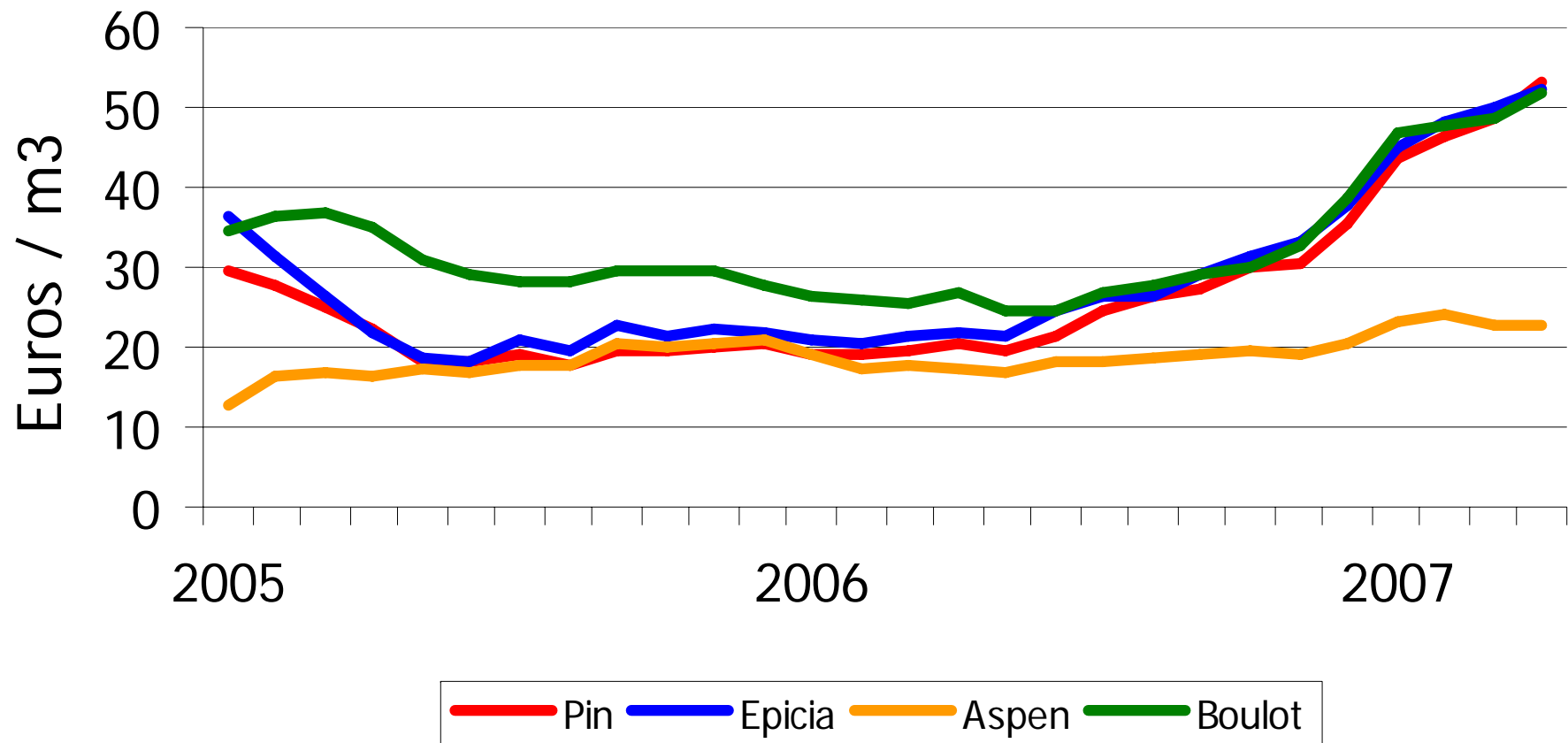
Sources: UNECE/FAO TIMBER database, and UNECE Timber Committee forecasts, October 2007



Wood Futures Conference
8 November 2007, London



European pulpwood prices rising



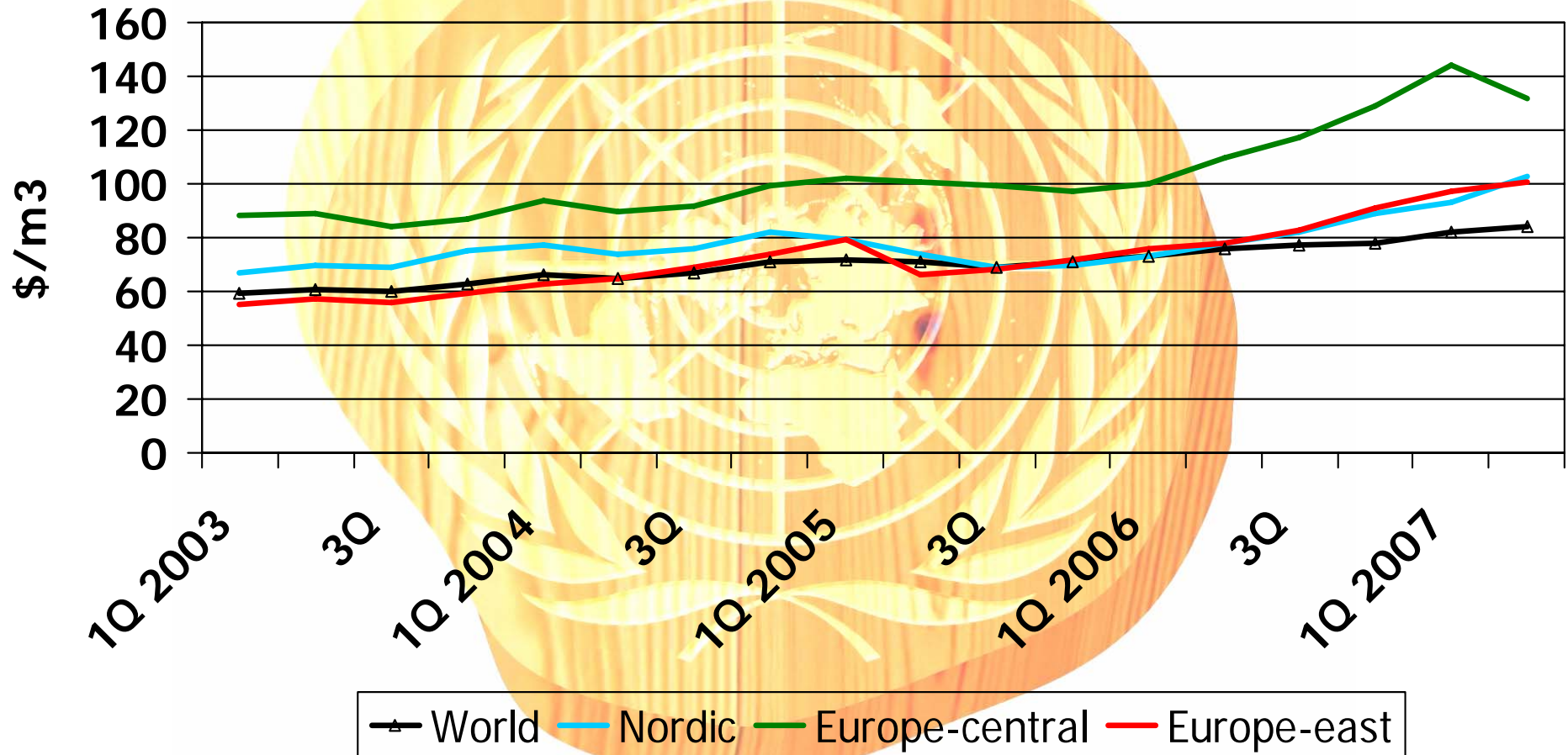
Source: Latvian Forest Industry Federation



Wood Futures Conference
8 November 2007, London



Softwood log prices



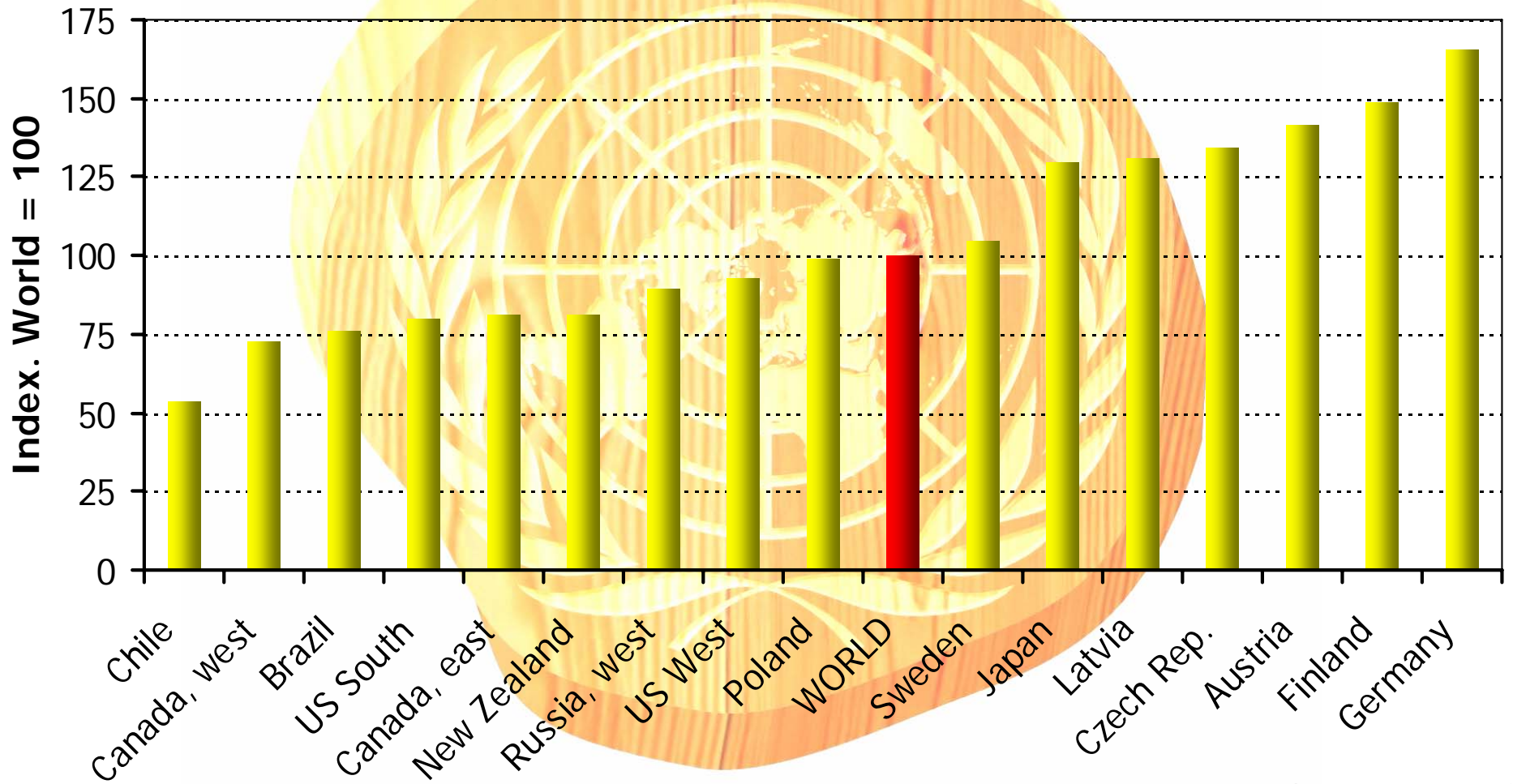
Source: World Resources International



Wood Futures Conference
8 November 2007, London



Softwood log prices (Second semester, 2007)



Source: Wood Resource Quarterly



Wood Futures Conference
8 November 2007, London





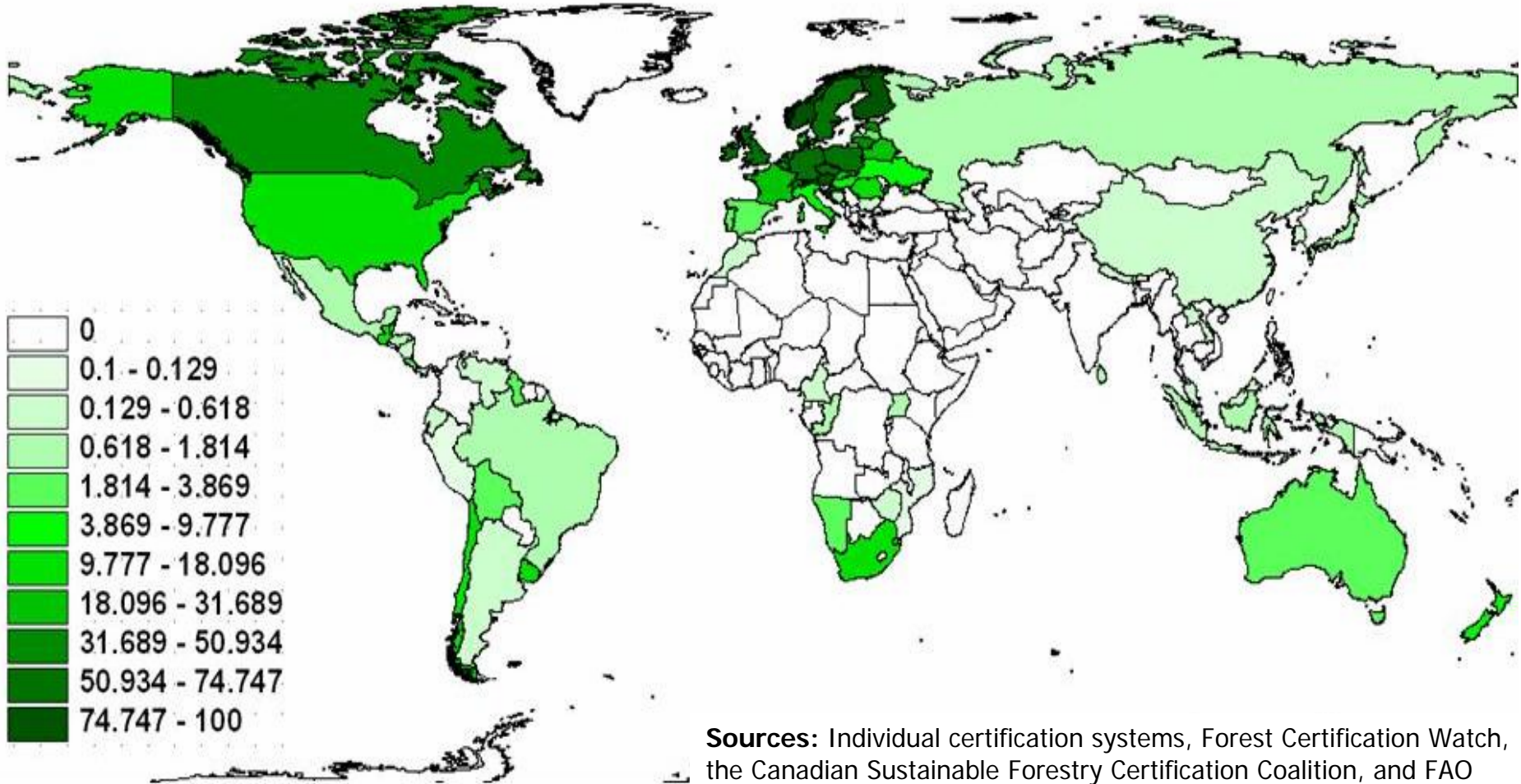
III. Certified forest products



Wood Futures Conference
8 November 2007, London



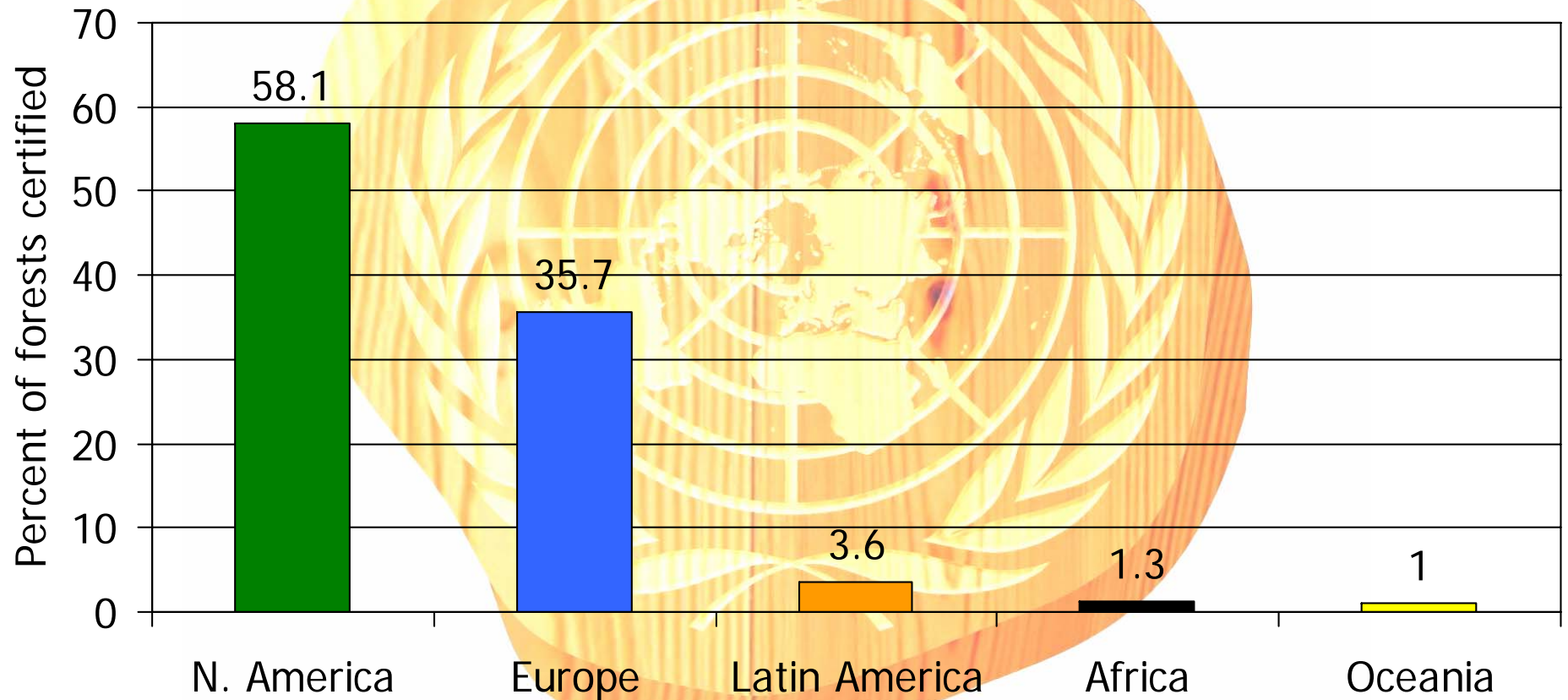
Global distribution of certified forest area as a percentage of total forest area by countries, 2007



Wood Futures Conference
8 November 2007, London



Distribution of certified forests, 2007



Sources: Individual certification systems, Forest Certification Watch, the Canadian Sustainable Forestry Certification Coalition



Wood Futures Conference
8 November 2007, London



Certification summary

- ~300 million hectares, 8% world's forests
- Mostly temperate, only ~6% tropic
- Equivalent of industrial roundwood
 - ~400 million m³
 - ~25% of world production
- New drivers
 - Public procurement policies
 - Biomass certification



UNECE Timber Committee on certification

- Chain-of-custody tracing important to achieve full certification benefits
- N. American drivers
 - Paper industry holds most chain-of-custody certificates
 - Publishers, as paper consumers
- US Green Building Council is driving certification via LEED rating systems
- Green building rating systems should accept all internationally recognized sustainable forest management standards
- Woodfuels certification to drive further certification

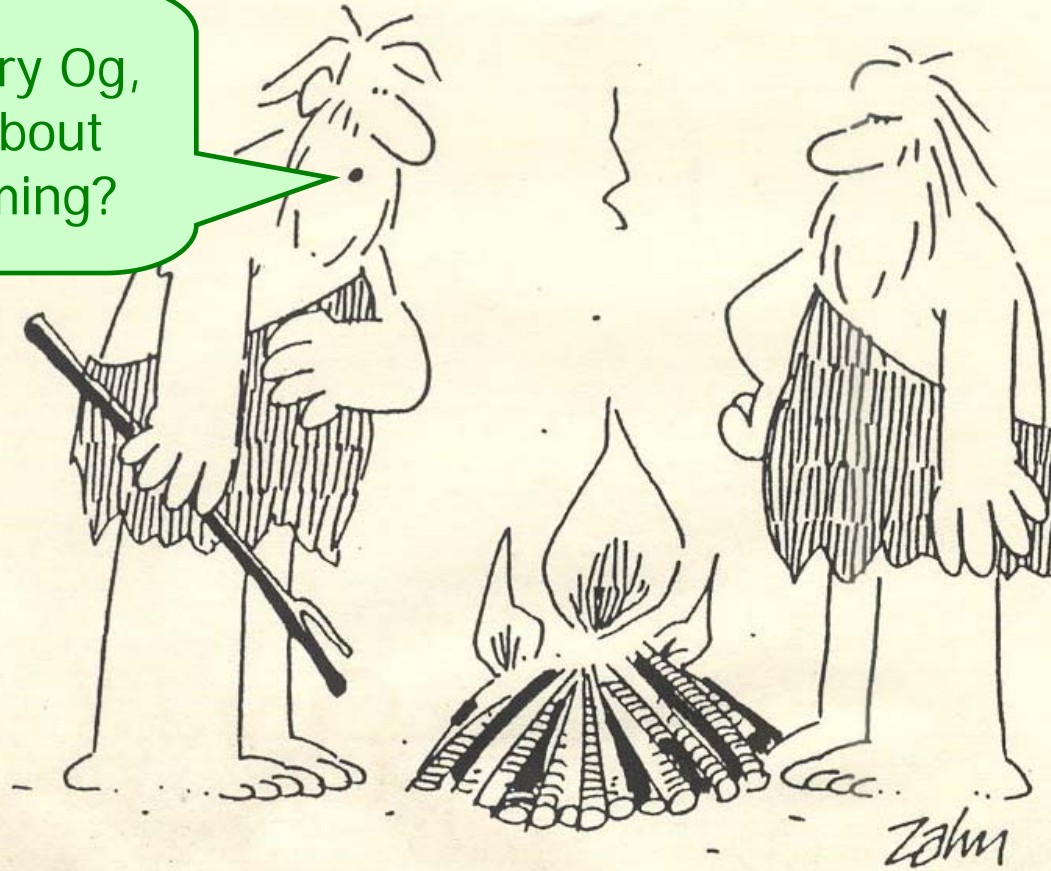


Wood Futures Conference
8 November 2007, London



IV. Wood energy (the oldest and newest market)

Nice discovery Og,
but what about
global warming?



Wood Futures Conference
8 November 2007, London



Situation today

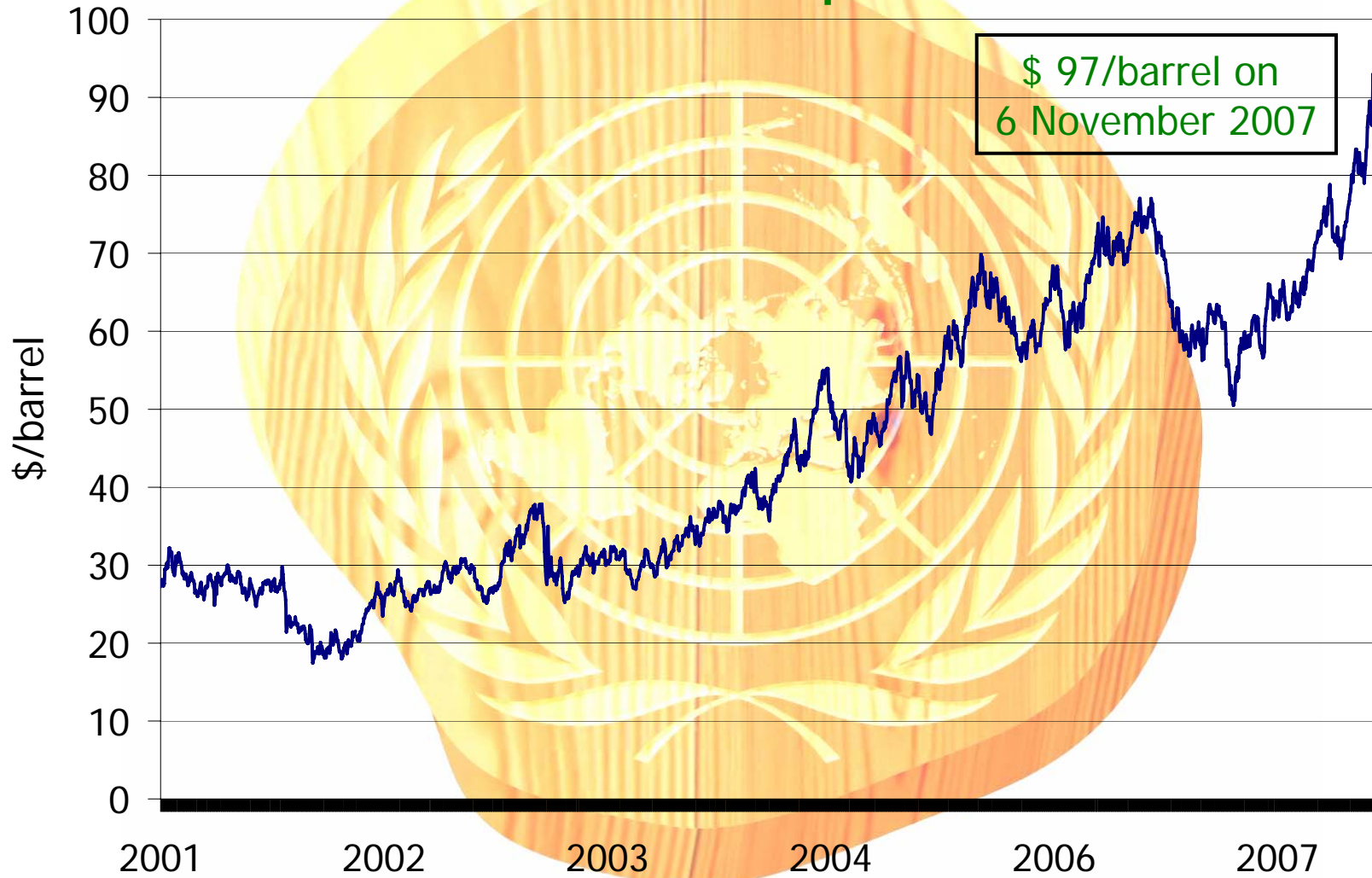
- Record high petroleum prices
- Energy sources security problems
- Climate change policies
- Wood industries' raw material needs increasing
- Wood energy production increasing
- Roundwood and residue prices increasing



Wood Futures Conference
8 November 2007, London



Record oil prices



Source: US Dept. of Energy, Nov. 2007



Wood Futures Conference
8 November 2007, London



Energy security

- European oil and gas imports from Russia
- China's energy consumption escalating
- War in Iraq (2002+)
- Conflict between Turkey and Kurds (Oct. 2007)
- Desire for secure sources, especially domestic and price stabilization



Wood Futures Conference
8 November 2007, London



Climate change policies

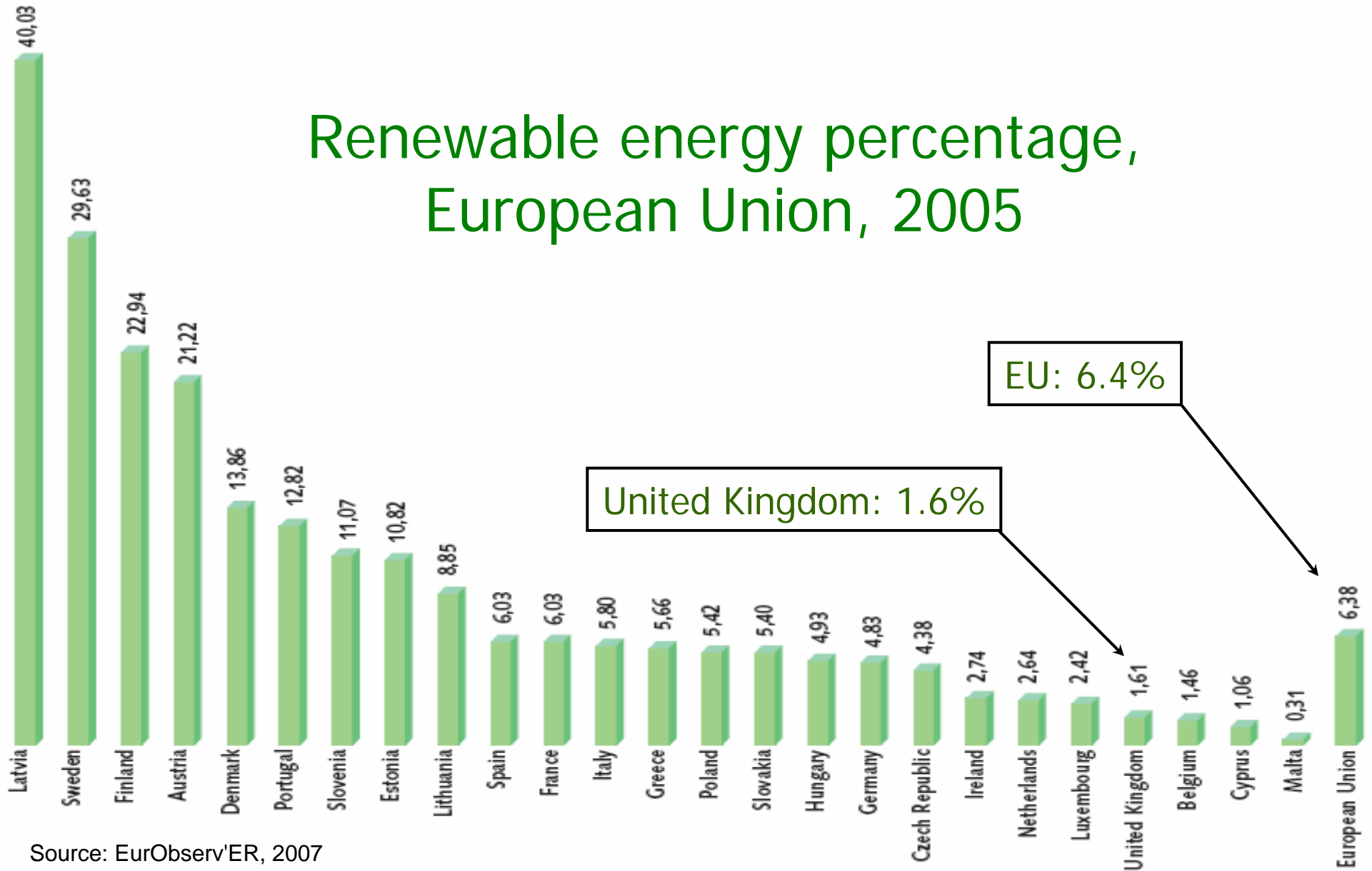
- Kyoto Protocol
- European Union
 - 20% renewable energy in 2020
 - 20% increased efficiency in 2020
- Biofuels rapidly expanding – policy push



Wood Futures Conference
8 November 2007, London



Renewable energy percentage, European Union, 2005

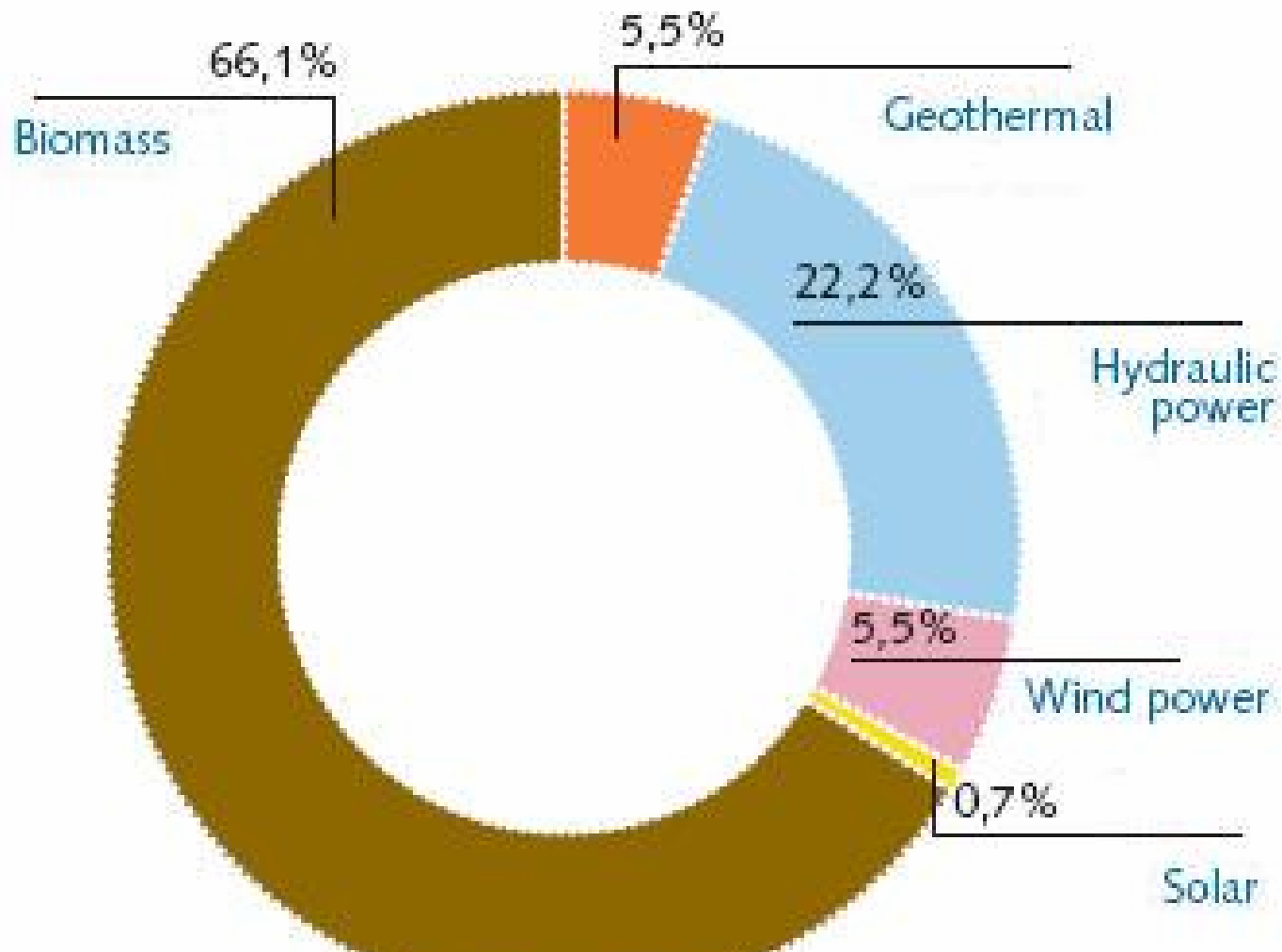


Source: EurObserv'ER, 2007



Wood Futures Conference
8 November 2007, London





EU Renewable energy sources, 2005

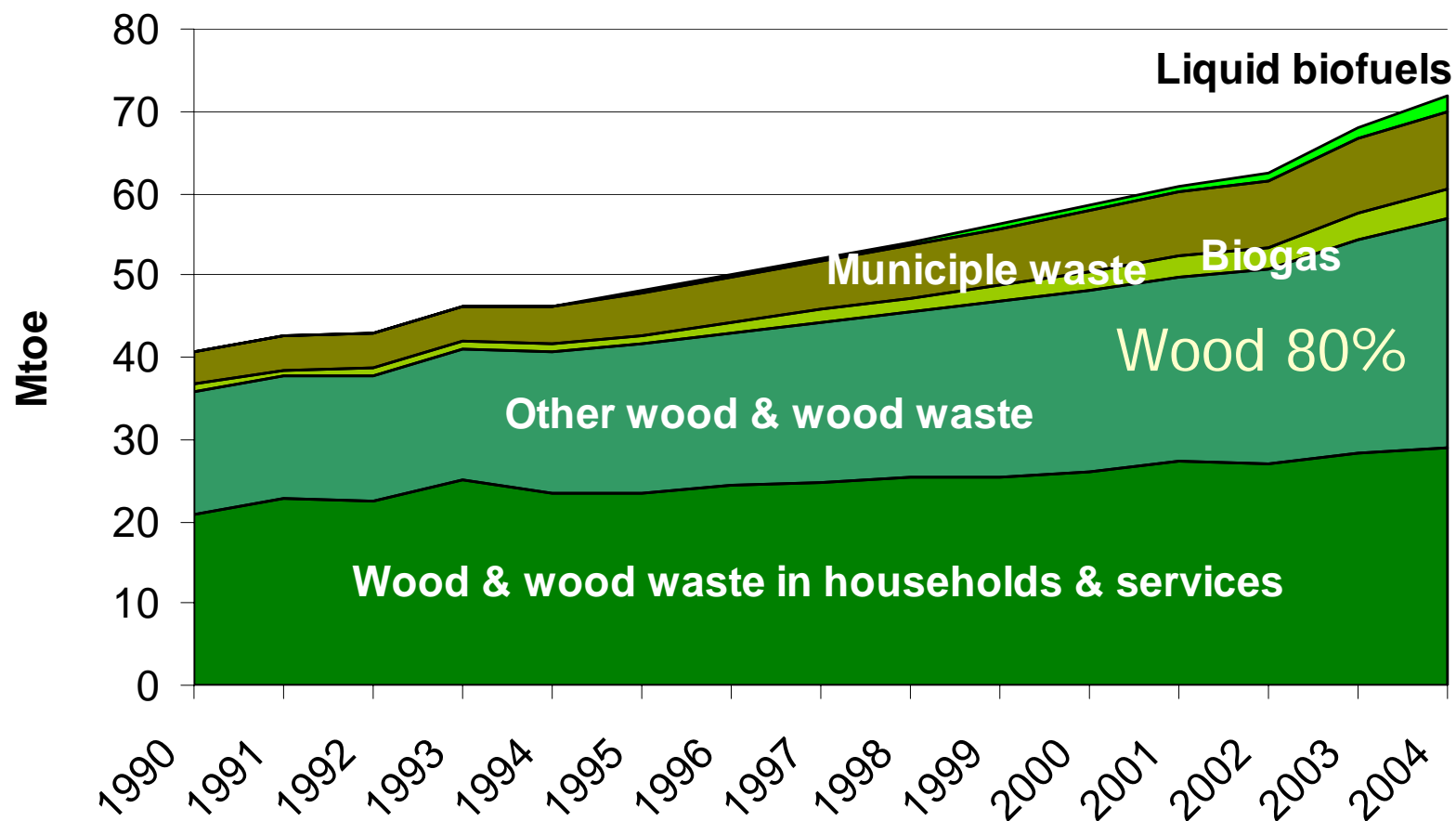
Source: EurObserv'ER, 2007



Wood Futures Conference
8 November 2007, London



Utilization of biomass in the EU



Source: EurObserv'ER, 2007



Wood Futures Conference
8 November 2007, London



Wood for the wood-based industries

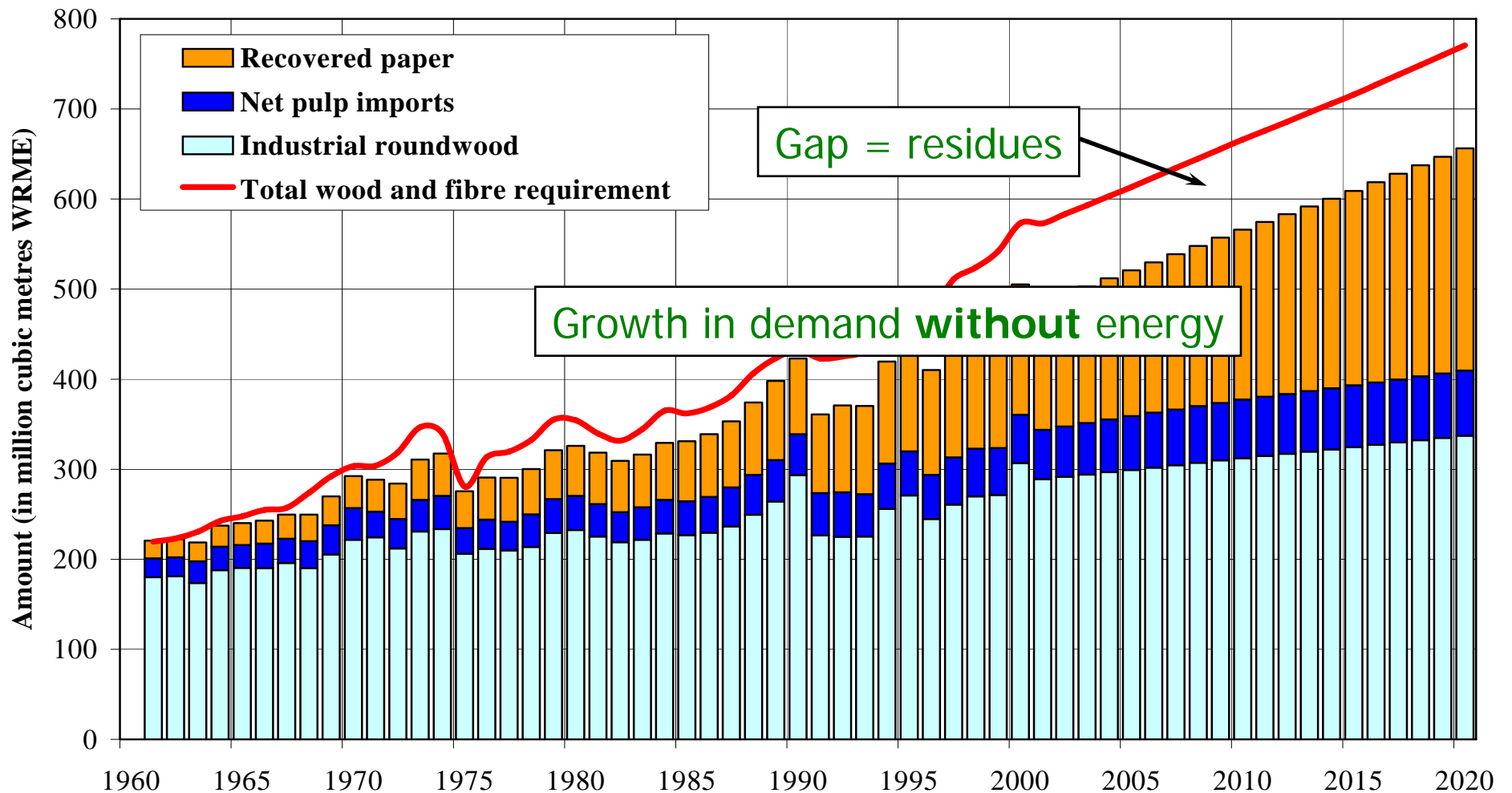
- Increasing demand forecast
- Wood raw material prices climbing
- Competition for roundwood and residues
 - Local and regional
 - Short-term intense!
 - Medium term?



Wood Futures Conference
8 November 2007, London



Demand for wood and fibre in western Europe, **without** energy, 1960-2020



WRME = Equivalent de bois brut

Source: UNECE/FAO European Forest Sector Outlook Study, 2005

Results of a UNECE/FAO study on “Wood resources availability and demands: Implications of renewable energy policies”

- Wood is the major renewable energy source in Europe
- Woodfuel consumption much greater than previously measured
- Lack precise statistics
- Increasing wood energy changes long-term forecasts for the sector's wood needs



Wood Futures Conference
8 November 2007, London



Dilemma or opportunity? (million m³)

Year	Supply	Demand	"Gap"
2005	775	821	-47
2010	791	976	-185
2020	825	1274	-448

Source: UNECE/FAO "Wood resources availability and demands: Implications of renewable energy policies", 2007.



Wood Futures Conference
8 November 2007, London



How to fill the “gap”

- Increase harvests from European forests
 - More of annual growth
 - More standing timber
- Remove more biomass from forests
 - Tree tops
 - Branches, needles, leaves
- Harvest wood outside forests (urban, hedgerows)
- Increase wood recycling and residue reuse
- Import biomass, wood fuels
- Improve energy use efficiency



Possible consequences of a future gap

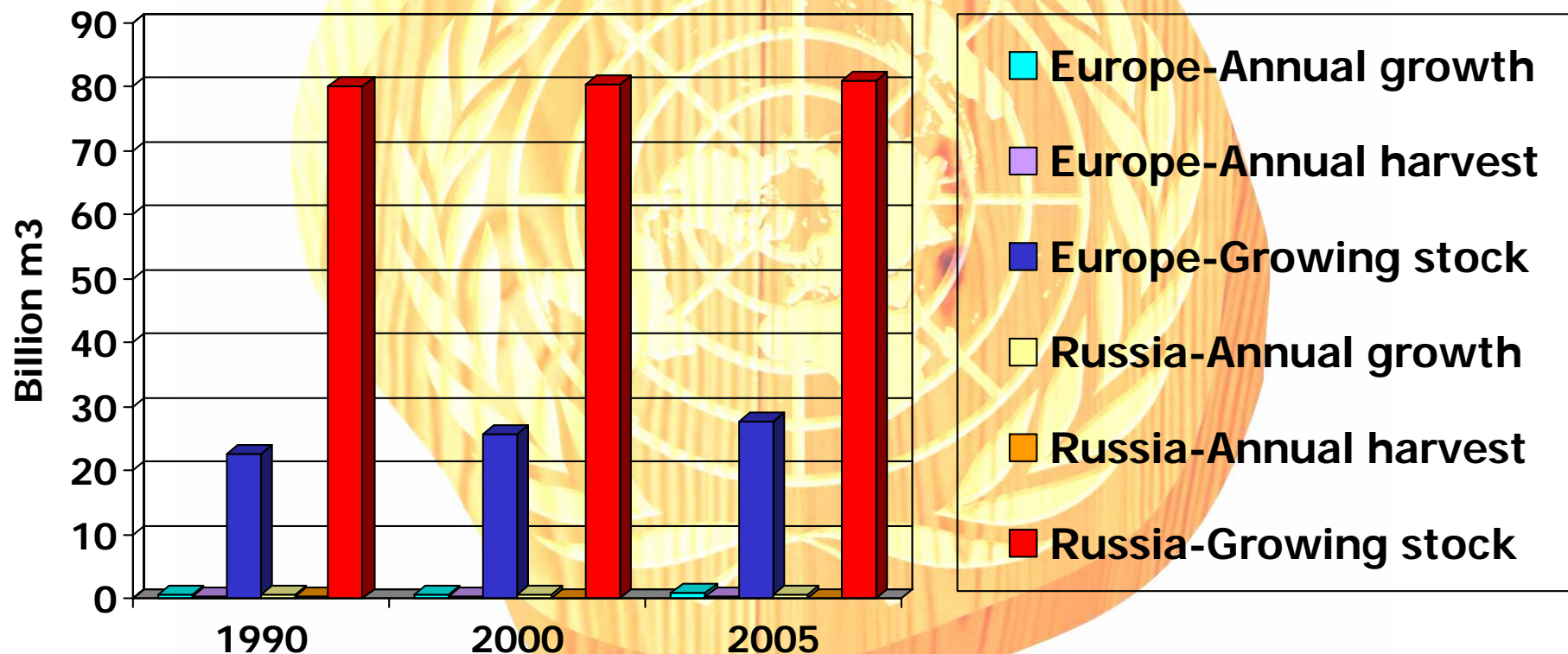
- Renewable energy targets not achieved
- Goals achieved, but not only with wood
 - Other sources of biomass
 - Other renewable energy sources
- Wood industry growth slowed
 - Raw material unavailable
 - Price of raw material too expensive



Wood Futures Conference
8 November 2007, London



Import more fibre? From Russia??



Source: UNECE/FAO Forest Resources Assessment

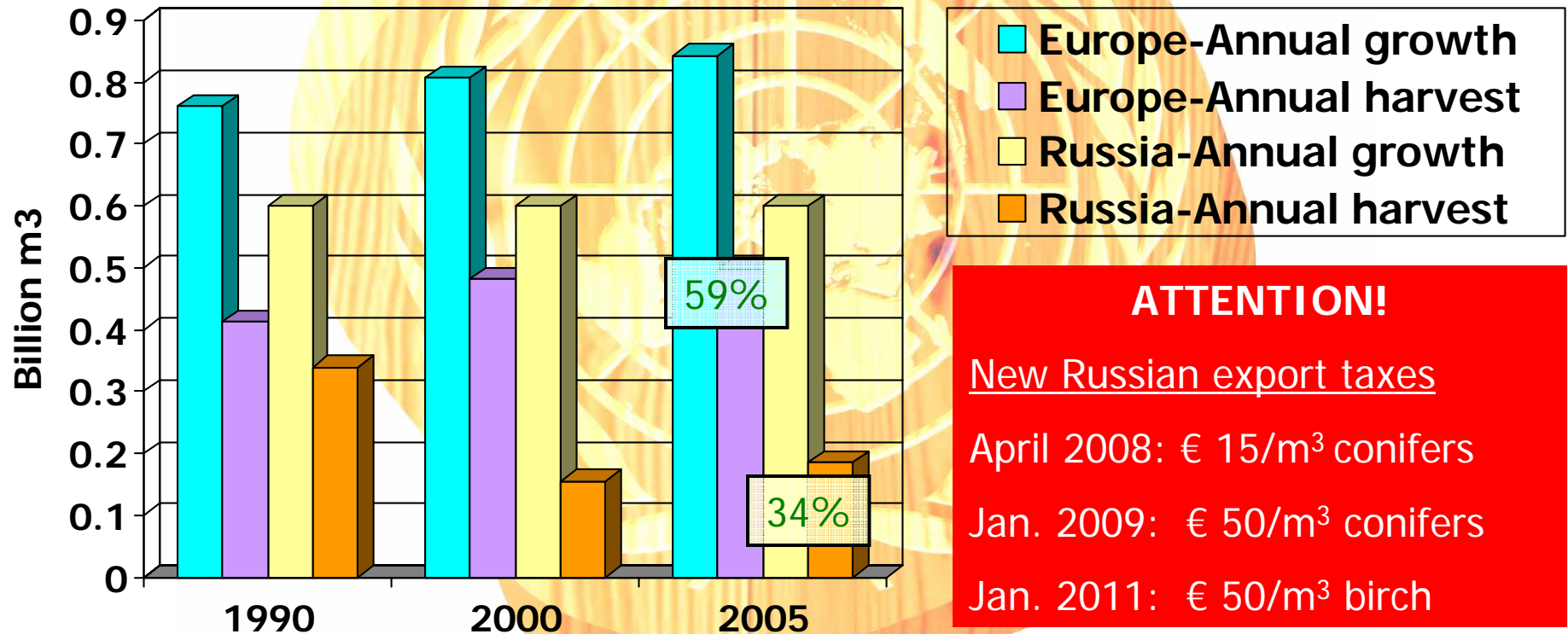


Wood Futures Conference
8 November 2007, London



Import more fibre? From Russia??

Annual growth vs. annual harvests



Source: UNECE/FAO Forest Resources Assessment



Wood Futures Conference
8 November 2007, London



Mobilize more wood

- Remember ~40% of annual growth remains in Europe's forests each year
- Confederation of European Forest Owners estimates on private forest lands
 - 150 million m³ more harvest possible (~half of surplus 40%)
 - 25% more production through better silviculture
- How many billion cubic metres of standing timber are enough?





V. Conclusions



Wood Futures Conference
8 November 2007, London



UNECE Timber Committee on “Energy”

- Entire forest sector being transformed by increased wood energy in the UNECE region
 - Forest owners and managers
 - Wood industry and markets
 - Bioenergy industry
- Growing wood energy is both a challenge and an opportunity
- Government policies must consider
 - Needs of the forest sector, especially the wood industry
 - Needs for bioenergy



Wood Futures Conference
8 November 2007, London



UNECE Timber Committee on “Energy”

- Interaction of policies and markets is complex
- Policies promoting bioenergy
 - Strongly increase wood energy consumption
 - Open important markets
 - Create new trade



Wood Futures Conference
8 November 2007, London



Policies can level or distort the playing field



Wood Futures Conference
8 November 2007, London



UNECE Timber Committee on “Energy”

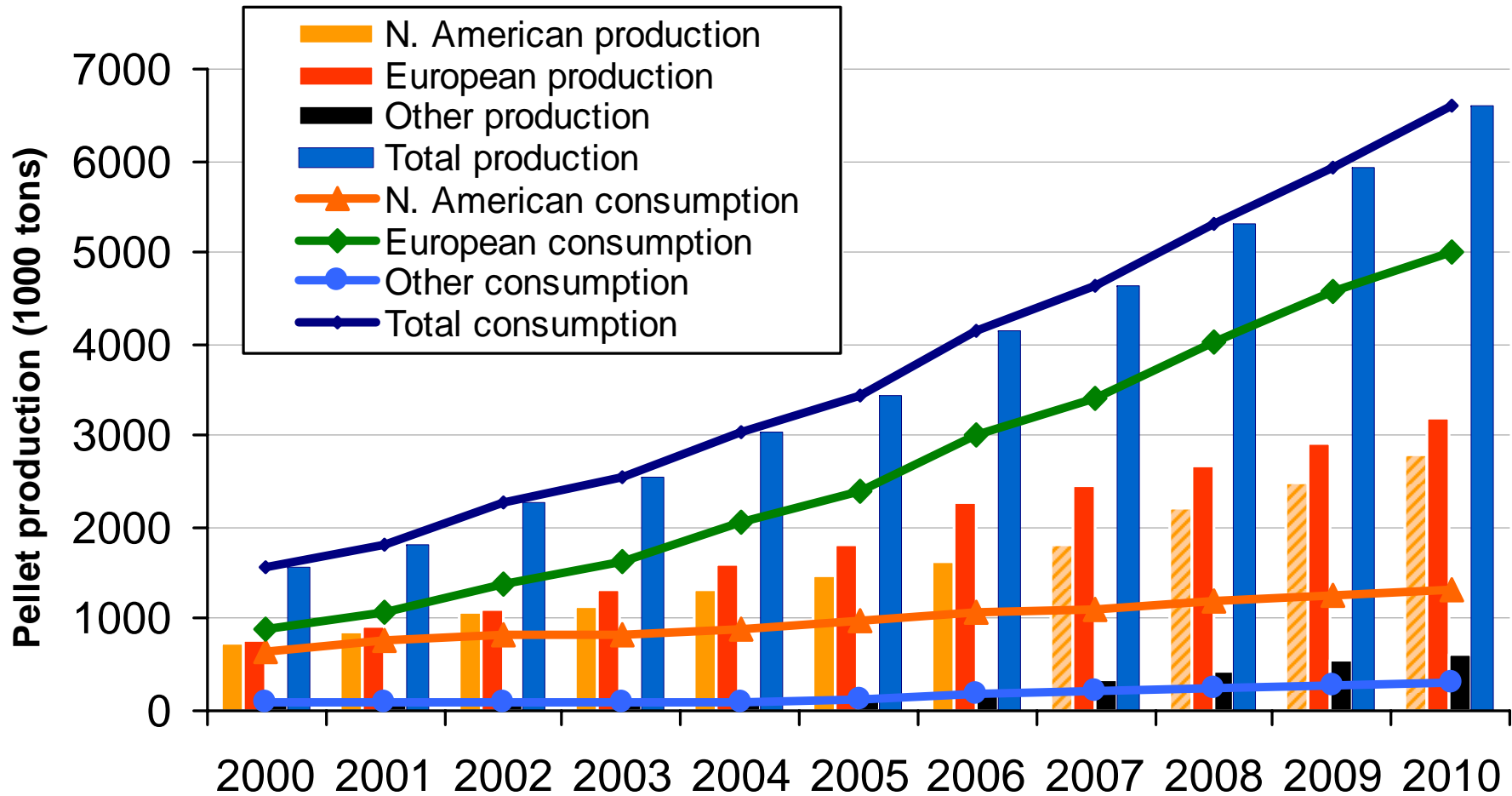
- Pellet demand at record level
- Pellet prices at new highs
- Increasing pellet trade
 - Especially strong in Germany, Sweden, Austria
 - 80% of N. American production exported to Europe
- Consumption of wood energy much greater than previously known



Wood Futures Conference
8 November 2007, London



Pellet consumption et production



Source: Canadian Wood Pellet Association, 2007



Wood Futures Conference
8 November 2007, London



UNECE Timber Committee on “markets”

- N. American markets forecast to decline due to crash in US housing market
- Positive developments in Europe and Russia
 - Prices at record highs in 2007
 - Roundwood production forecast to increase in 2007 with demand from wood and paper
 - Russian export taxes will halve exports in 2008



Wood Futures Conference
8 November 2007, London



UNECE Timber Committee on “new markets”

- New processes overcome some traditional weaknesses of wood
 - Sensitivity to moisture
 - Dimensional instability
 - Lack of resistance to fungi
- New materials are opening up new marketing possibilities
- Wood should take market share from competing building materials



Wood Futures Conference
8 November 2007, London



Timber Committee on procurement

- Public agencies, trade associations and private companies establishing procurement policies to ensure sustainable and legal sources
- Purchasers aim to minimize the environmental impact of whole systems, through “green building” requirements – directly influencing markets for forest products



Wood Futures Conference
8 November 2007, London



Timber Committee: corporate social responsibility

- Trade associations issuing codes of conduct
- Companies developing CSR policies to demonstrate their positive social impact
- CSR policies are a means to
 - Shape consumer perceptions
 - Gain competitive edge
 - Improve international recognition and perception
- Mutual recognition of trade associations' CSR policies could facilitate trade.



Wood Futures Conference
8 November 2007, London



Timber Committee on wood promotion

- Several European countries target parliamentarians
- 2010 Vancouver Olympics and the 2012 London Olympics: major opportunities to showcase wood
- Consistent approach needed on wood specifications to aid choices for construction
- Certification of sustainable forest management is an important communication tool.



Wood Futures Conference
8 November 2007, London



Forest sector mitigates climate change

- Replacement of non-renewables
 - Energy: wood for fossil fuels
 - Materials: wood for concrete, steel, plastics
- Storage of carbon
 - Forest ecosystem
 - Wood and paper products
- Burning wood is carbon neutral
- Wood-based insulation for energy efficiency

Source: *State of Europe's Forests 2007*



Wood Futures Conference
8 November 2007, London



Conclusions from *State of Europe's Forests, 2007*

- European forests in comparatively good state
- Sustainable forest management progressing
- Political commitment to SFM
- Threats to forests being addressed
- New challenges require effective policies and action
 - Increasing risks to forests
 - Increasing demands
 - More diverse, including from other sectors
 - More stakeholders

Source: UNECE/FAO & MCPFE, 2007



Wood Futures Conference
8 November 2007, London



Future of the forest sector

- Integrated production of wood & paper products with energy production
- Greater value of energy production by integrated plants than by “primary wood & paper” products?!
- Profitability of the sector linked to wood energy
 - Challenge for certain industries, e.g. panels
 - Opportunity for forest owners, sawmills, energy suppliers



Wood Futures Conference
8 November 2007, London



VI. Recommendations

- Know the provenance of your wood – be sure it's sustainable and legal, not only for your company today, and for your company tomorrow, but for the sake of the entire sector's reputation
- Work together to increase wood demand through effective promotion
- Use wood efficiently, with highest values first, and eventually recycle for new products and energy



Wood Futures Conference
8 November 2007, London





VII. Discussion & questions



Wood Futures Conference
8 November 2007, London





Ed Pepke
Forest Products Marketing Specialist
UNECE/FAO Timber Section
448 Palais des Nations
CH-1211 Genève 10, Suisse
Tel. +41 22 917 2872
Fax +41 22 917 0041
www.unece.org/trade/timber
Ed.Pepke@unece.org



Wood Futures Conference
8 November 2007, London

