

# Subsidies to Industrial Forest Plantations: Impacts and Implications

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# Outline

- Rationale for study
- Global overview
  - Of plantations
  - Of subsidies
- Key issues
- Key implications
- Conclusions and Recommendations

# Rationale for Study

- Approximately 4.5 million hectares of new plantations established per year – many in China
- A majority of all plantations are subsidized – usually about 75% of total costs - an important amount of public money
- Plantations AND subsidies very controversial: social, economic, environmental concerns
- Subsidies increasingly discouraged by global trading regimes, e.g. WTO
- Purpose: help improve use of public funds for forestry

# Common Justifications for Subsidies

- Conventional:
  - Increase domestic timber supply (fear of timber famine)
  - Provide low-cost wood to industry
  - Industry “needs” subsidies to be profitable
- New argument: plantations “decrease pressure” on natural forests, and thereby help protect natural forests
- Many analyses have questioned validity of conventional justifications
- Particular focus on this last assumption: Is this true?

# Types of Plantations

- Two types of plantations:
  - Industrial
    - 70-100 million hectares globally (of 120 total)
    - Now supply about 20% of global market
    - Estimated to supply 40-50% of global market by 2050
    - In China: approximately 2 million ha/yr new
    - Australia, Brazil dedicated to double their plantation base soon
  - Landscape restoration
    - Natural revegetation, reduce erosion, etc.

# Plantation Area in Top 10 Countries

Country	Plantation Area [hectares]	% of Total Forest Area in Country
China	54,083,000	33.1
India	32,578,000	50.8
United States	16,238,000	7.2
Indonesia	9,871,000	9.4
Brazil	4,982,000	0.9
Thailand	4,920,000	33.3
Chile	2,017,000	13.0
Malaysia	1,750,000	9.1
New Zealand	1,542,000	19.4
Australia	1,396,000	0.9

Source: (FAO 2001)

# Industrial Plantation Issues

- Well covered in “Fast-Wood Forestry” led by CIFOR and co-sponsored by IUCN, WWF and Forest Trends, 2003
- Social:
  - Often displace local people, abuse property rights
  - Usually do not achieve promised employment goals
- Environmental:
  - mixed record, loss of biodiversity, destruction of natural forest,
  - “Can” contribute to landscape restoration
- Economic:
  - Plantations often ineffective and underperform: poor site selection, seedling quality and management

# Estimates of World Subsidies: '94-'98

Sector	OECD	Non-OECD	World	% of World Total
	<b>\$ US billions 1994-1998</b>			
Agriculture	335	65	400	37
Water	15	45	60	6
<i>Forestry</i>	5	30	35	3.3
Fisheries	10	10	20	2
Mining	25	5	30	3
Energy & Industry	335	185	520	49
Total	725	340	1,065	100

Source: van Beers and de Moor (2001) as cited in Pearce (2002).

# Types of Subsidies

- Direct
  - Direct transfer of funds
  - Promised transfer of funds (future payments)
- Indirect
  - Foregone revenue to government (e.g. tax breaks)
  - Provision of goods or services (e.g. roads, research, general support)
  - Access to undervalued public land, forest assets (e.g. forest concessions)

# Global Review of Direct Payments – Top 10

<b>Country</b>	<b>Adjusted for Inflation</b>	<b>Period Reported</b>	<b>Average Annual Subsidy</b>
China	809.3	1985-2000	53.95
India	-	-	-
United States	241.0	1974-1994	12.05
Indonesia	440.6	1984-2001	25.90
Brazil	7.3	2001	7.30
Thailand	-	2001	-
Chile	196.7	1974-1997	78.60
Malaysia	263.0	2002	263.00
New Zealand	3.1-4.4	1908-2001	0.03-0.05
	192.0	1950-1959	19.20
Australia	-	-	-

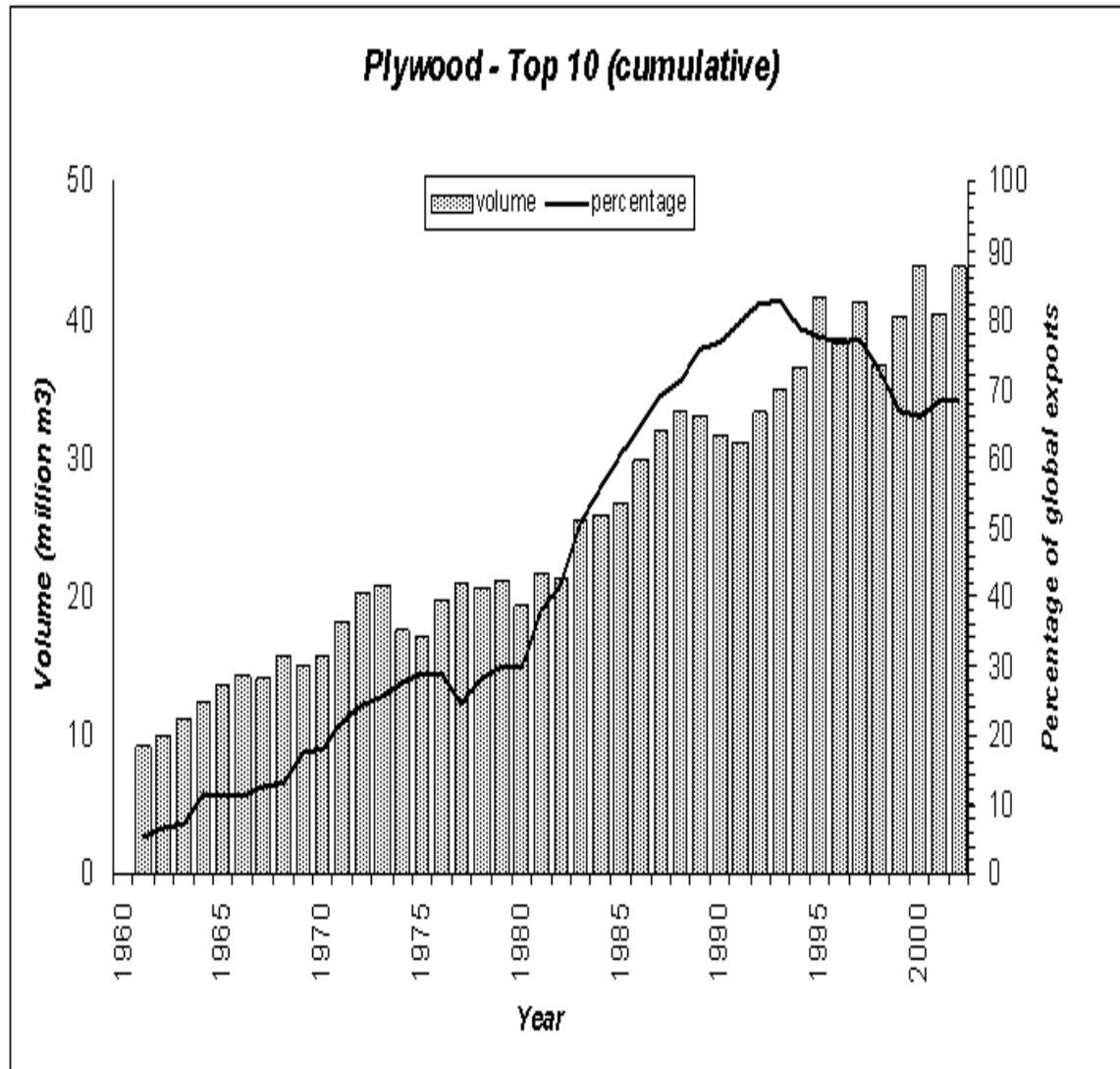
# Subsidy Trends

- Caveat: very difficult to find data and understand trends, government data often not publicly available
- General Findings:
  - Began in 60's, heavy in 70's – 80's: wood now on market
  - Shift from public to private plantations and from public to private investment (e.g. South Africa, Australia, New Zealand)
  - Direct subsidies going down in most countries
    - except China, going up
  - Many countries using more indirect subsidies (e.g. tax breaks for companies)
    - Much harder to identify and track
    - Concern for WTO?

# Subsidy Issues (from literature)

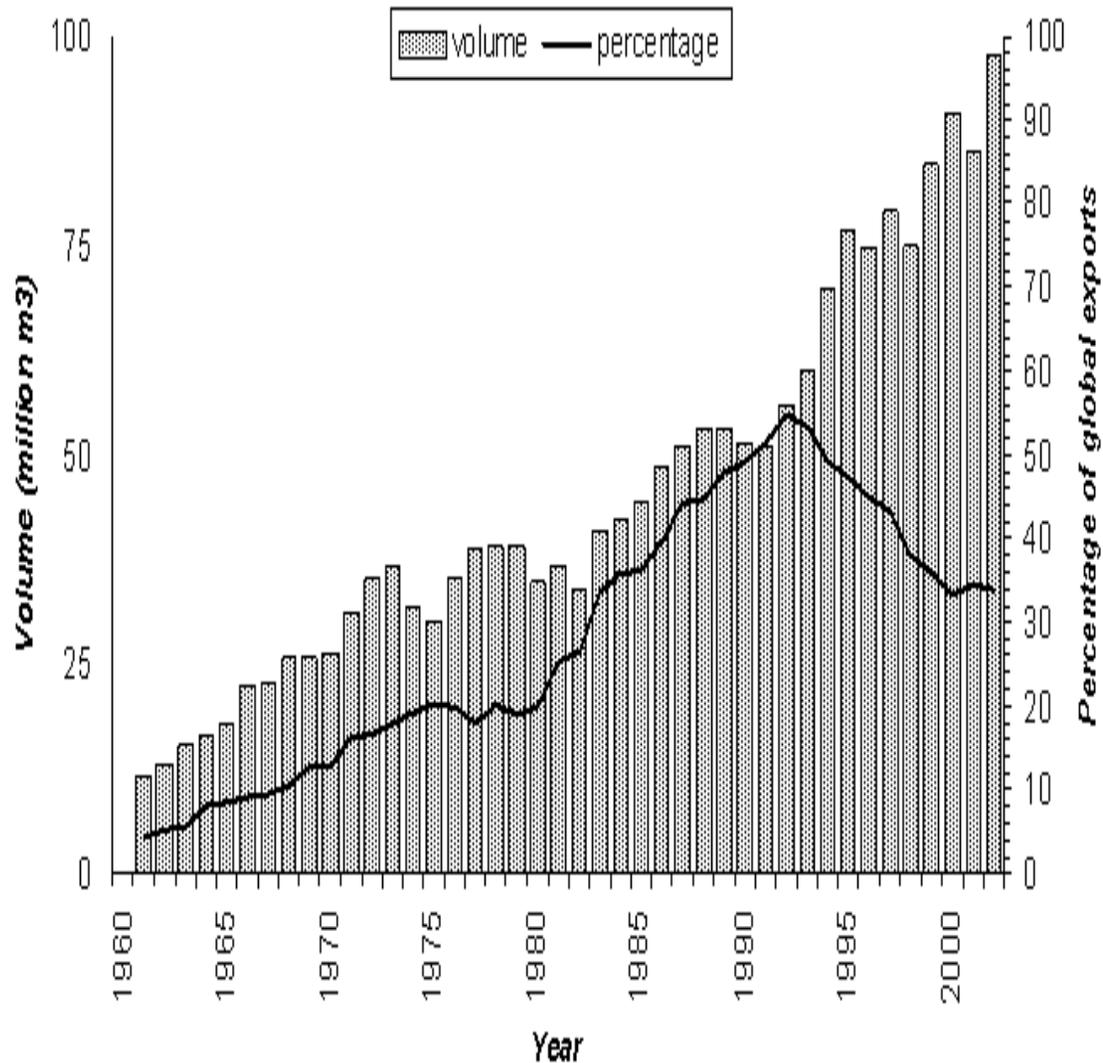
- Often inefficient use of government funds
  - Often ineffective
  - Often not necessary: (efficient level of private investment would have happened anyway)
  - Sometimes initially successful, later misused (Brazil, Australia)
  - Often “cover” for risk/uncertainty caused by underlying policy issues – e.g insecure land tenure
  - Sometimes “create” new risk and uncertainty – e.g corruption
- Social-political:
  - Inequity: often funds go to small set of large industry – reinforcing inequity
  - Strategic gamesmanship between countries (e.g. US-Canada)
- Environmental: subsidies can accelerate degradation
- Economic distortions – affecting product prices and natural forest values

# Implications: Economic Distortions



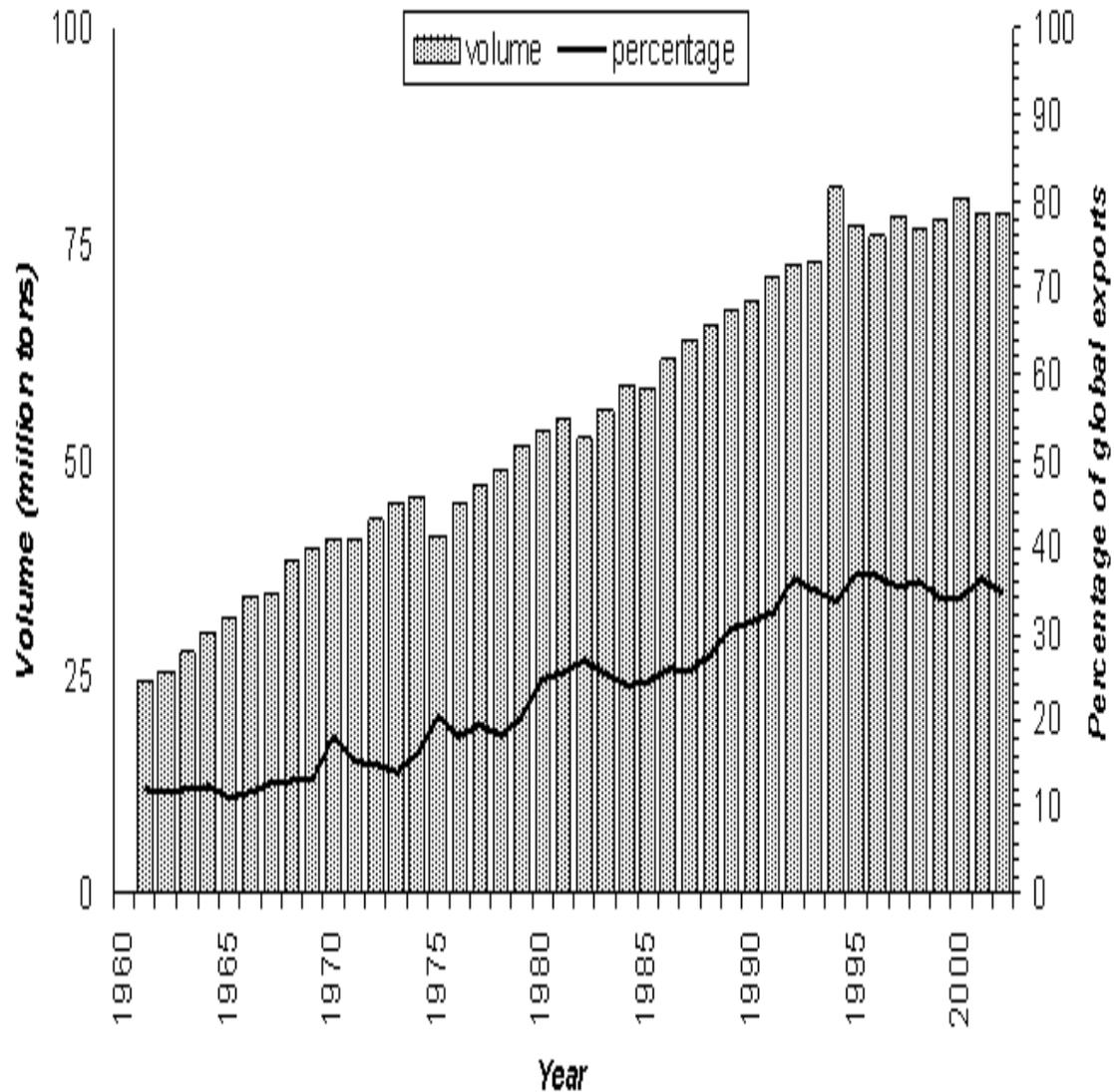
- Increased production from 10-40 million m3 since '60
- Increase in % of global market from 3 - 70%

### Wood Based Panels - Top 10 (cumulative)



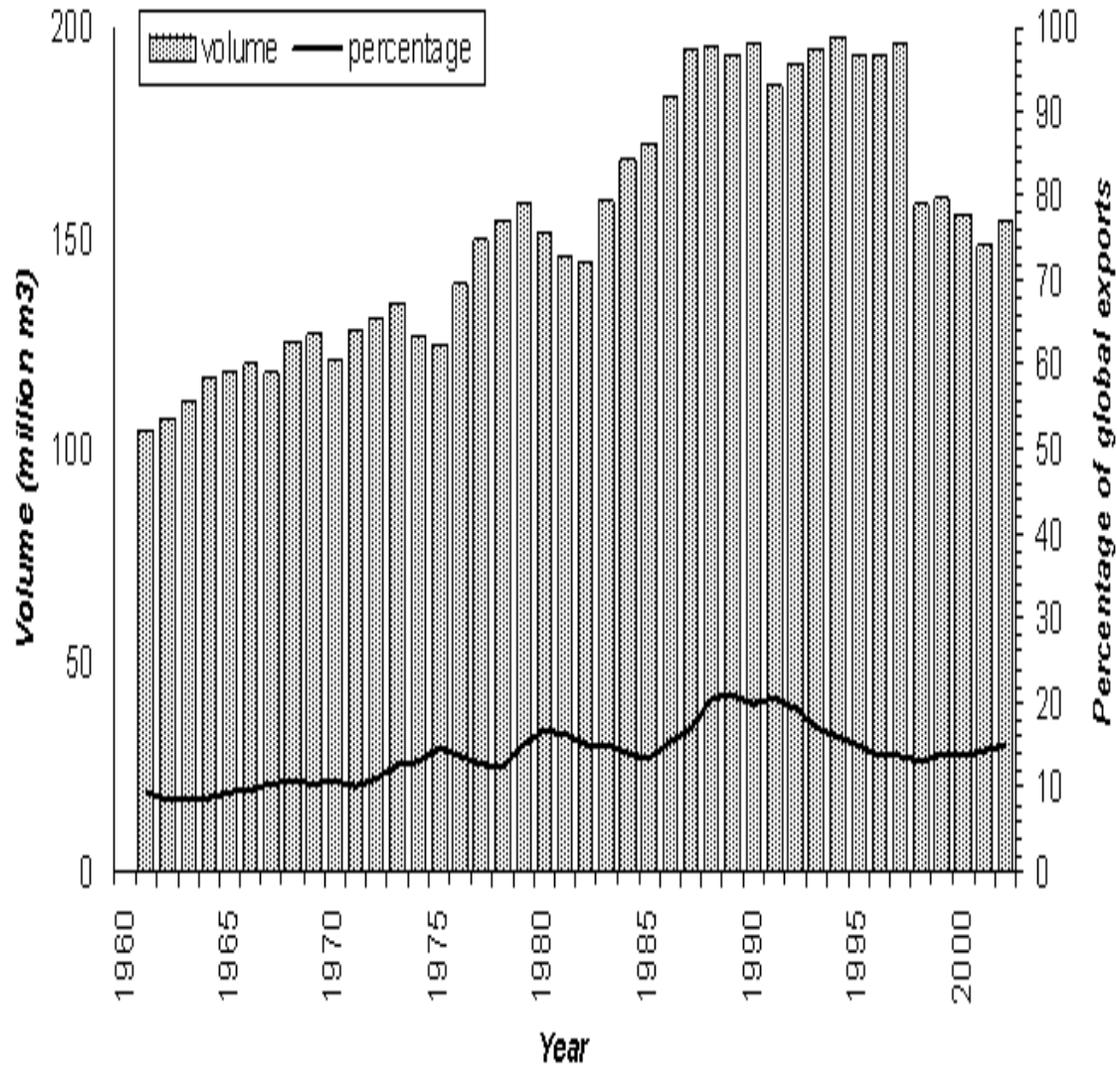
- Top 10 production from 10 to 100 million m3 between '60 – '02
- % of global supply from 5 to 34%

Wood Pulp - Top 10 (cumulative)



- Production increased from 25 to 75 million m3
- From 10 to 34% of global market between '60 and '02

### Sawnwood - Top 10 (cumulative)

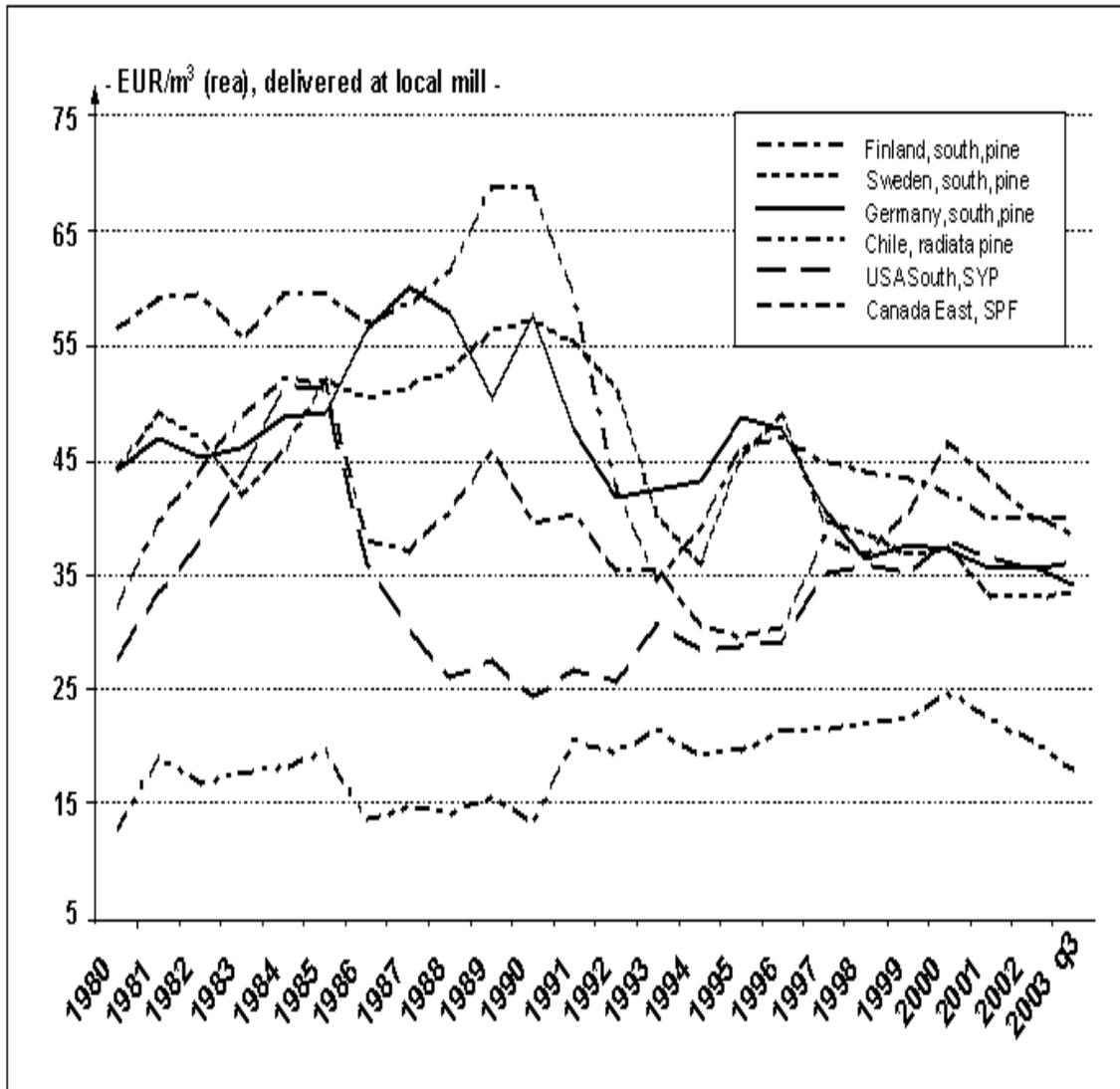


- Production from 100 to 150 million m3
- Percentage of global market flat – about 10%

# General Implications: Market Effects

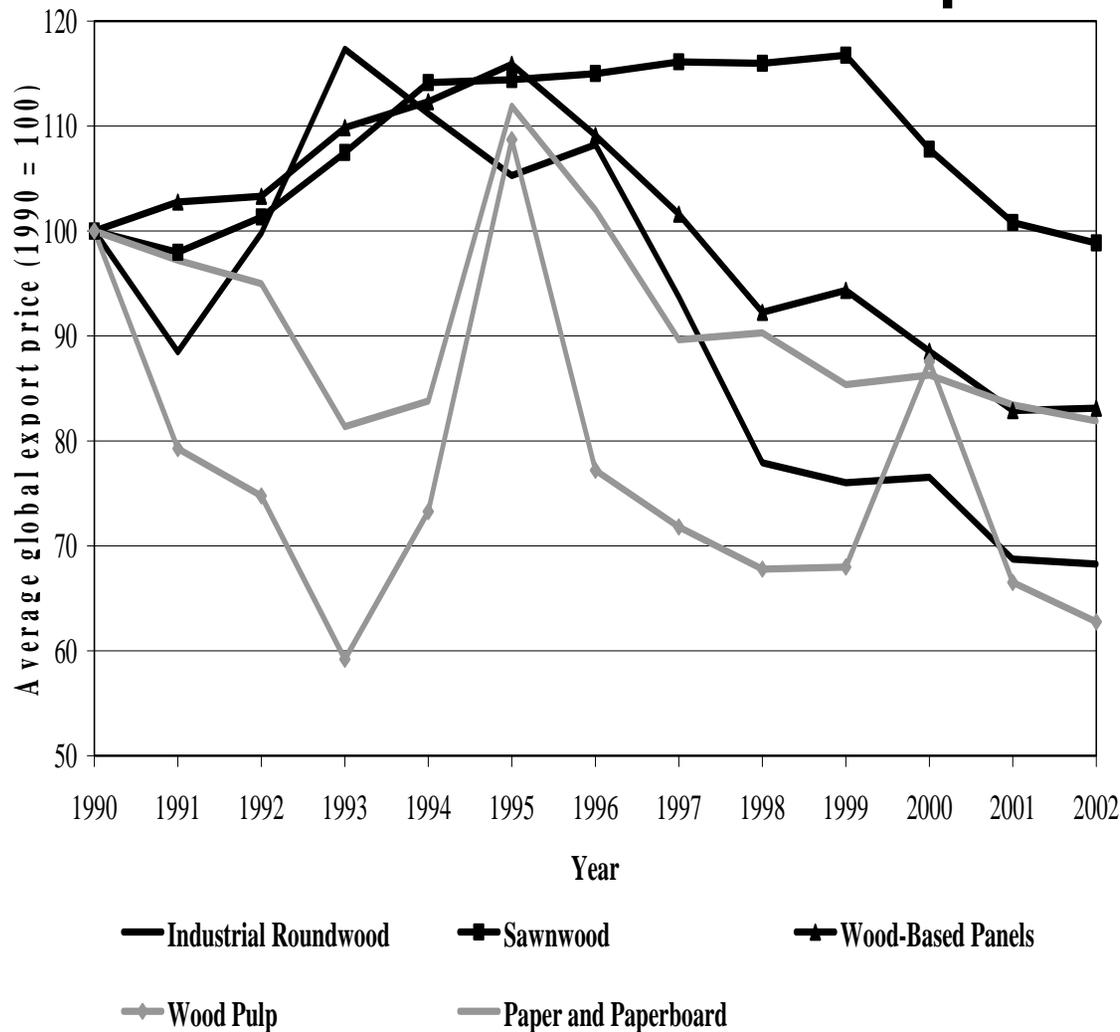
- Top 10 plantation countries increased share of markets since 1960
  - plywood (from 3% to 70%)
  - wood based panels (from 5% to 34%)
  - wood pulp (from 10% to 34%)
  - total product volumes in all three types of wood product increasing from 200% to over 400% from 1960 to 2002.
- A dramatic increase in the amount of forest volume harvested and a significant influence on international markets for these three product categories.
- Given their market share this will naturally have a significant impact on product prices.
- Exception: sawnwood, primarily from natural forest sources, only 10% of global markets

# Price Effects: Real Softwood Pulpwood Costs, 1980-2003



- Nilsson (2004) data from Jaakko Pöyry,
- Regions representing natural/semi-natural forests and industrial plantations.
- 1980, great difference in delivered prices between wood from natural/semi-natural forests and plantations – gap narrowed by 2003
- Prices increased slightly for plantation wood but substantial decrease in prices of wood from natural/semi-natural forests [magnitude of 15-20€/m<sup>3</sup>].

# Recent Trends in Global Forest Product Export Prices



- Export prices trends downward, except for sawnwood, (not impacted by an increasing volume from plantation countries).
- Combination of downward pressure on prices, especially with wood pulp, with increasing volumes of pulp material from plantations
- End result: subsidies to industrial plantations aggravating the declining economic conditions for natural forest industry: declining incentives for investment and management

# General Conclusions

1. General trend is towards an increasing use of indirect subsidies
  - makes it more difficult to determine the exact financial costs of such programs, and if the subsidy can be justified based on economic, environmental and social criteria.
2. Subsidies often lead to inequity and inefficient allocation of public resources.
  - Challenge is to find the appropriate institutional arrangement and monitoring systems to ensure that both equity and efficiency issues are appropriately addressed.
3. Subsidies seem to be a serious contributor to the distortion of forest products markets and prices – and undermine value of natural forests.
  - Incentives to maintain natural forests, and financing to ensure their management suffer

# But...

The same general findings are true for subsidies in other sectors – such as agriculture:

- Not reasonable to suggest that all subsidies to the forestry sector stop while subsidies to other sectors, especially those that compete for the same land, continue.

- More practical question:

*How to reform subsidies within the forestry sector and ensure that they address the most critical environmental and social market failures?*

# Recommendations

Two priority areas for subsidy to the forest sector:

1. Payments for ecosystem services provided by private and collective forest owners, including restoration of degraded forest:
  - Landowners are increasingly expected to maintain forest and produce social benefits of biodiversity, carbon, wetland habitat or water conservation. If society wants these from private and collective forest owners, they need to pay for them.
2. Support for small scale and community forest businesses that directly advance rural development.
  - Including business and technical advice, market information services, market studies – helping them to successfully use their forest assets and compete (e.g. Mexico)

# Final Thought

- Research and experience show that subsidies cannot overcome and cannot be effective in inadequate policy environments
  - (e.g. where property rights are insecure, markets are dominated by governments, regulations, taxes and fees are exorbitant subsidies are inefficient)
  - Governments should consider addressing these policy constraints first (or at least simultaneously)