



# Metsäteho

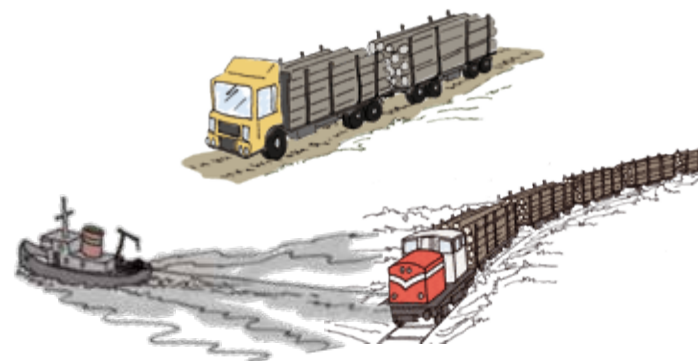
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## Timber Harvesting and Long-distance Transportation of Roundwood 2010

Arto Kariniemi

## Target and Publications

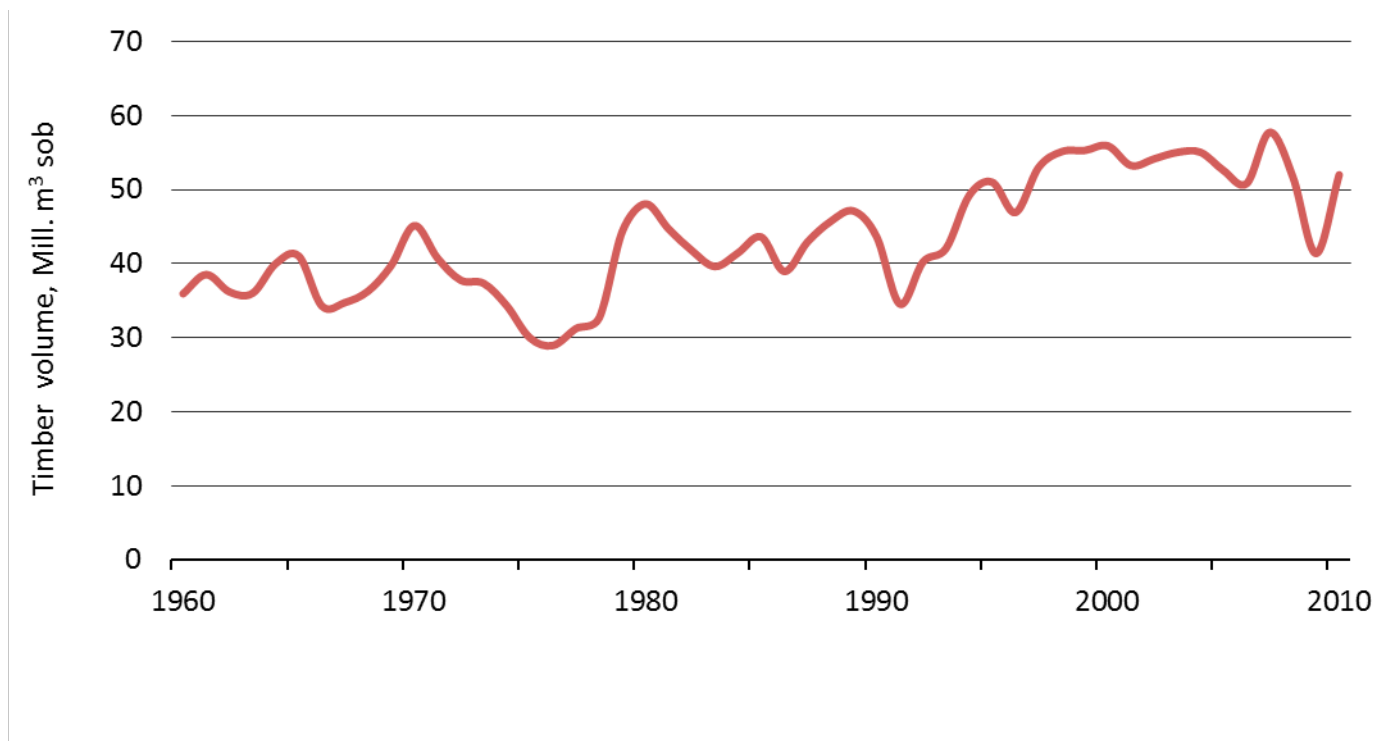
- Includes volumes and direct harvesting costs of timber assortments concerning domestic roundwood by the forest industries and State forest enterprise as well as proportions of harvesting methods.
- Look at also Finnish Statistical Yearbook of Forestry (Finnish Forest Research Institute), especially chapter 5 "Harvesting and transportation of roundwood".
- Publications
  - Kariniemi, A. 2011. Puunkorjuu ja kaukokuljetus vuonna 2010. Metsätehon katsaus nro 46. Summary: Harvesting and long-distance transportation 2010.



# Background Information of Finnish Wood Supply

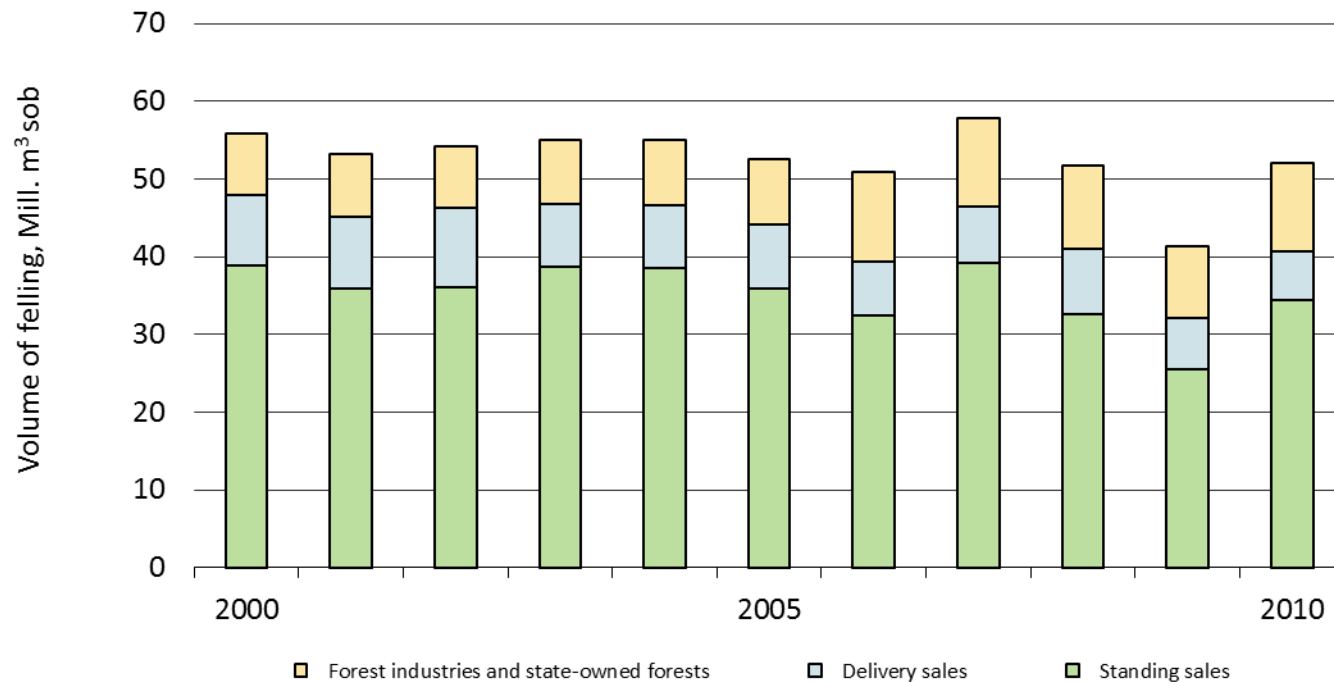
Statistics of Metsäteho

## Domestic Commercial Fellings, 1960 – 2010



Source: Finnish Forest Research Institute

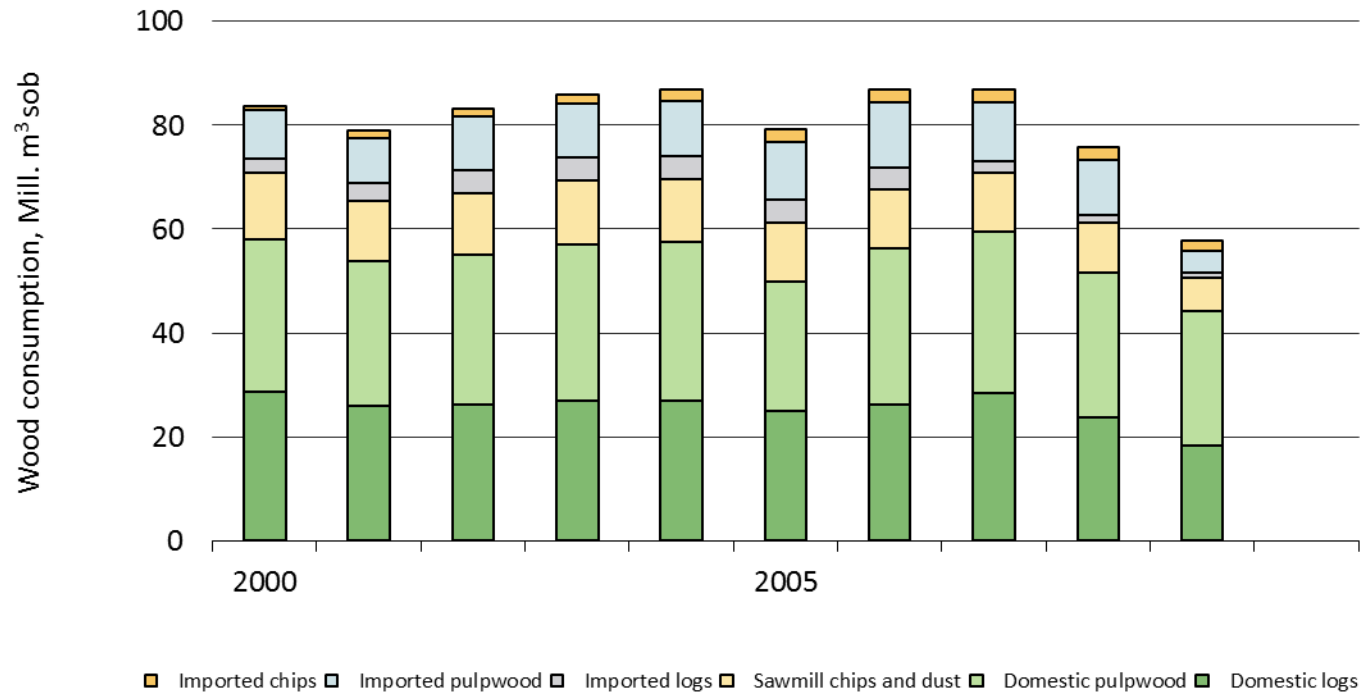
# Commercial Roundwood Removals by Forest Ownership Category, 2000 – 2010



Standing sales + Delivery sales = Non-industrial, private forests

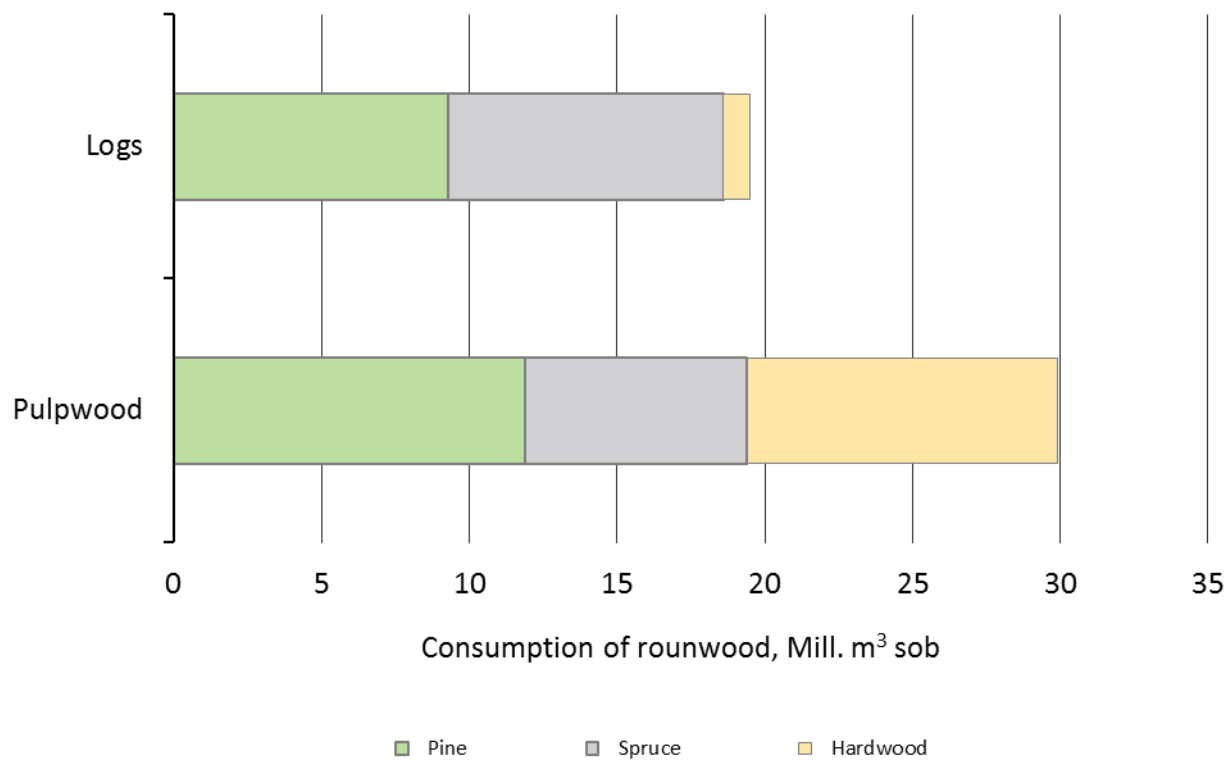
Source: Finnish Forest Research Institute

# Roundwood Consumption by Forest Industries, 2000 – 2009



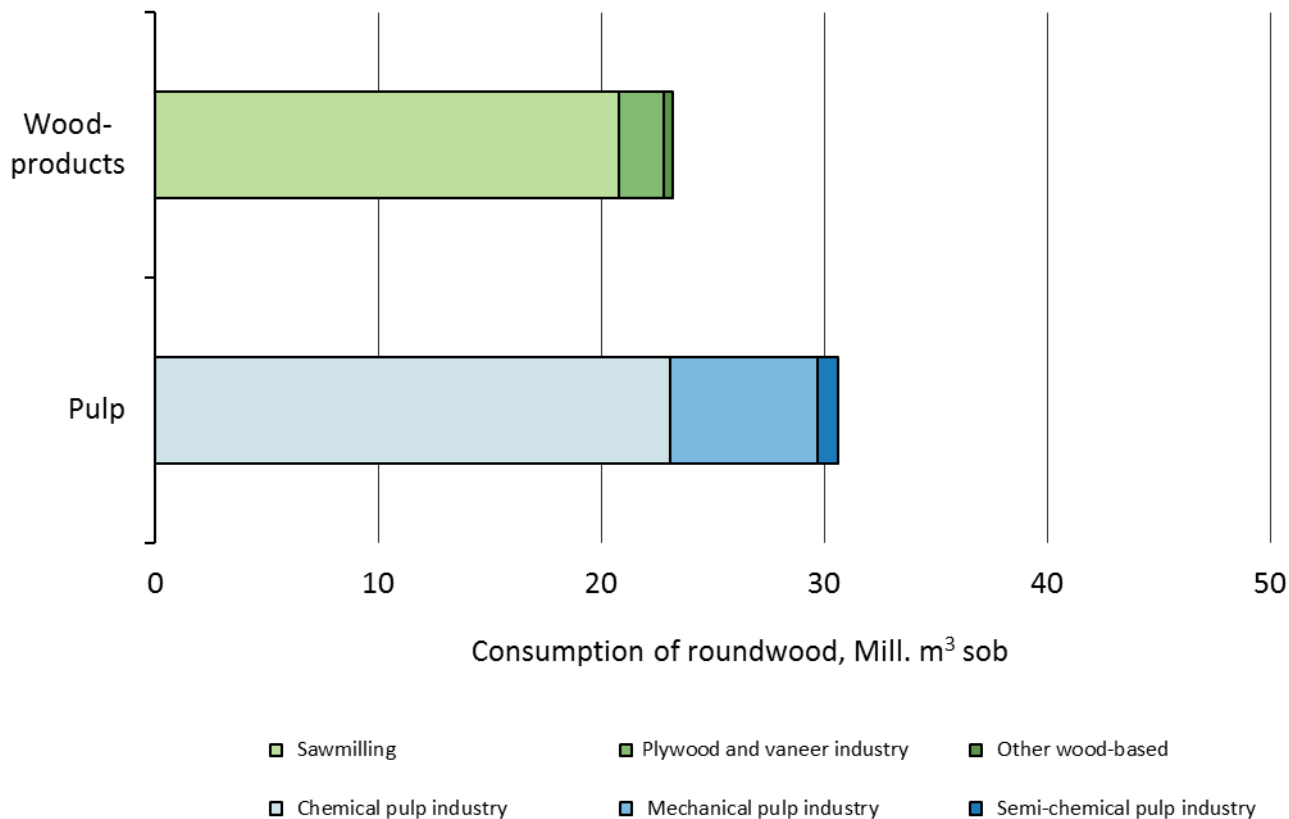
Source: Finnish Forest Research Institute

# Wood Consumption by Forest Industries, 2009



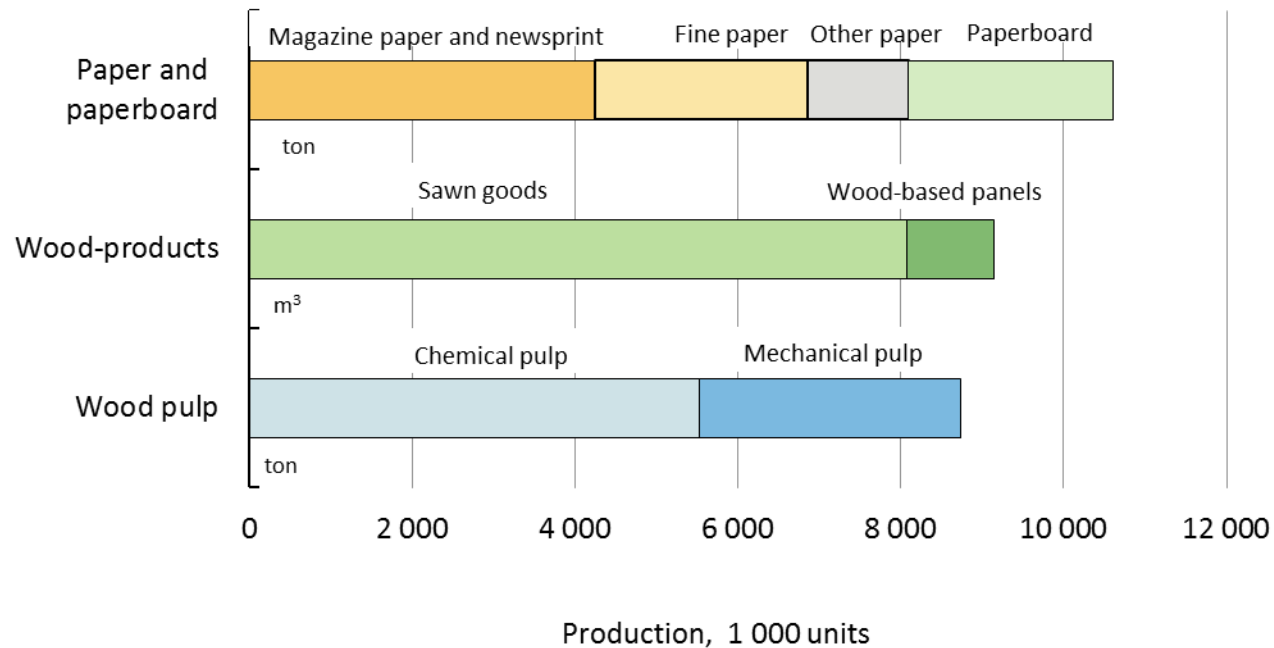
Source: Finnish Forest Research Institute

# Roundwood Consumption by Forest Industries by Branch of Industry, 2009



Source: Finnish Forest Research Institute

# Production of Forest Industry products, 2009

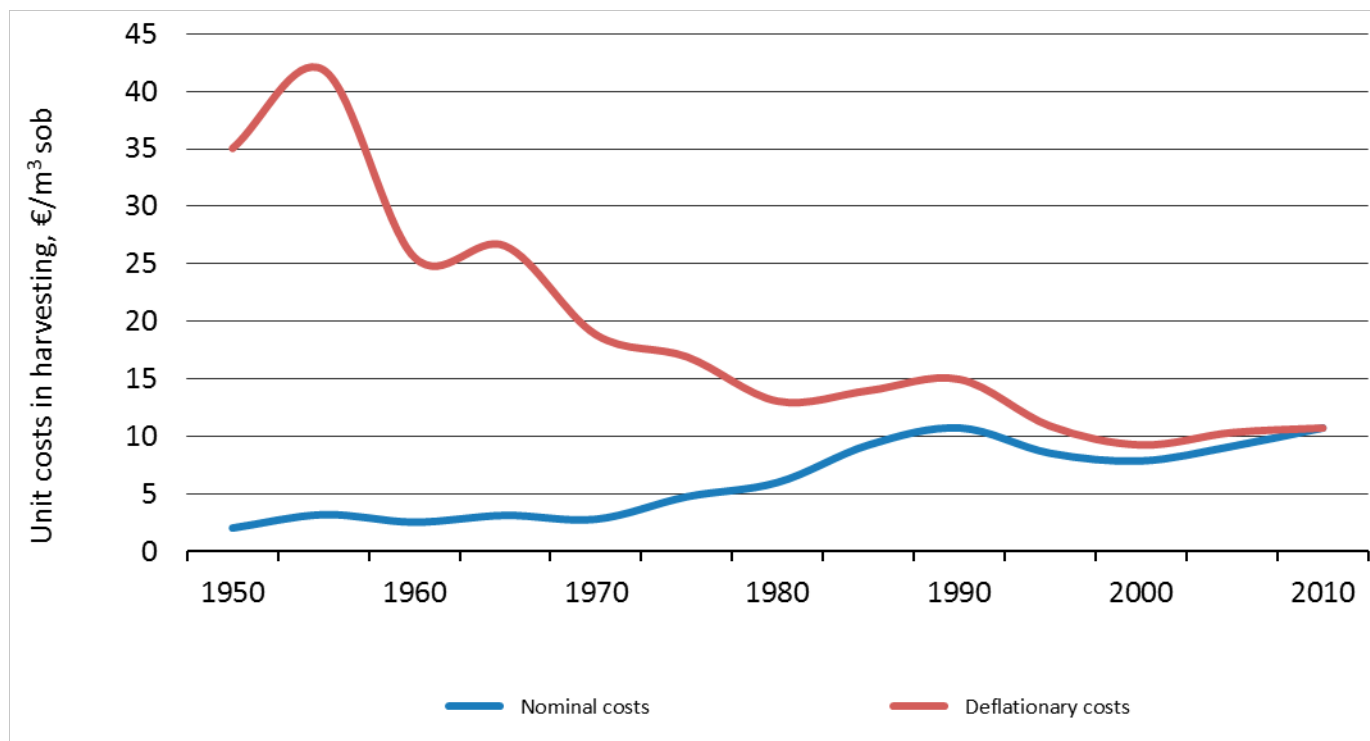


Source: Finnish Forest Research Institute

# Long Term Trends of Finnish Wood Supply

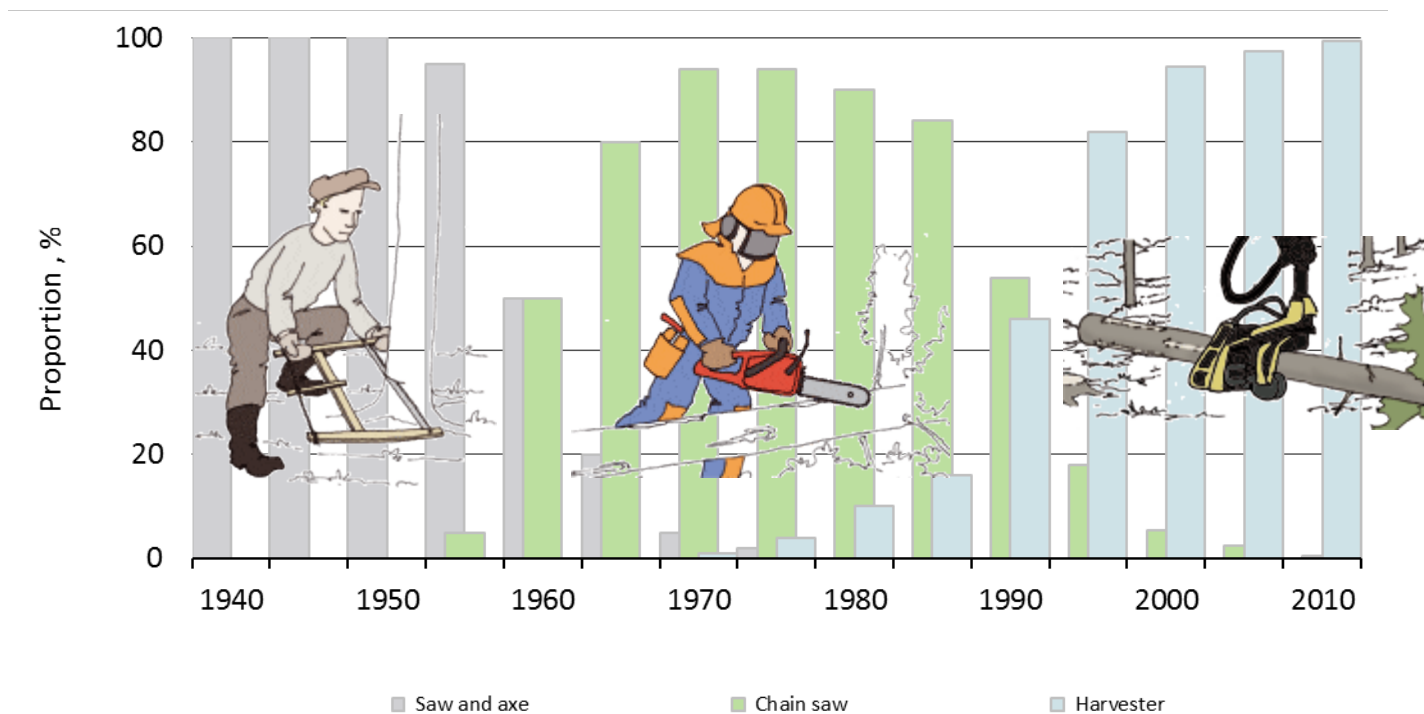
Statistics of Metsäteho

## Unit Costs in Timber Harvesting, 1950 – 2010

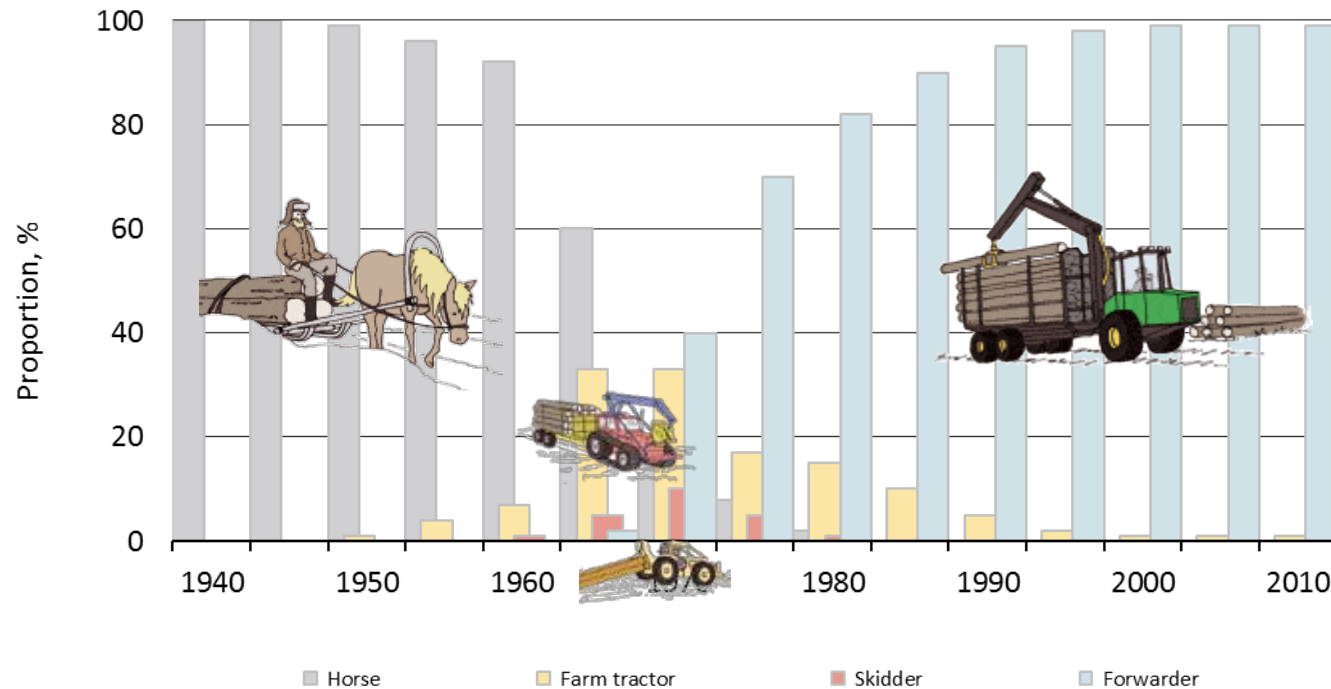


Real costs have been deflated by the wholesale price index (2010=100).

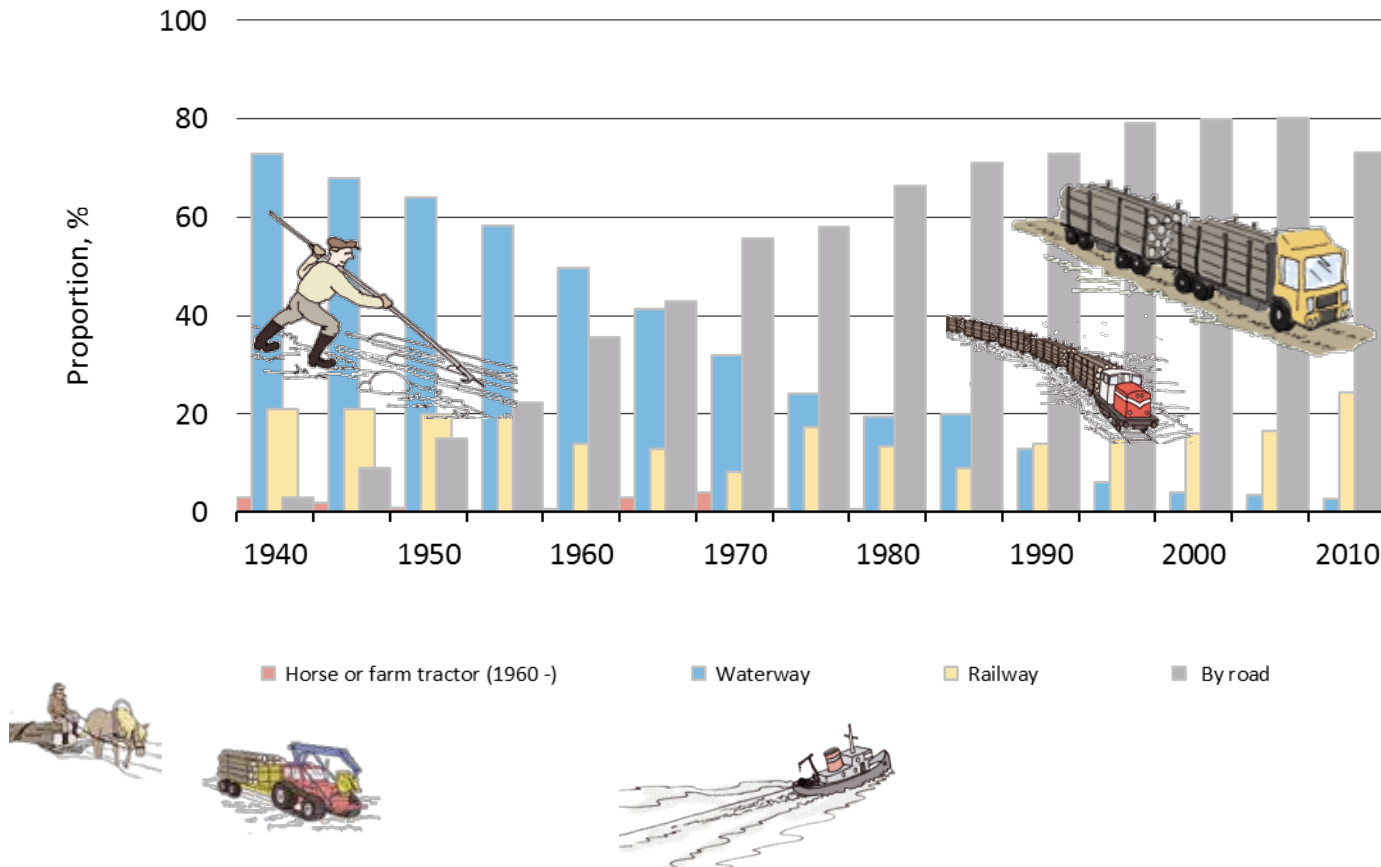
# Felling Techniques, 1940 – 2010



# Forest Haulage Techniques, 1940 – 2010



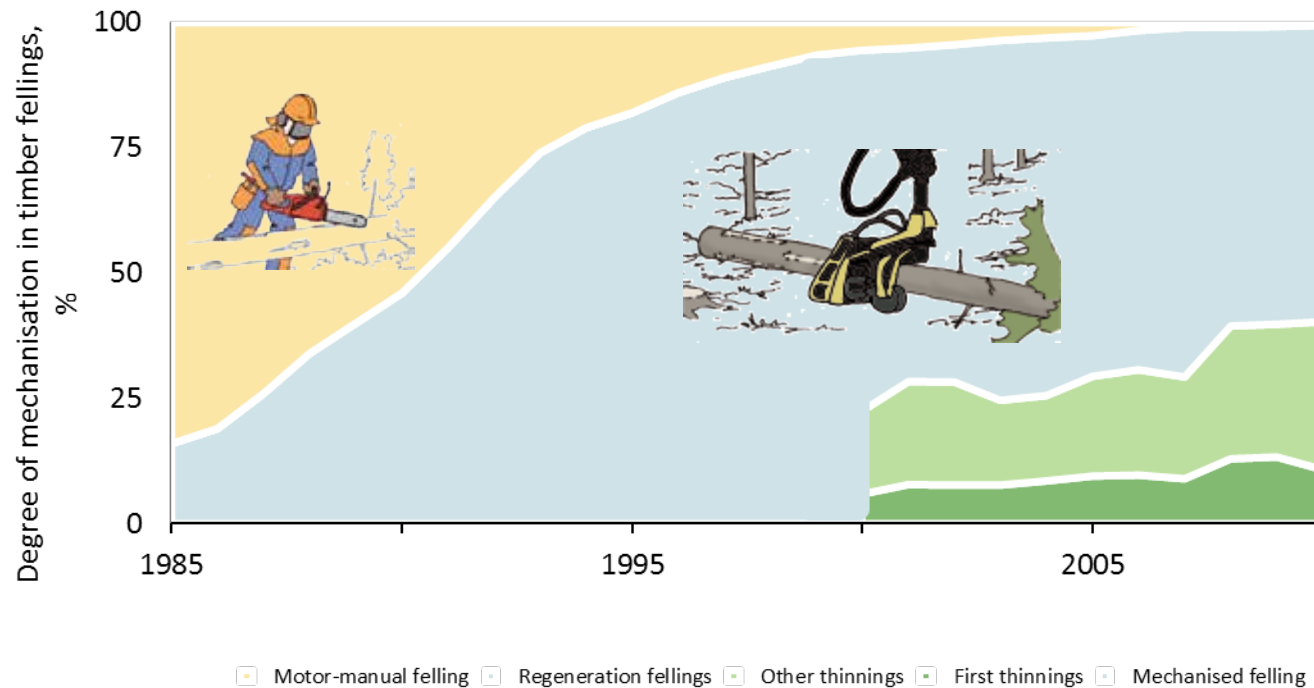
# Long-distance Transportation Techniques, 1940 – 2010



# Short Term Trends of Finnish Wood Supply

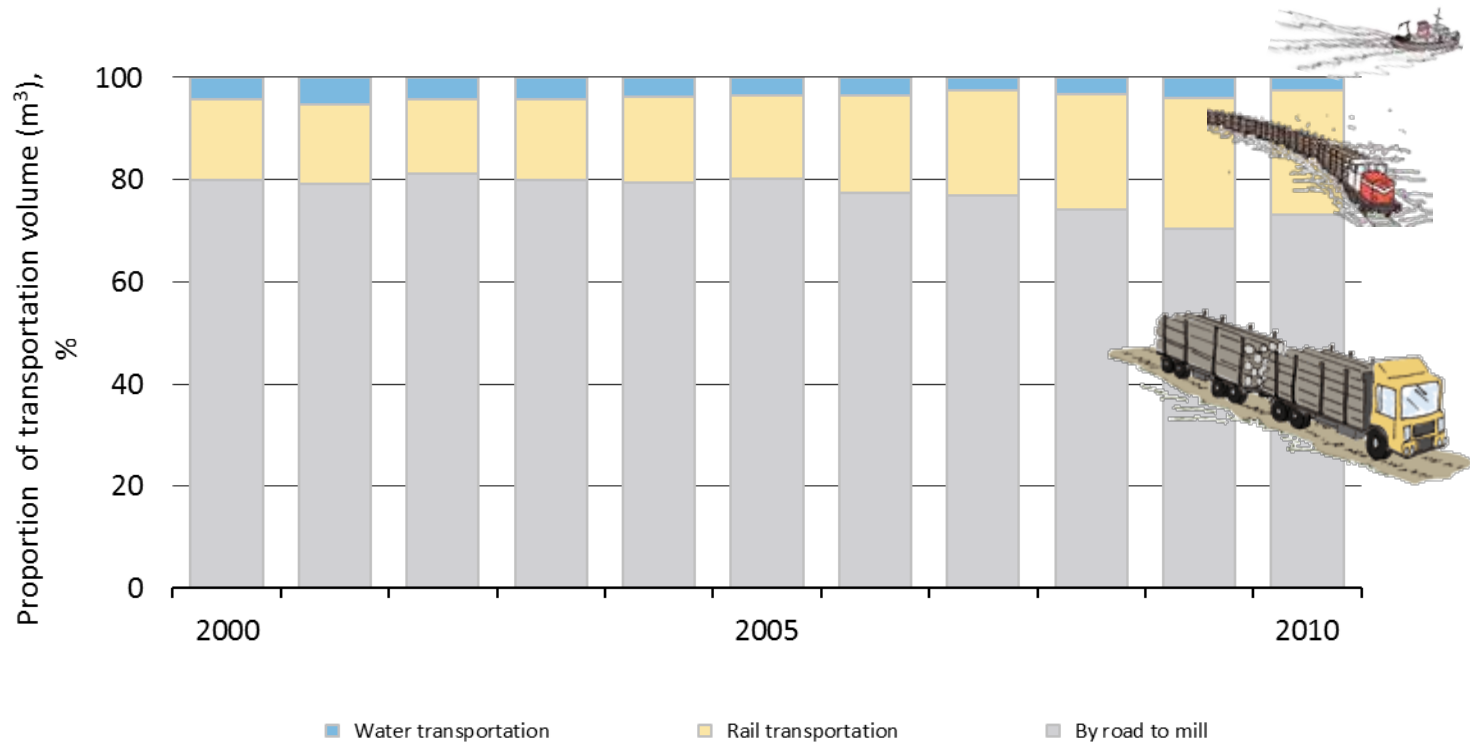
Statistics of Metsäteho

# Mechanisation of Felling, 1985 – 2010

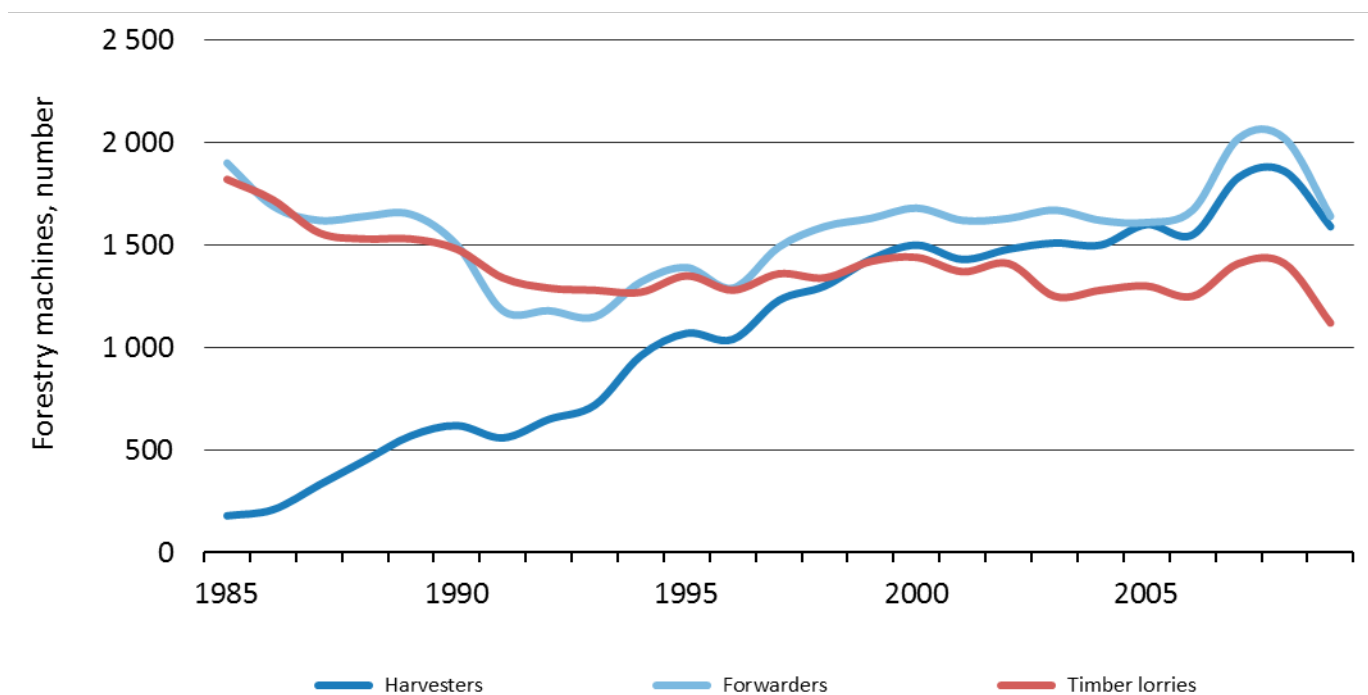


Per cent of mechanised felling year 2010: 99.4%

# Long-distance Transportation Techniques, 2000 – 2010

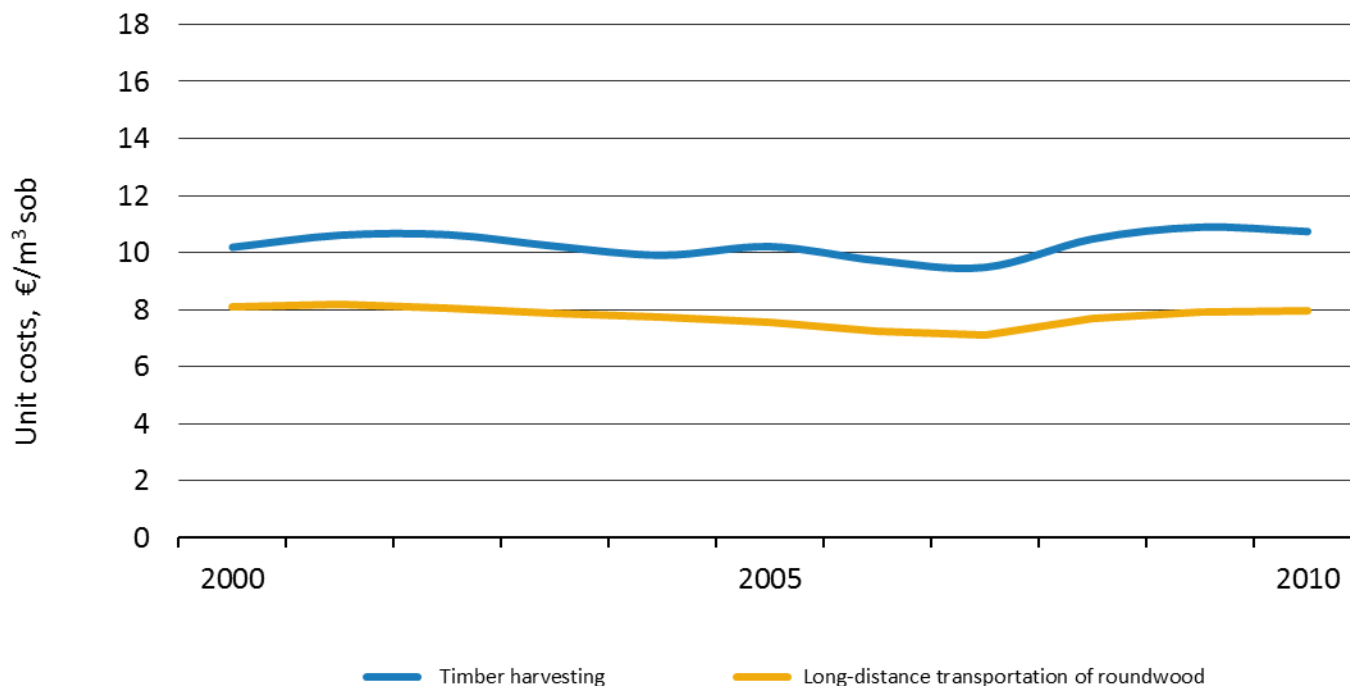


## Forestry Machines, 1985 – 2009



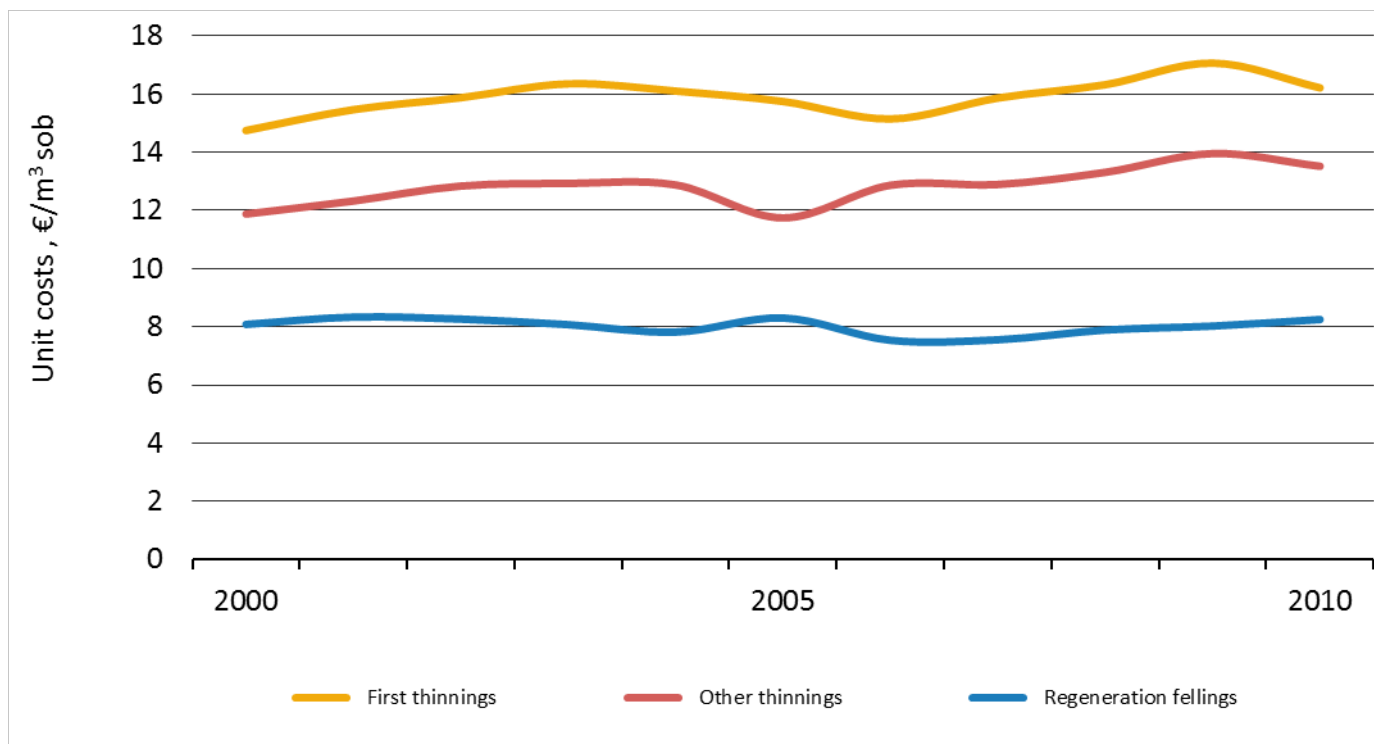
Source: Finnish Forest Research Institute

## Unit Costs in Timber Harvesting and Long-distance Transportation of Roundwood, 2000 – 2010



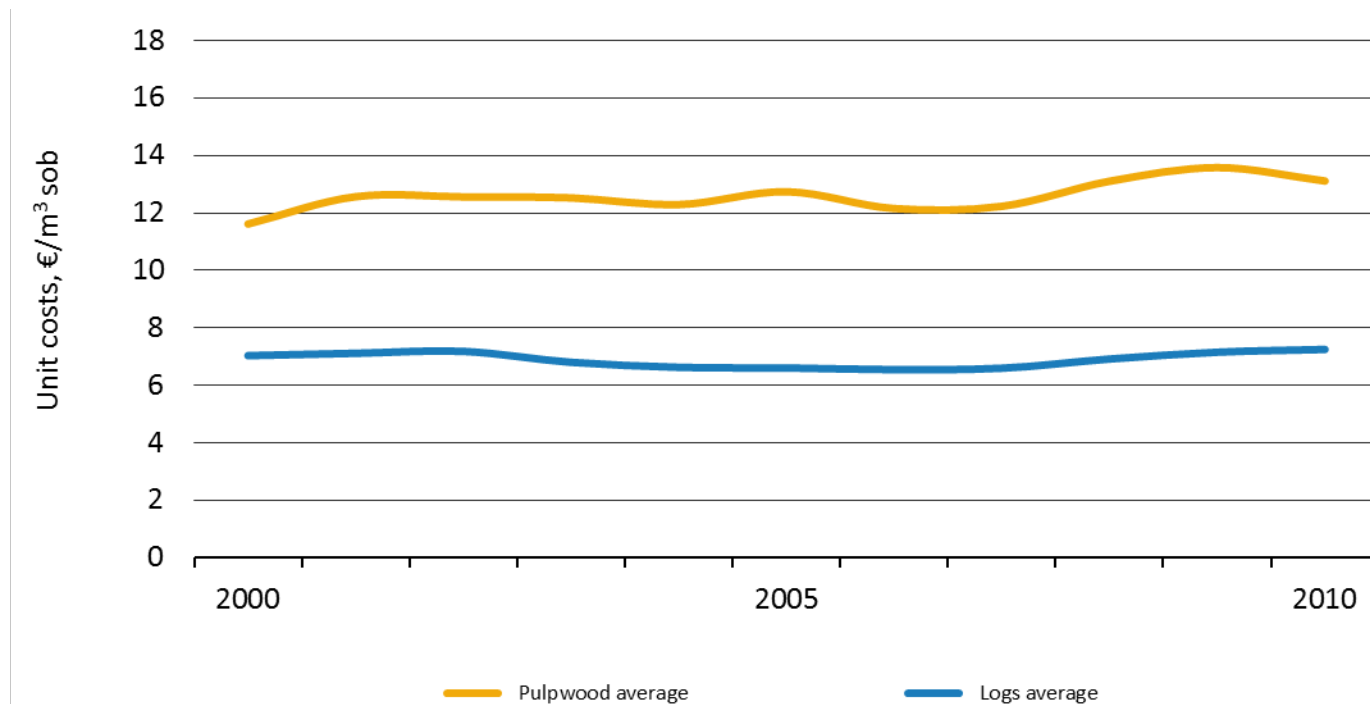
Real costs have been deflated by Indexes of forest machinery costs and lorry traffic costs (2010=100).

## Unit Costs in Mechanised Harvesting by Felling Method, 2000 – 2010



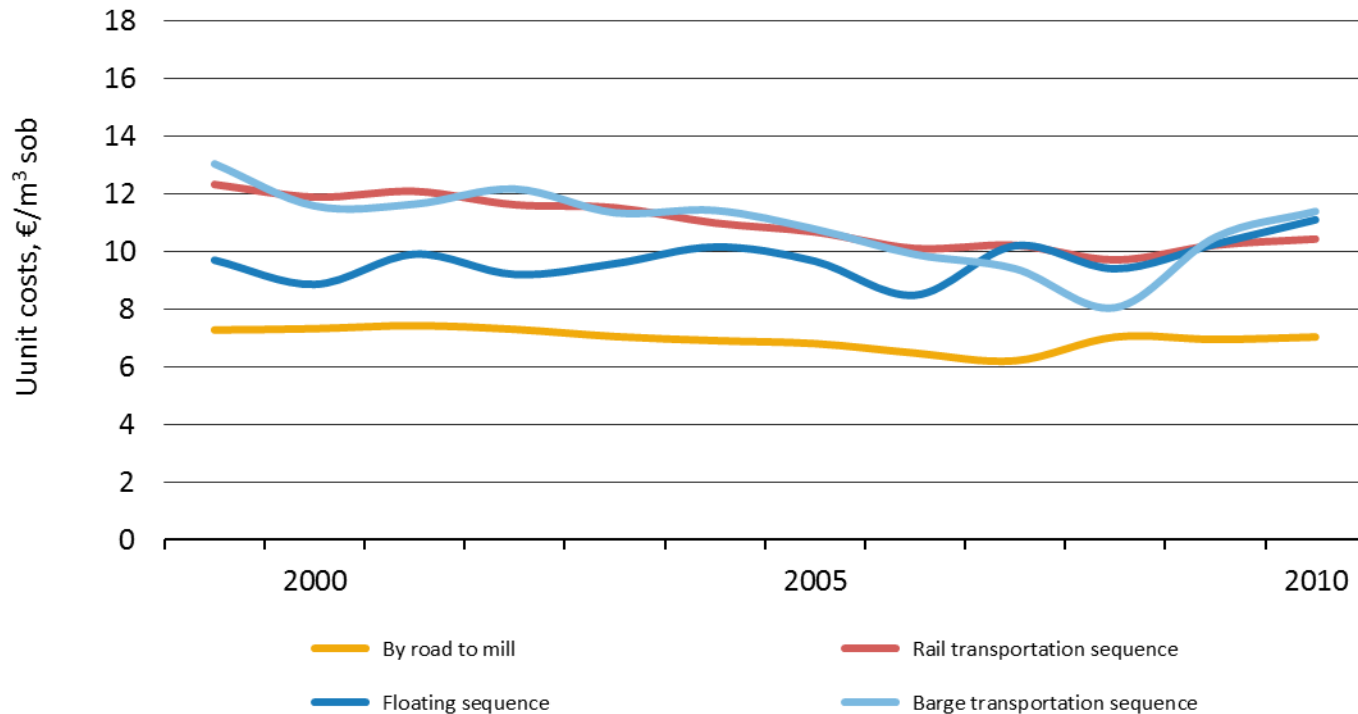
Real costs have been deflated by Index of forest machinery (2010=100).

## Unit Costs in Mechanised Harvesting by Timber Assortments, 2000 – 2010



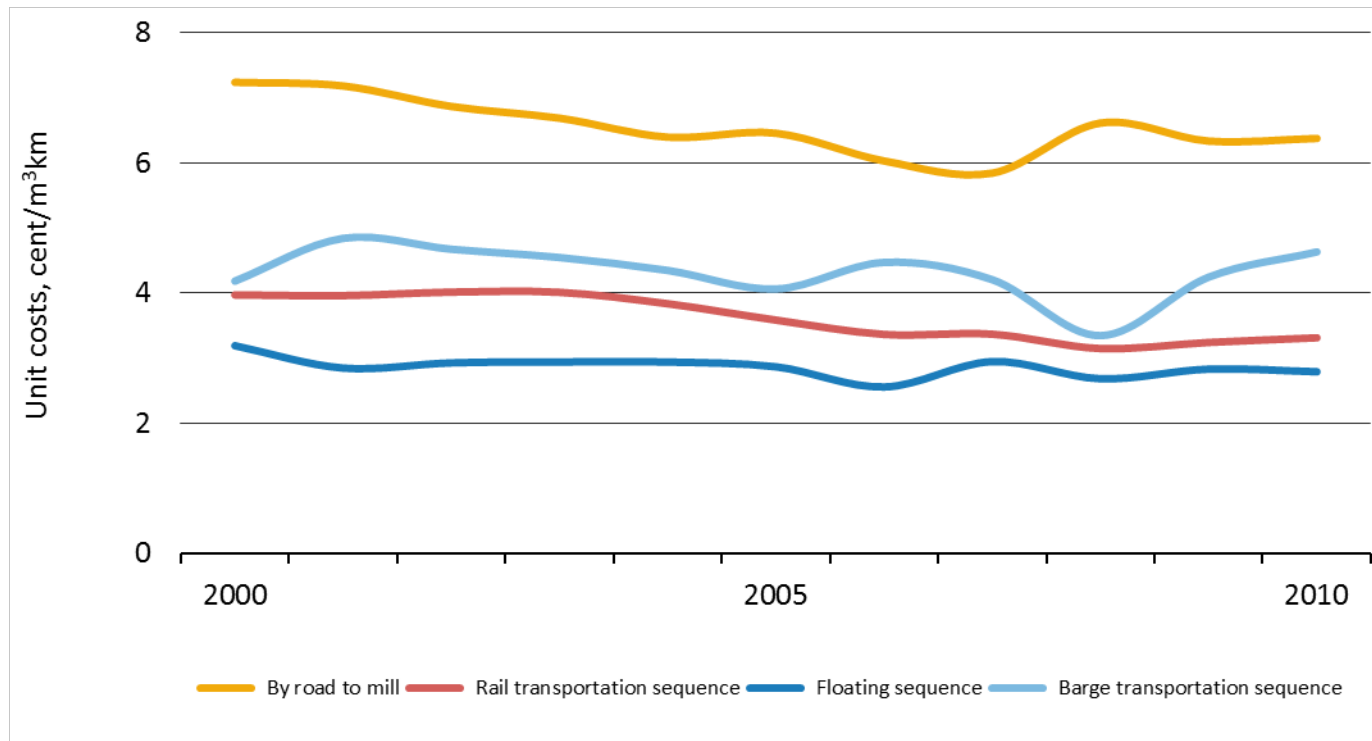
Real costs have been deflated by Index of forest machinery (2010=100).

# Unit Costs in Long-distance Transportation of Roundwood 2000 – 2010 (I)



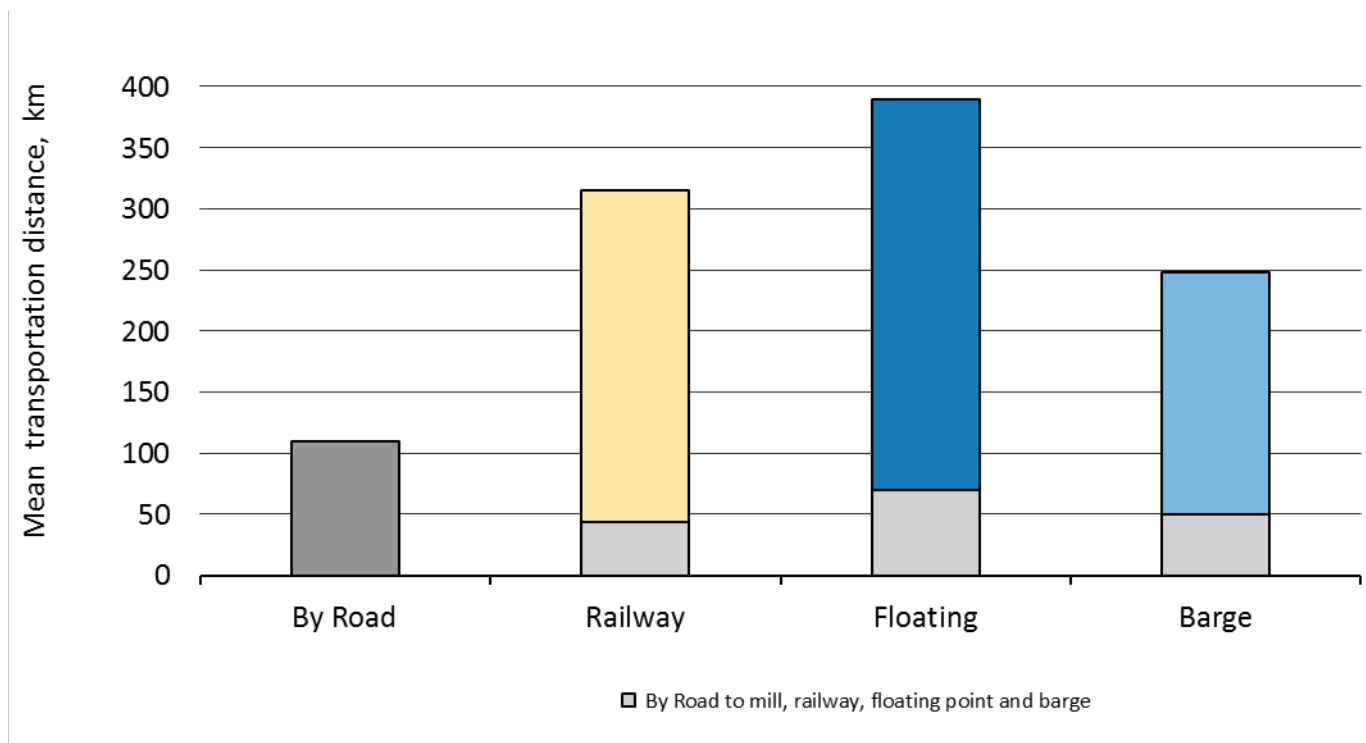
Real costs have been deflated by Index of lorry traffic costs (2010=100).

# Unit Costs in Long-distance Transportation of Roundwood 2000 – 2010 (II)

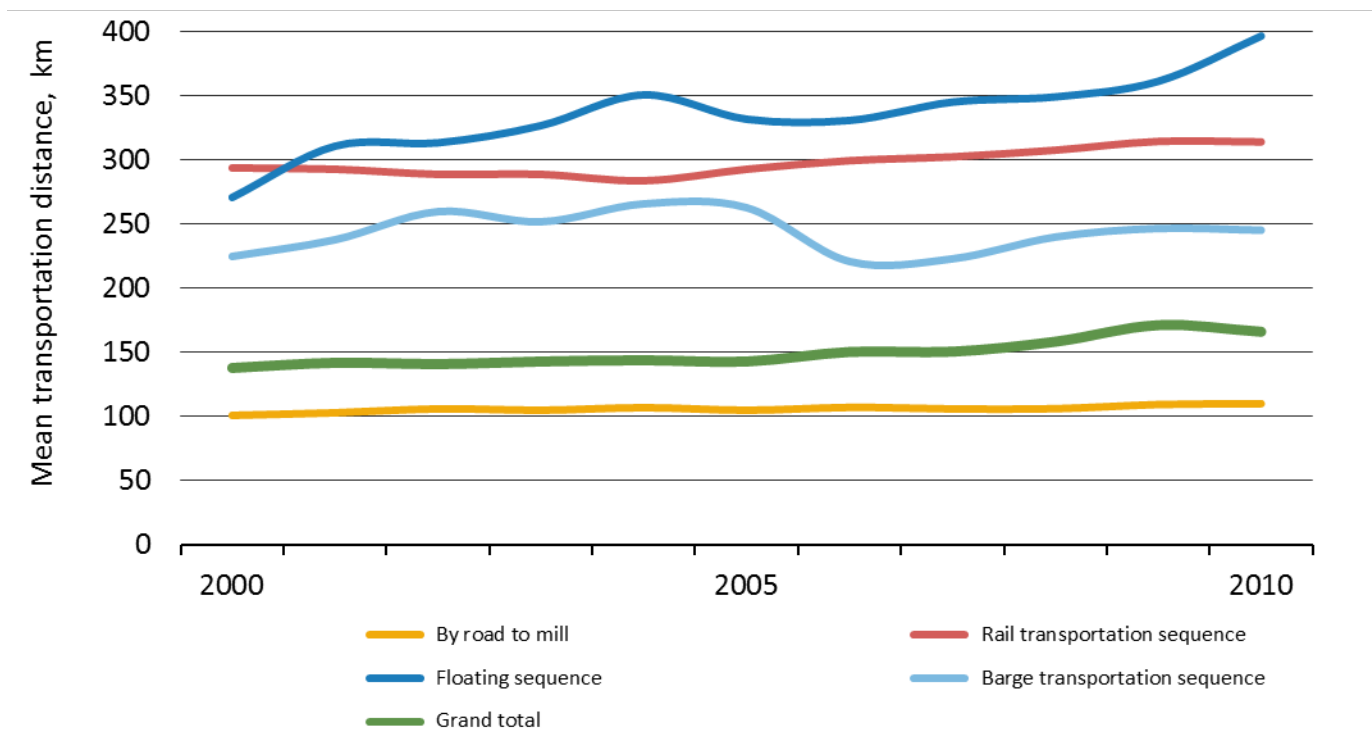


Real costs have been deflated by Index of lorry traffic costs (2010=100).

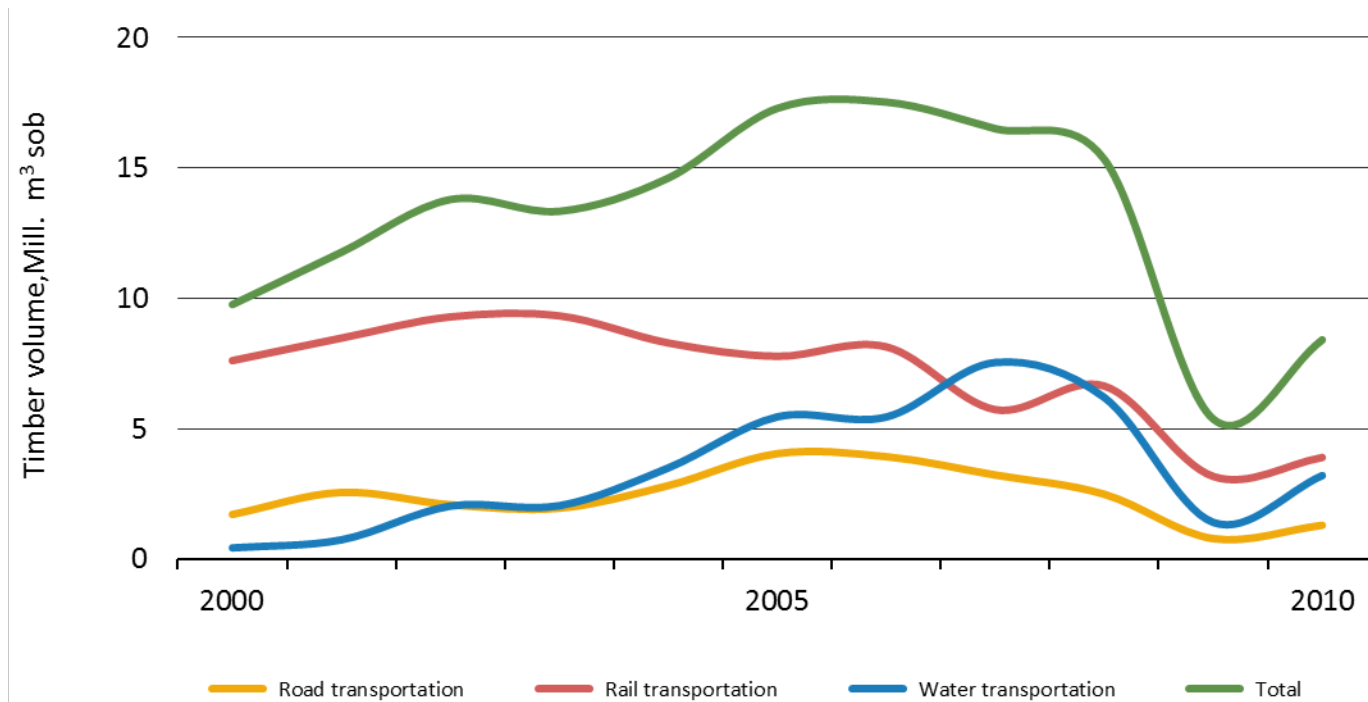
## Mean Transportation Distance, 2010



# Mean Transportation Distance, 2000 – 2010



# Volumes of Imported Roundwood by Transportation Method, 2000 – 2010



# Statistics 2010 Tables

Statistics of Metsäteho

## Costs and Timber Volume, 2010

	Costs		Timber volume	Transport volume	
	Mill. €	%	Mill. m <sup>3</sup>	Mill. m <sup>3</sup> km	%
Harvesting	410,3		38,2		
Long-distance transportation	348,3	100		7 255	100
Road transportation	273,2	78		4 005	55
Rail transportation	67,5	19		2 872	40
Water transportation	7,6	2		378	5

(solid over bark)

## Unit Costs in Felling by Felling Method, 2010

€/m <sup>3</sup>	First thinning	Other thinning	Regeneration felling	Total
Harvesting				10,74
Harvesting, machinery <sup>*)</sup>	16,22	13,52	8,25	10,68
- osuus puumäärästä	10,9	29,7	59,5	100
- osuus kustannuksista	16,5	37,6	45,9	100

<sup>\*)</sup> Includes mechanised felling as well as forest haulage related to mechanised and motor-manual felling

(solid over bark)

## Unit Costs in Felling by Timber Assortments, 2010

€/m <sup>3</sup>	Mechanised harvesting <sup>*)</sup>	Long-distance transportation
Pine logs	7,48	6,91
Spruce logs	6,98	5,88
Plywood logs	8,00	7,70
Logs average	7,25	6,57
Pine pulpwood	12,61	8,89
Spruce pulpwood	12,35	7,81
Birch pulpwood	14,95	9,11
Pulpwood average	13,11	8,71
Average	10,68	7,94

<sup>\*)</sup> Includes mechanised felling as well as forest haulage related to mechanised and motor-manual felling

(solid over bark)

# Long-distance Transportation of Roundwood, 2010

	Domestic roundwood				
	1 000 m <sup>3</sup>	%	km	cent/m <sup>3</sup> km	€/m <sup>3</sup>
Total long-distance transportation	43 865		166	4,8	7,94
Total by road	43 017	98,1	93	6,8	6,35
By road to mill	31 828	72,6	110	6,4	7,02
Rail transportation sequence	10 582	24,1	314	3,3	10,42
By road to railway	10 226	23,3	44	9,9	4,35
Rail transportation	10 582	24,1	271	2,3	6,38
Water transportation sequence	1 147	2,6	329	3,4	11,22
Floating sequence	659	1,5	390	2,8	11,09
By road to floating point	659	1,5	70	6,8	4,75
Floating	659	1,5	320	2,1	6,82
Barge transportation sequence	488	1,1	245	4,6	11,38
By road to barge	364	0,8	50	12,6	6,31
Barge transportation	488	1,1	198	3,4	6,67

(solid over bark)