



# Metsäteho

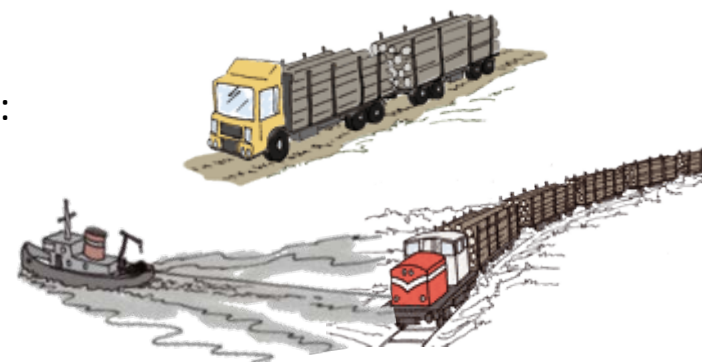
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## **Timber Harvesting and Long-distance Transportation of Roundwood 2013**

Markus Strandström

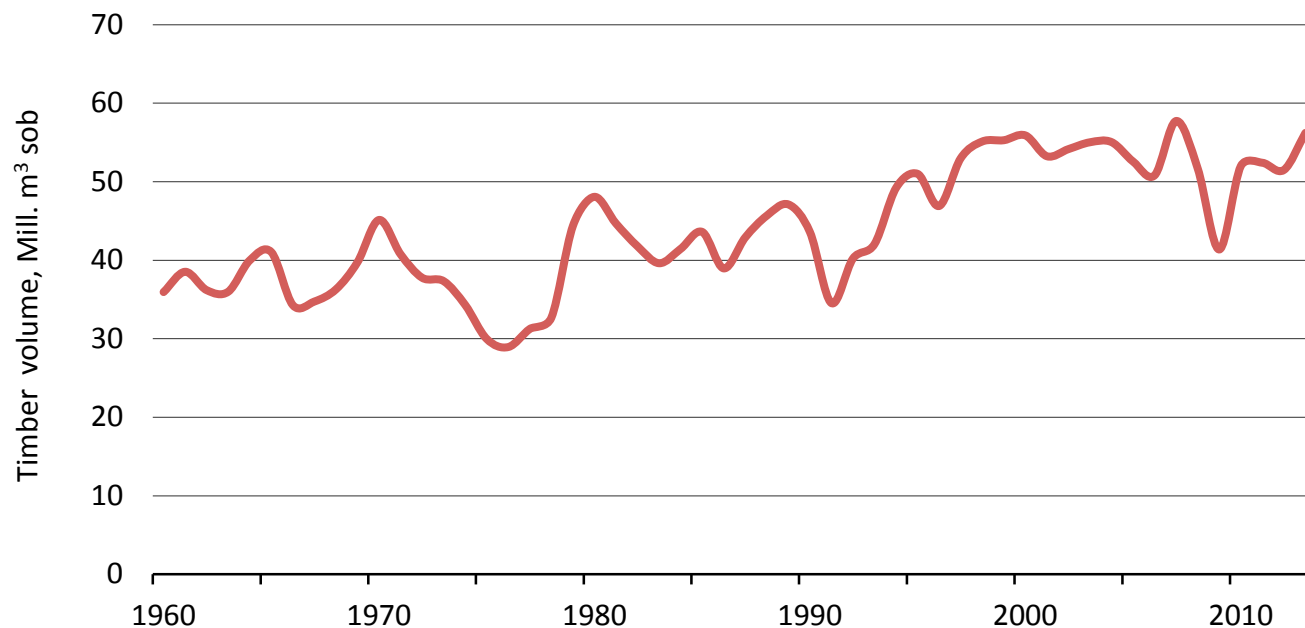
## Target and Publications

- 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
  - Strandström, M. 2014. Puunkorjuu ja kaukokuljetus vuonna 2013. Metsätehon katsaus nro 50. Summary: Harvesting and long-distance transportation 2013.



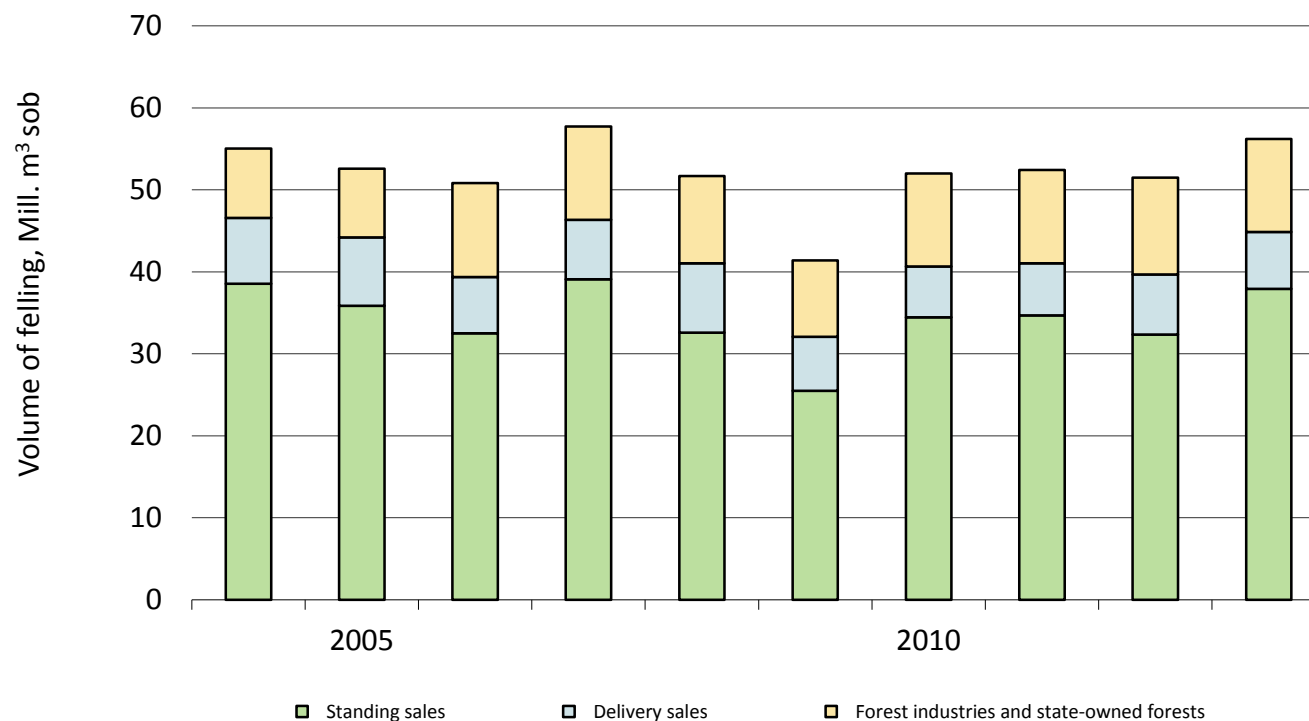
# Background Information of Finnish Wood Supply

## Commercial Roundwood Removals, 1960–2013



Source: Finnish Forest Research Institute

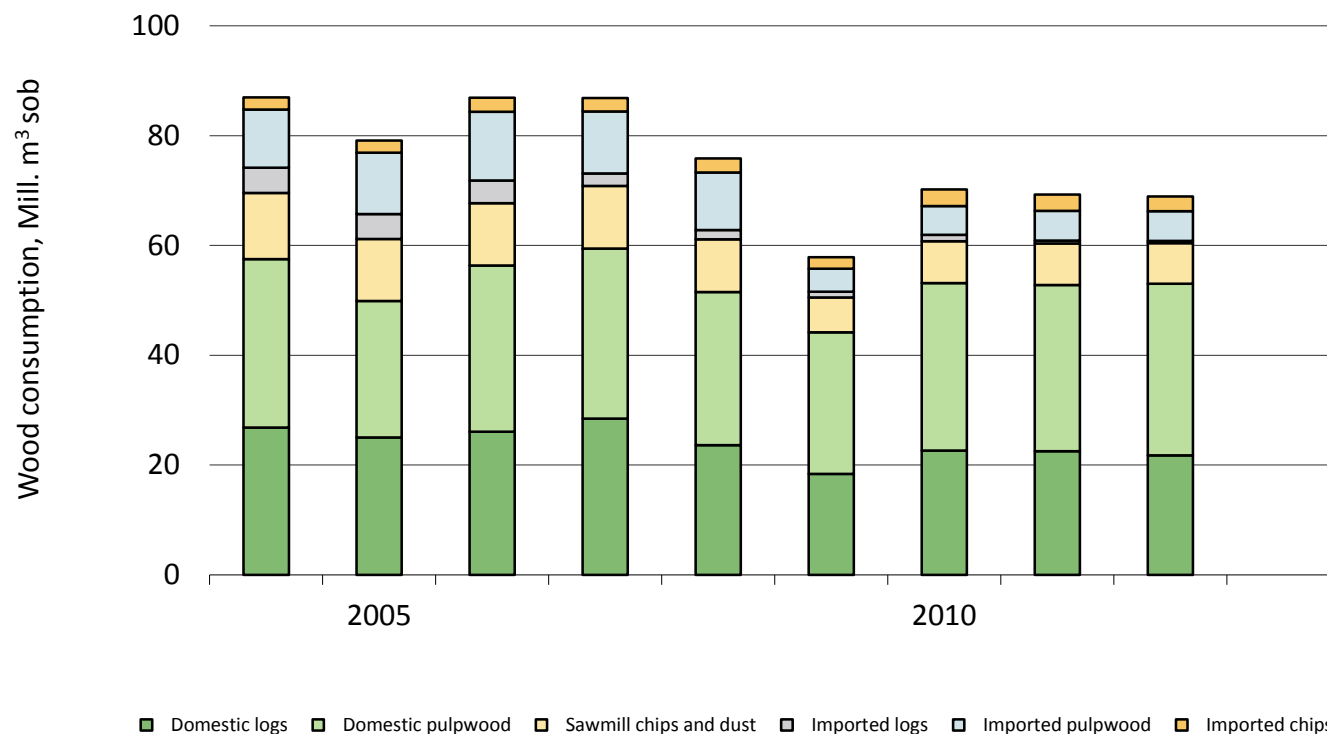
# Commercial Roundwood Removals by Forest Ownership Category, 2004–2013



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

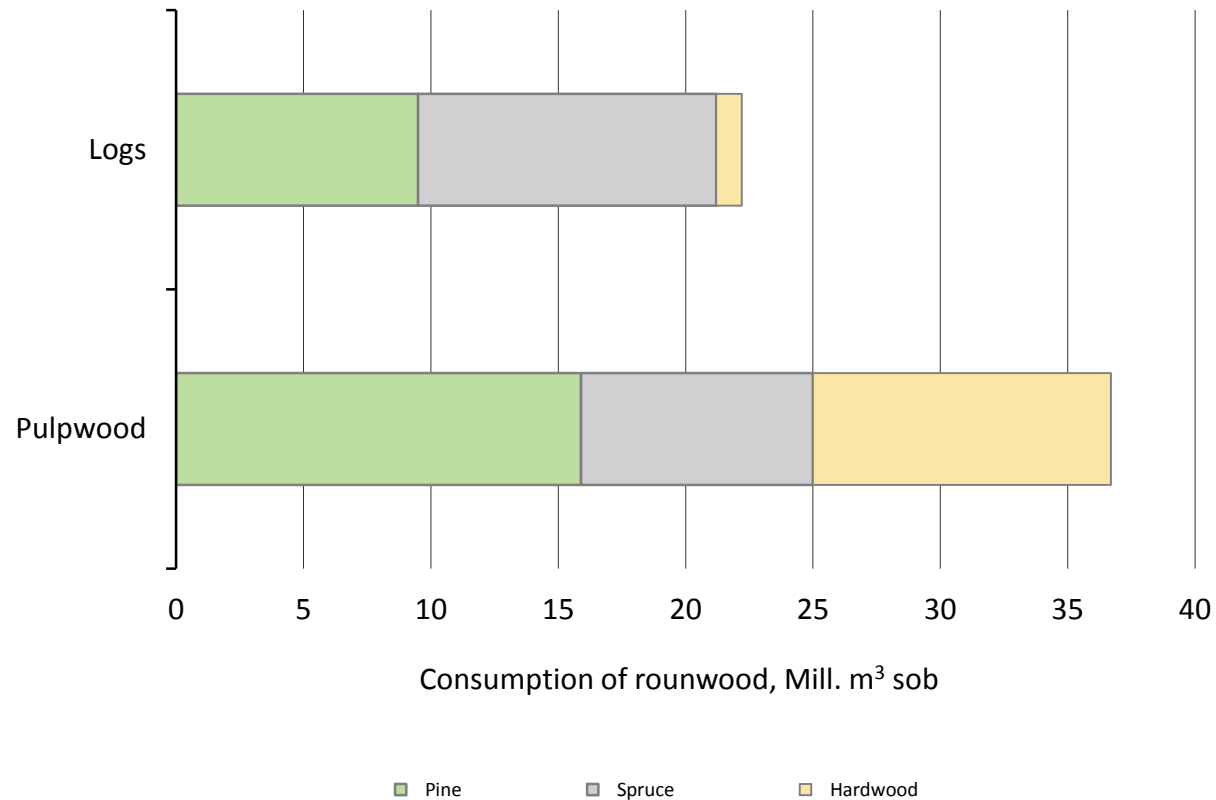
Source: Finnish Forest Research Institute

# Roundwood Consumption by Forest Industries, 2004–2013



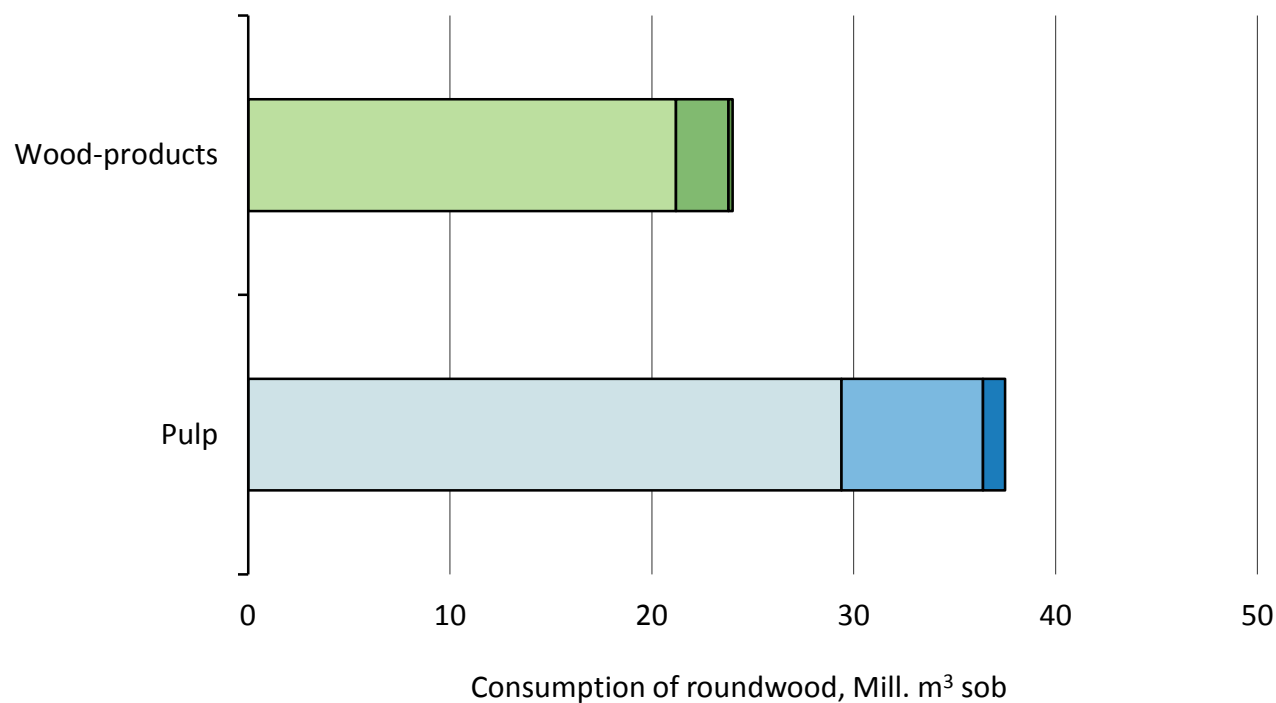
Source: Finnish Forest Research Institute

# Wood Consumption by Forest Industries, 2012



Source: Finnish Forest Research Institute

## Roundwood Consumption by Forest Industries by Branch of Industry, 2012

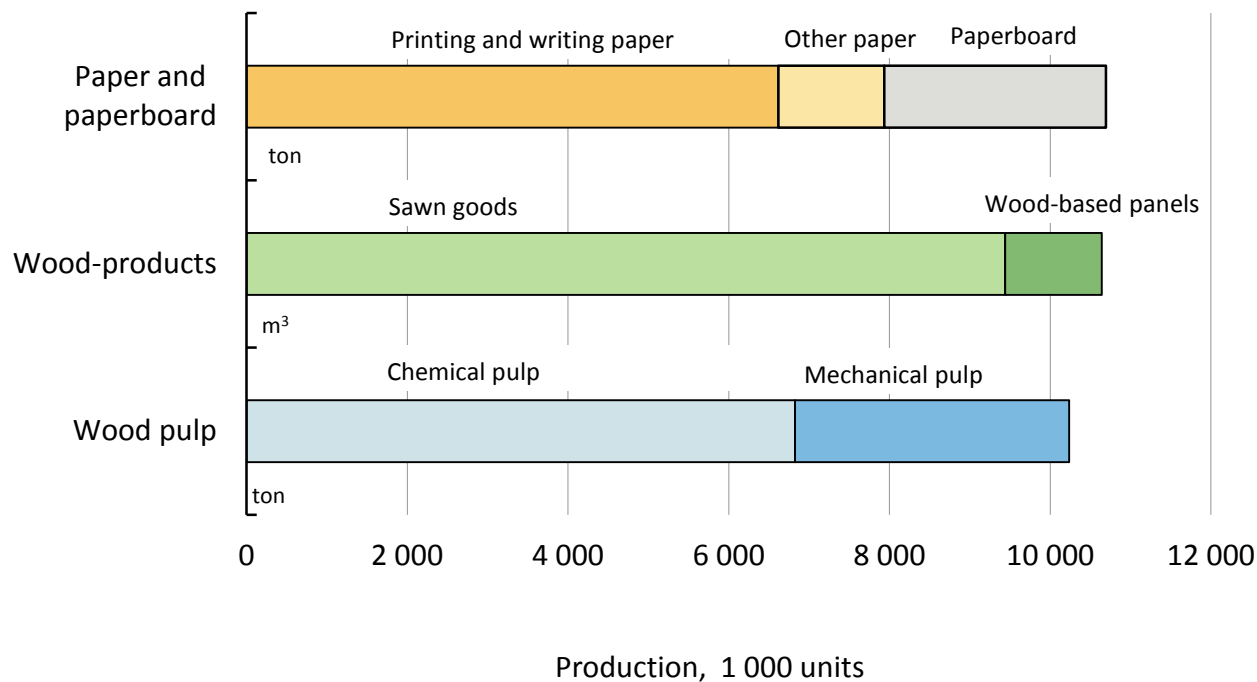


- Sawmilling
- Plywood and veneer industry
- Other wood-based
- Chemical pulp industry
- Mechanical pulp industry
- Semi-chemical pulp industry

Source: Finnish Forest Research Institute



# Production of Forest Industry Products, 2012

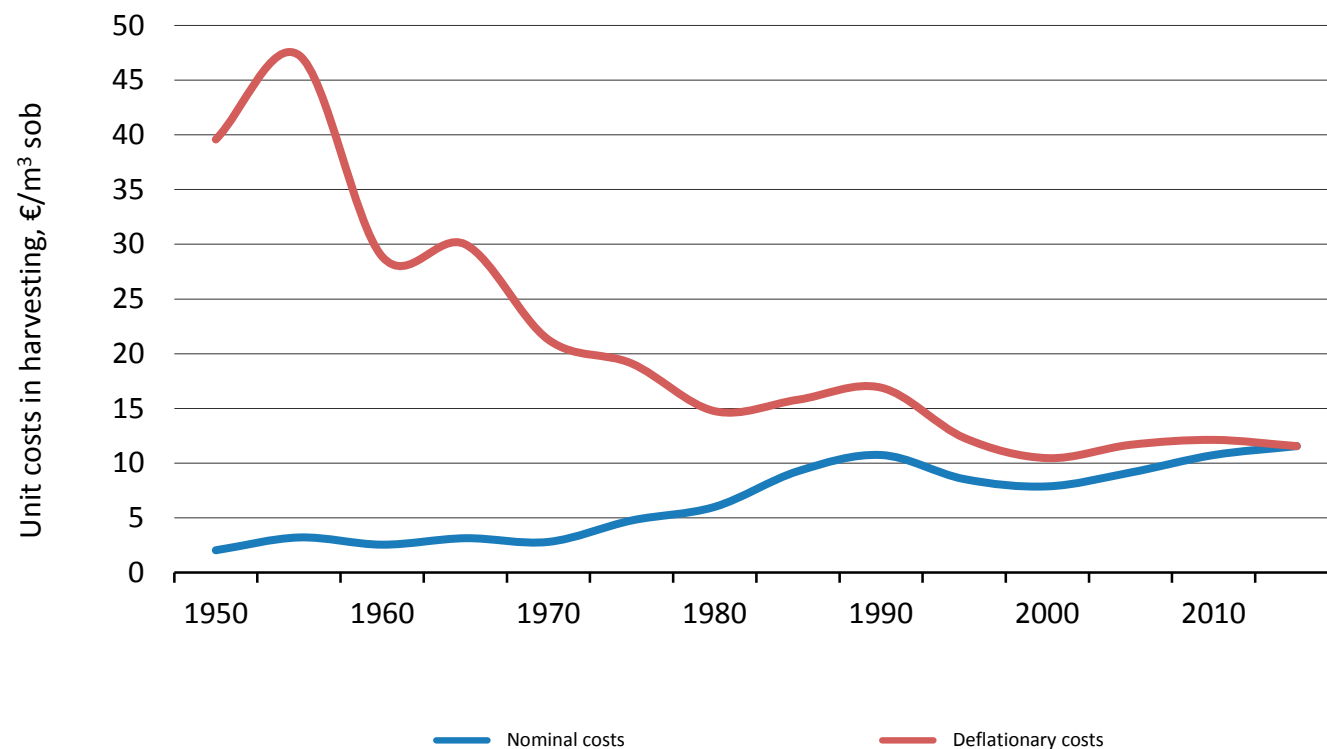


Source: Finnish Forest Research Institute

# Long Term Trends of Finnish Wood Supply

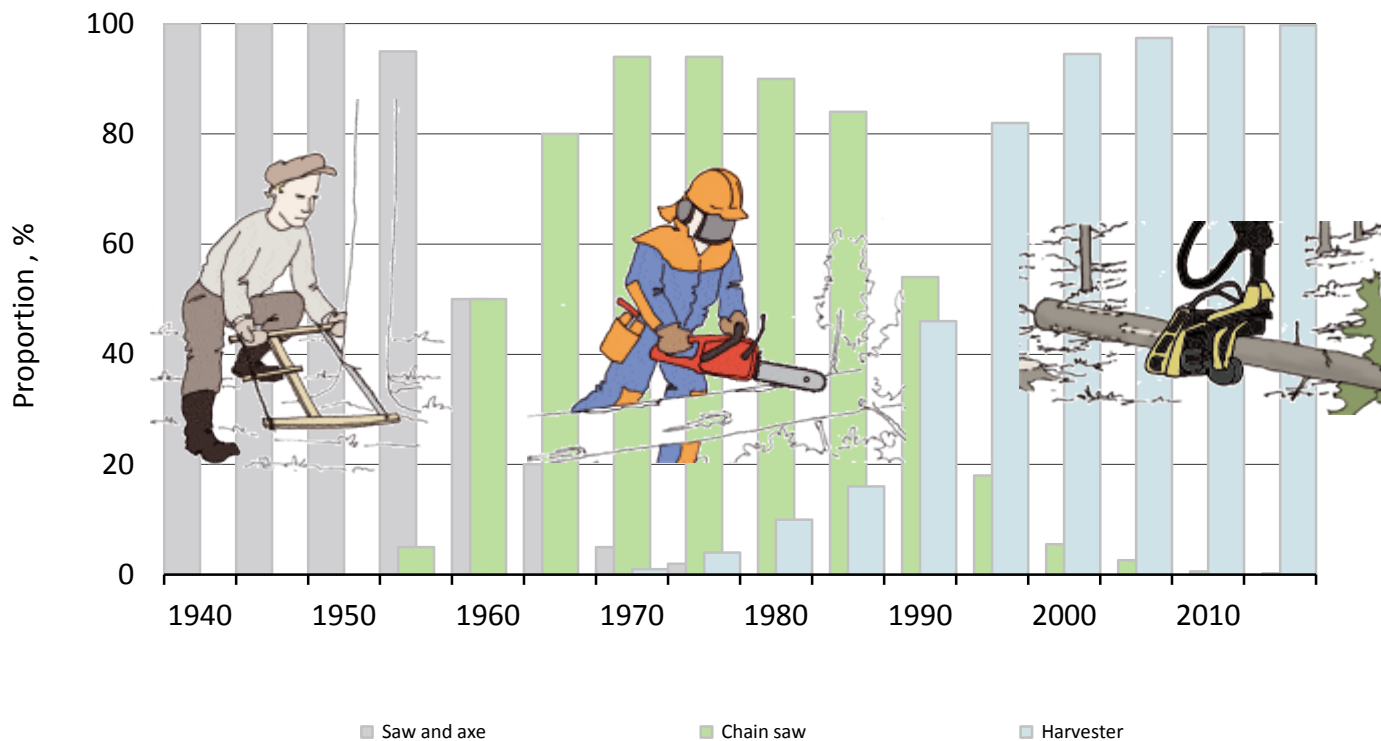
Statistics of Metsäteho

## Unit Costs in Timber Harvesting, 1950–2013

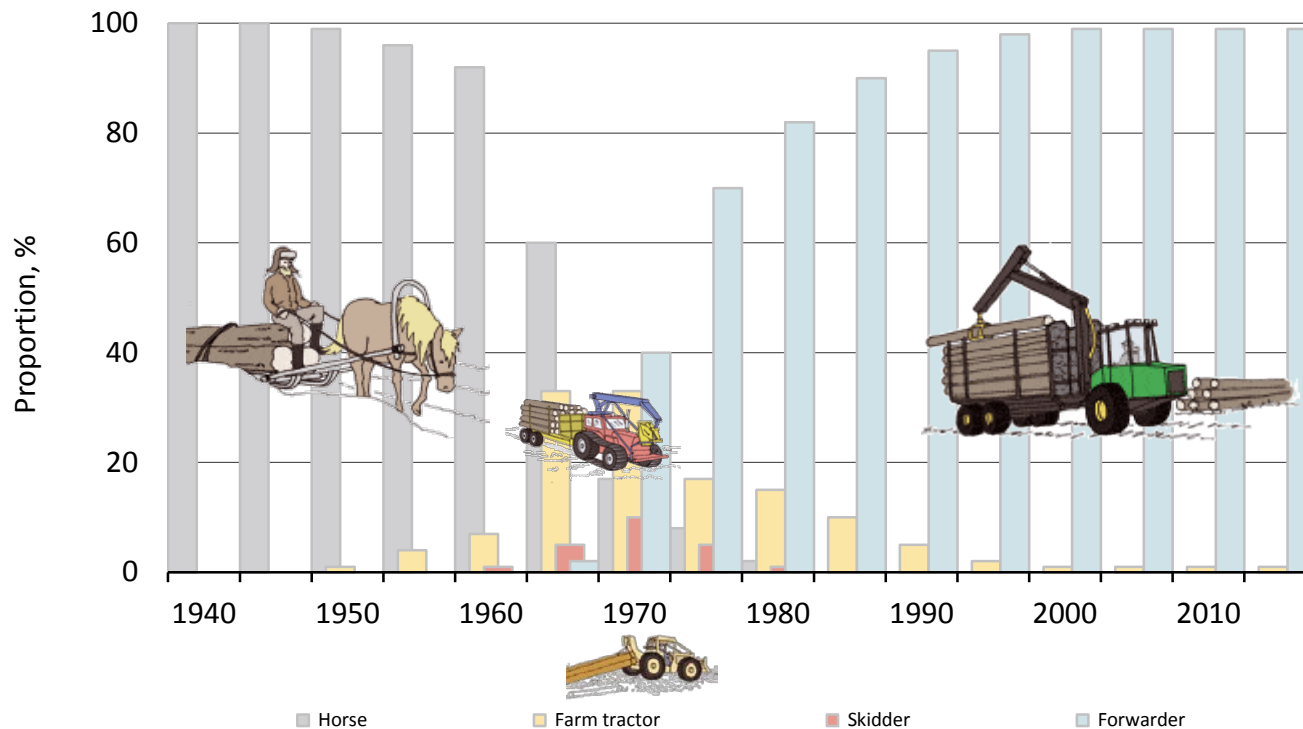


Costs have been deflated by the wholesale price index (2013=100).

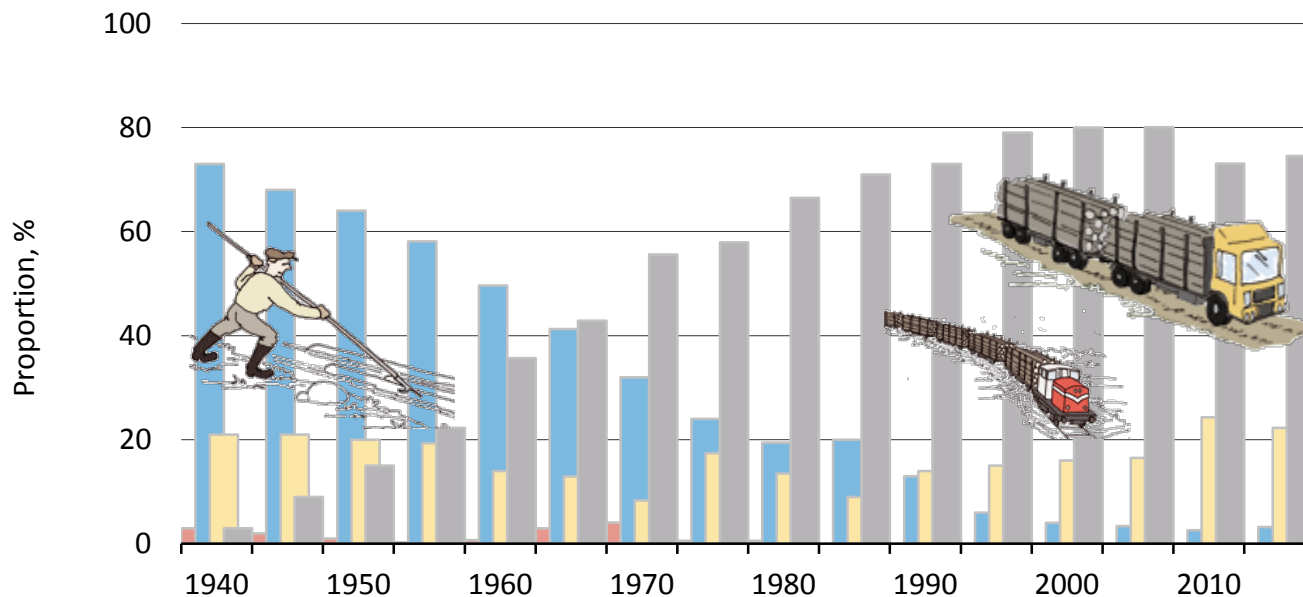
# Felling Techniques, 1940–2013



# Forest Haulage Techniques, 1940–2013



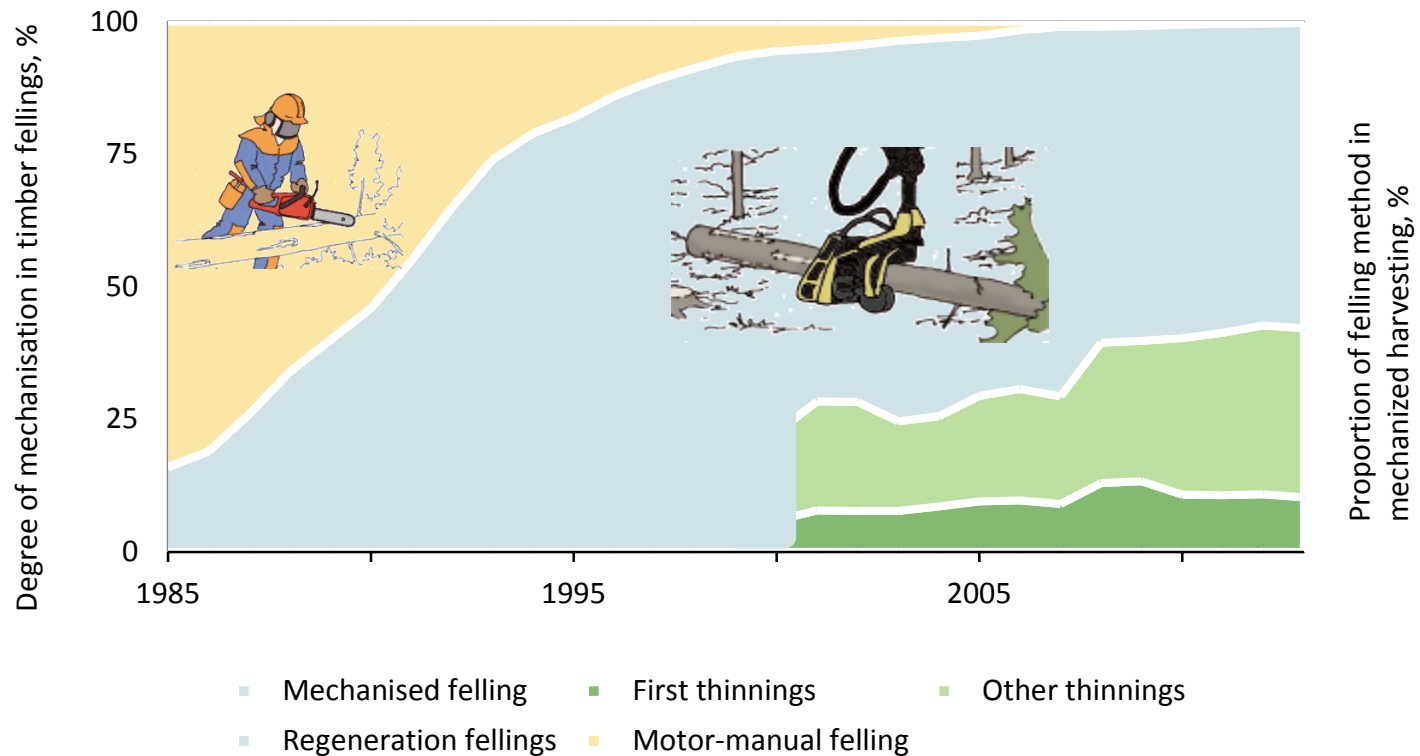
# Long-distance Transportation Techniques, 1940–2013



# Short Term Trends of Finnish Wood Supply

Statistics of Metsäteho

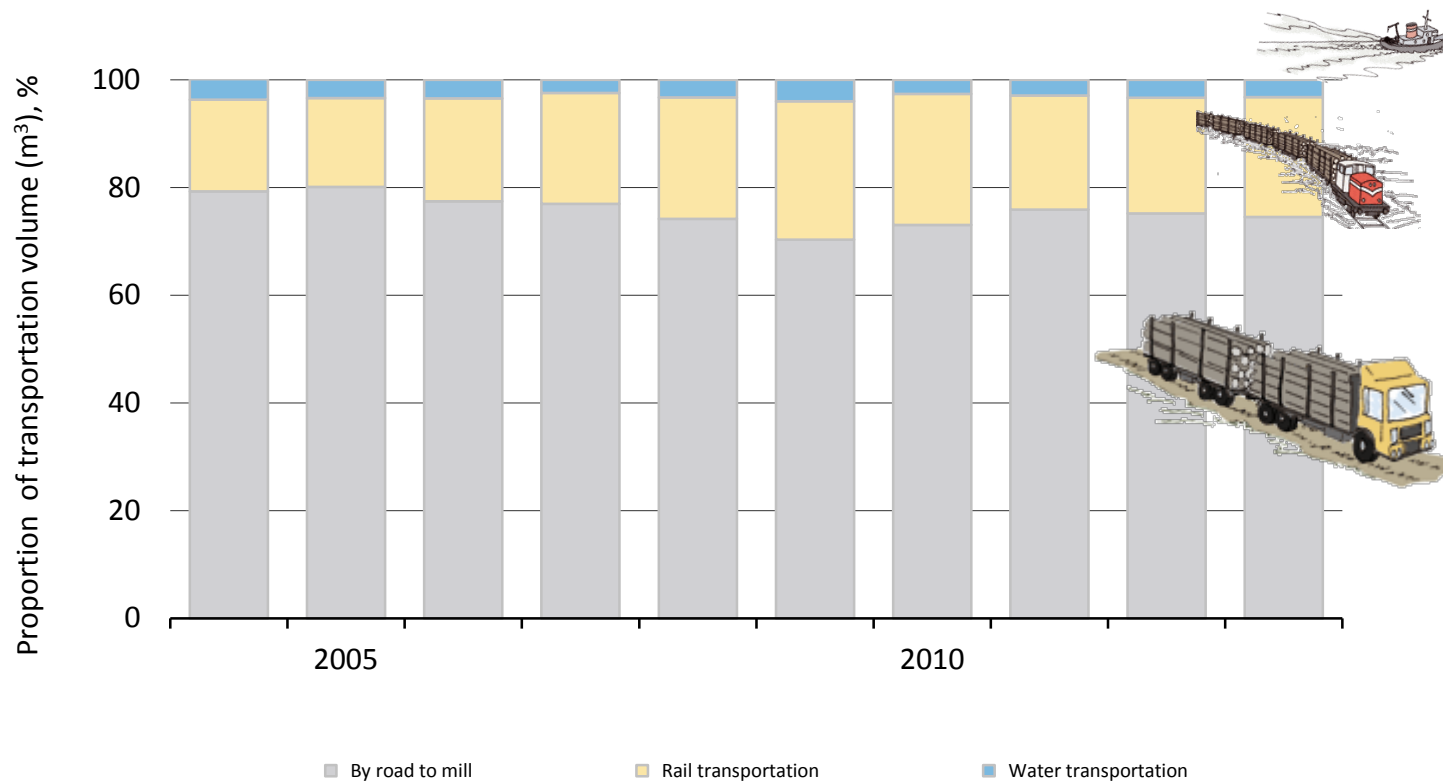
# Mechanisation of Felling, 1985–2013



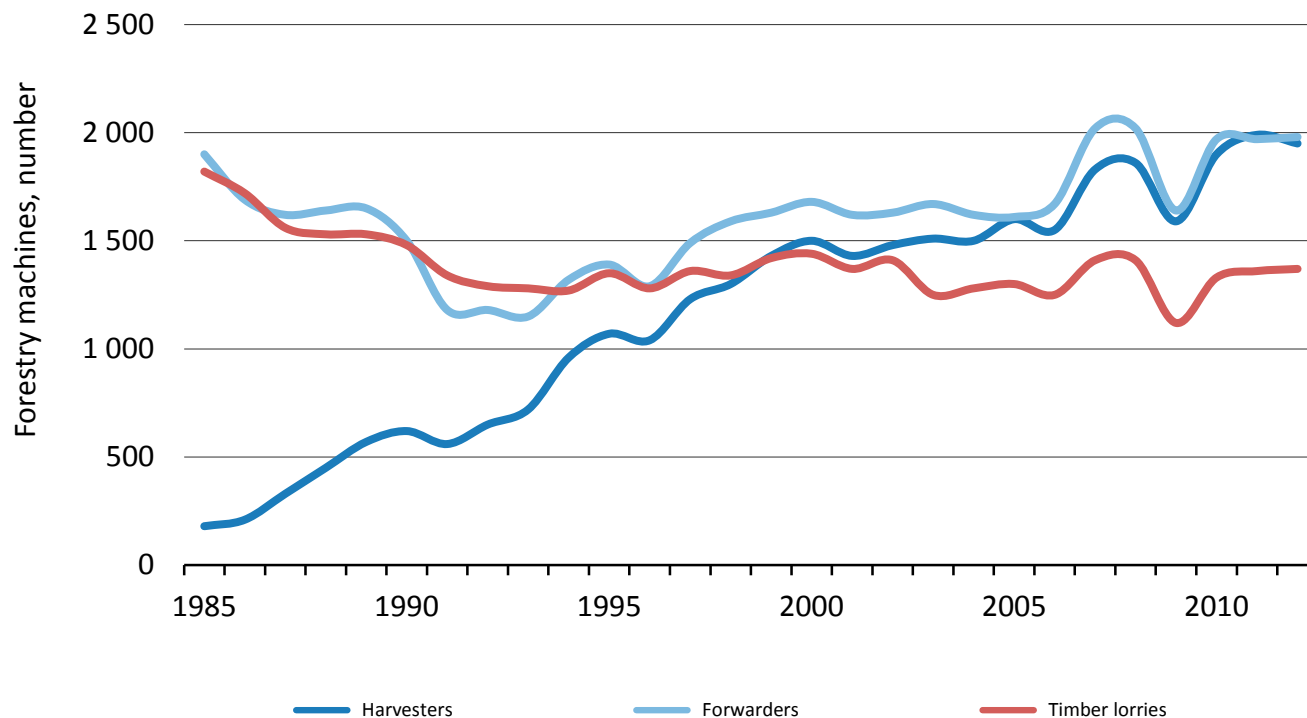
Per cent of mechanised felling year 2013: 99.8%



# Long-distance Transportation Techniques, 2004–2013

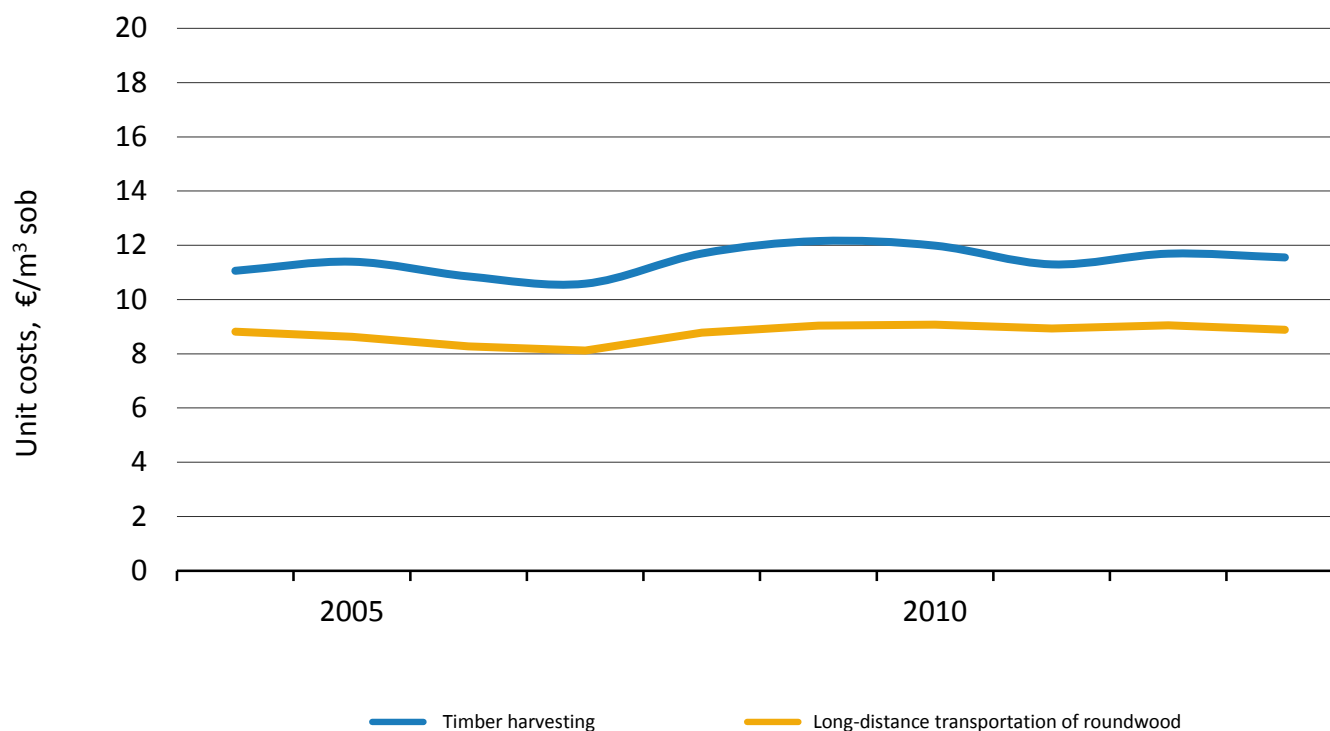


## Forestry Machines, 1985–2012



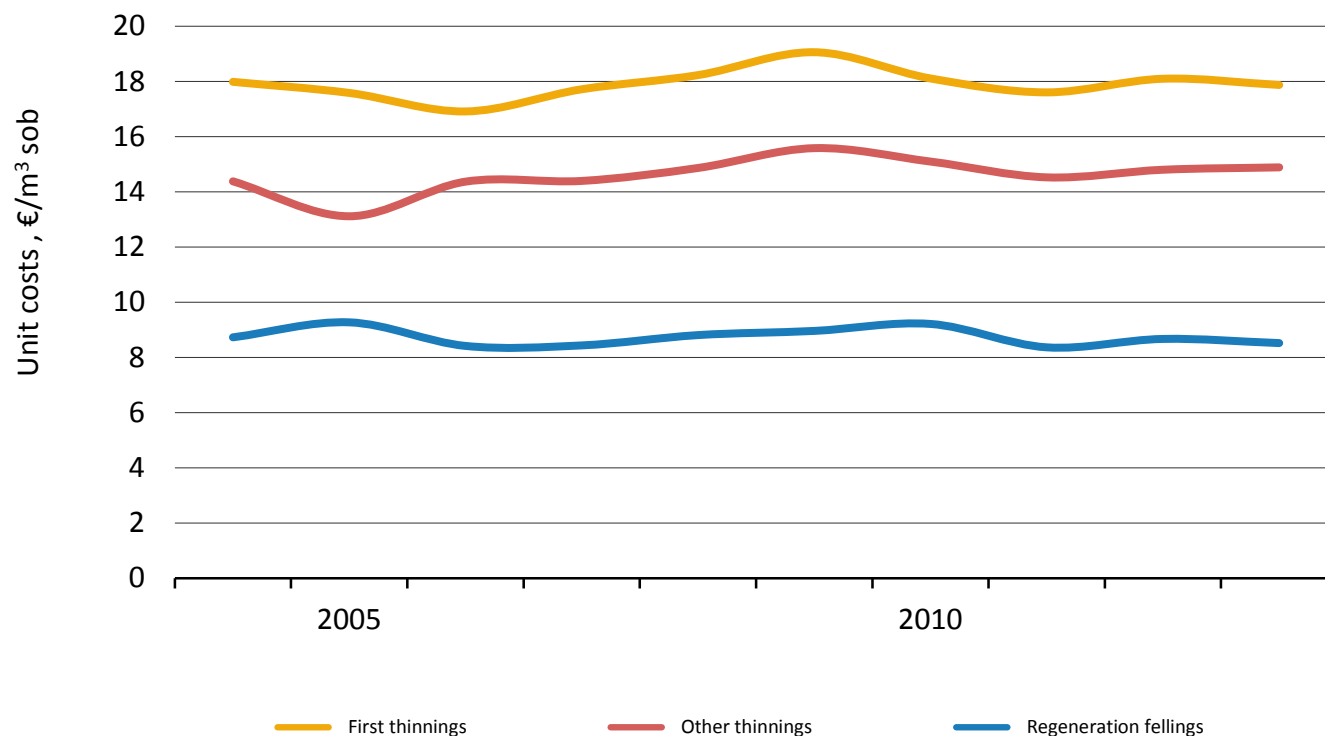
Source: Finnish Forest Research Institute

## Unit Costs in Timber Harvesting and Long-distance Transportation of Roundwood, 2004–2013



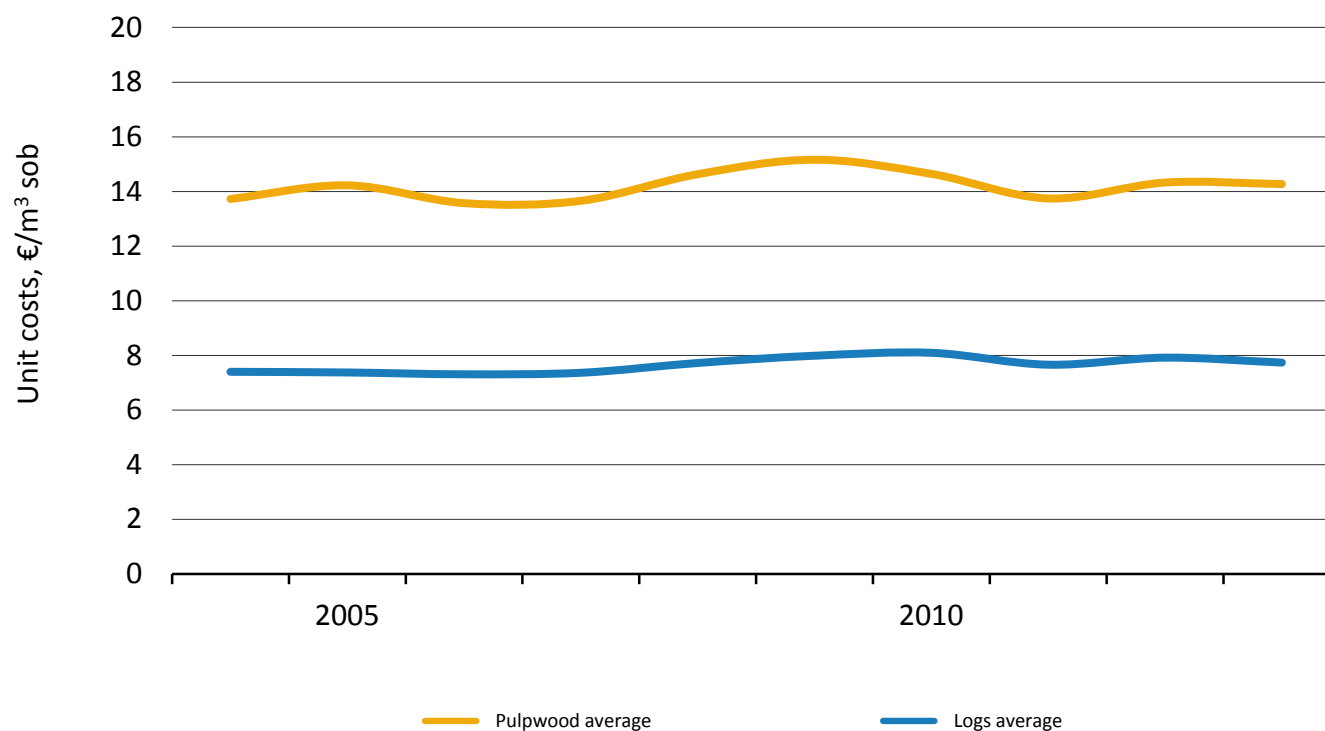
Costs have been deflated by Indexes of forest machinery costs and lorry traffic costs (2013=100).

## Unit Costs in Mechanised Harvesting by Felling Method, 2004–2013



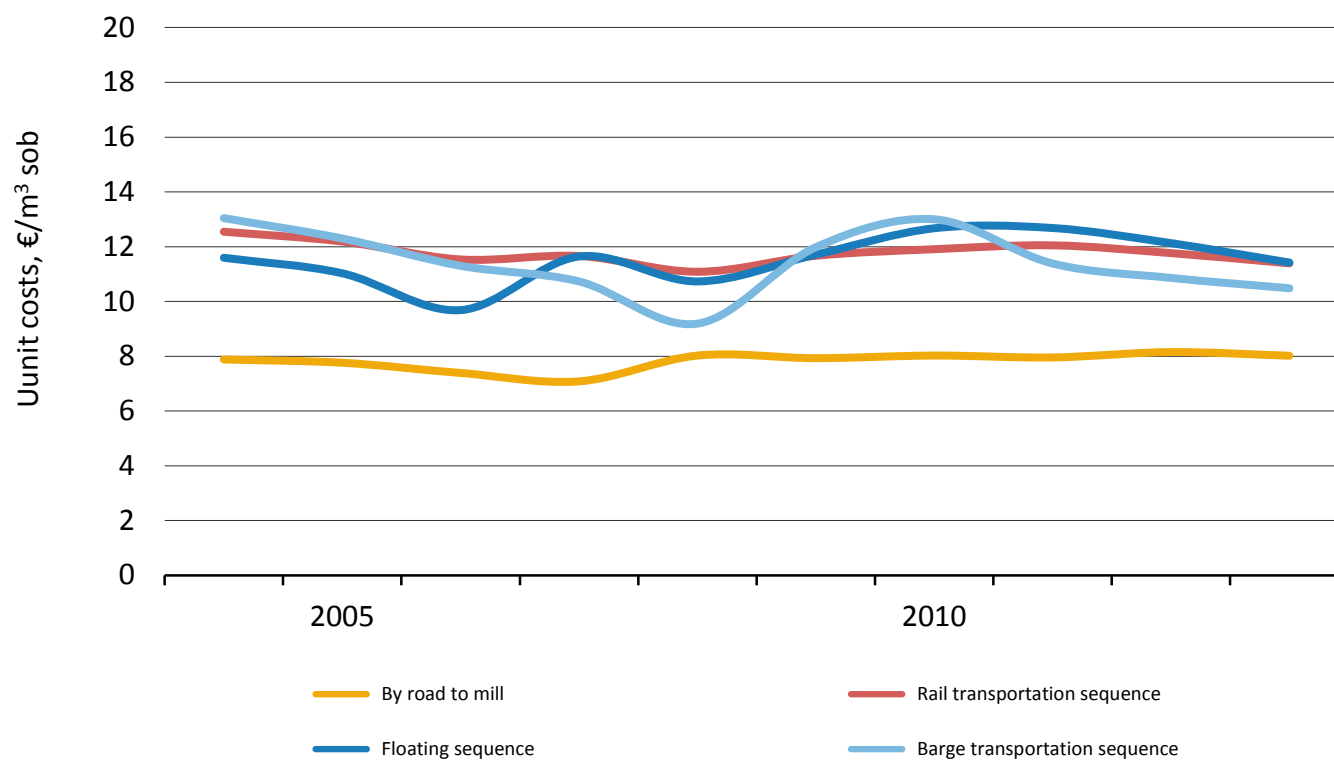
Costs have been deflated by Index of forest machinery (2013=100).

## Unit Costs in Mechanised Harvesting by Timber Assortments, 2004–2013



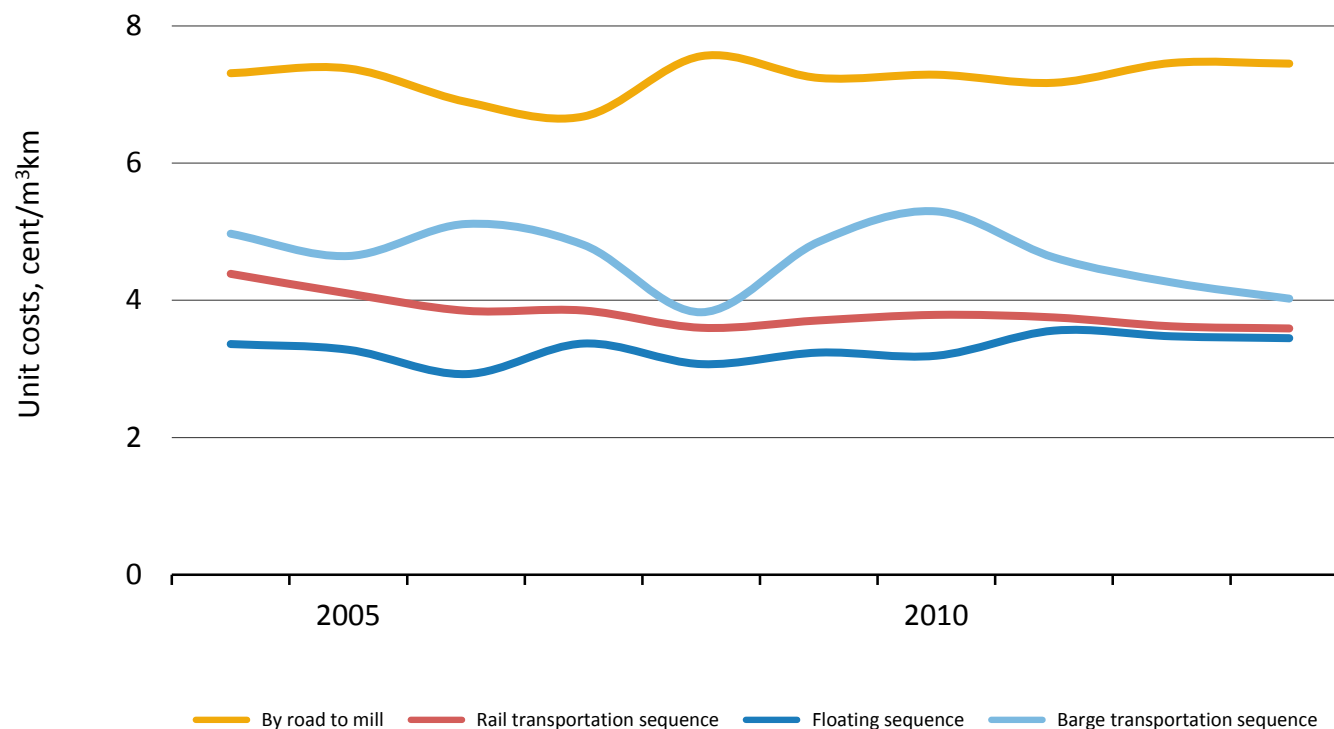
Costs have been deflated by Index of forest machinery (2013=100).

# Unit Costs in Long-distance Transportation of Roundwood 2004–2013 (I)



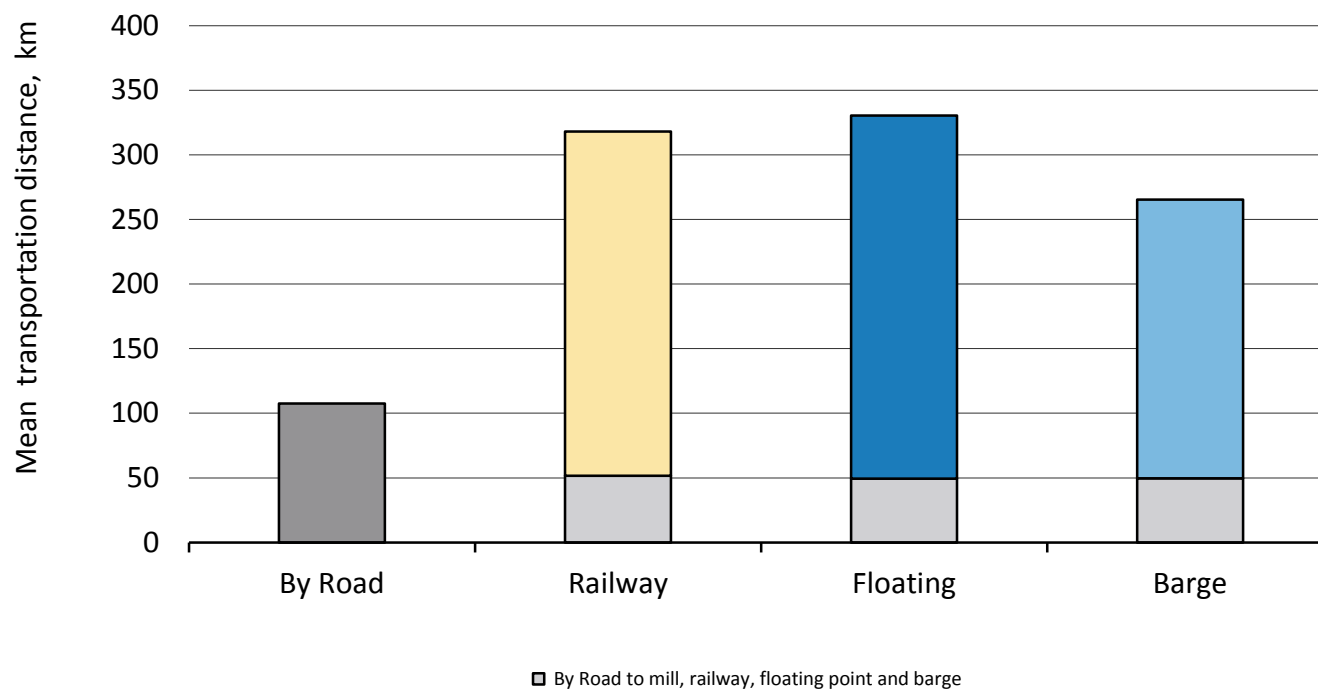
Costs have been deflated by Index of lorry traffic costs (2013=100).

# Unit Costs in Long-distance Transportation of Roundwood 2004–2013 (II)



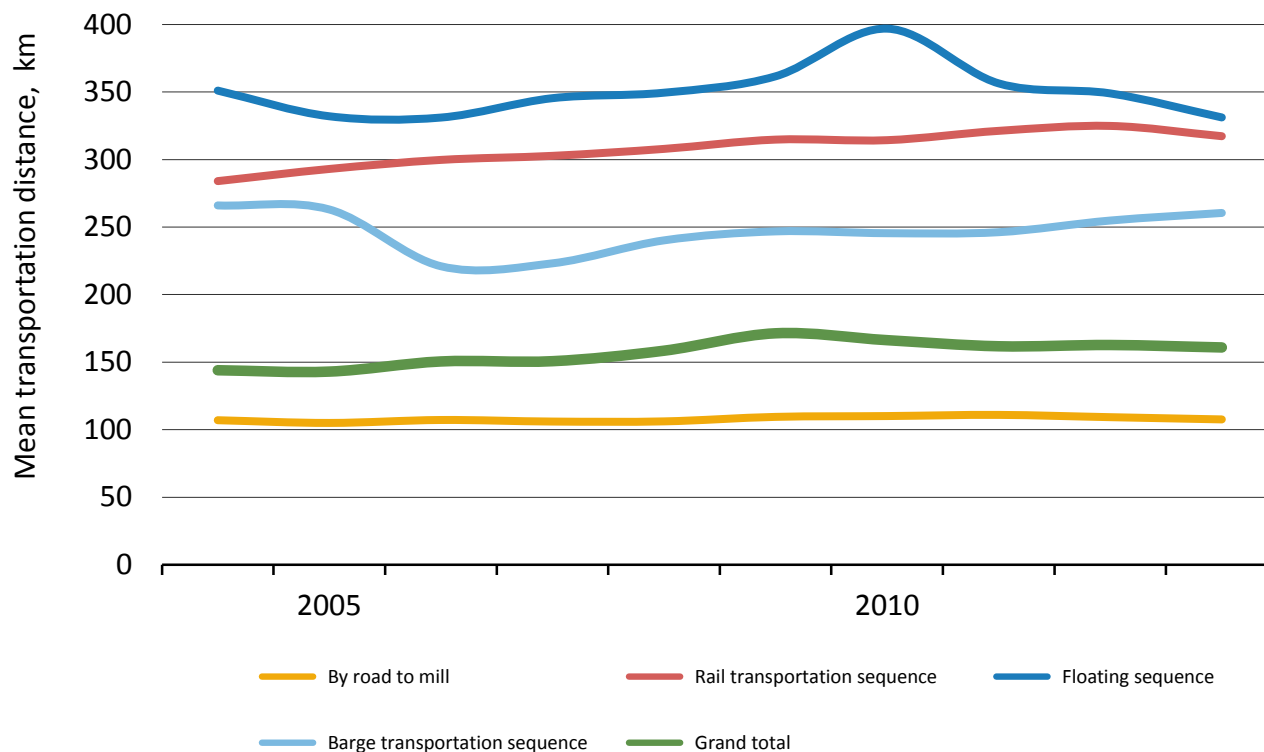
Costs have been deflated by Index of lorry traffic costs (2013=100).

## Mean Transportation Distance, 2013

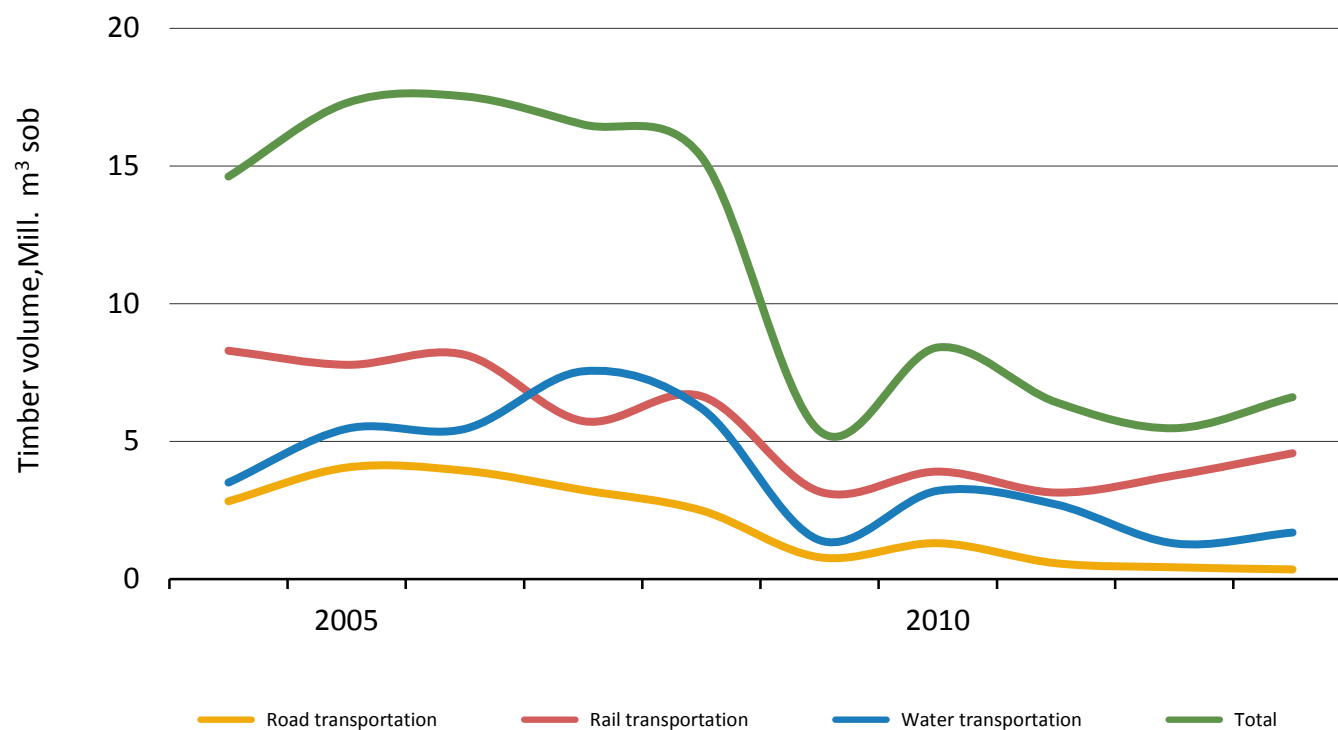




# Mean Transportation Distance, 2004–2013



## Volumes of Imported Roundwood by Transportation Method, 2004–2013



# Statistics 2013

## Tables

Statistics of Metsäteho

## Costs and Timber Volume, 2013

	Costs		Timber volume	Transport volume	
	Mill. €	%	Mill. m <sup>3</sup>	Mill. m <sup>3</sup> km	%
Harvesting	460,0		39,8		
Long-distance transportation	401,4	100		7 294	100
Road transportation	326,5	81		4 184	57
Rail transportation	65,3	16		2 679	37
Water transportation	9,6	2		430	6

(solid over bark)

## Unit Costs in Felling by Felling Method, 2013

€/m <sup>3</sup>	First thinning	Other thinning	Regeneration felling	Total
Harvesting				11,55
Mechanised harvesting <sup>*)</sup>	17,87	14,89	8,52	11,52
- share of volume	10,3	32,0	57,7	100
- share of costs	16,0	41,3	42,7	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, 2013

€/m <sup>3</sup>	Mechanised harvesting <sup>*)</sup>	Long-distance transportation
Pine logs	8,11	8,24
Spruce logs	7,35	6,89
Plywood logs	8,34	10,22
Logs average	7,74	7,65
Pine pulpwood	13,79	10,34
Spruce pulpwood	13,52	8,82
Birch pulpwood	15,94	9,16
Pulpwood average	14,27	9,65
Average	11,52	8,88

<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, 2013

	Domestic roundwood				
	1 000 m <sup>3</sup>	%	km	cent/m <sup>3</sup> km	€/m <sup>3</sup>
Total long-distance transportation	45 188		161	5,5	8,88
Total by road	44 675	98,9	94	7,8	7,31
By road to mill	33 684	74,5	108	7,5	8,02
Rail transportation sequence	10 059	22,3	317	3,6	11,39
By road to railway	9 691	21,4	52	10,0	5,18
Rail transportation	10 059	22,3	266	2,4	6,49
Water transportation sequence	1 446	3,2	298	3,7	10,95
Floating sequence	719	1,6	330	3,4	11,42
By road to floating point	719	1,6	49	9,4	4,62
Floating	719	1,6	281	2,2	6,28
Barge transportation sequence	726	1,6	260	4,0	10,48
By road to barge	513	1,1	50	10,5	5,19
Barge transportation	726	1,6	216	3,2	6,99

(solid over bark)