International Wood Market Developments

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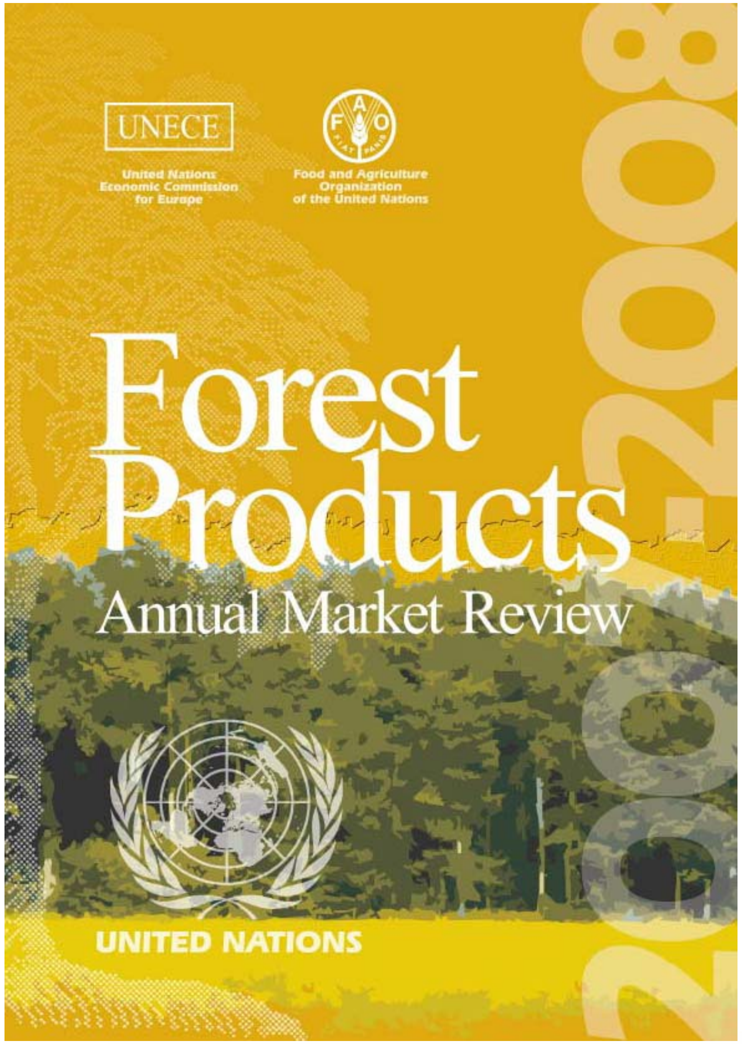
Subjects

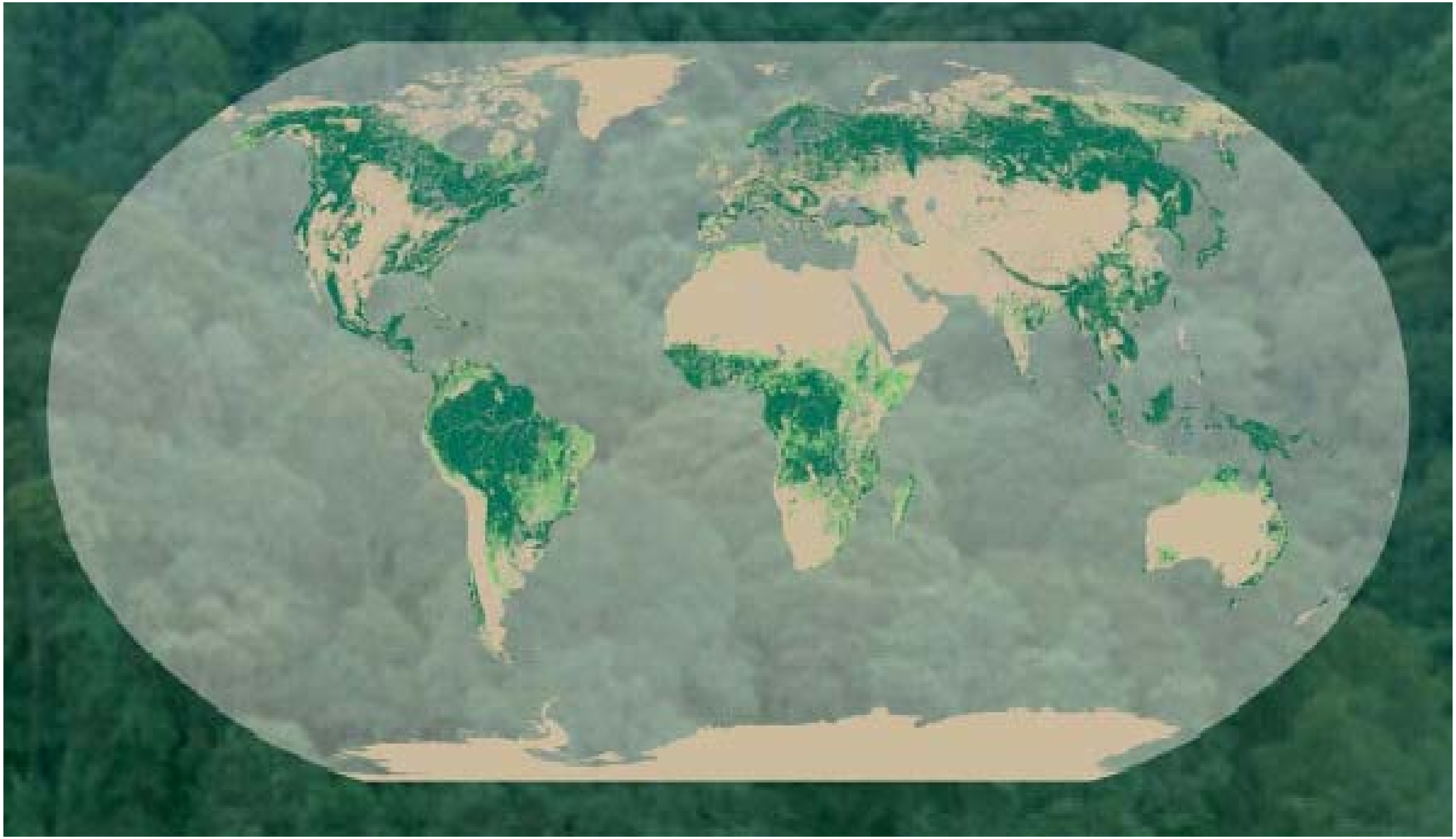
I. Overview of developments
II. Market drivers
III. Policy drivers
IV. Specific sector developments
   A. Wood raw materials (roundwood)
   B. Sawn softwood
   C. Wood energy
V. Conclusions
VI. Recommendations
VII. Questions and discussion

Main sources of information



- UNECE/FAO *Forest Products Annual Market Review, 2007-2008*
- UNECE/FAO Forest resources assessment
- UNECE/FAO Timber database
- FAO Statistics
- *State of Europe's Forests 2007* by Ministerial Conference for the Protection of Forests in Europe, November 2007

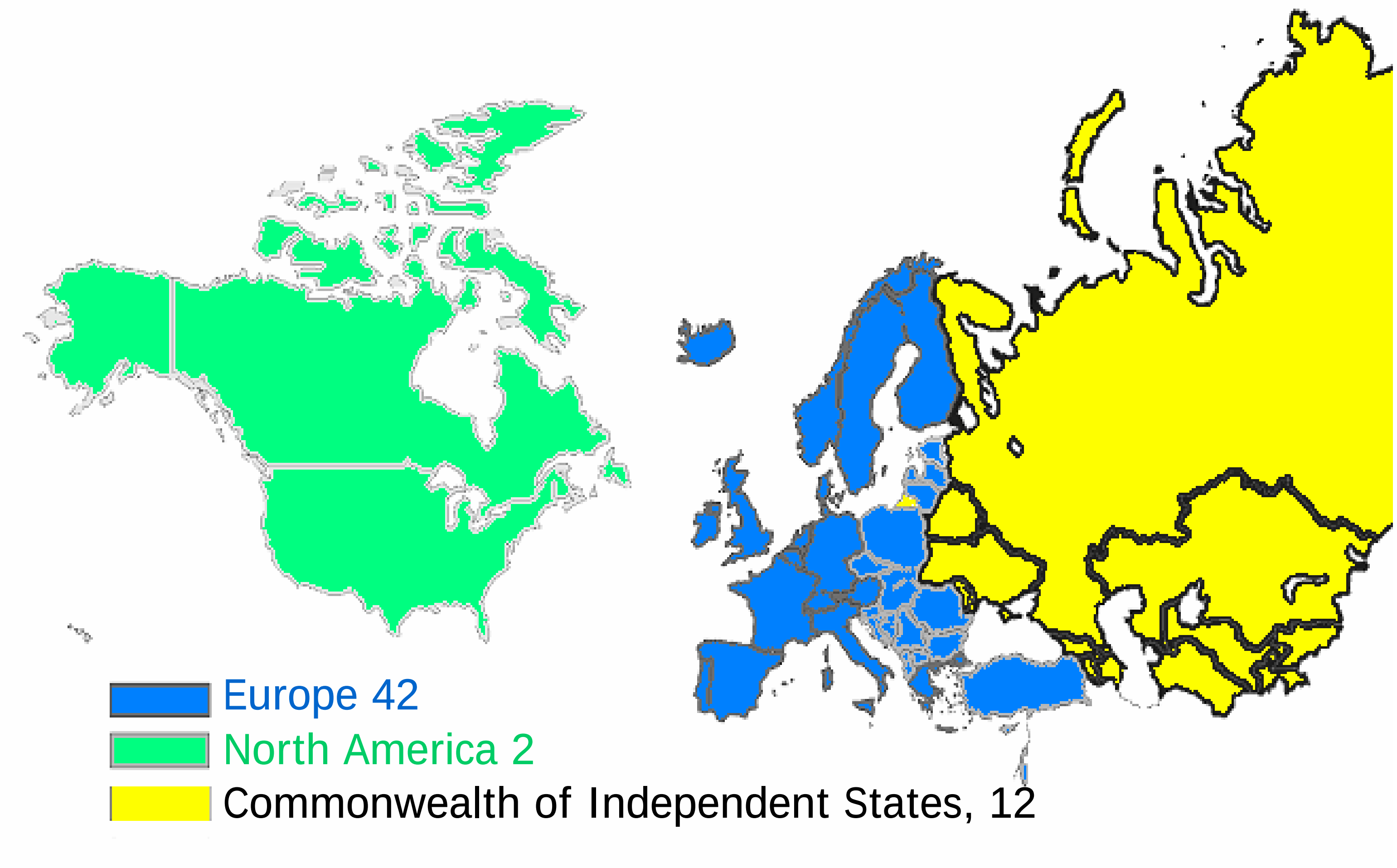
I. Overview of developments



“United States forest products market crash impacts UNECE region”

- In 2007, US housing construction continued its sharp decline, severely impacting world markets.
- Green building systems are a market driver, but also a constraint.
- UNECE region consumption of wood and paper products fell in 2007 for the first time in 6 years (downturn in North American overcoming a rise in European and CIS).
- Oil prices soared, stimulating wood-based biofuels and policies to mobilize more wood from both forests and other sources.
- Certified forest area rose to over 300 million hectares worldwide.

UN Economic Commission for Europe region



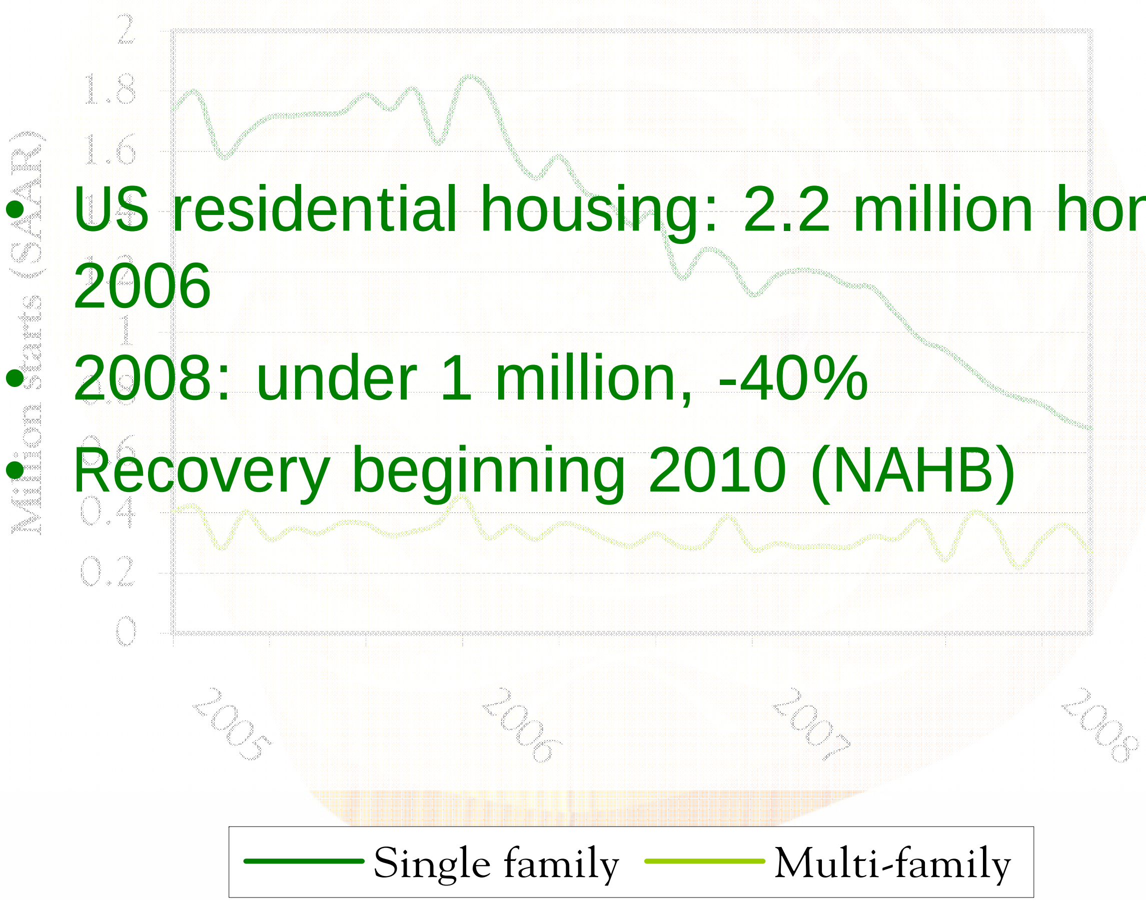
“US forest products market crash impacts UNECE region”

- Some European market sectors exceeded their North American counterparts: production of sawn softwood and consumption of panels and paper and paperboard.
- China’s trade with countries in the UNECE region continues to increase.
- In Europe, wood products prices generally rose in 2007, then fell in 2008 as markets weakened
- In North America prices for some wood products, such as sawnwood dropped to their lowest levels since 1991.
- Russian export taxes on roundwood are disrupting supply and changing trade patterns.

II. Market drivers

- US housing market
- Energy prices
- Russian export taxes
- China’s trade

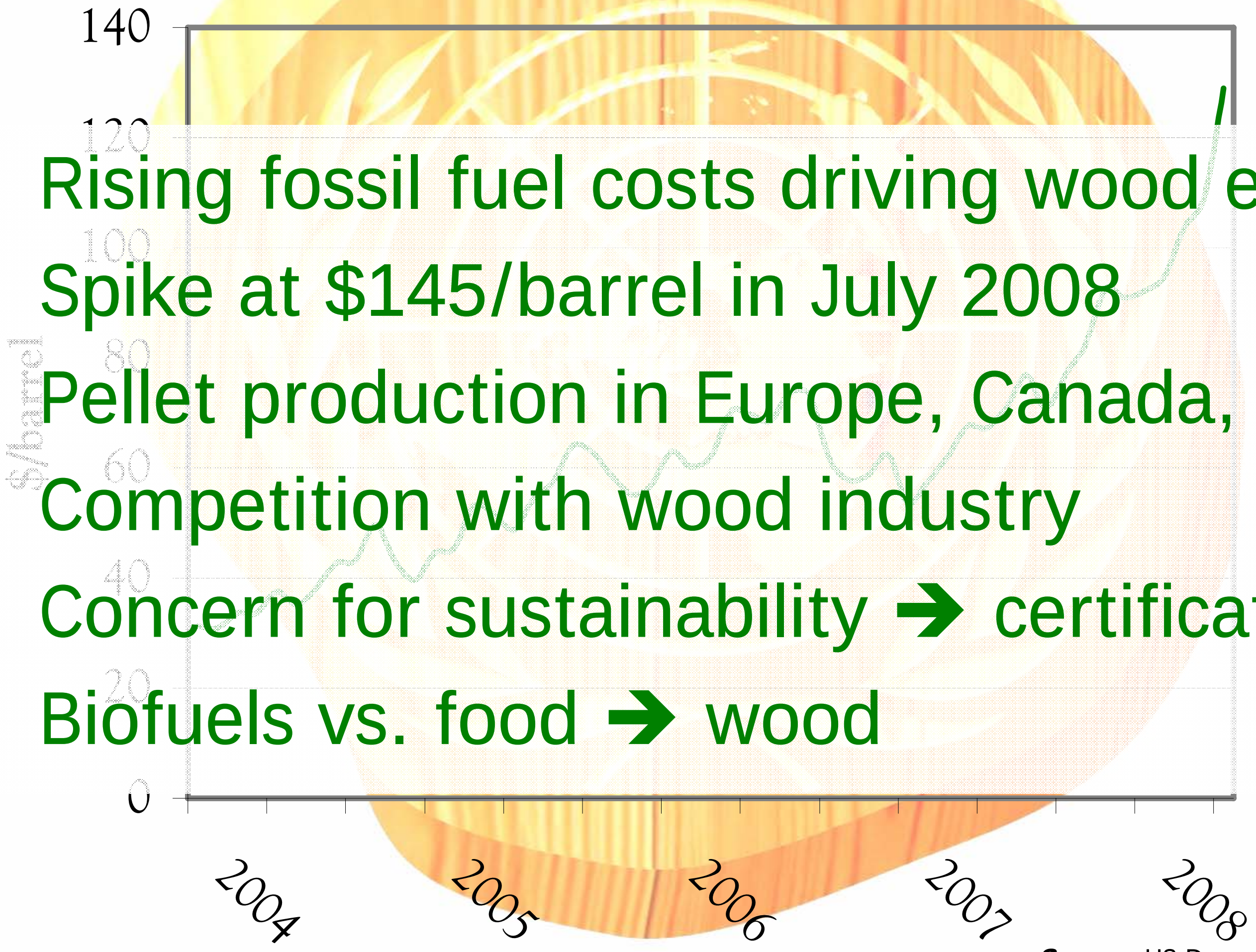
United States housing starts



- US residential housing: 2.2 million homes in 2006
- 2008: under 1 million, -40%
- Recovery beginning 2010 (NAHB)

Source: US Census Bureau, 2008.

Oil prices

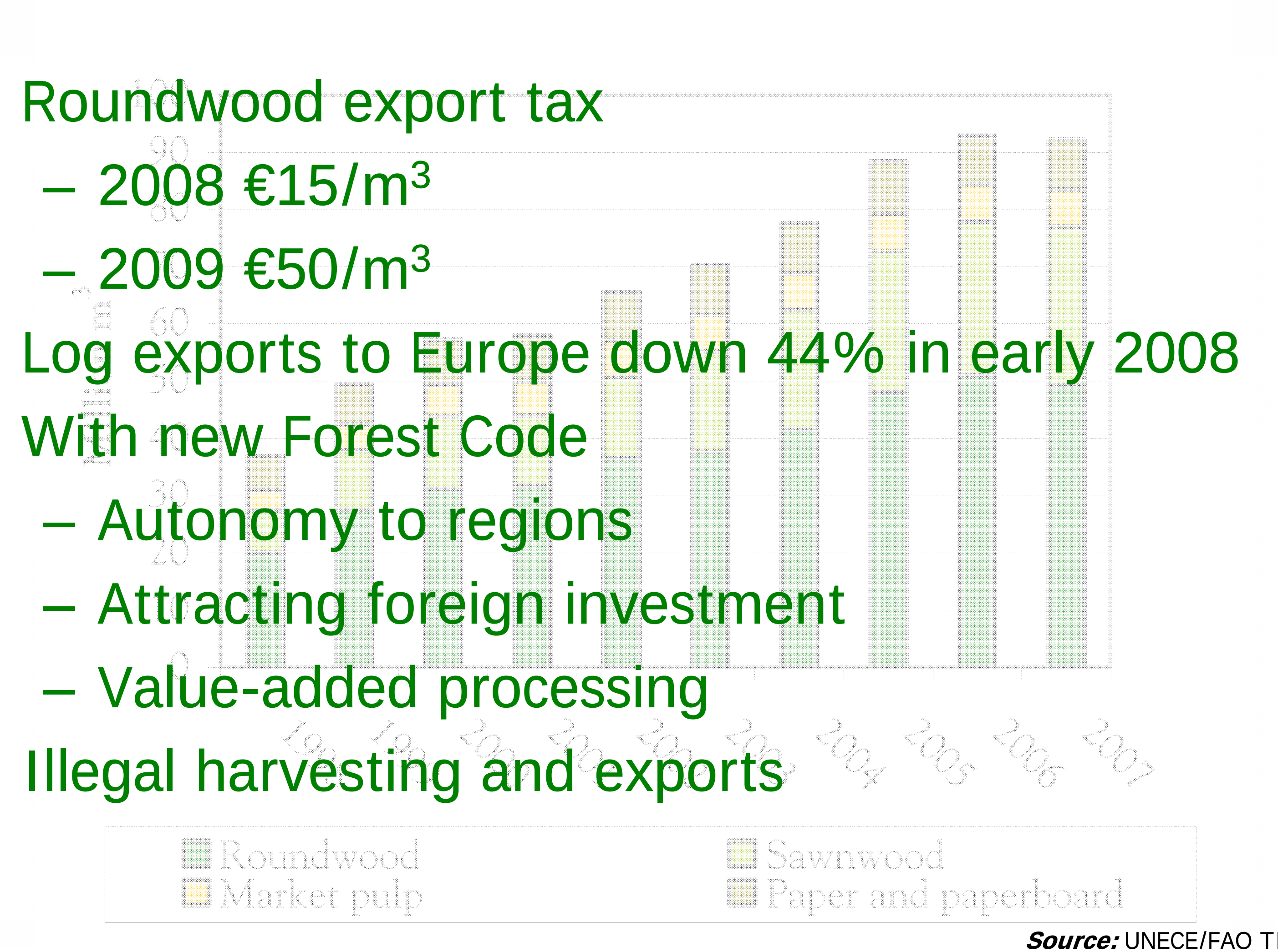


- Rising fossil fuel costs driving wood energy
- Spike at $145/barrel in July 2008
- Pellet production in Europe, Canada, Russia
- Competition with wood industry
- Concern for sustainability ➔ certification
- Biofuels vs. food ➔ wood

Source: US Department of Energy, 2008.

Russian exports & taxes

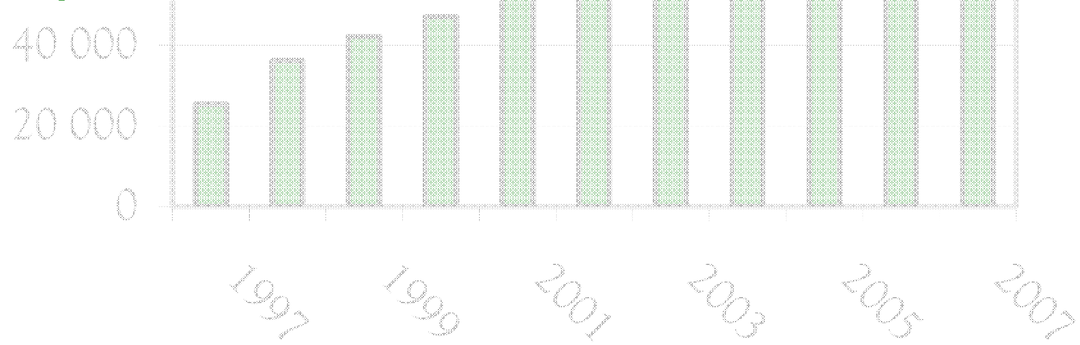
- Roundwood export tax
  - 2008 €15/m^3
  - 2009 €50/m^3
- Log exports to Europe down 44% in early 2008
- With new Forest Code
  - Autonomy to regions
  - Attracting foreign investment
  - Value-added processing
- Illegal harvesting and exports



Source: UNECE/FAO TIMBER database, 2008

China's forest products output impacts

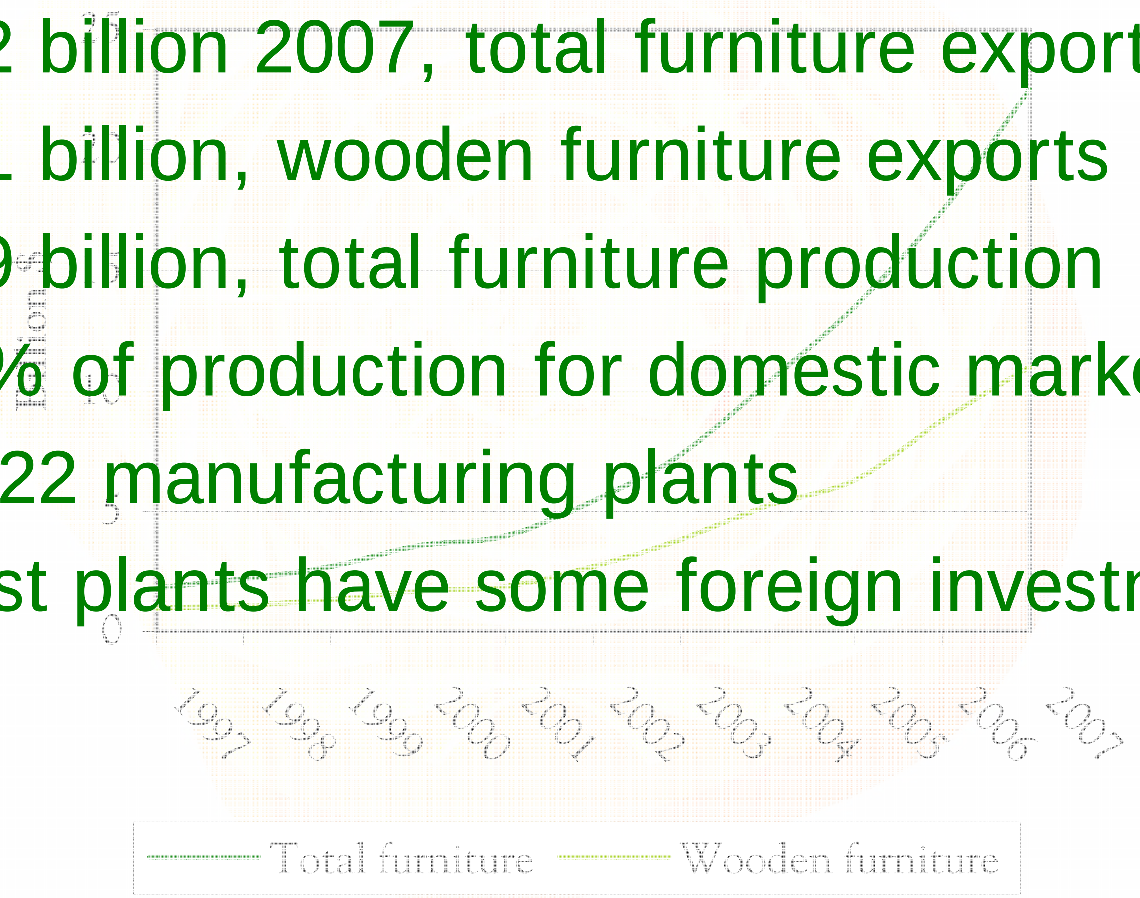
- Impacting every market sector
- Roundwood imports profit UNECE region exporters
- European roundwood exports affect sawmills
- China's exports benefit consumers
- European, American manufactures impacted
- Graph does not include furniture



Source: International Wood Markets Group, 2008

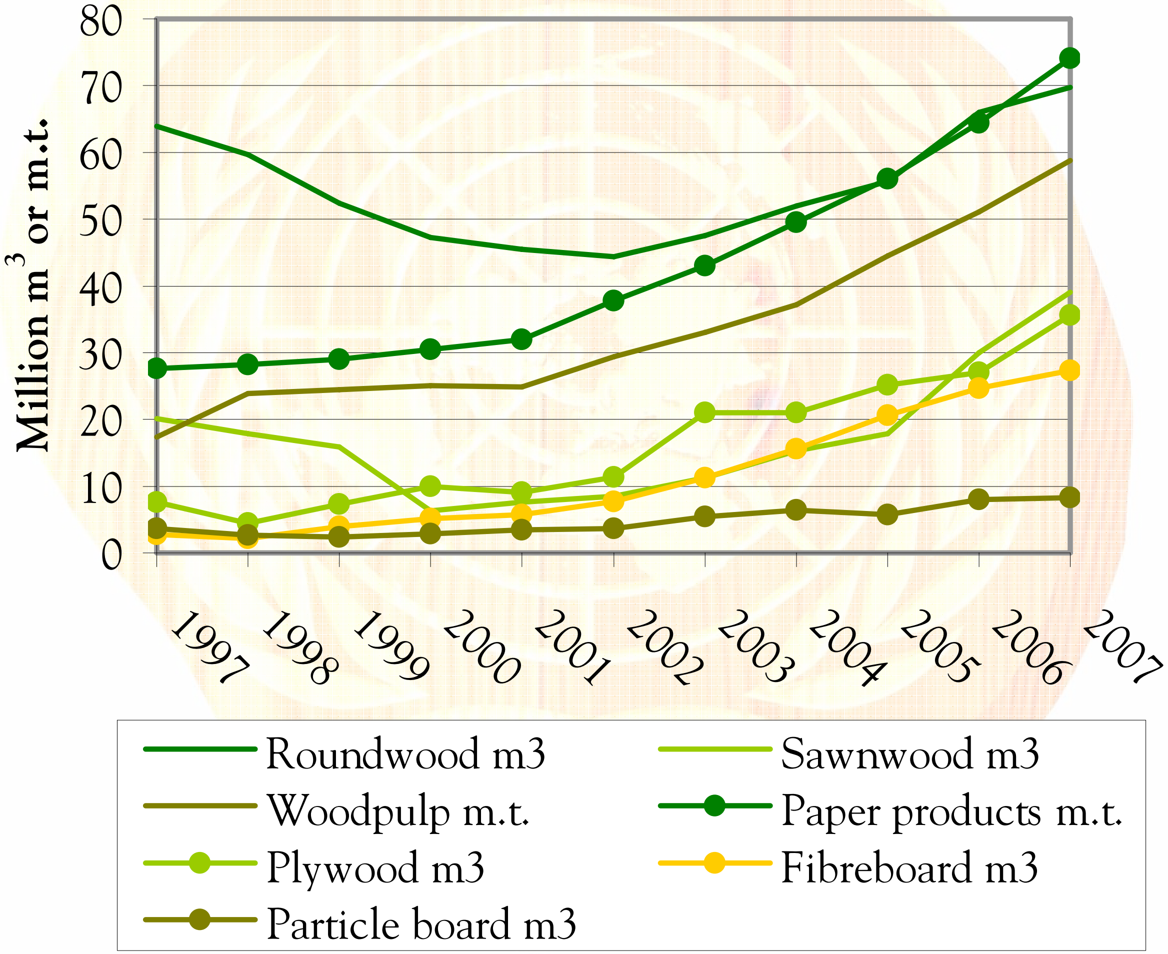
Chinese furniture exports

- $22 billion 2007, total furniture exports
- $11 billion, wooden furniture exports
- $69 billion, total furniture production
- 66% of production for domestic market
- 2,322 manufacturing plants
- Most plants have some foreign investment



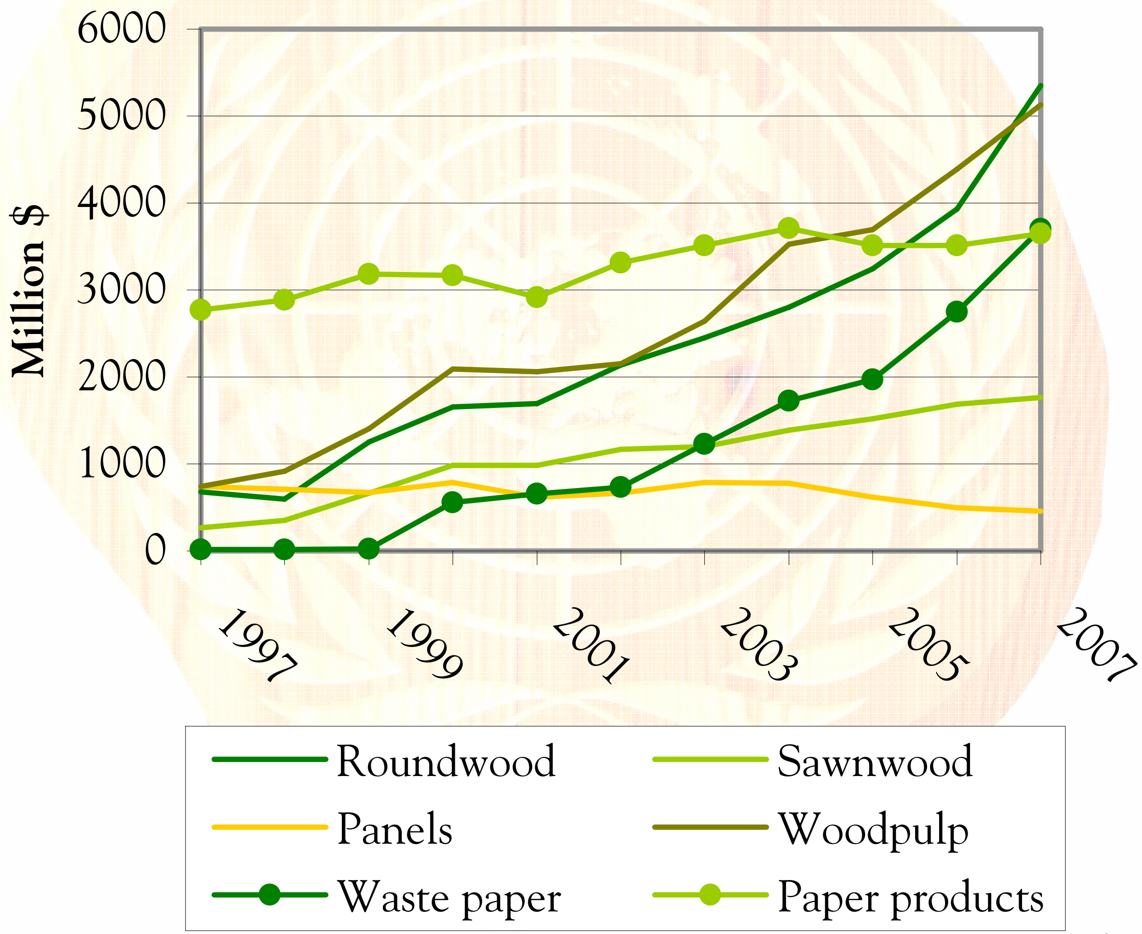
Source: IBISWorld, 2008 and Tan,X. et al., 2007

Chinese forest products production



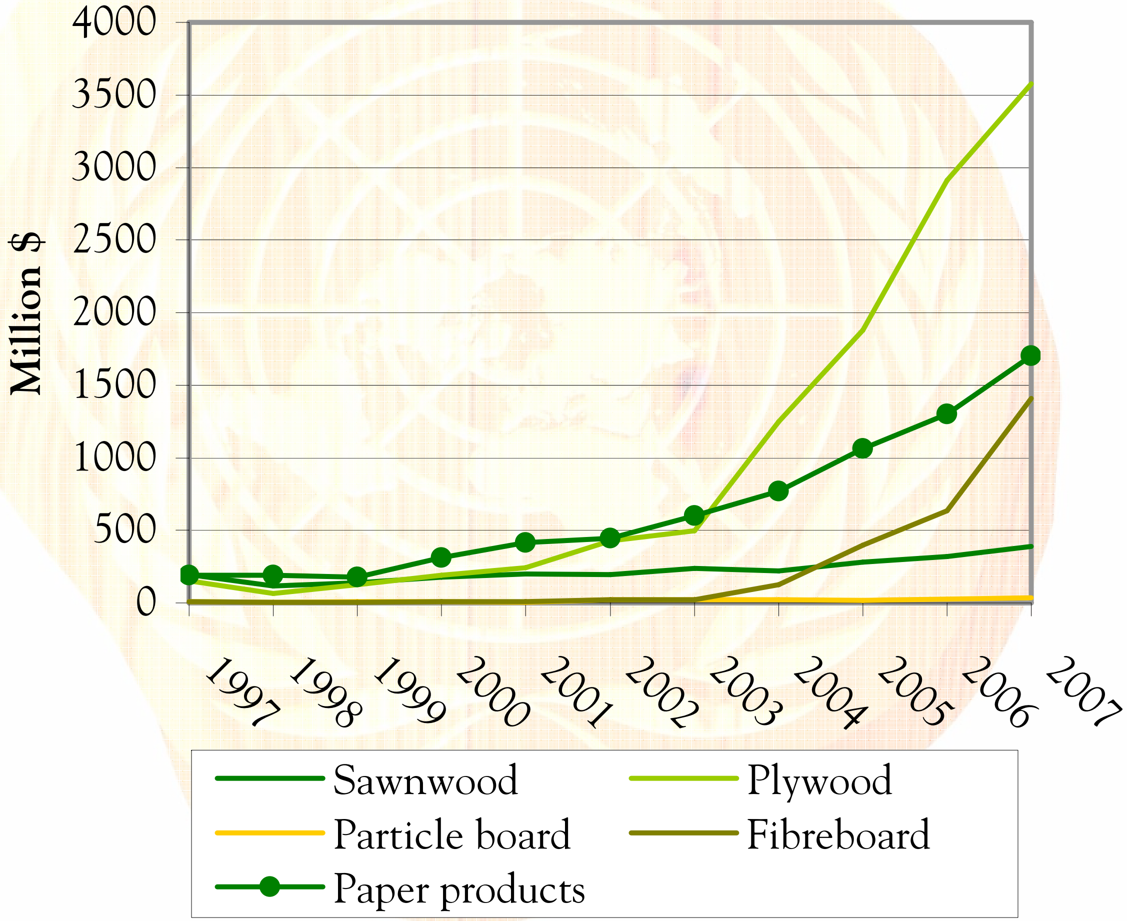
Source: International Wood Markets Group, 2008

Chinese forest products imports



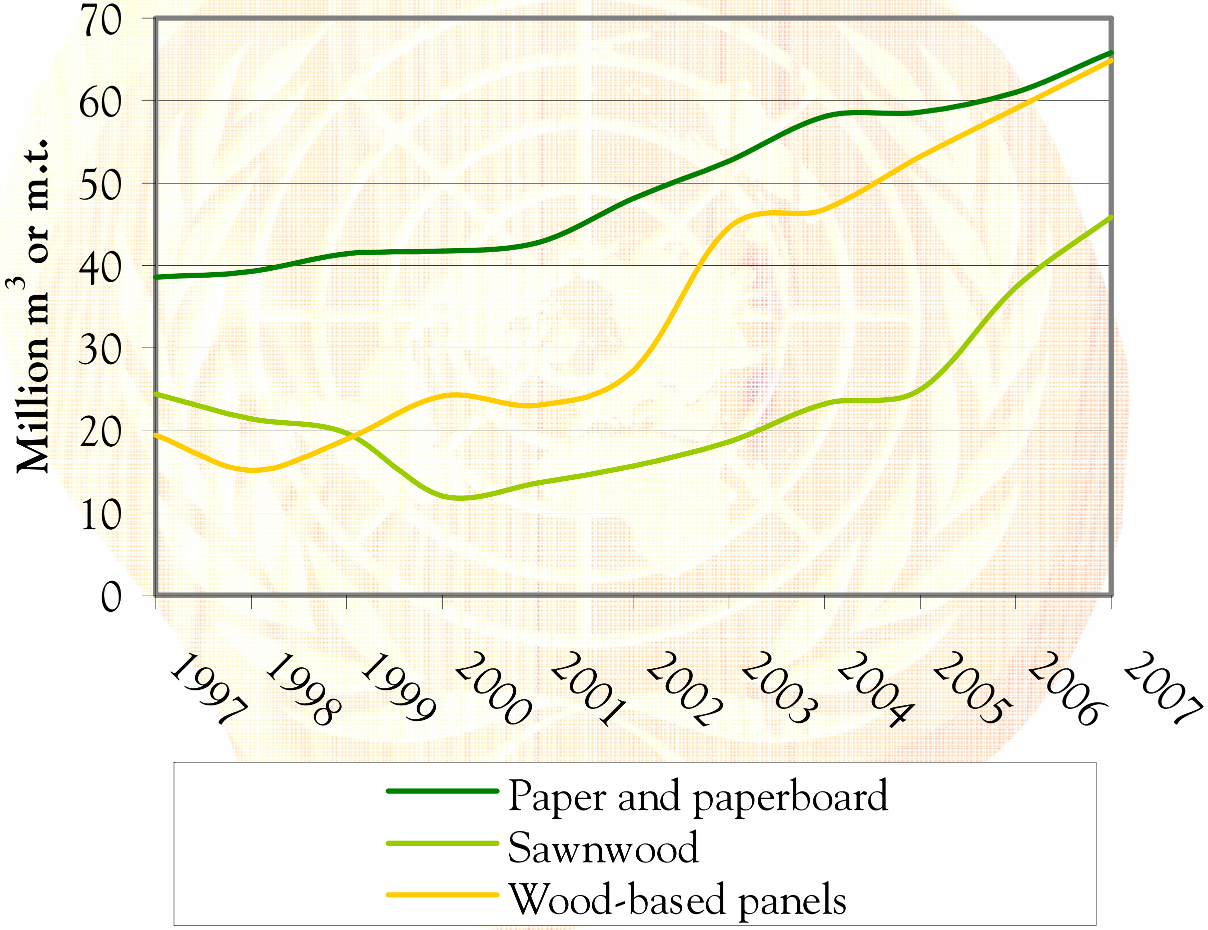
Source: International Wood Markets Group, 2008

Chinese forest products exports



Source: International Wood Markets Group, 2008

Chinese forest products consumption



Sources: FAOStat, 2008 and Tan, X., et al, 2007.

III. Policy drivers

- Climate change
- Carbon markets
- Wood energy, biofuels vs food
- Green building
- Deforestation
- Corporate responsibility
- Illegal logging and trade

Policies can level or distort the playing field

- Laws, duties, tariffs, taxes, regulations
- Raw material costs
- Labour costs & benefits
- Manufacturing costs
- Goal: Raise standard of living → and domestic consumption of wood products

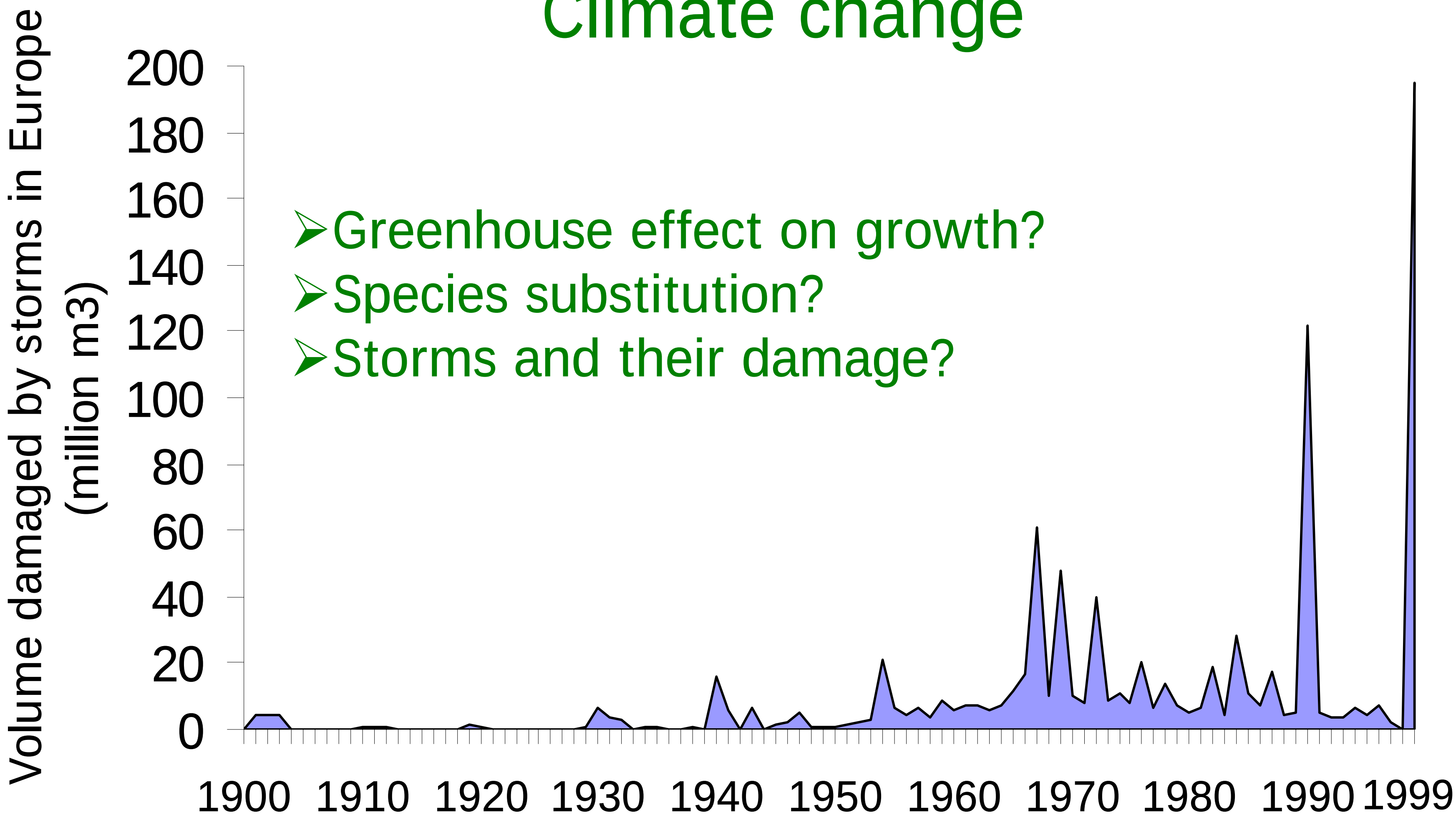
Climate change

- UN Intergovernmental Panel on Climate Change: “evidence of a warming trend is unequivocal”
- Policies mitigating climate change
  - National and sub-national governments
  - International organizations
  - Trade associations
  - Non-governmental organizations

Climate change

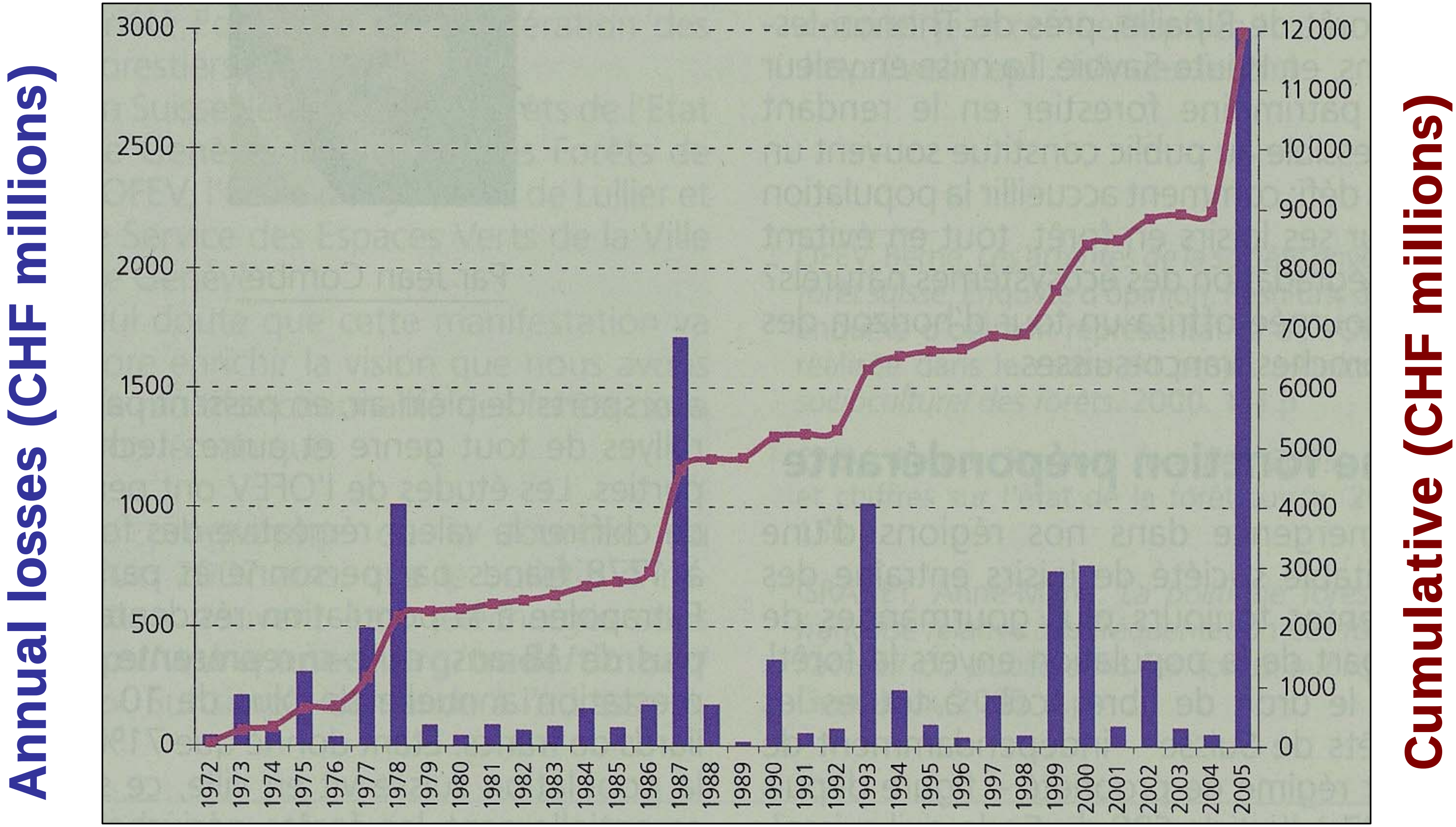
- 17.4% of global greenhouse gas emissions caused by humans are from forestry, mainly deforestation
- Direct links between sustainable forest management and climate change
- EU targets for 2020
  - 20% renewable energy
  - 20% improved energy efficiency

Factor "X" for forests: Climate change



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

Storm damage in Swiss forests, 1972-2005



Source: Institute fédérale de Recherche Suisse, 2007

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Carbon markets

- Active forest management reduces carbon emissions
- Following Kyoto Protocol, carbon trading established
- Pulp and paper industry included in the EU Emissions trading Scheme
- Future in marketing carbon sequestration in forests and products of wood and paper?

Wood energy policies

- Targets for wood energy
  – European and North American
  – Must be balanced with current and future availability from forests
  – Must be balanced with wood processing industry needs
- 60% of annual growth in European forests harvested
  – 80% in North America
  – 34% in Russia

Biofuels versus food

- Food security
- Food shortages
- Production of liquid biofuels from food crops
- Wood-based biofuels do not compete with food
  - Forests, including harvesting residues
  - Wood processing residues
  - Recycling of wood and paper products

Green building systems

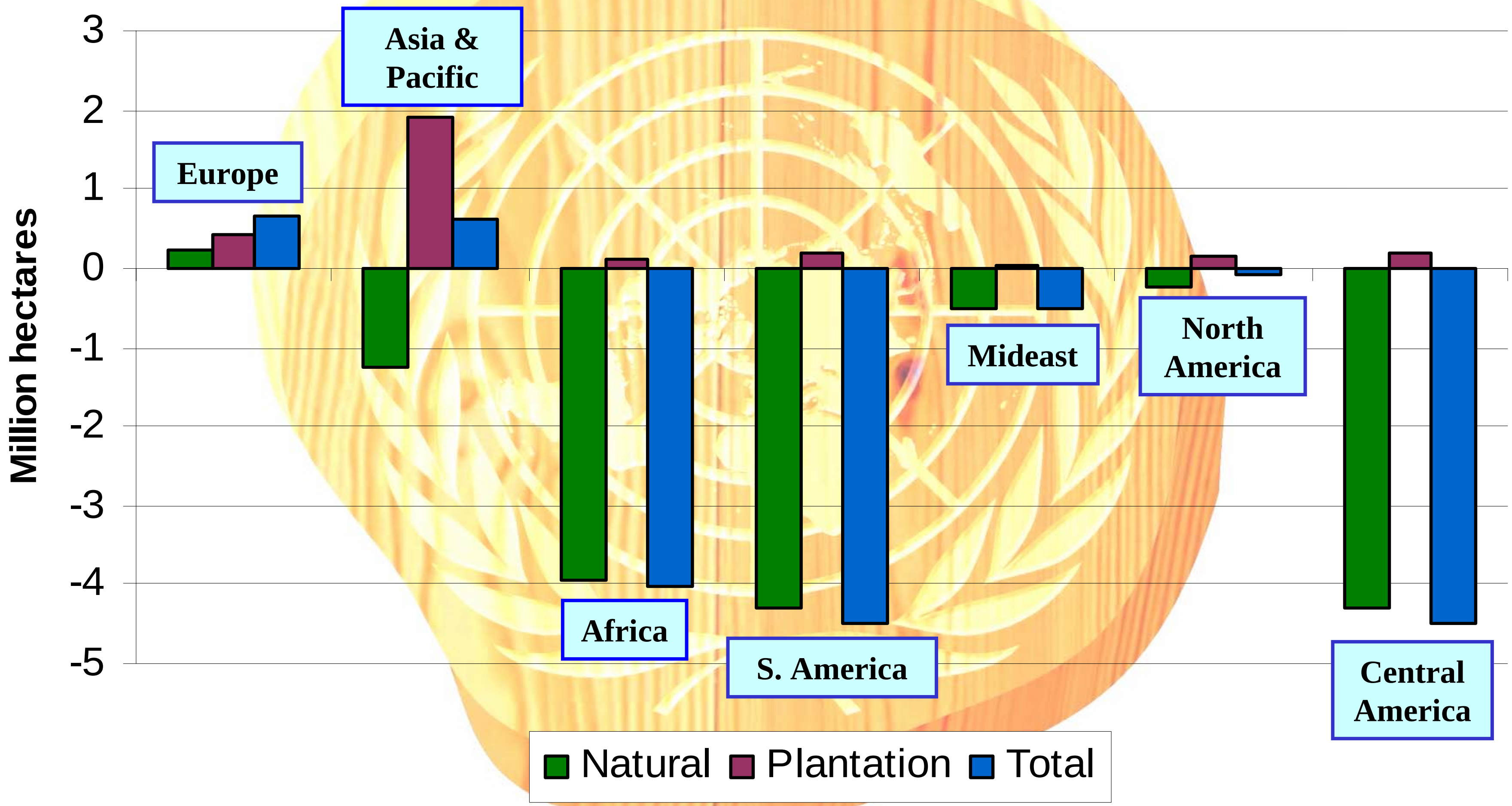
- New market
- Market driver

Photo: APA.

Deforestation

- Issue which plagues the forest sector
- Consumers confused between tropical deforestation and state of forests in Europe
- Strong policies in UNECE region for sustainable forest management

Change in annual forest area, 1990-2000



Source: FAO Global Forest Resources Assessment 2000

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

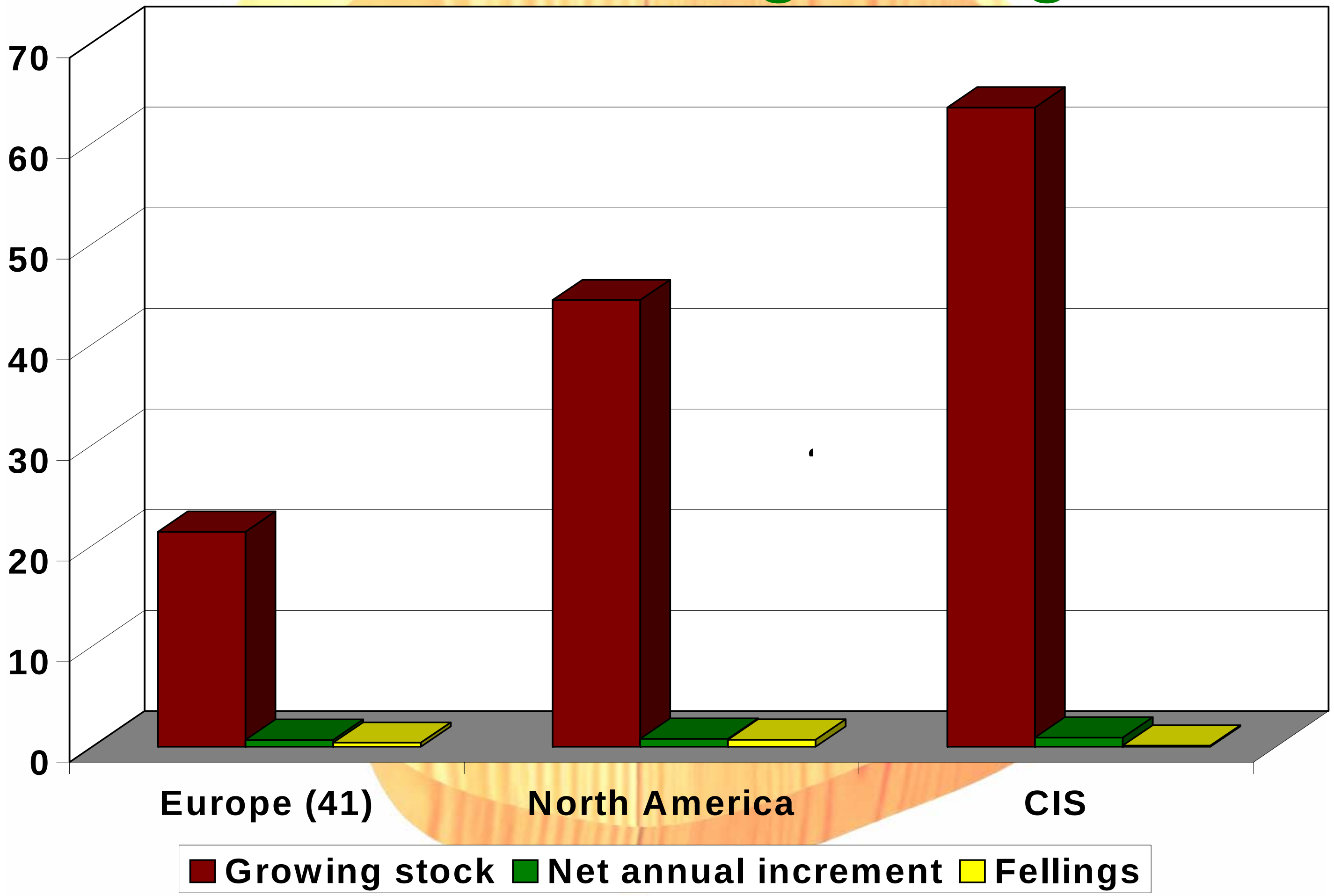
Note: The change in annual forest area was recalculated at -7.3 million ha per year from 2000 to 2005 by the FAO Global Forest Resources Assessment in 2005.

Source: FAO Global Forest Resources Assessment 2000

Causes of deforestation

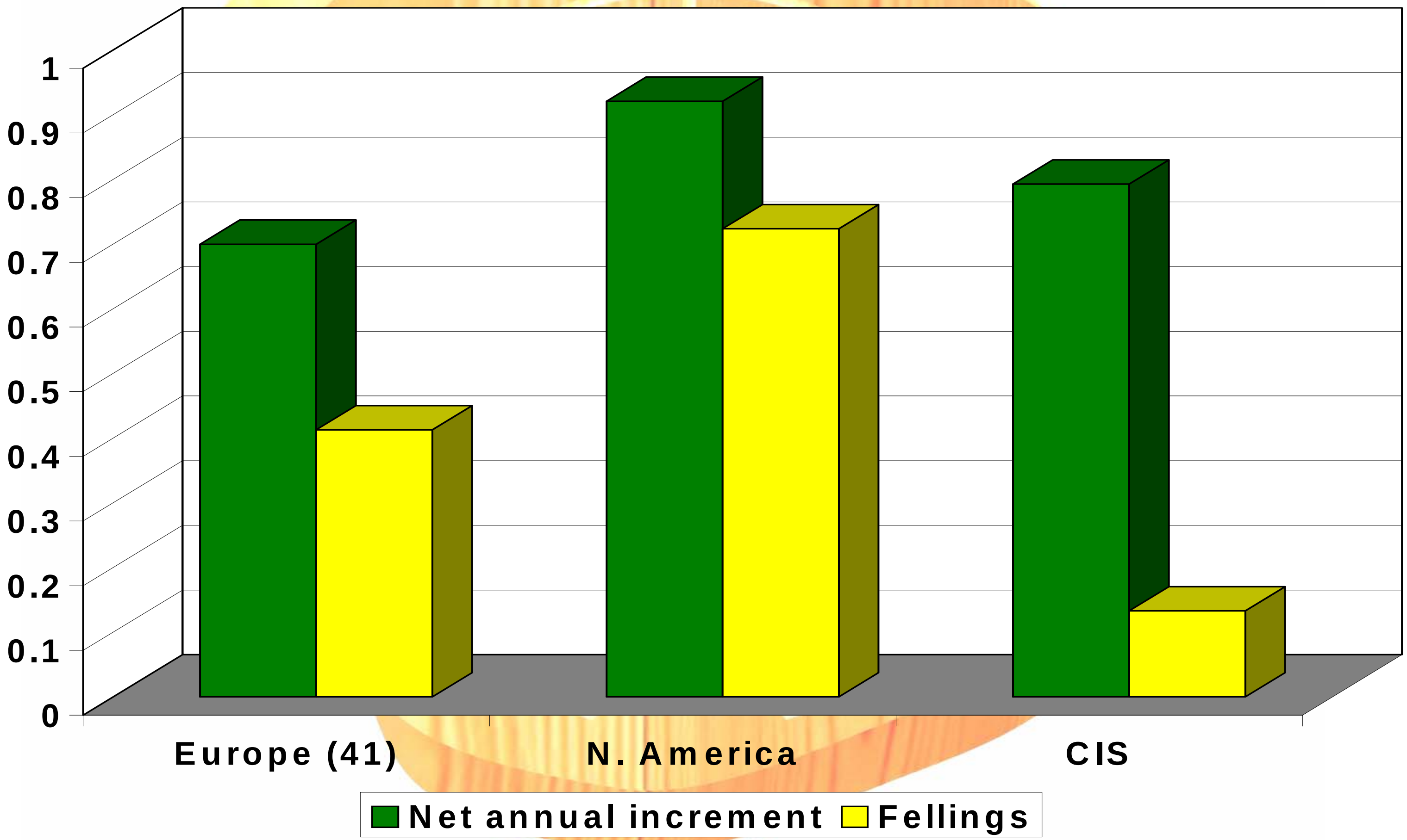
- Forest conversion
  - Agricultural, including
    - Pastures for animals
    - Bioenergy plantations: palm oil, sugar cane
  - Urbanization
- Unsustainable forest management
  - Poor harvesting practices
  - Insufficient regeneration
  - Fire, insects, disease
  - Over harvest of fuelwood
- Poverty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

Forest resources growing stock



Source: UNECE/FAO Forest Resources Assessment 2005

Net annual growth vs. fellings



Source: UNECE/FAO Forest Resources Assessment 2005

Forest resources in Europe*

- Only 60% of the annual growth is harvested
- Forest volume increases ~700,000 m^3 daily
- Forest area growing: ~700,000 ha annually

* Europe = 42 countries for the UN Economic Commission for Europe

Source: UNECE/FAO Forest Resources Assessment

Timber Committee: corporate social responsibility

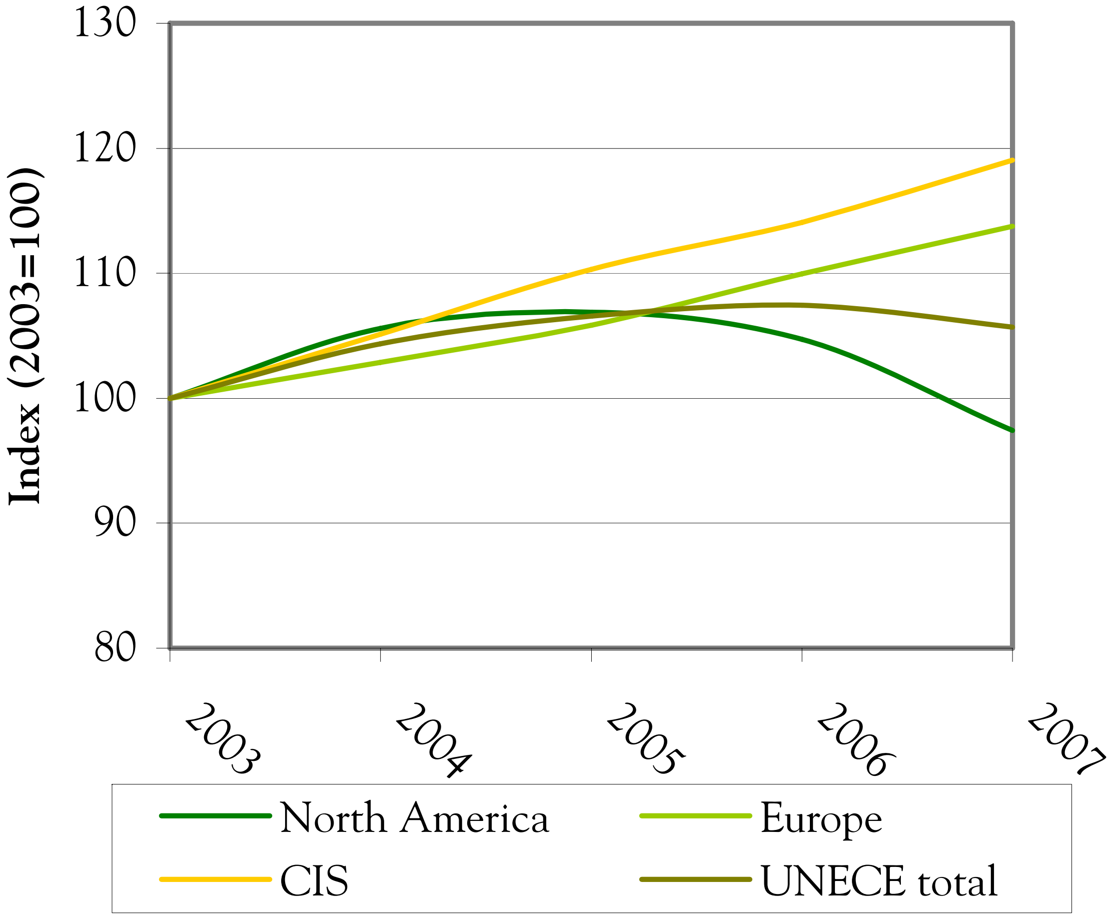
- Trade associations issuing codes of conduct
- Companies developing CSR policies to demonstrate their positive social impact
- CSR policies are a means to
  - Shape consumer perceptions
  - Gain competitive edge
  - Improve international recognition and perception
- Mutual recognition of trade associations'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

Illegal logging and trade

- G8
  - "support existing processes to combat illegal logging"
  - "one of the most difficult obstacles to further progress in realizing sustainable forest management and thereof , in protecting forests worldwide"
- Legislation in US and EU
- Trade associations establishing and updating codes of conduct
  - UK TTF proactively made members establish "due diligence risk assessment systems"
  - Timber Trade Action Plan coordinates associations

IV. Sector developments

Wood products consumption



Source: UNECE/FAO TIMBER database, 2008

European consumption of forest products

			Change from 2006	
	Million	2007	volume	%
Sawnwood	m^3	128	+6	4.6
Panels	m^3	71	+3	5.0
Paper & p-board	m.t.	100	+2	2.3
Total	m^3 equiv.	658	+22	3.5
EU 27 total	m^3 equiv.	586	+18	3.2

Source: UNECE/FAO TIMBER database, 2008

Subregion consumption of forest products

			Change from 2006	
	Million	2007	volume	%
Europe total	m^3 equiv.	658	+22	3.5
N. America total	m^3	634	-48	-7.0
CIS total	m.t.	100	+6	8.7
UNECE region total	m^3 equiv.	1,366	-19.6	-1.4

Source: UNECE/FAO TIMBER database, 2008

Wood raw materials

- Total removals of industrial roundwood in the UNECE region rose 4.3%, to a record 1.2 billion m3.
- In Europe, roundwood (including fuelwood) production rose by 8.7%, to a record 512.9 million m3.
- European industrial roundwood gained 11.3%
  - rising to 410.9 million m3, higher than 2000
  - below 2006 peak of 429.1 million m3.
- Winter storms were a factor influencing harvests in the past three years in Europe, including in 2008.

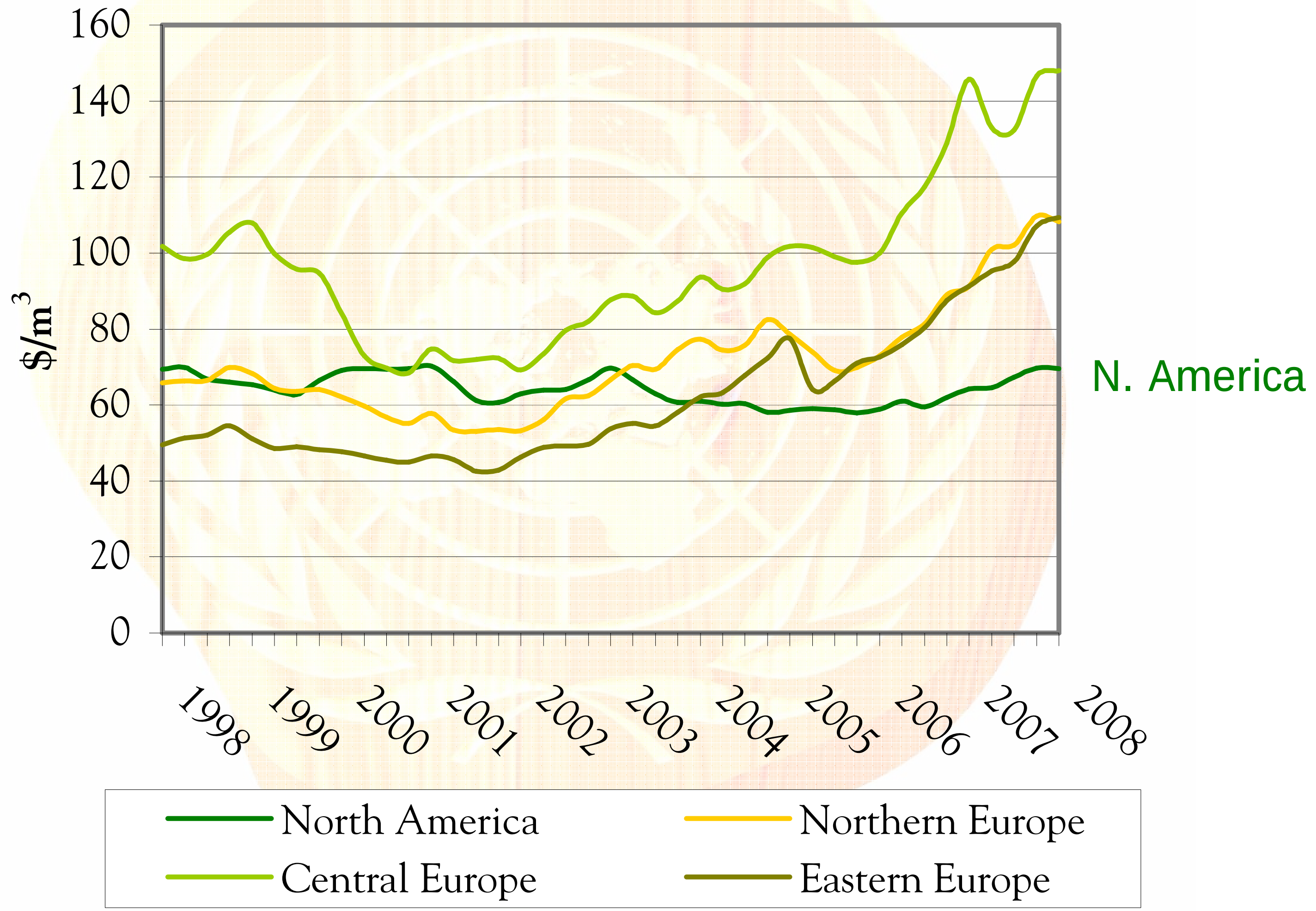
Wood raw materials

- Most European countries increased harvests in 2007 – Germany increased by 23.2% to 77 million m3
- 2008 forecast also below 2006 peak
- Russian harvests increased 12% in 2007 to 162 million m3
- Russian industrial roundwood exports fell 3.5% to 49 million m3
- US sawlog production down to 1986 level – exports up, from Canada too, mainly to Asia
- N. American prices fell in 2007

Wood raw materials

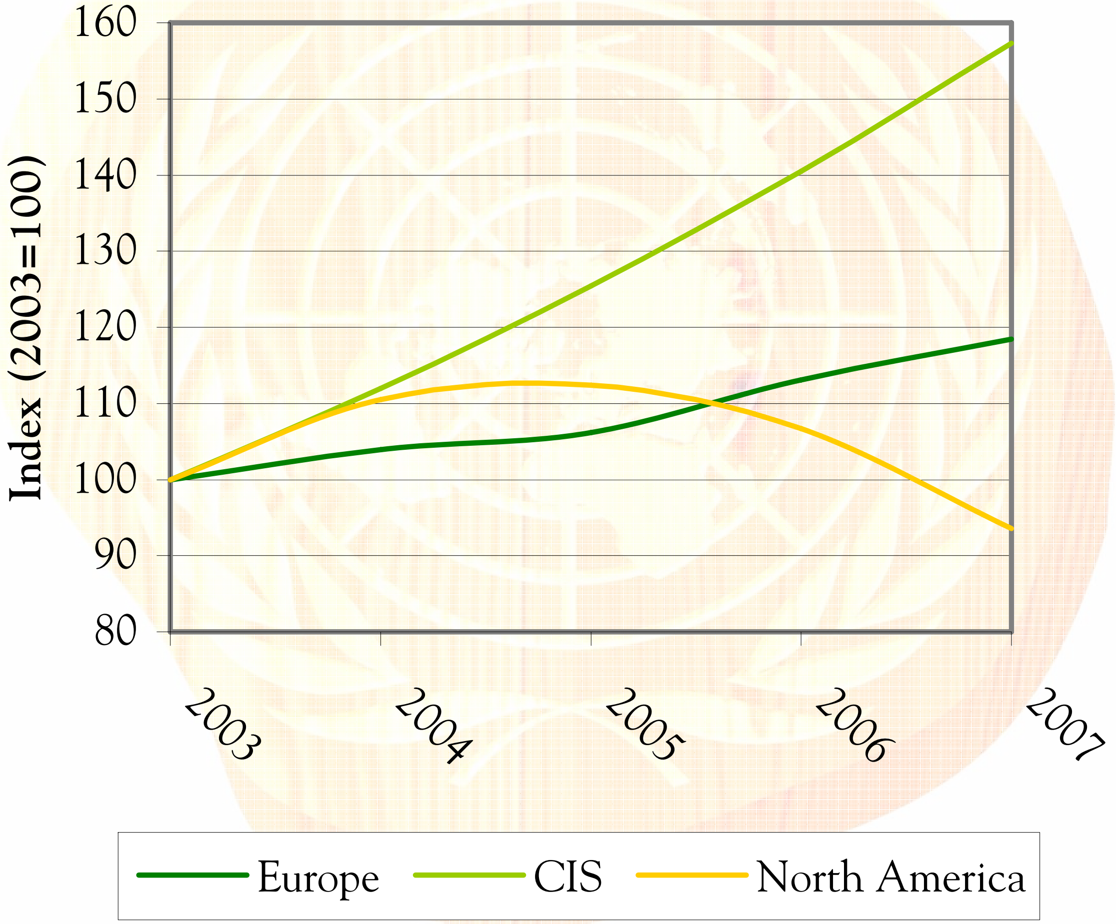
- European sawlog prices rose faster than world average
- Pulpwood reached record highs in 2008
  - Rising demand for pulp
  - Raw material for panels
  - Energy sector demand – for residues
- Higher raw material, manufacturing and transportation costs undermining profitability
- Most wood fibre used for fuel (including from manufacturing & forest residues, pulping byproducts, recycling)

Sawlog prices in Europe and N. America



Source: *Wood Resource Quarterly*, Wood Resources International, 2008.

Sawn softwood – consumption



Note: CIS apparent consumption is secretariat estimate.
Source: UNECE/FAO TIMBER database, 2008.

Sawn softwood market developments

- US housing market collapse caused 1/4 of the North American industry capacity to curtail or close
- Green building has quickly emerged to become a new business and expanding market in North America.
- After a profitable 2006, most European sawmill revenues declined in mid-2007 and the industry drifted into a more difficult financial situation in mid-2008.

Sawn softwood market developments

- Russian sawn softwood situation
  - Production and exports (9%) increased
  - New sawmill investments announced
  - Effects of escalating sawlog export taxes
- 2008 oversupply in most markets as sawnwood intended for Japan and the US were redirected to Europe or the Middle East.
- German sawn softwood situation
  - Europe's largest producer in 2004
  - Production escalated 12% in 2006
  - Production up 3.4% in 2007
  - Roundwood harvests up 9% in 2006
  - Harvests up 23% in 2007, also for pulp, panels, energy.

Sawn softwood market developments

- Catastrophic market situation in North America, downturn in Europe
  - Present challenges
  - Require new business models
  - To maintain production, marketing channels, trained employees, customer loyalty
- Sawmills operating at sizeable losses on every sale
- Mergers and acquisitions

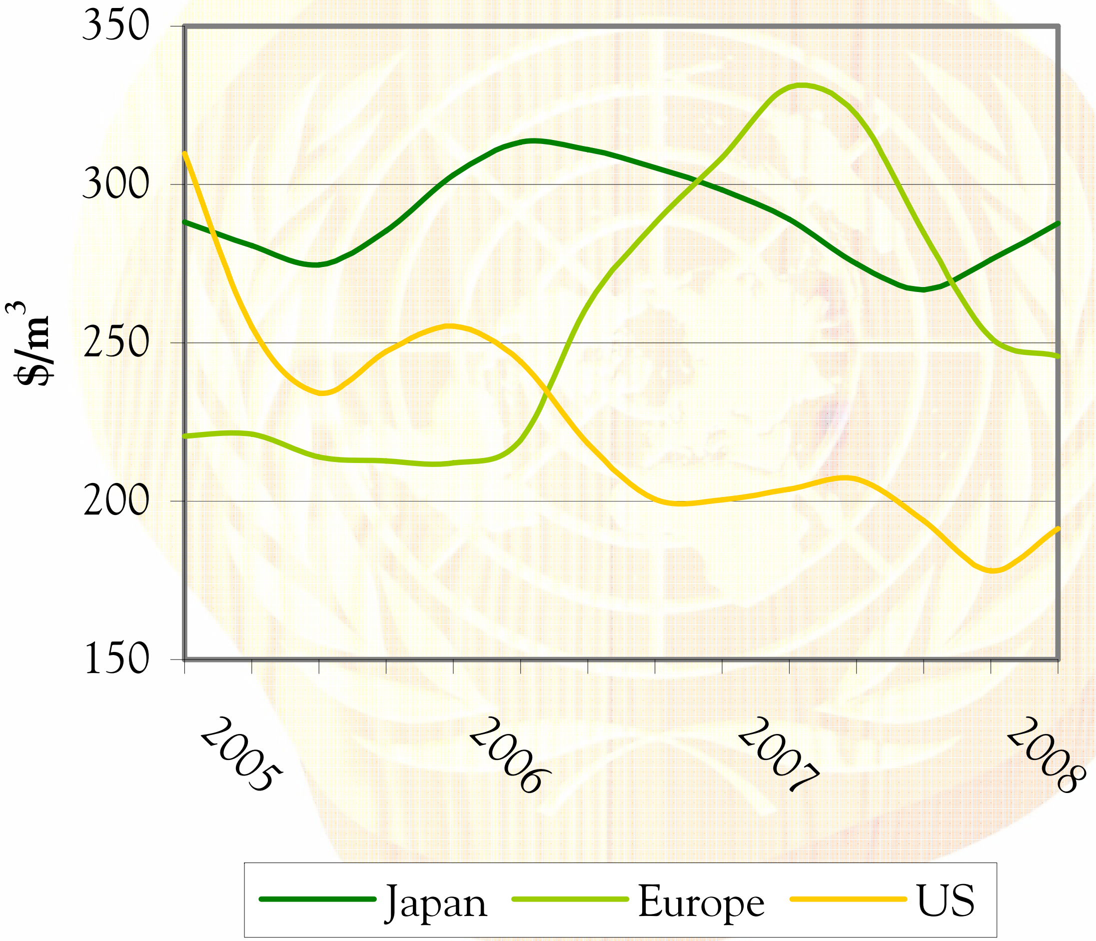
New sawnwood business models

- North American mills operating when prices below break even
- Greater consequences if mills close to reduce immediate losses.
- Sawmills owned by pulp companies need to keep operating to supply minimum volumes of wood chips, especially when these high-capital pulp-mill investments are operating at near-record prices. Integrated mills must operate regardless of the current sawnwood market price.
- Price trends...

New business models

- Corporate and independent mills have contracts or obligations to consider with regard to log supply, from their own logging crews to log supply agreements
- Many mills have longer-term market commitments with large contractual customers
- In considering mill downtime in weak markets, mills need to be concerned about keeping their skilled workers
- Fixed costs that need to be absorbed during a mill shutdown or curtailment can be very high (even prohibitive for shutting down), especially if bank loans need to be serviced through cash flow

Sawn softwood price trends

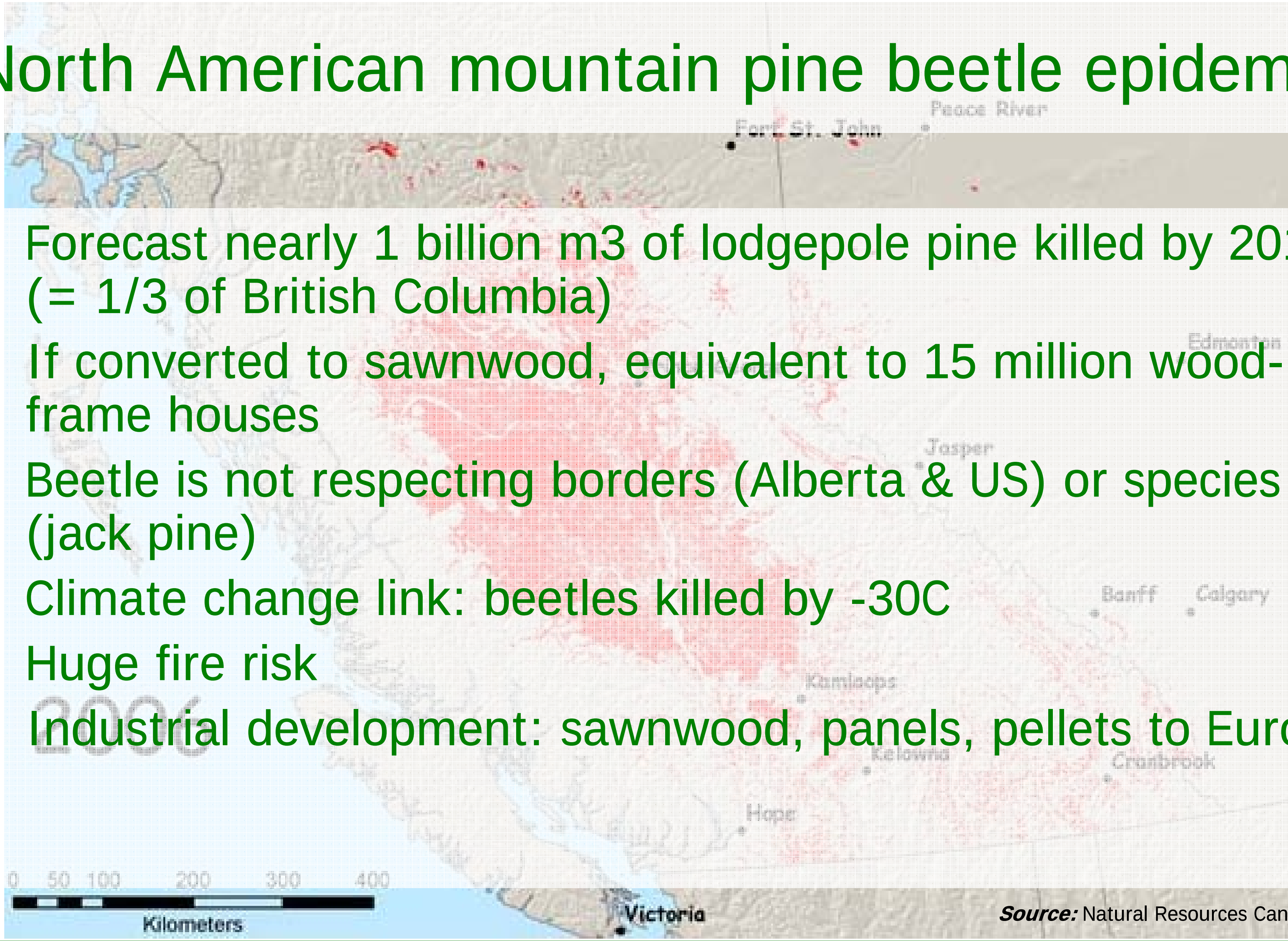


Source: Wood Markets *Monthly Newsletter*, 2008.

German sawnwood exporters maintain US market share

- Winter storm damage in 2006, 2007 and 2008
  - Windthrow salvage
  - Beetle salvage
  - Lower cost sawlogs ➔ flexibility in pricing
- Exporters committed to long-term contracts
- Protecting client relationships

North American mountain pine beetle epidemic



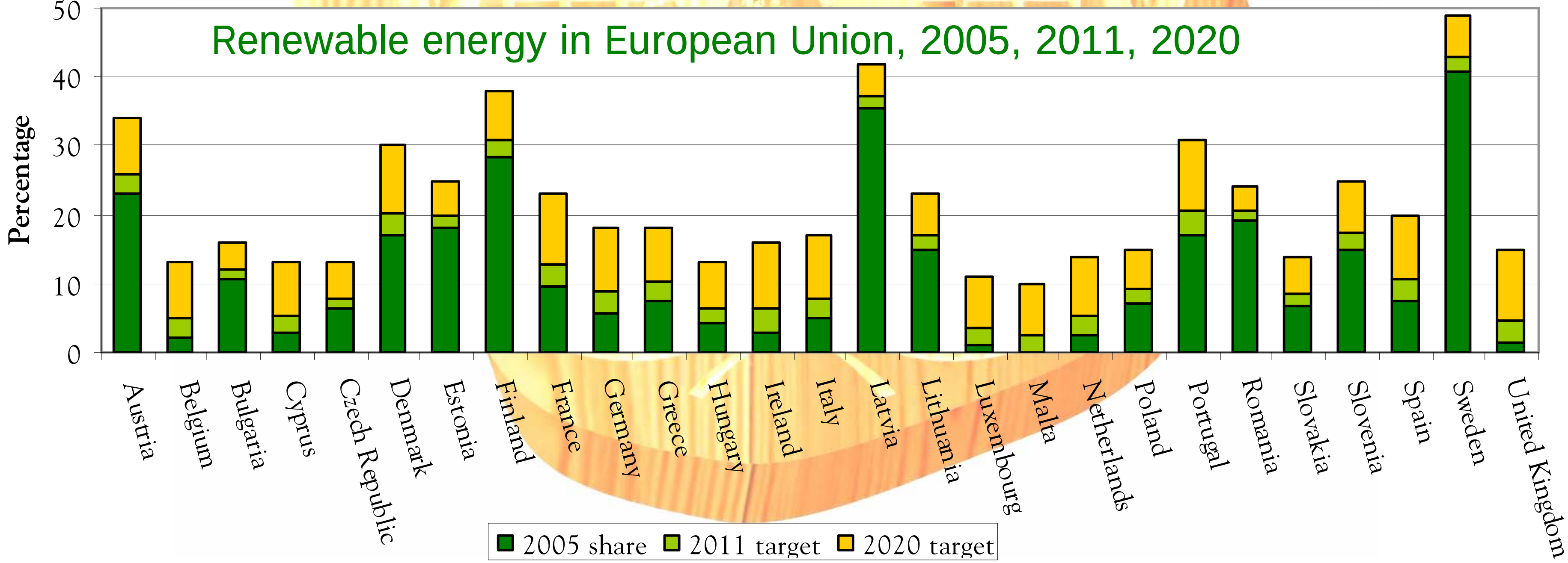
- Forecast nearly 1 billion m3 of lodgepole pine killed by 2017 (= 1/3 of British Columbia)
- If converted to sawnwood, equivalent to 15 million wood-frame houses
- Beetle is not respecting borders (Alberta & US) or species (jack pine)
- Climate change link: beetles killed by -30C
- Huge fire risk
- Industrial development: sawnwood, panels, pellets to Europe

Source: Natural Resources Canada, 2008

Wood energy
(the oldest and newest market)

Wood energy markets

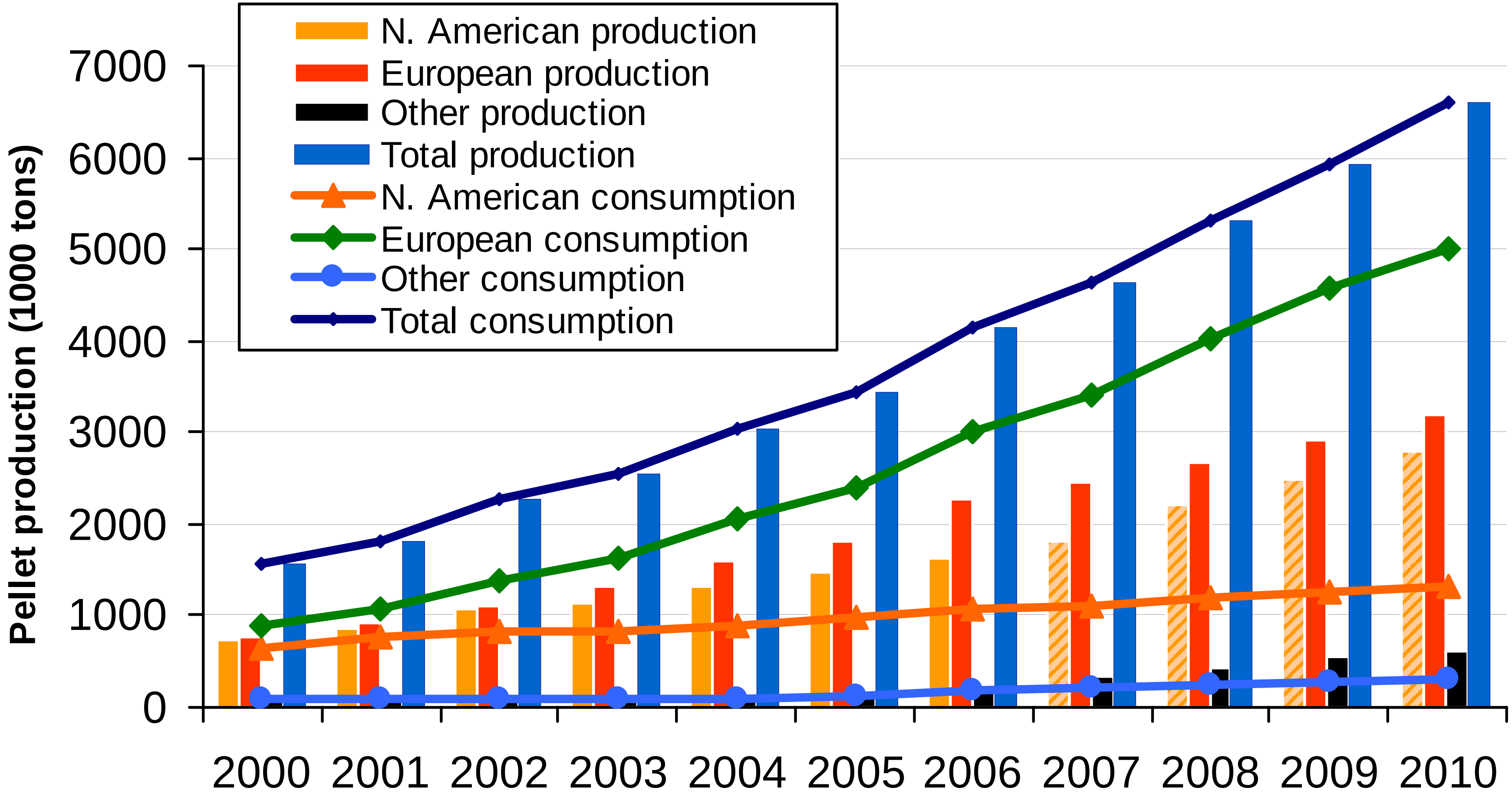
- Driven by high fossil fuel costs
- Driven by policies to promote renewable energies
  - 20% by 2020 in EU
  - 10% of transport fuels by 2020 in EU
- Driven by policies for energy security



Wood energy markets

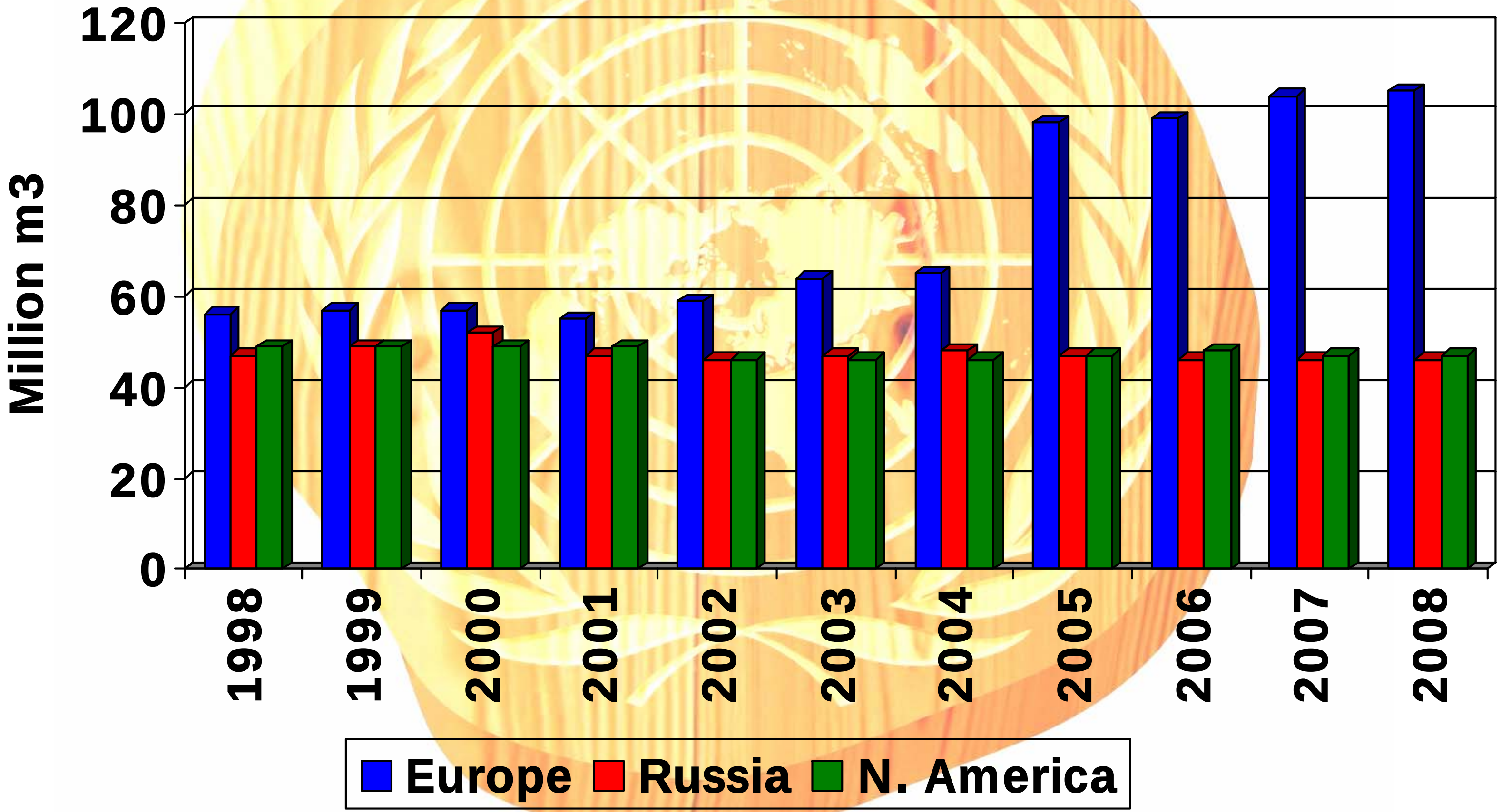
- Similar targets in North and South America, Asia, Oceania and Africa
  - US target of 15% biofuels for transport by 2022
  - 30% by 2030
- Most energy demand for space and water heating
- Wood pellet industry growing
  - Warm winters of 2006/2007, 2007/2008 ➔ oversupply
  - Transportation costs, especially Canada to Europe
- Future: cellulosic ethanol

Pellet consumption et production



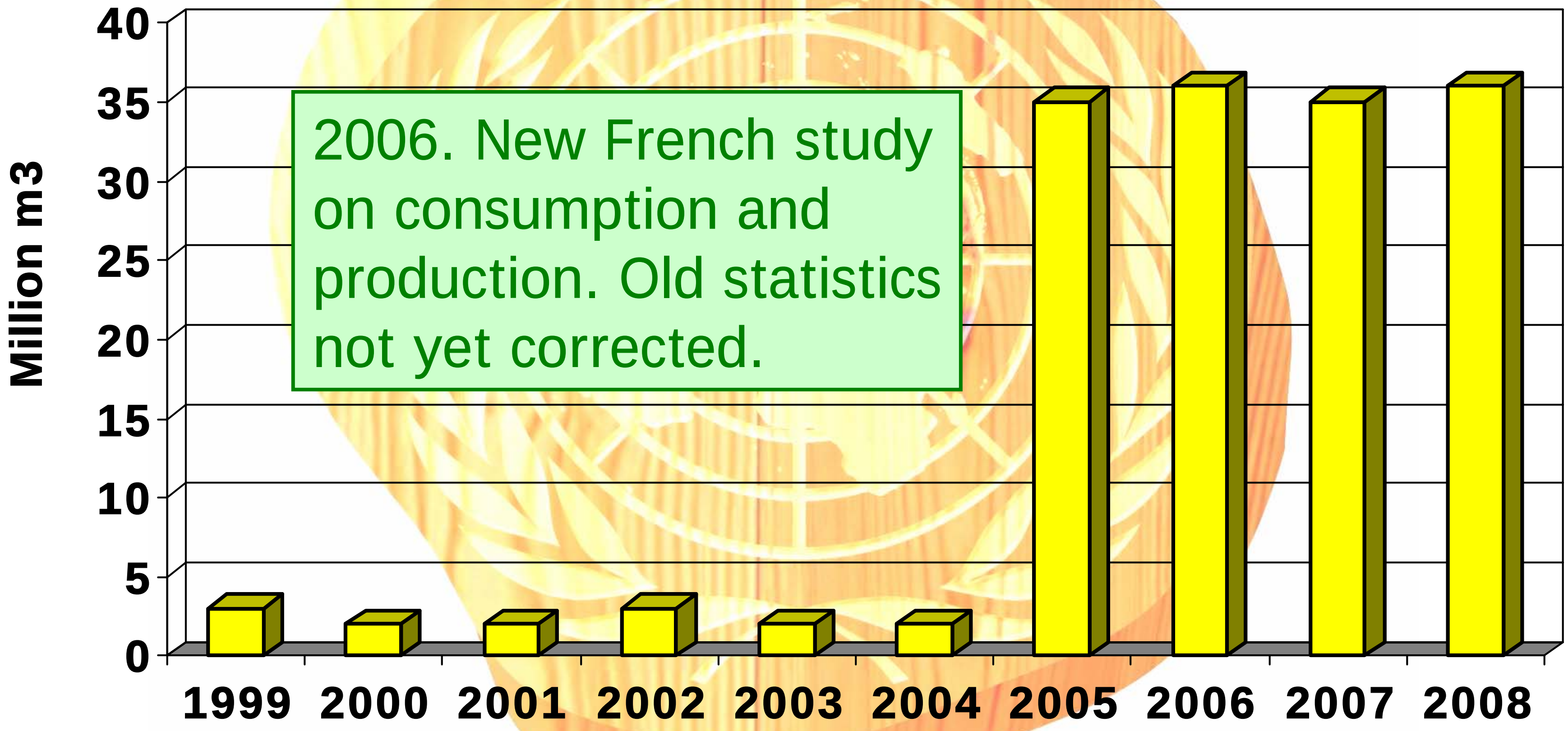
Source: Canadian Wood Pellet Association, 2007

Wood fuel production



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

French fuelwood production

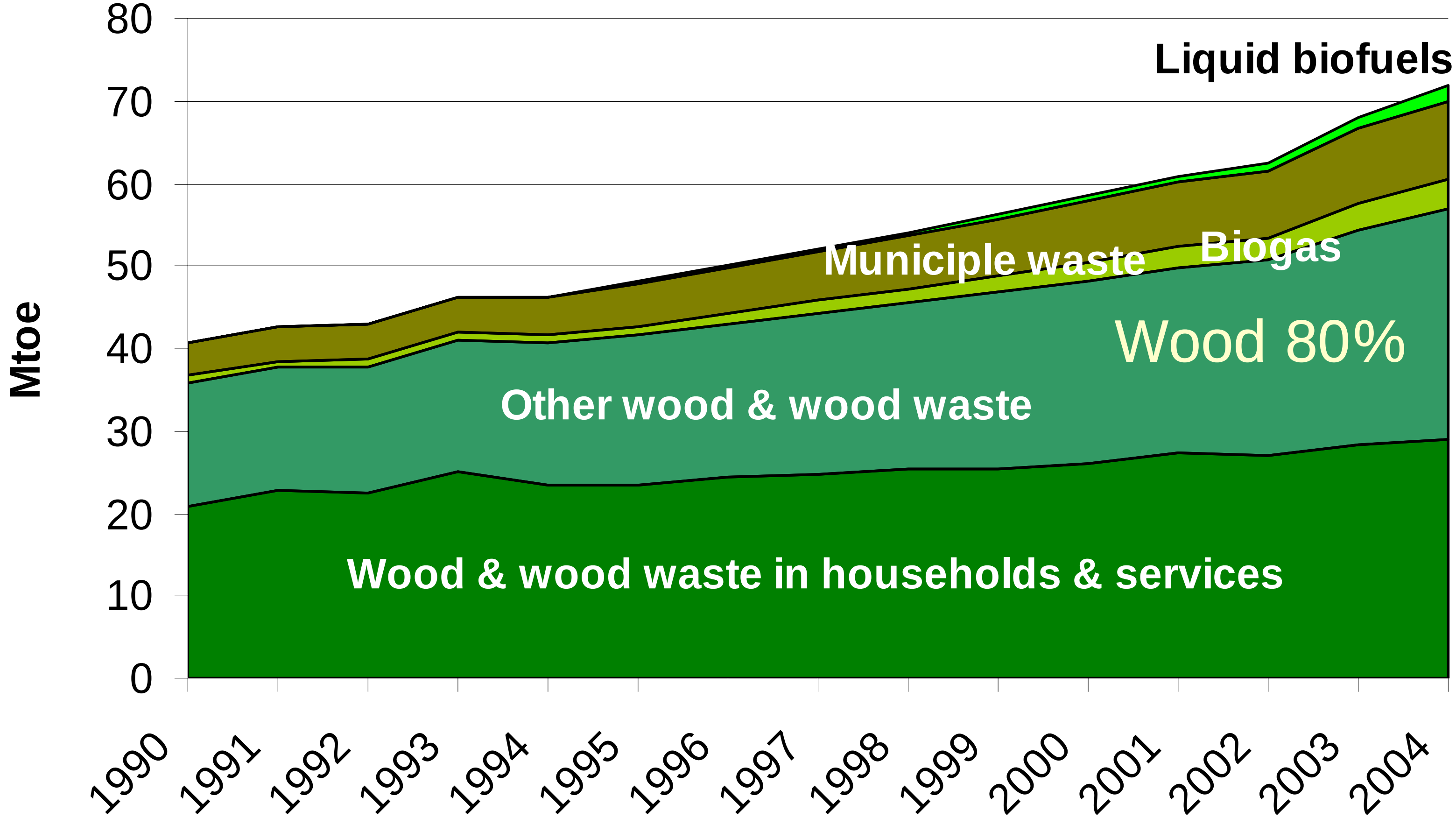


Sources: UNECE/FAO TIMBER database, and UNECE Timber Committee forecasts, October 2007

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

Utilization of biomass in the EU

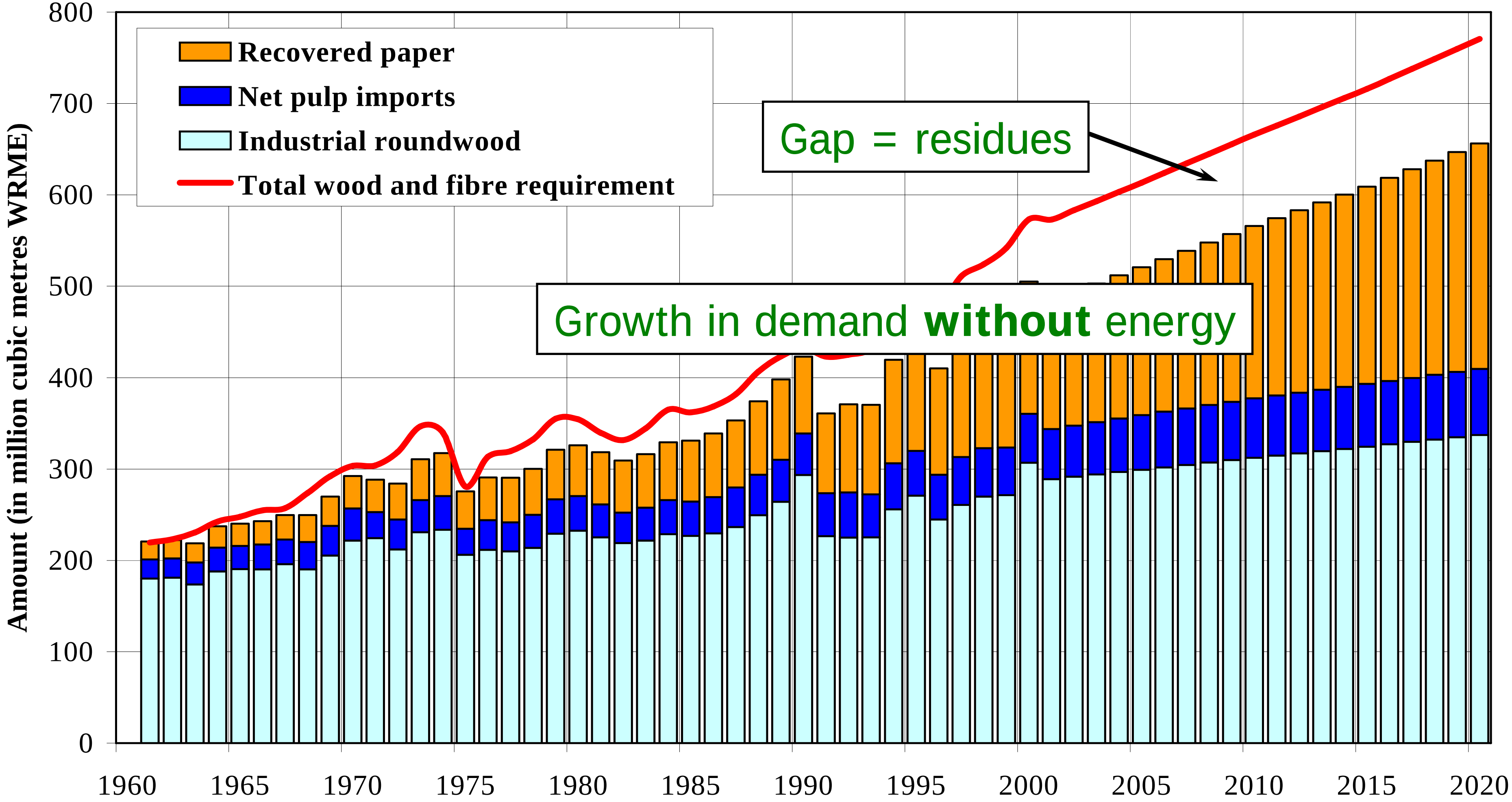


Source: EurObserv'ER, 2007

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?

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



WRME = Wood raw material equivalent

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

Dilemma or opportunity?
(million m^3)

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.

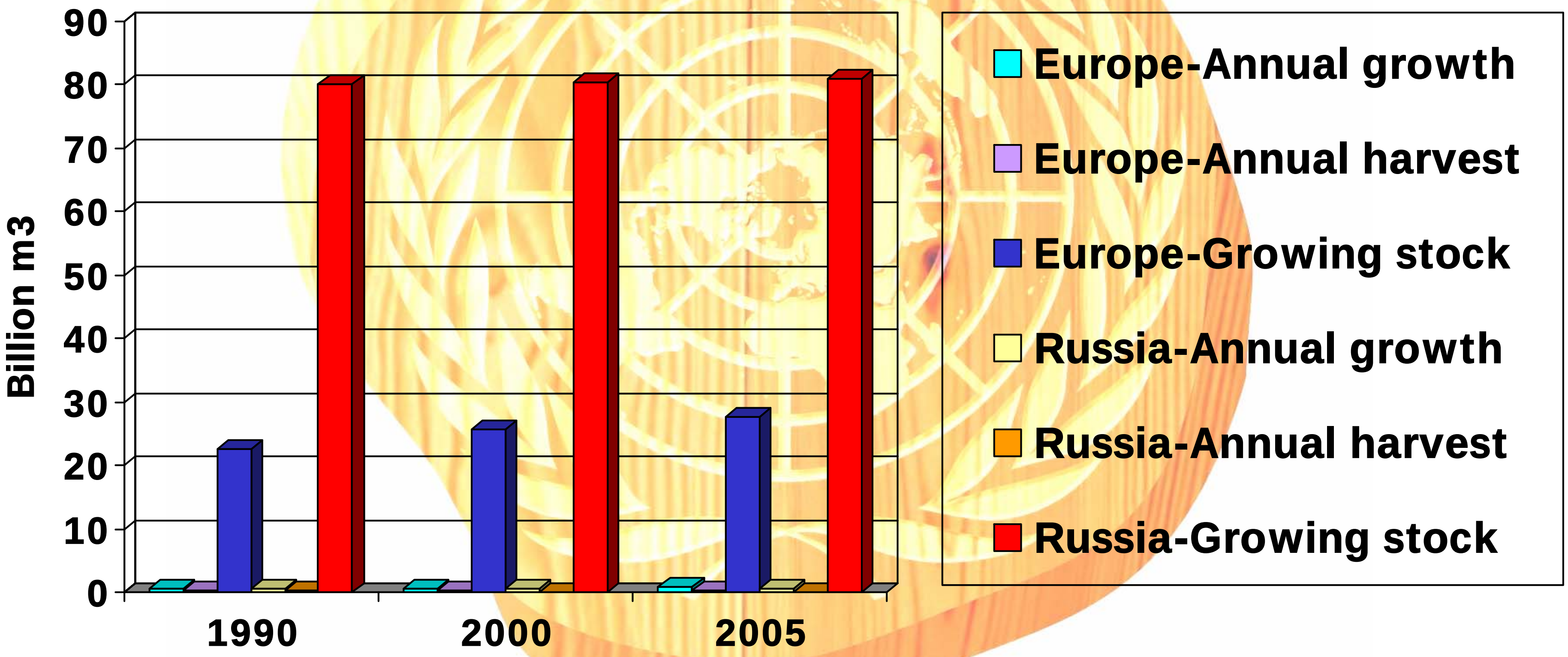
How to fill the “gap”

- 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

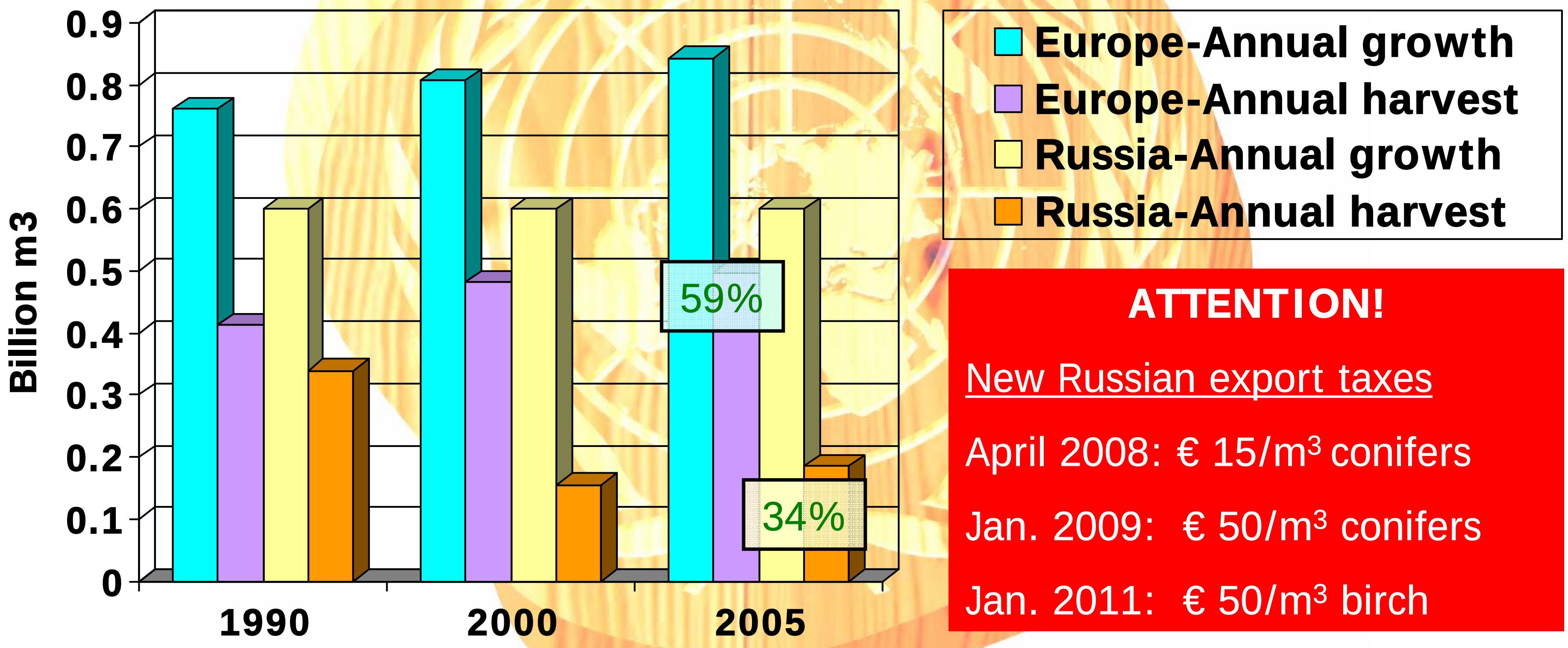
- Renewable energy targets not achieved
- Goals achieved, but not only with wood
  - Other sources of biomass
  - Other renewable energy sources
- Wood industry growth slowed
  - Raw material unavailable
  - Price of raw material too expensive

Import more fibre? From Russia??



Source: UNECE/FAO Forest Resources Assessment

Import more fibre? From Russia??
Annual growth vs. annual harvests



ATTENTION!

New Russian export taxes

April 2008: € 15/m³ conifers

Jan. 2009: € 50/m³ conifers

Jan. 2011: € 50/m³ birch

Source: UNECE/FAO Forest Resources Assessment

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 m^3 more harvest possible (~half of surplus 40%)
  - 25% more production through better silviculture
- How many billion cubic metres of standing timber are enough?

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

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

Swedish imports of wood fuels

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

UNECE Timber Committee on "Energy"

- Pellet demand at record level
- Pellet prices peaked in 2007, except Sweden
- 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

V. Conclusions

UNECE Timber Committee on "markets"

- N. American markets forecast to continue declining
- European markets slowing in 2008
- Russian export taxes will halve exports in 2008

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

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

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.

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*

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

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

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

VII. Discussion & questions

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