

Forest Products Conversion Factors

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Timber Measurement Society, April 7-9
Portland Oregon



Background

- The Project was initiated at the 2008 Working Party Meeting
- It took the correspondents much longer than anticipated to obtain the factors
- Factors from 16 countries and one trade association
- Differs from past efforts: explanatory text, more products and sub-products
- Completed in January 2010



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Comparison with conversion factors from the FAO Statistical Yearbook

- Key differences...
 - Wood raw materials m³ per metric ton

Product	Factor	FAO Statistical	DP-49, 2010	difference
		Yearbook/JFSQ	Median	
Coniferous sawlog	m ³ /mt	1.43	1.07	-25.2%
Non-coniferous sawlog	m ³ /mt	1.25	0.91	-27.2%
Tropical	m ³ /mt	1.37	1.12	-18.2%
Coniferous pulp log	m ³ /mt	1.54	1.12	-27.3%
Non-coniferous pulp log	m ³ /mt	1.33	0.91	-31.6%
Coniferous wood chips	m ³ /mt		1.19	
Non-coniferous wood chips	m ³ /mt		1.01	
All wood chips	m ³ /mt	1.6	1.13	-29.4%

Source: UNECE/FAO, 2010



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- Sawnwood, plywood, veneer pulp & paper

Product	Factor	FAO Statistical Yearbook/JFSQ	DP-49, 2010 Median	difference
Coniferous sawnwood, rough-dry	m ³ rw/m ³ p		1.99	
Non-coniferous sawnwood, rough-dry	m ³ rw/m ³ p		2.01	
All sawnwood*	m ³ rw/m ³ p	1.6	1.89	18.1%
Veneer sheets	m ³ rw/m ³ p	1.9	2	5.3%
Plywood	m ³ rw/m ³ p	2.3	2.13	-7.4%
Wood pulp	m ³ /mt	3.37	3.86	14.5%
Paper and paperboard	m ³ /mt	3.37	3.6	6.8%

Source: UNECE/FAO, 2010

Note: *ITTO factor is 1.82



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MBF (1,000 board feet) of sawlogs to m³

- One mbf = 4.53 m³ (source, FAO, 1950 or earlier)
 - May have been reasonable under old growth harvests in the past
- Varies by log size and the board foot rule used
- The “real” m³/mbf is likely closer to 5.7, in the aggregate, but varies substantially by region



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7.1 m³/mbf

7 inch (18 cm) top diameter



6.2 m³/mbf

5.8 m³/mbf

11 inch (28 cm) top diameter 14 inch (36 cm) top diameter



4.6 m³/mbf

22 inch (56 cm) top diameter



4.2 m³/mbf

34 inch (86 cm) top diameter



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Why does any of this matter?

- People use our conversion factors!

4.211 One of the most significant errors made by the USDOC was the conversion factor it used to compare the stumpage rates in different jurisdictions. Comparing US and Canadian stumpage rates involves different measures of log volumes. Log volumes in several of the US comparison areas used by the USDOC are measured in thousand board feet (MBF) whereas stumpage in Canada is measured in cubic metres (m³) using a metric scale designed to measure the total volume of solid wood in logs..

World Trade Organization. 2002. United States – Preliminary Determinations with Respect to Certain Softwood Lumber from Canada: Report of the Panel (WT/DS236/R)

The conversion factor generally used to convert logs measured in board feet to cubic meters has traditionally been set at 4.53. Because of diminishing old growth, large-diameter trees, the average conversion factor has risen, as illustrated in this analysis of Washington state sawmill data over the period 1970–1998. Conversion factors for coastal and interior Washington were estimated at 6.76 and 5.93, respectively, up from 4.0 to 4.5 in the 1970s. Average saw-log diameters over the same period were estimated to have declined from 56 to 29 cm for coastal Washington and from 41 to 25 cm for interior Washington.

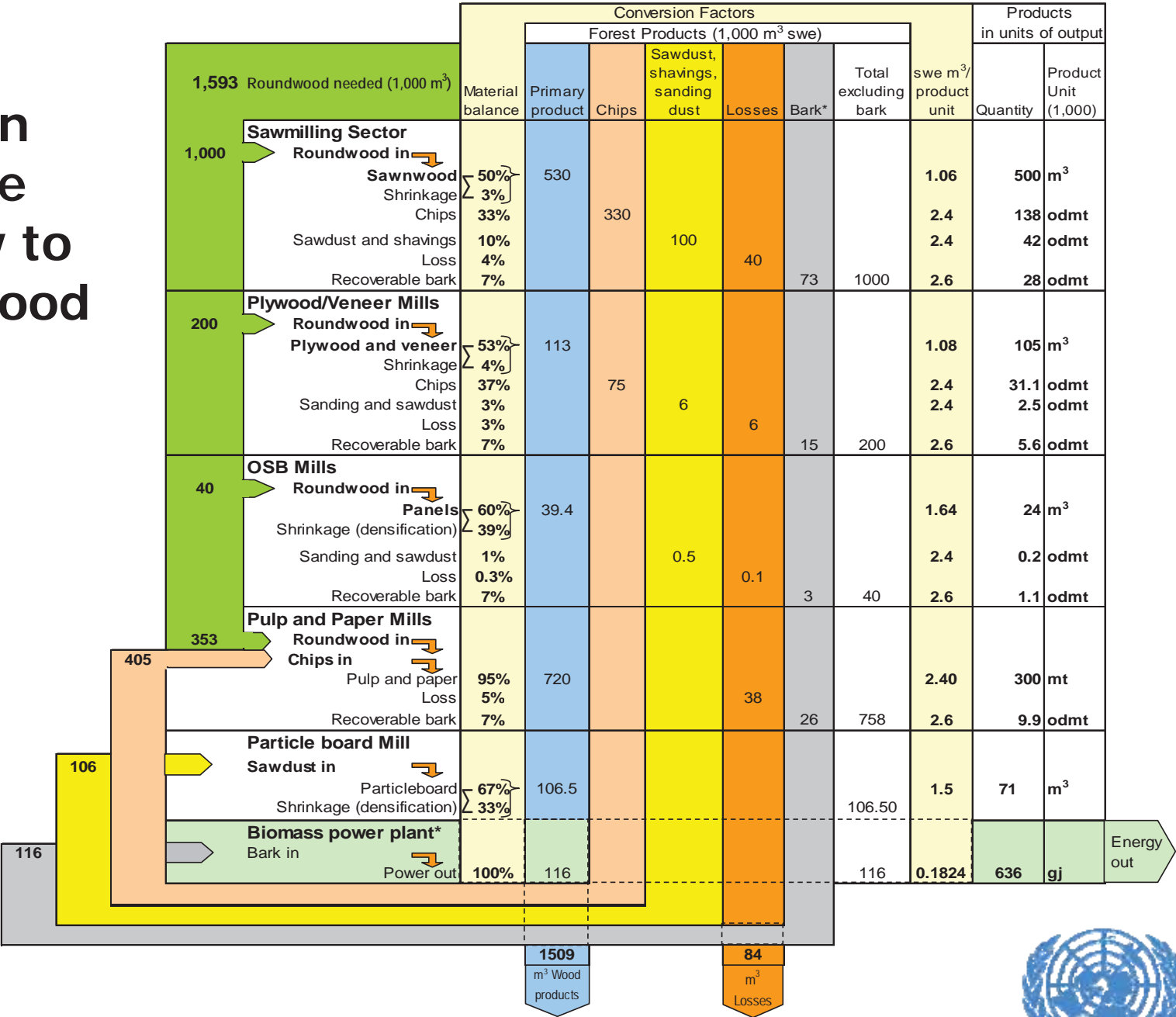
Spelter, Henry. 2002. Conversion of board foot scaled logs to cubic meters in Washington State, 1970–1998. Gen. Tech. Rep. FPL-GTR-131. Madison, WI: U.S. Department of Agriculture, Forest Service, Forest Products Laboratory.



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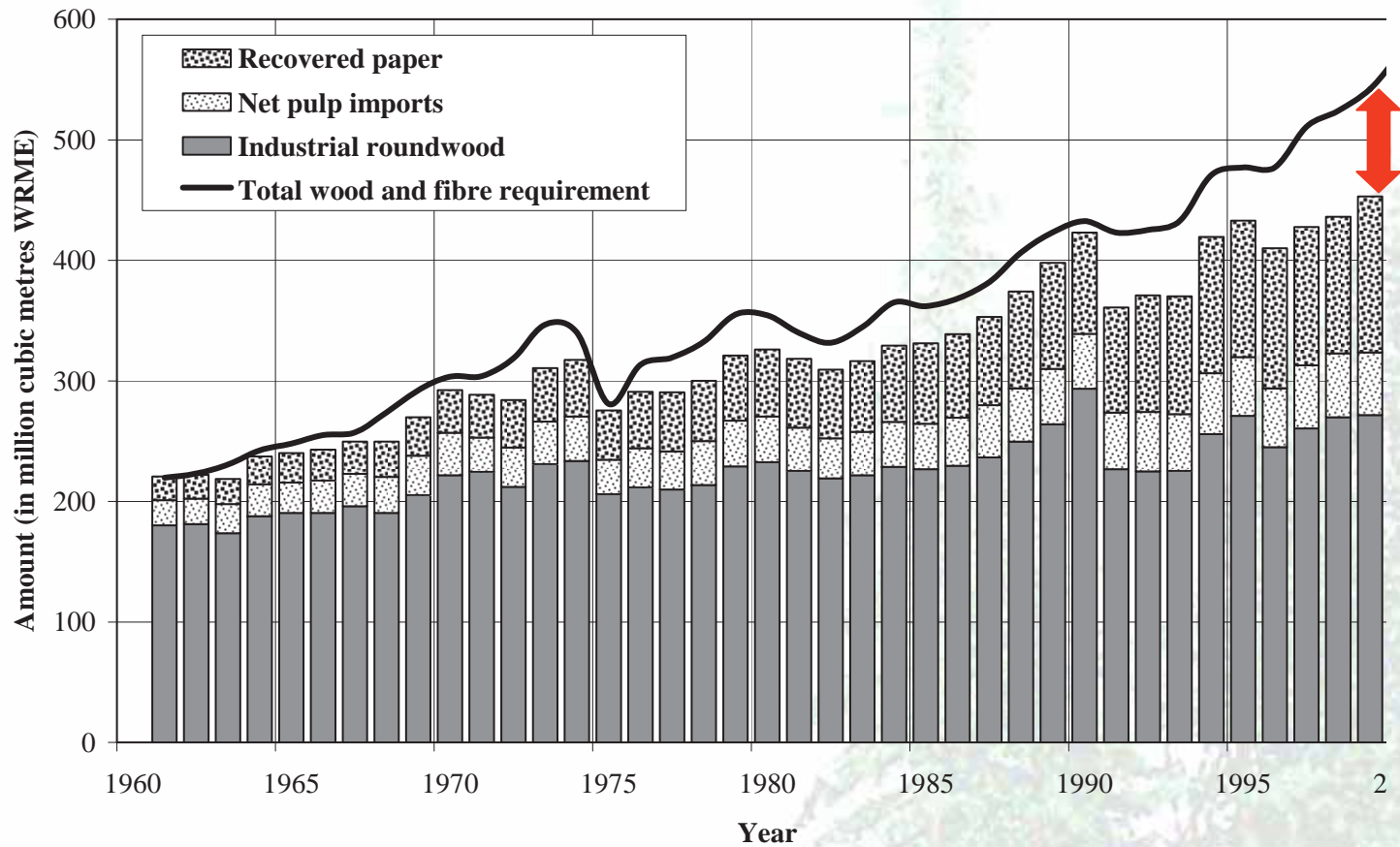


Accurate conversion factors are necessary to make a wood balance



EFSOS 2005 Imbalance

Trends in wood raw material consumption in Western Europe from 1961 to 2000



Source: derived from FAOSTAT production and trade statistics (<http://faostat.external.fao.org>).



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Thank you for your attention

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