



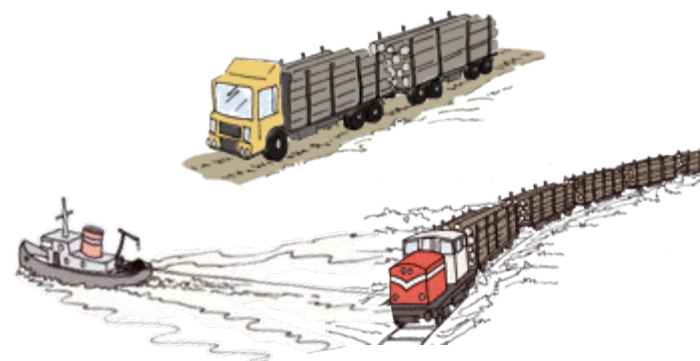
Metsäteho

Timber Harvesting and Long-distance Transportation of Roundwood 2009

Arto Kariniemi

Target and Publications

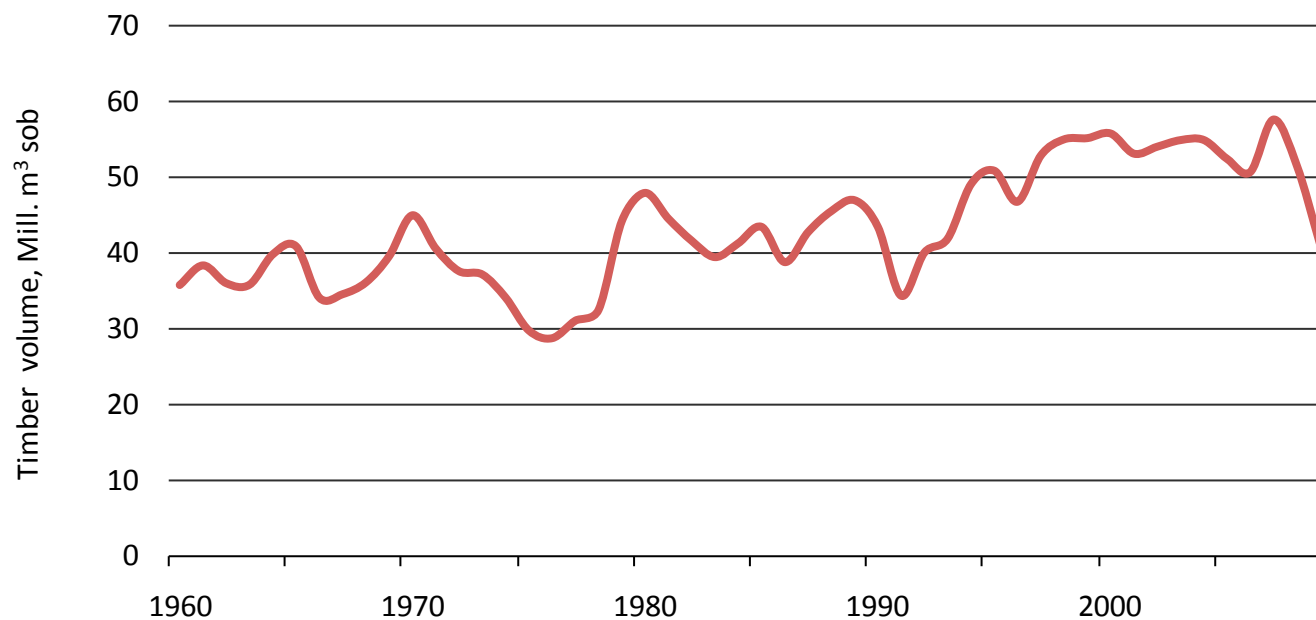
- Includes volumes and direct harvesting costs of timber assortments concerning domestic roundwood by the forest industries and State forest enterprise as well as proportions of harvesting methods.
- Look at also Finnish Statistical Yearbook of Forestry (Finnish Forest Research Institute), especially chapter 5 "Harvesting and transportation of roundwood".
- Publications
 - Kariniemi, A. 2010. Puunkorjuu ja kaukuljetus vuonna 2009. Metsätehon katsaus nro 43. Summary: Harvesting and long-distance transportation 2009.



Background Information of Finnish Wood Supply

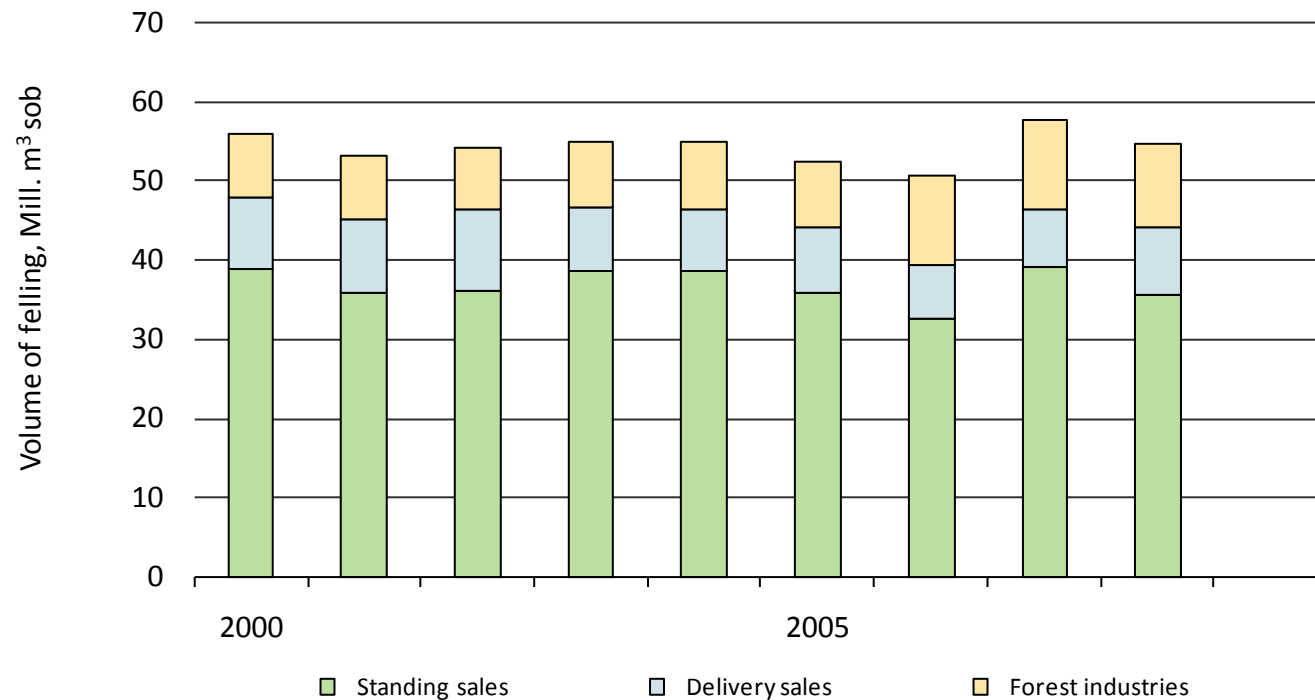
Statistics of Metsäteho

Domestic Commercial Fellings, 1960 – 2009



Source: Finnish Forest Research Institute

Commercial Roundwood Removals by Forest Ownership Category, 2000 – 2008

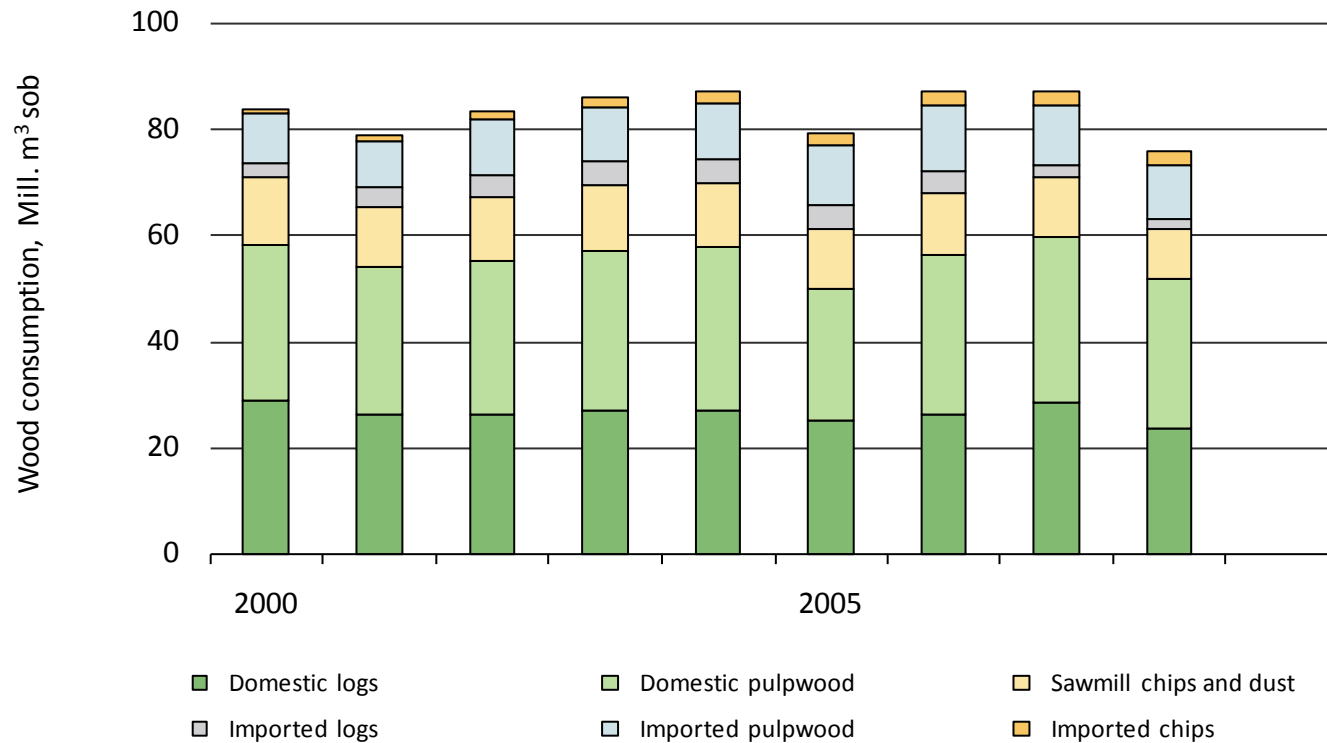


Standing sales + Delivery sales = Non-industrial, private forests

Forest industries = The forest industries' forests + State forests

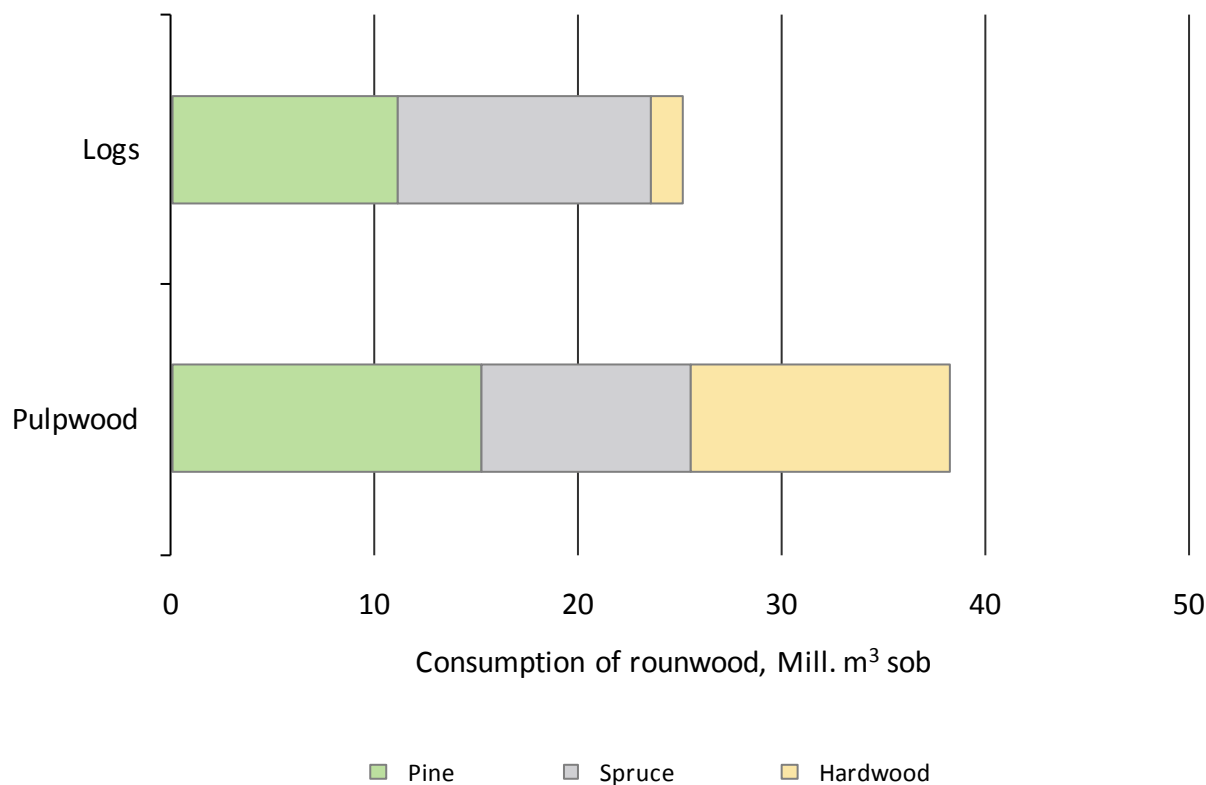
Source: Finnish Forest Research Institute

Roundwood Consumption by Forest Industries, 2000 – 2008



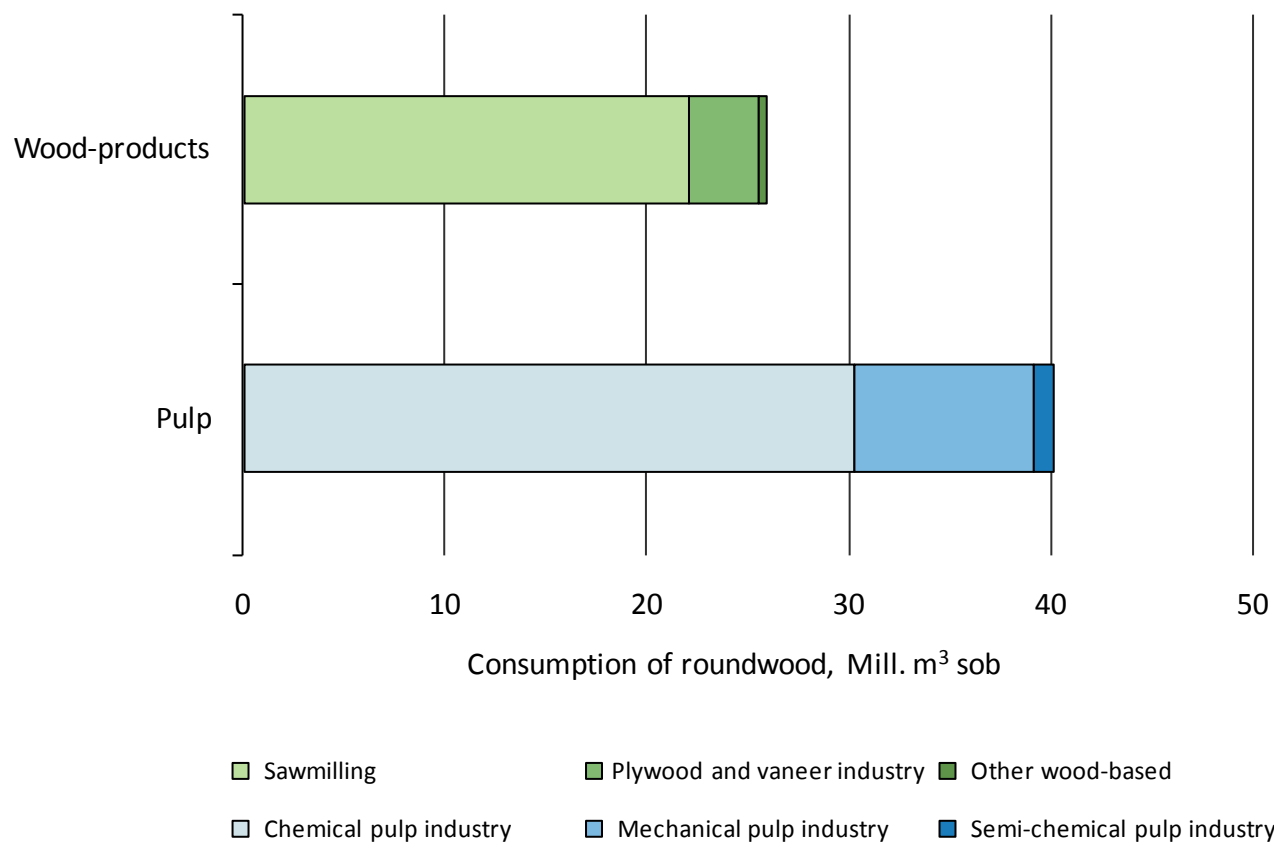
Source: Finnish Forest Research Institute

Wood Consumption by Forest Industries, 2008



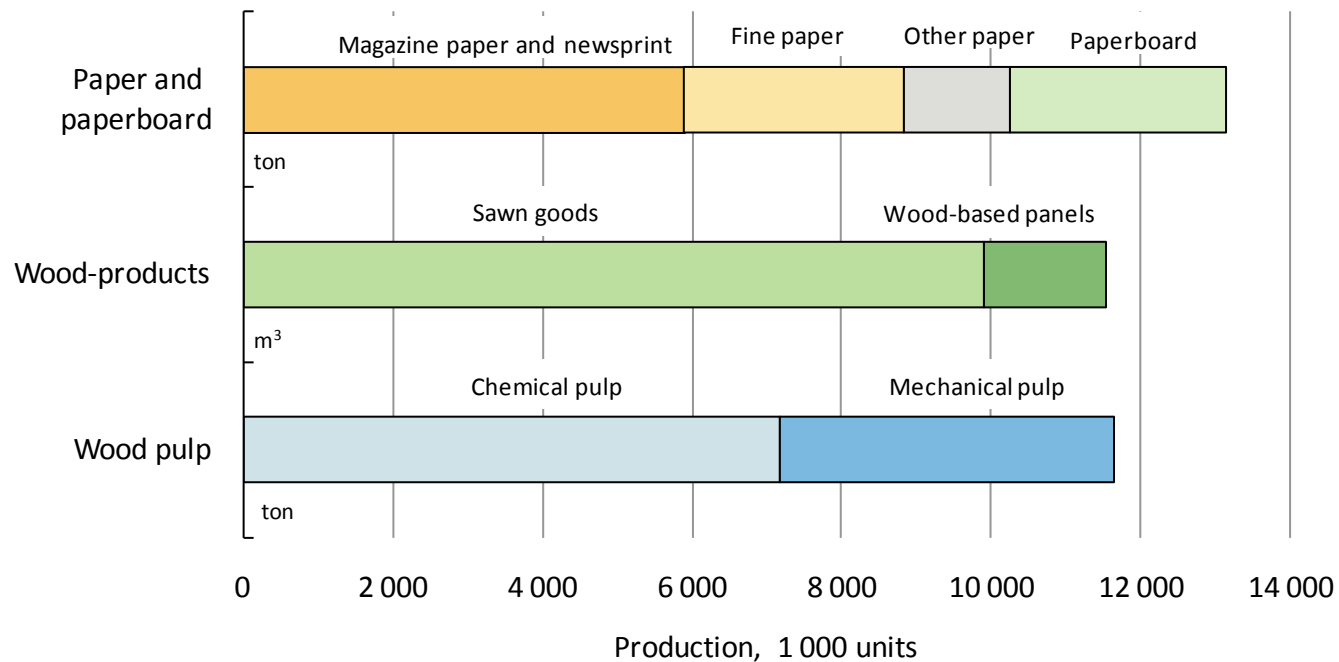
Source: Finnish Forest Research Institute

Roundwood Consumption by Forest Industries by Branch of Industry, 2008



Source: Finnish Forest Research Institute

Production of Forest Industry products, 2008

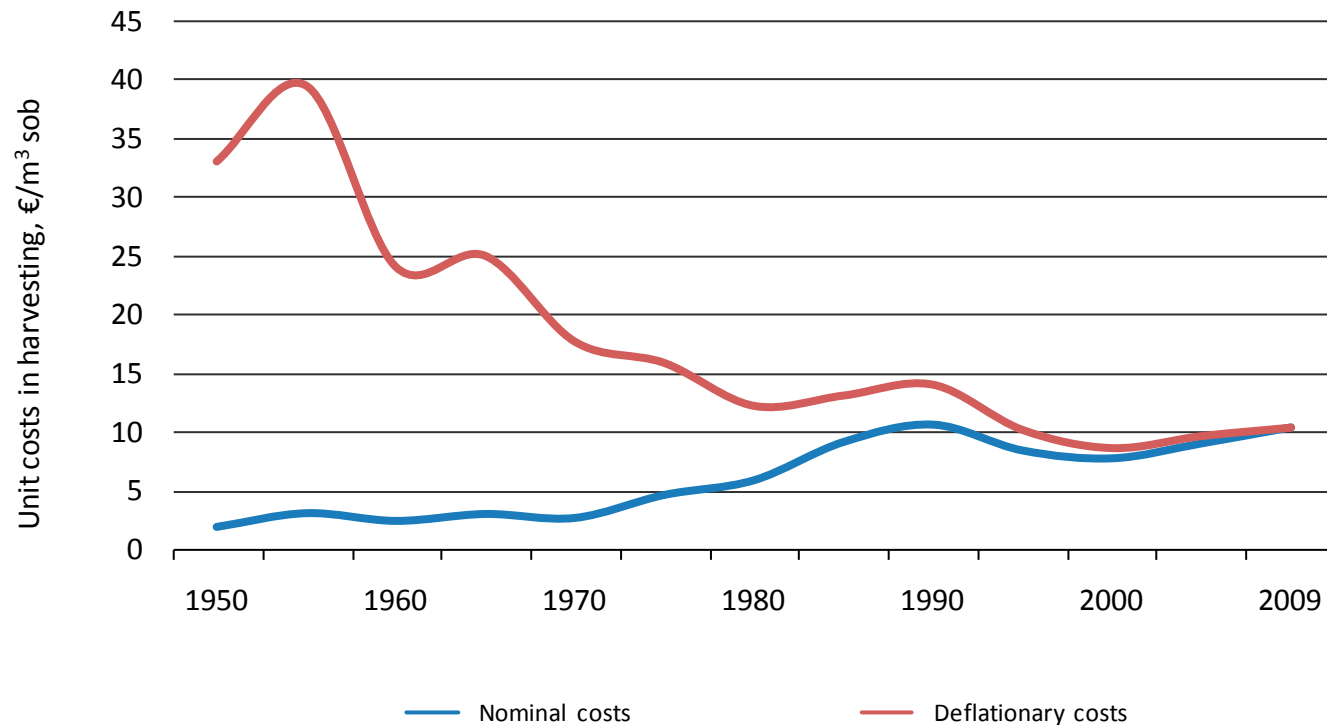


Source: Finnish Forest Research Institute

Long Term Trends of Finnish Wood Supply

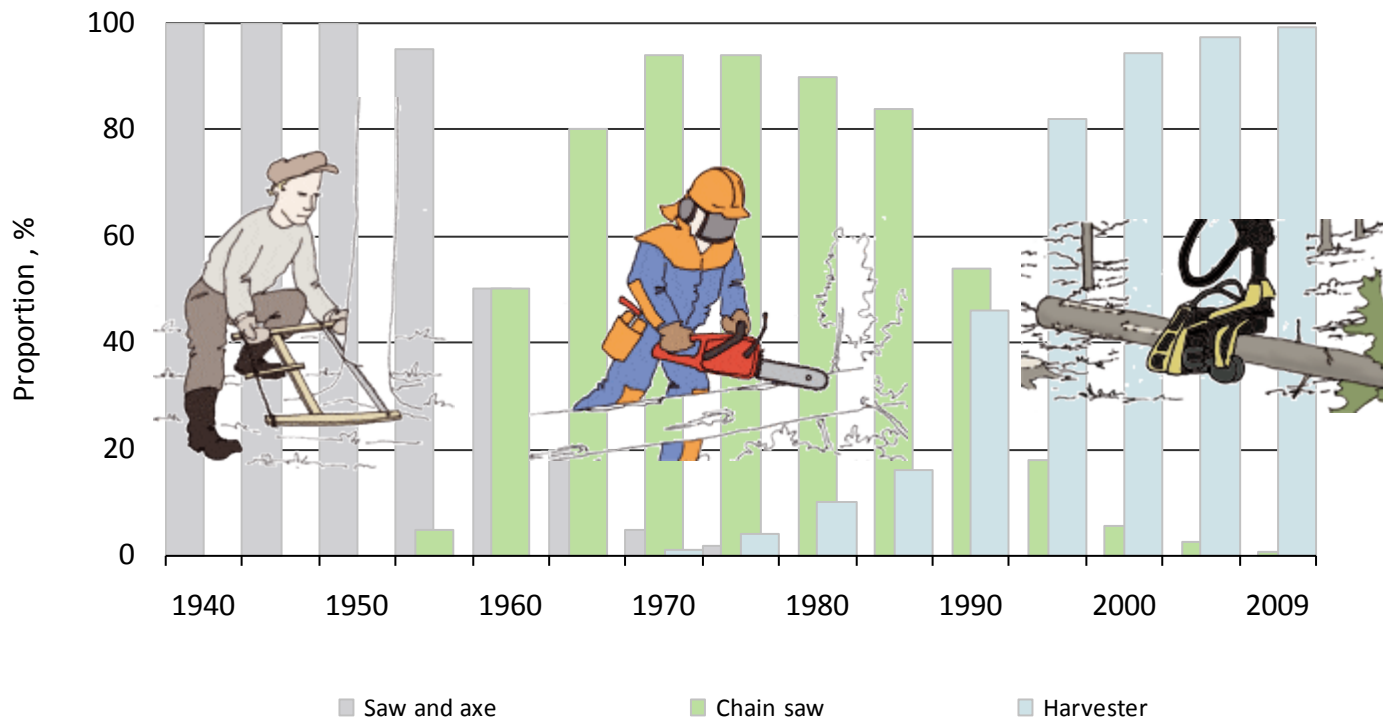
Statistics of Metsäteho

Unit Costs in Timber Harvesting, 1950 – 2009

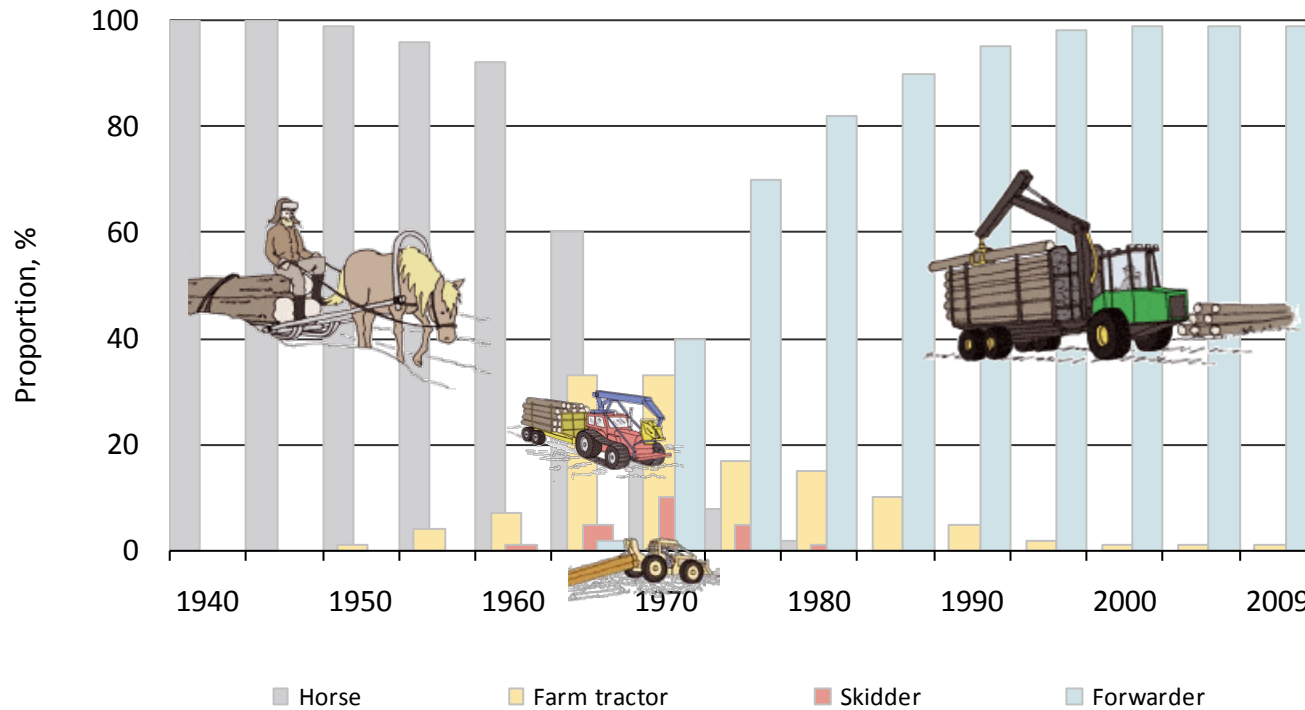


Real costs have been deflated by the wholesale price index (2009=100).

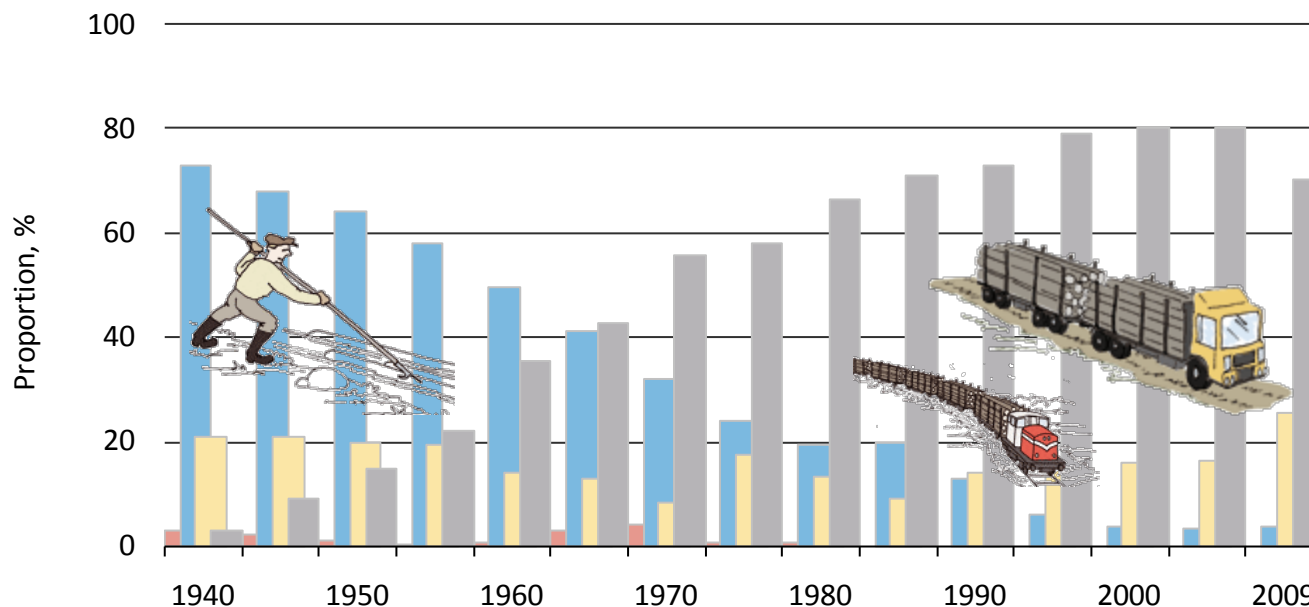
Felling Techniques, 1940 – 2009



Forest Haulage Techniques, 1940 – 2009



Long-distance Transportation Techniques, 1940 – 2009



■ Horse or farm tractor (1960 -)

■ Waterway

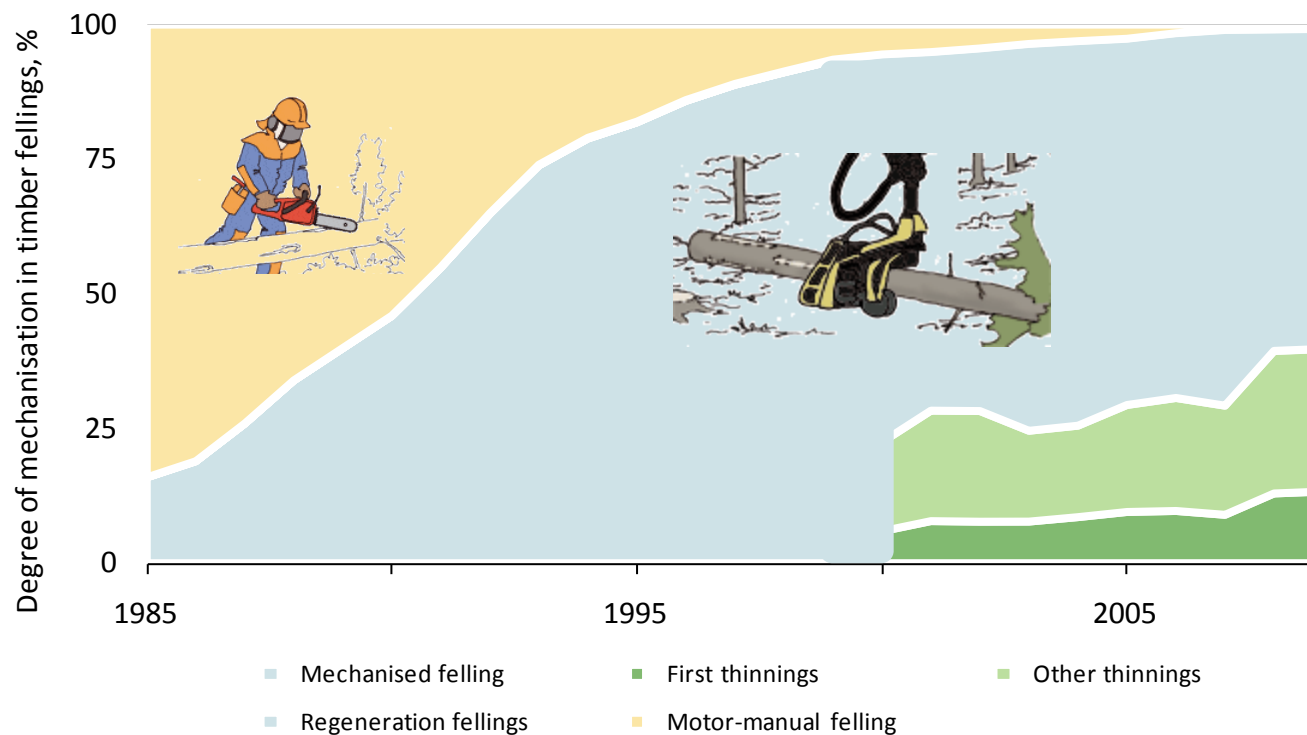
■ Railway

■ By road

Short Term Trends of Finnish Wood Supply

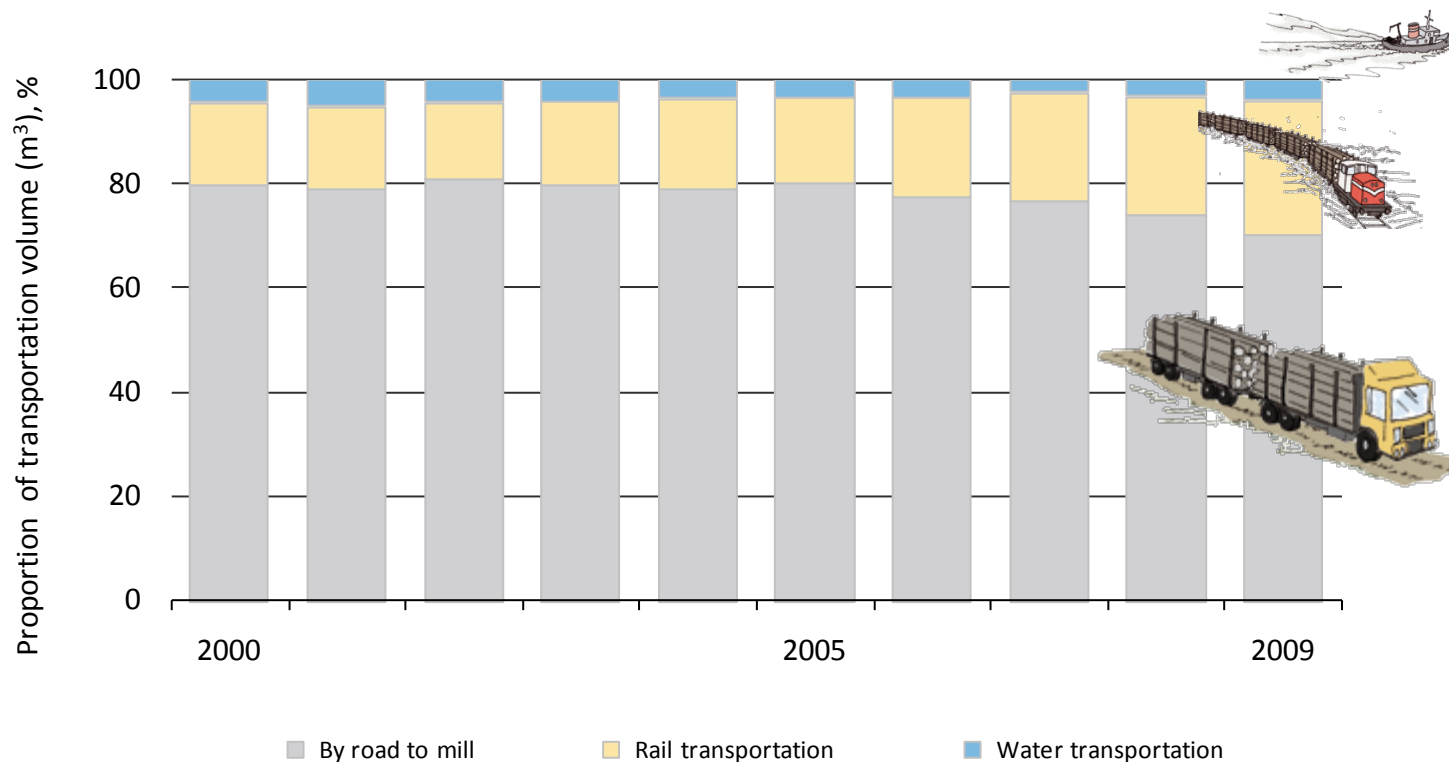
Statistics of Metsäteho

Mechanisation of Felling, 1985 – 2009

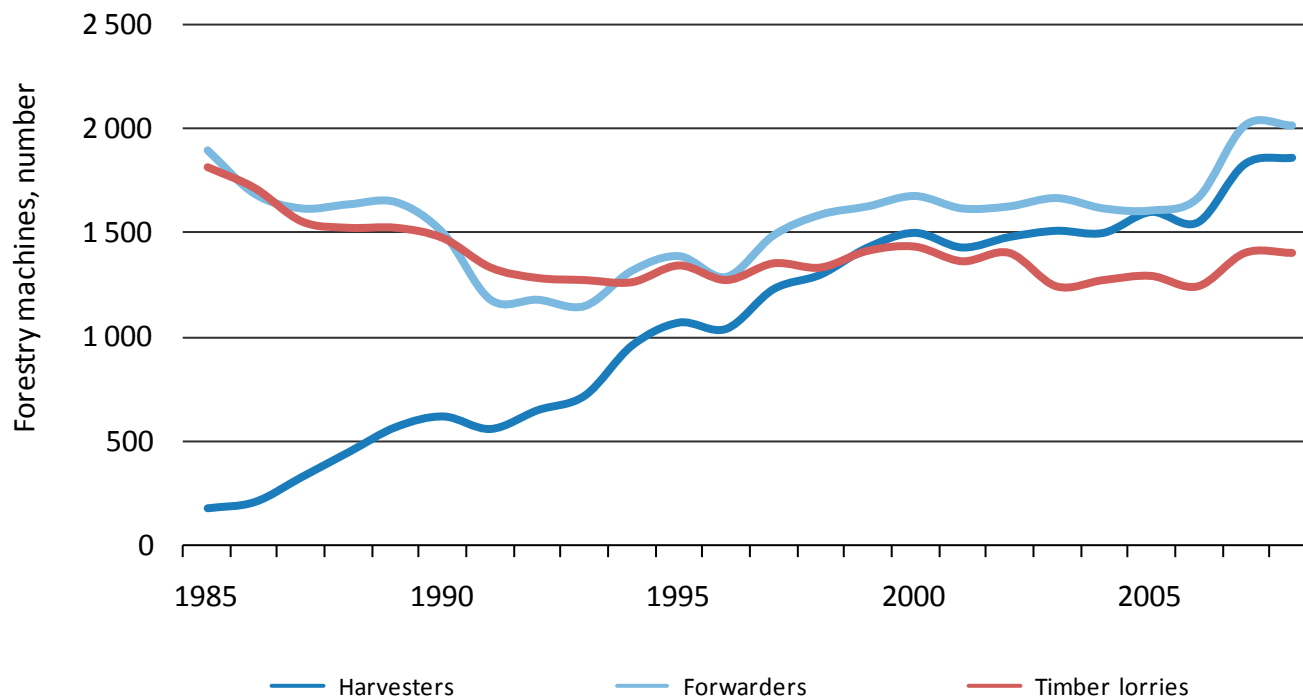


Per cent of mechanised felling year 2009: 99.2%

Long-distance Transportation Techniques, 2000 – 2009

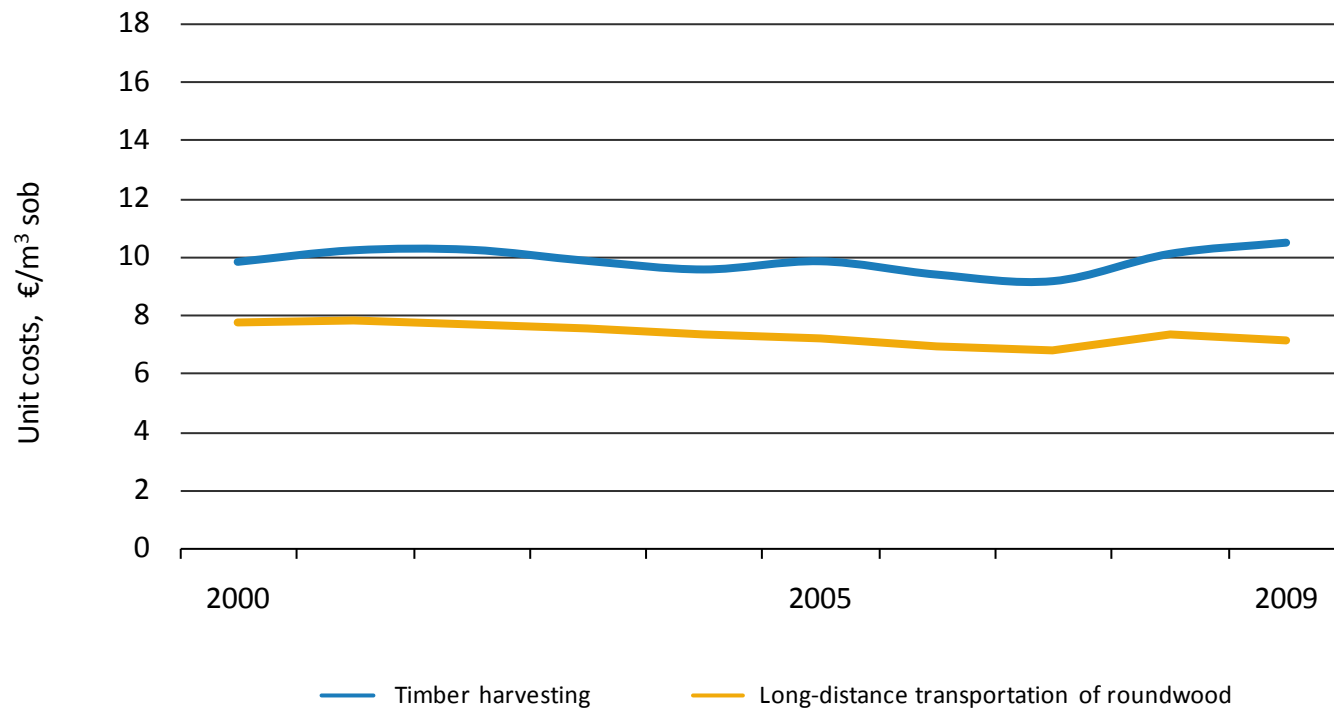


Forestry Machines, 1985 – 2008



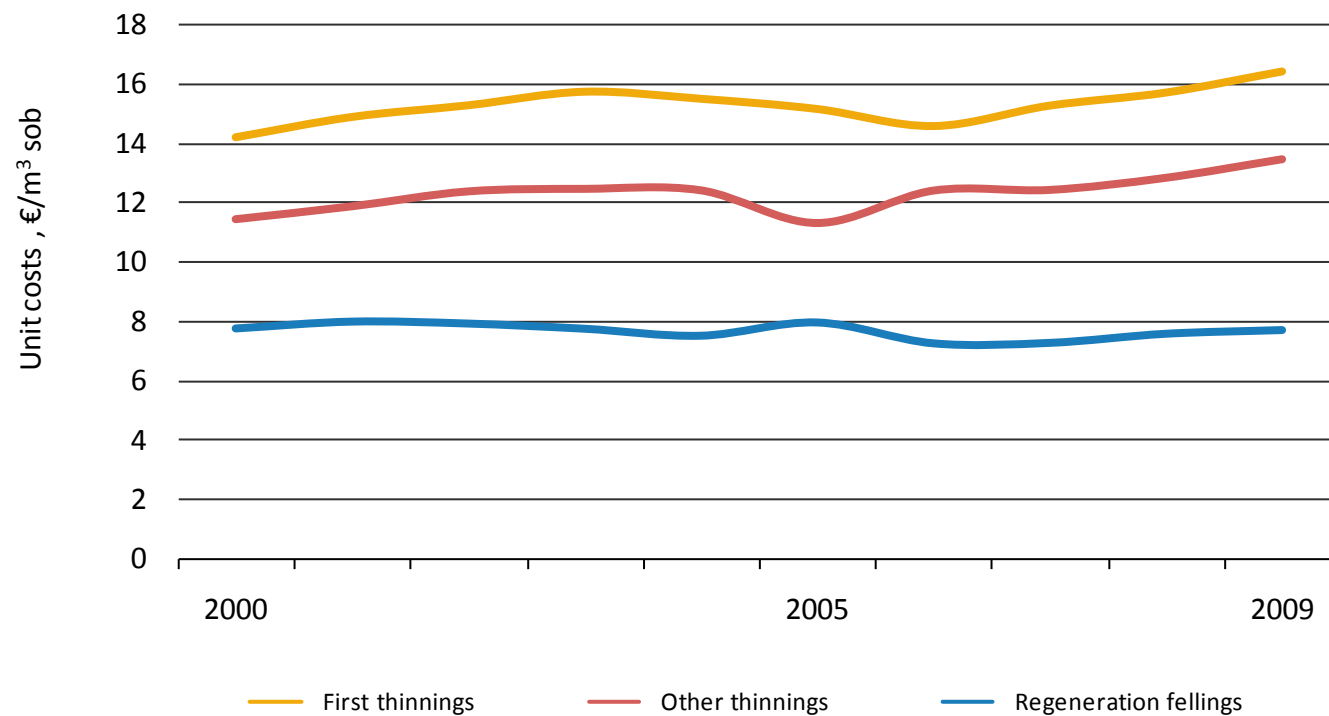
Source: Finnish Forest Research Institute

Unit Costs in Timber Harvesting and Long-distance Transportation of Roundwood, 2000 – 2009



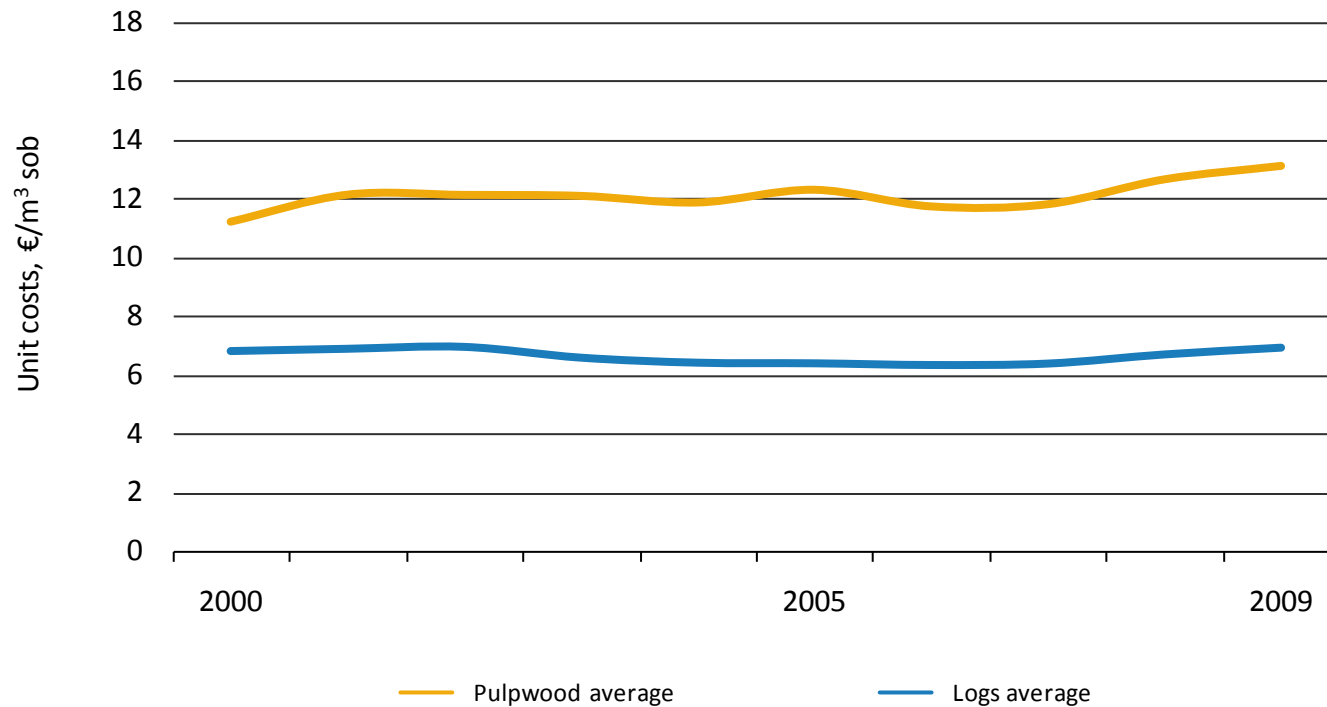
Real costs have been deflated by Indexes of forest machinery costs and lorry traffic costs (2009=100).

Unit Costs in Mechanised Harvesting by Felling Method, 2000 – 2009



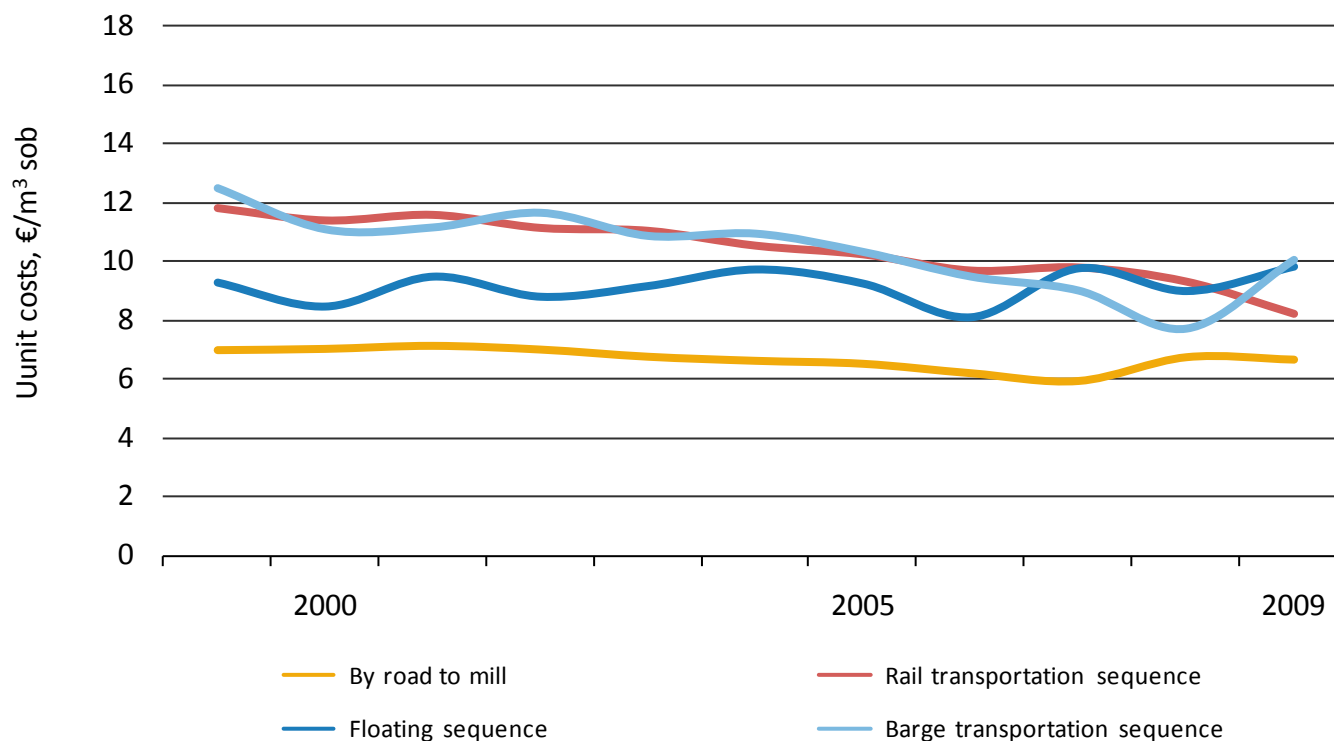
Real costs have been deflated by Index of forest machinery (2009=100).

Unit Costs in Mechanised Harvesting by Timber Assortments, 2000 – 2009



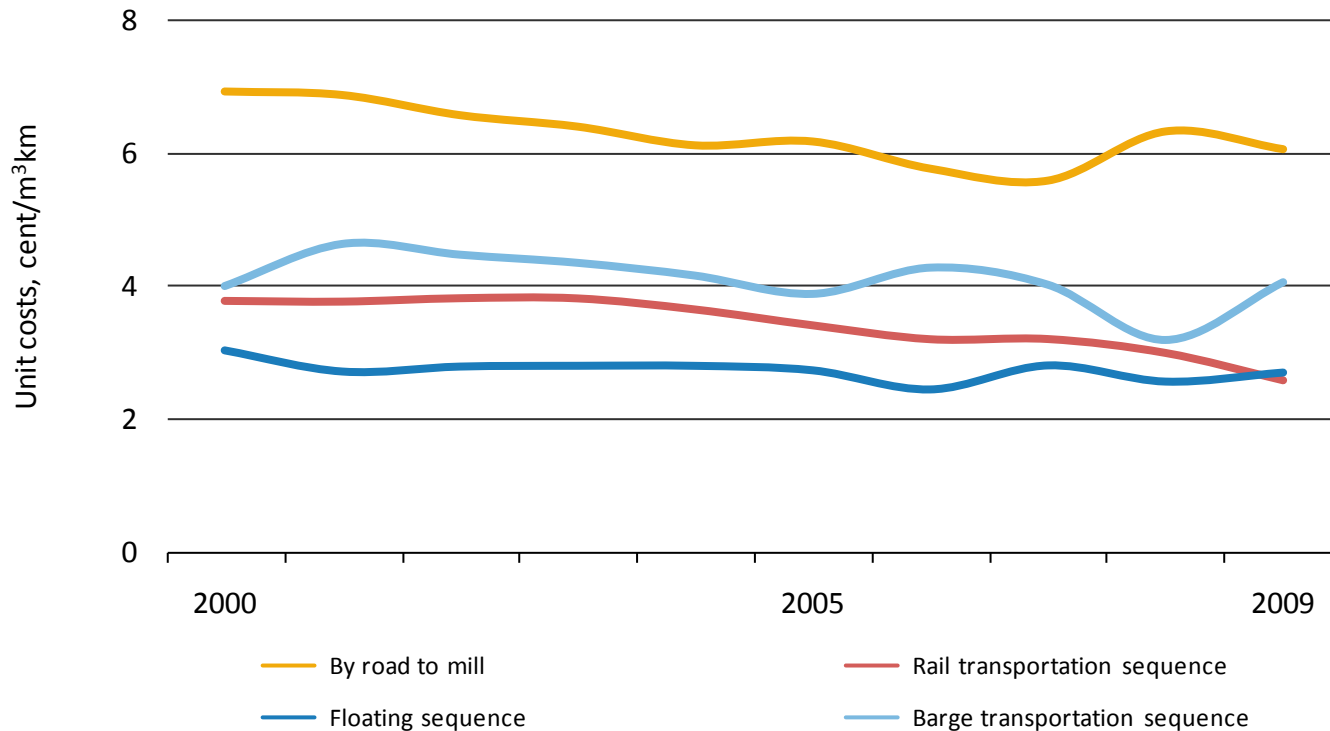
Real costs have been deflated by Index of forest machinery (2009=100).

Unit Costs in Long-distance Transportation of Roundwood 2000 – 2009 (I)



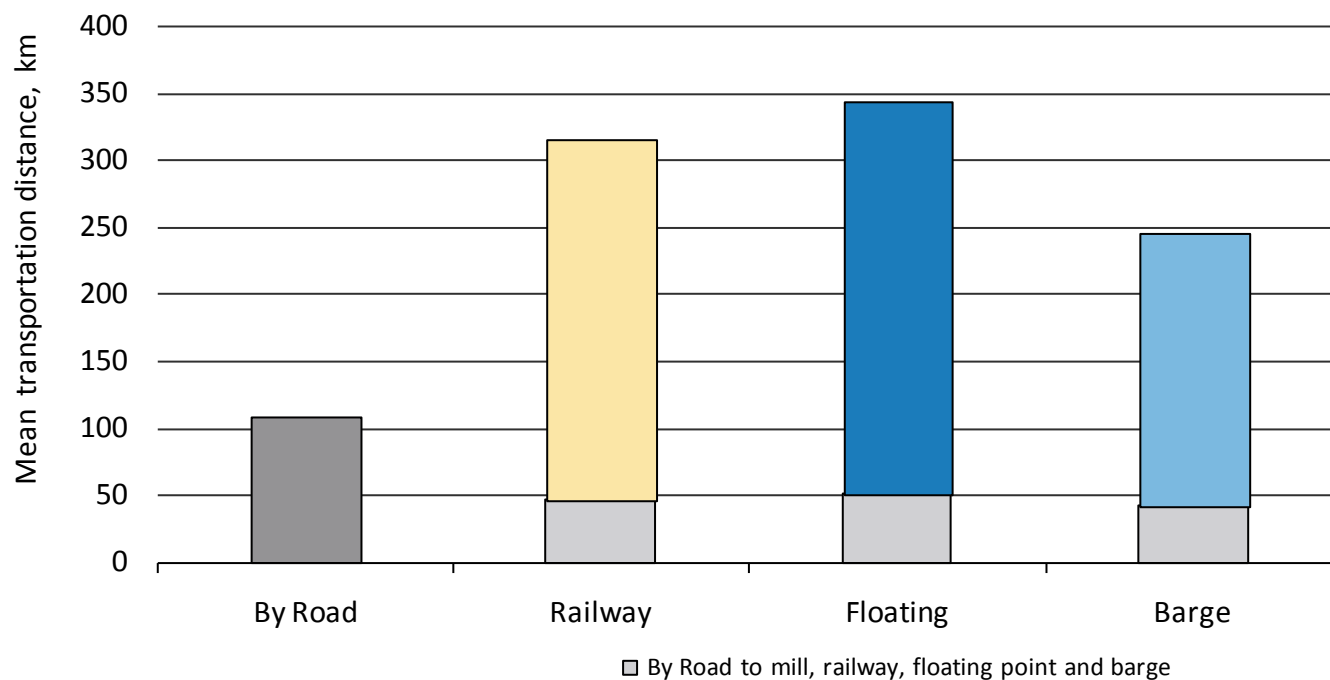
Real costs have been deflated by Index of lorry traffic costs (2009=100).

Unit Costs in Long-distance Transportation of Roundwood 2000 – 2009 (II)

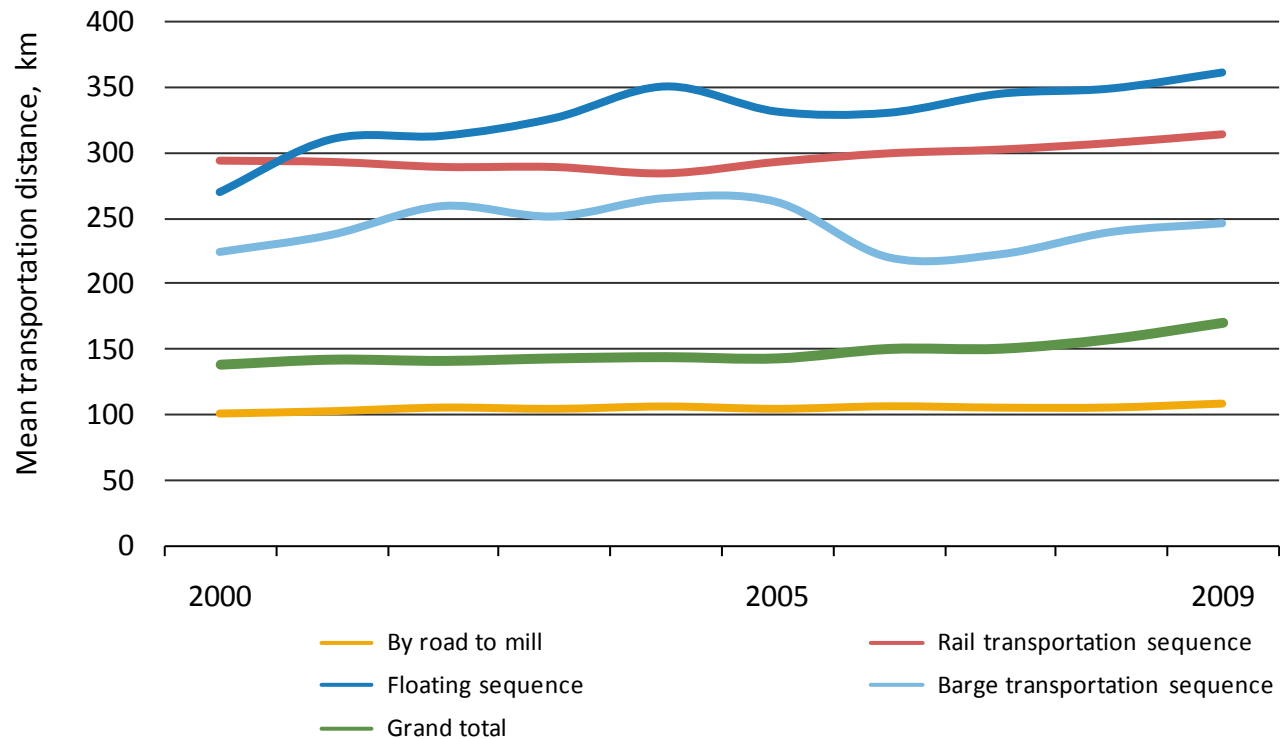


Real costs have been deflated by Index of lorry traffic costs (2009=100).

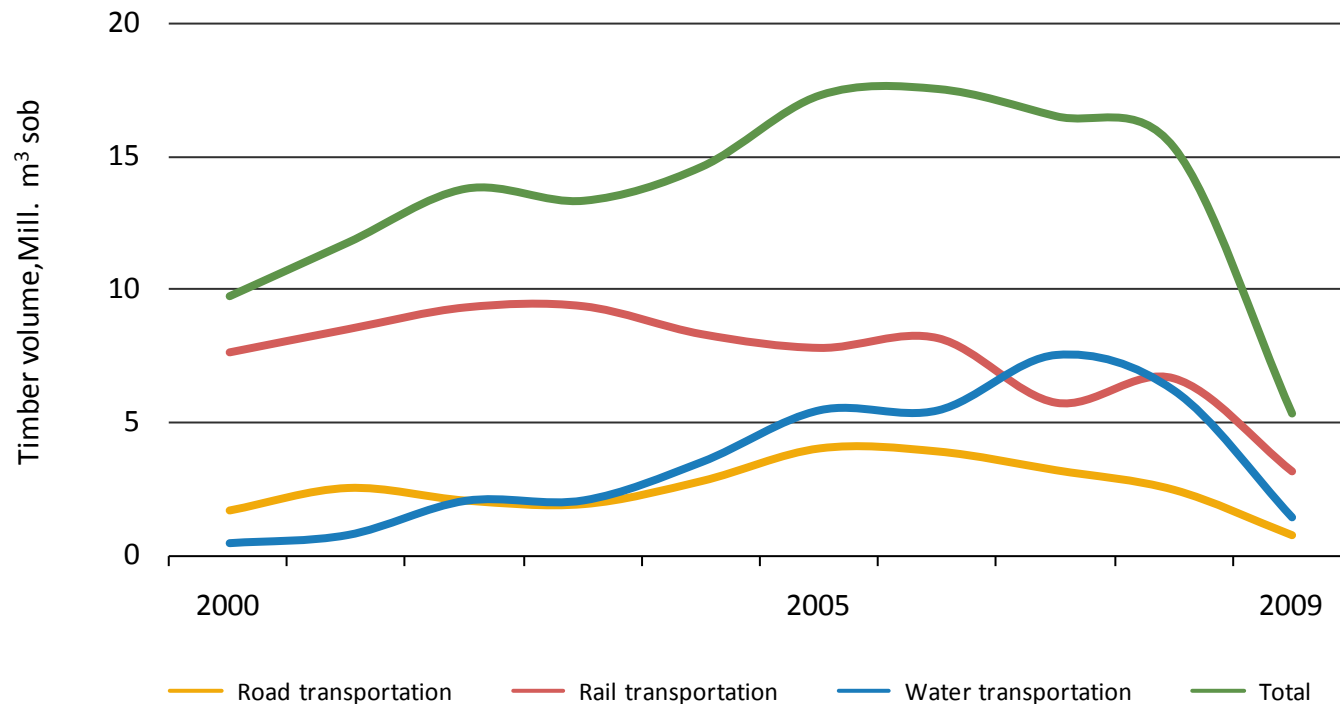
Mean Transportation Distance, 2009



Mean Transportation Distance, 2000 – 2009



Volumes of Imported Roundwood by Transportation Method, 2000 – 2009



Statistics 2009

Tables

Statistics of Metsäteho

Costs and Timber Volume, 2009

	Costs		Timber volume	Transport volume	
	Mill. €	%	Mill. m ³	Mill. m ³ km	%
Harvesting	304.0		28.9		
Long-distance transportation	258.6	100		5 805	100
Road transportation	196.4	76		3 067	53
Rail transportation	54.2	21		2 365	41
Water transportation	8.1	3		373	6

(solid over bark)

Unit Costs in Felling by Felling Method, 2009

€/m ³	First thinning	Other thinning	Regeneration felling	Total
Harvesting				10.51
Harvesting, machinery ^{*)}	16.47	13.46	7.74	10.44
- osuus puumäärästä	13.4	26.7	59.9	100
- osuus kustannuksista	21.2	34.4	44.4	100

(solid over bark)

Unit Costs in Felling by Timber Assortments, 2009

€/m ³	Mechanised harvesting ^{*)}	Long-distance transportation
Pine logs	7.11	6.76
Spruce logs	6.63	5.97
Plywood logs	7.67	8.45
Logs average	6.90	6.49
Pine pulpwood	12.48	8.17
Spruce pulpwood	12.34	7.18
Birch pulpwood	15.10	8.45
Pulpwood average	13.10	8.02
Average	10.44	7.16

^{*)} Includes mechanised felling as well as forest haulage related to mechanised and motor-manual felling

(solid over bark)

Long-distance Transportation of Roundwood, 2009

	Domestic roundwood				
	1 000 m ³	%	km	cent/m ³ km	€/m ³
Total long-distance transportation	34 175		171	4.2	7.16
Total by road	33 586	98.3	91	6.4	5.85
By road to mill	23 944	70.1	109	6.1	6.64
Rail transportation sequence	8 763	25.6	315	2.6	8.19
By road to railway	8 325	24.4	47	8.3	3.84
Rail transportation	8 763	25.6	270	2.3	6.19
Water transportation sequence	1 495	4.4	315	3.0	9.89
Floating sequence	1 057	3.1	344	2.7	9.81
By road to floating point	1 057	3.1	51	7.9	4.05
Floating	1 057	3.1	293	1.8	5.30
Barge transportation sequence	438	1.3	247	4.1	10.04
By road to barge	327	1.0	41	9.5	3.94
Barge transportation	438	1.3	205	3.5	7.10

(solid over bark)