



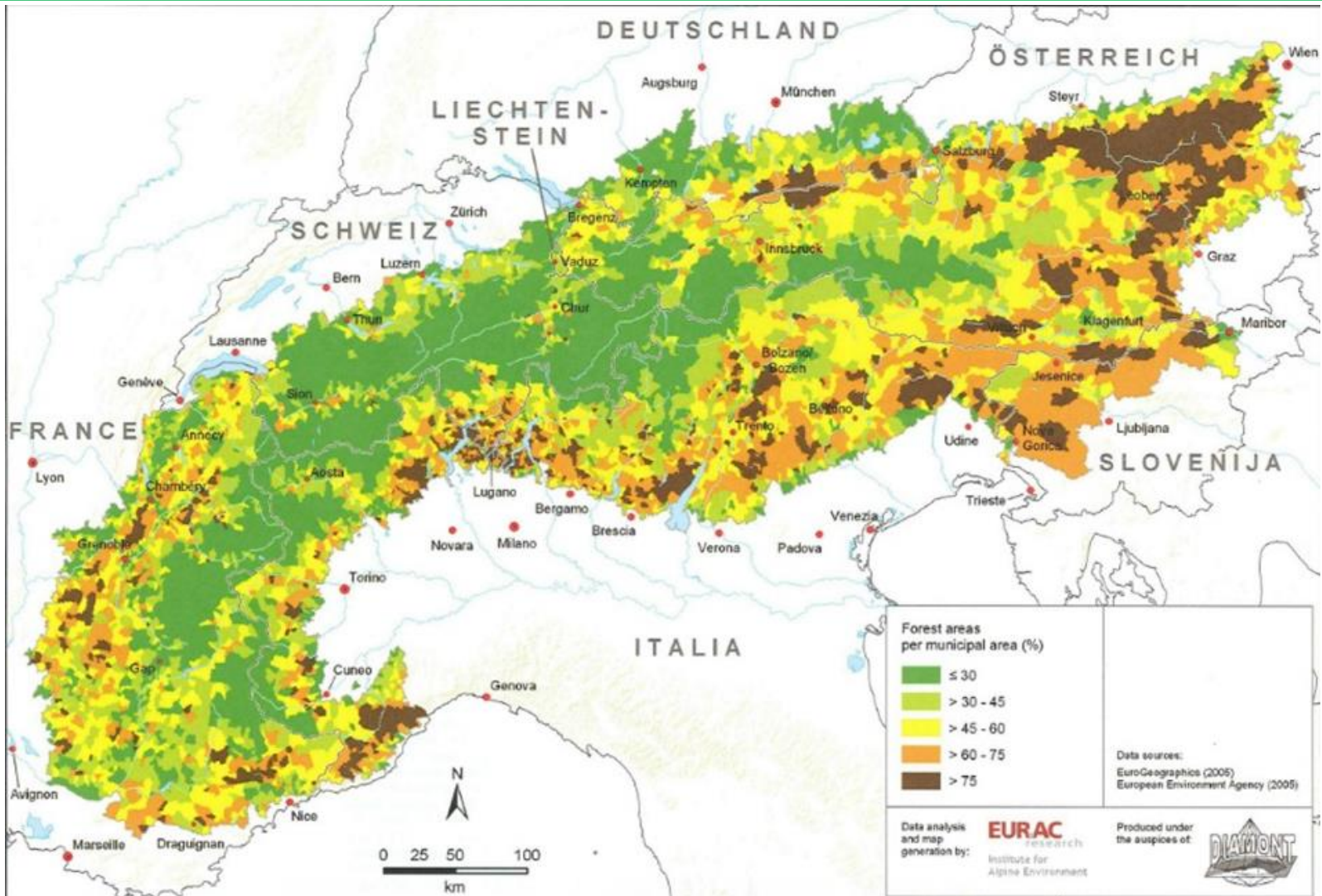
Cascaded Timber Use from Sustainably Managed Alpine Forests

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Joint Workshop

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21 November 2018, Innsbruck

Action Group 6

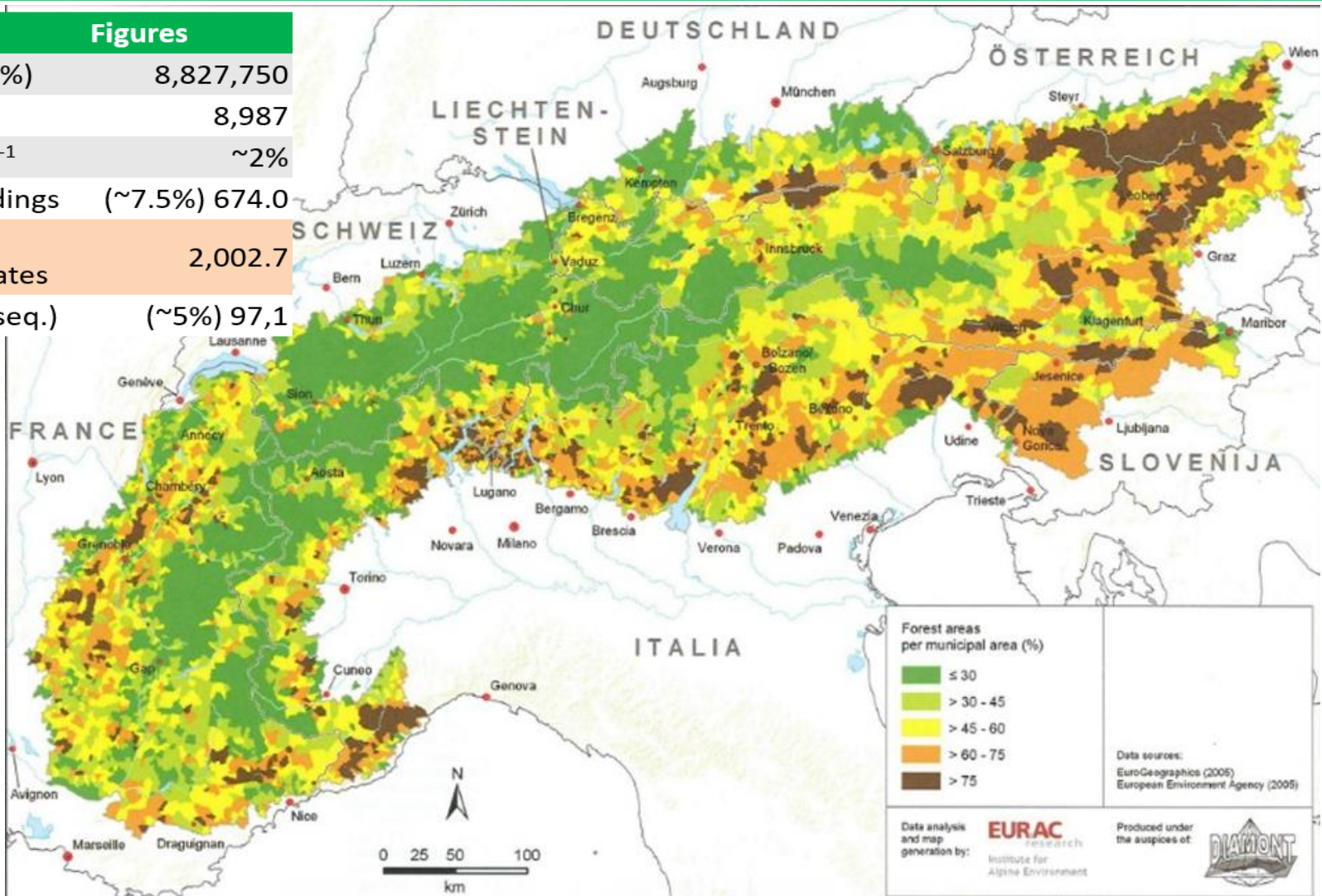


Action Group 6



AC Forest	Figures
Area ha (~46,4%)	8,827,750
CO ₂ Mio.t	8,987
CO ₂ biomass Y ⁻¹	~2%
CO ₂ Mio.t buildings	(~7.5%) 674.0
CO ₂ Emissions Mio.t Y ⁻¹ AC-states	2,002.7
CO ₂ Mio.t Y ⁻¹ (seq.)	(~5%) 97,1

Source: Klein D. &
Schulz C., 2011

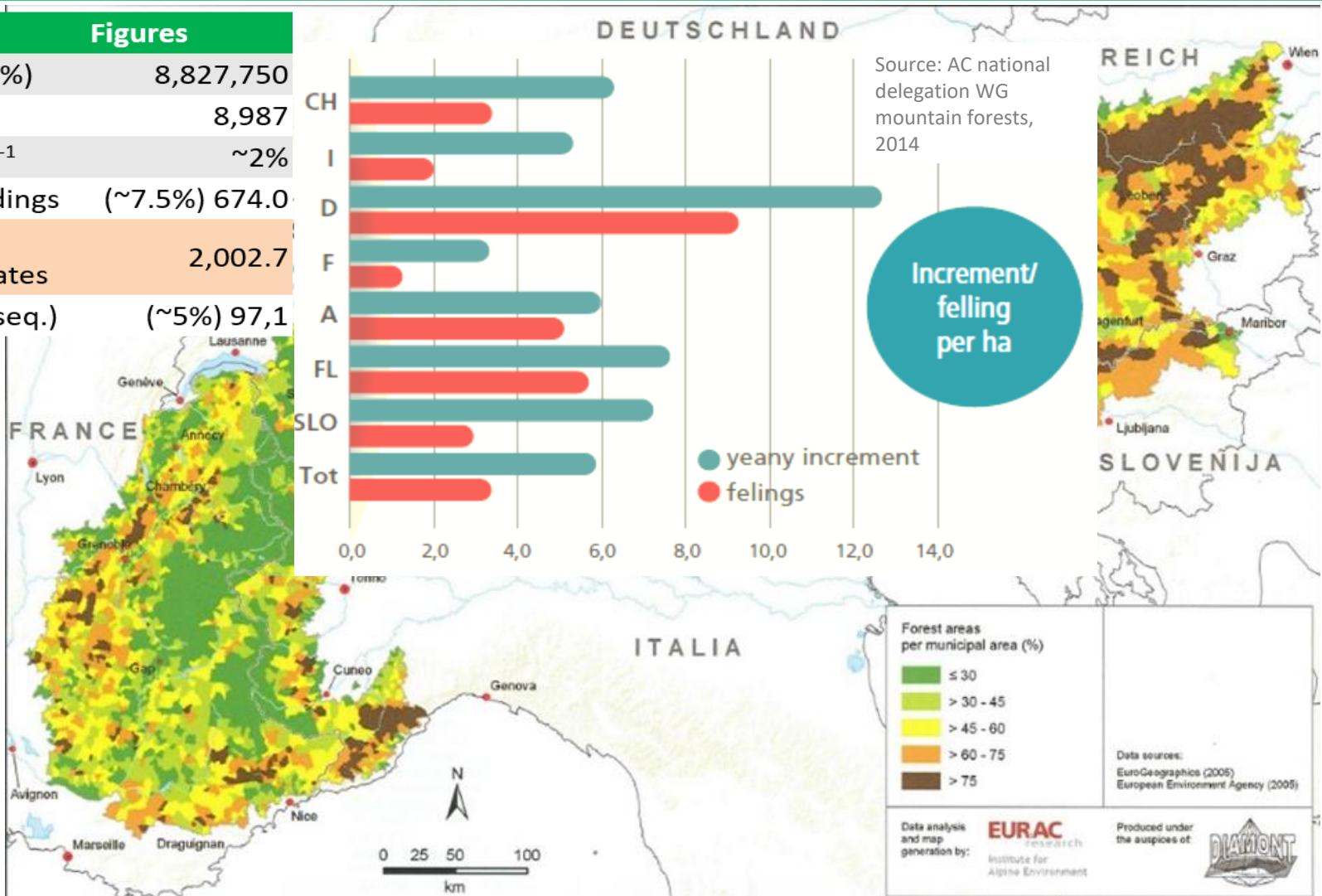


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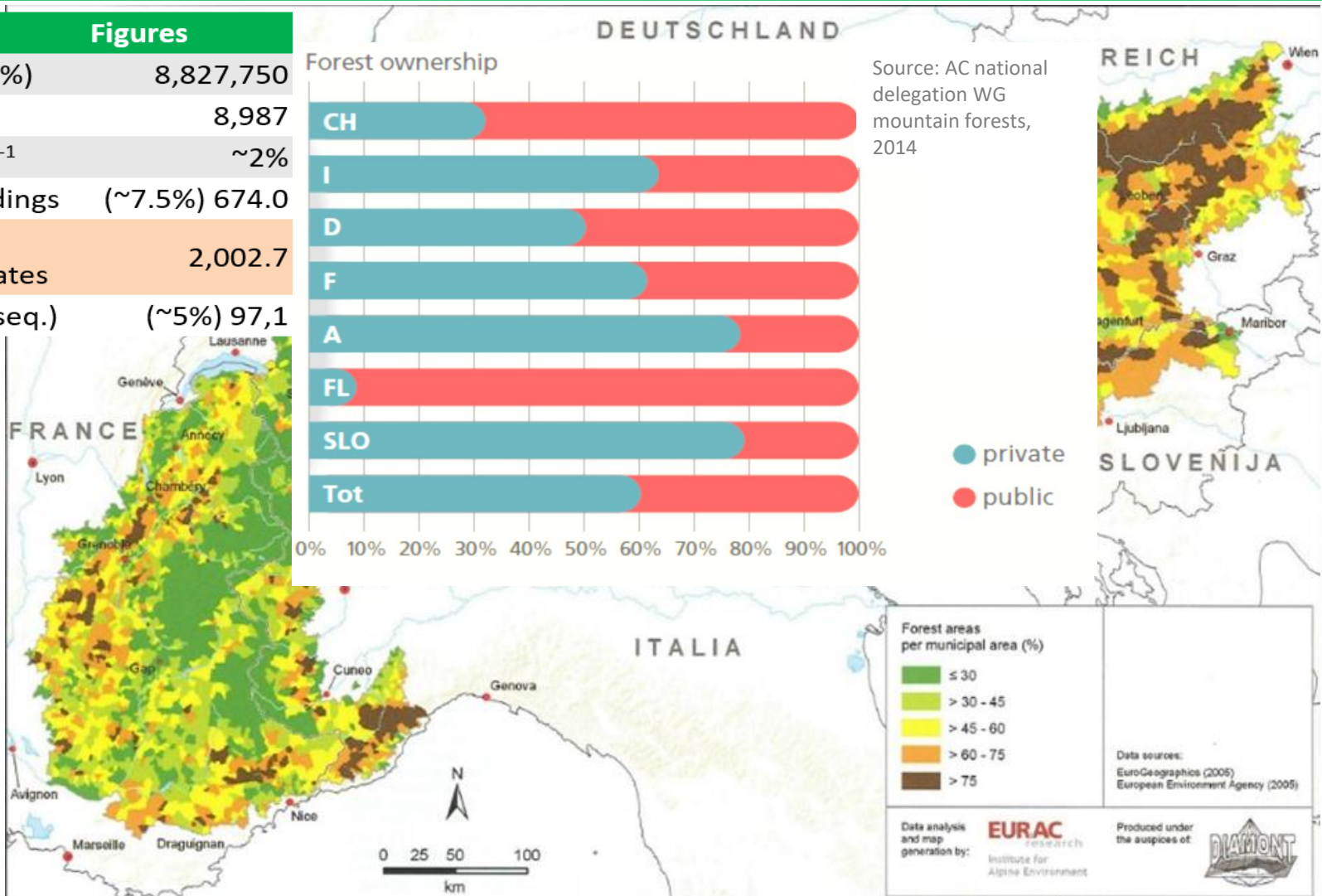


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Cascaded Timber Use

+ 7,5% of CO₂ sequestration y⁻¹

- Material versus energetic use
- Higher versus lower timber quality
- Long-term versus short-term use

The applicability of this concept is strongly related to the silvicultural principles applied!

Hans Carl von Carlowitz – Sylvicultura Oeconomica (1713).
Naturmäßige Anweisung zur wilden Baum-Zucht
*..., daß es eine **continuirliche, beständige und nachhaltige** Nutzung gebe*



Balsam Popular: 15ha
LC = 15y -> 1ha/y

Source: Zentrum Forst Holz Weihenstephan, LWF aktuell.

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Teak Plantation: 20ha
LC = 20y -> 1ha/y

Source: www.woodsource.ch

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Pinus Radiata: 28ha
LC = 28y -> 1ha/y

Source: Martin Dallen, Dep. of Agr. and Water Resources

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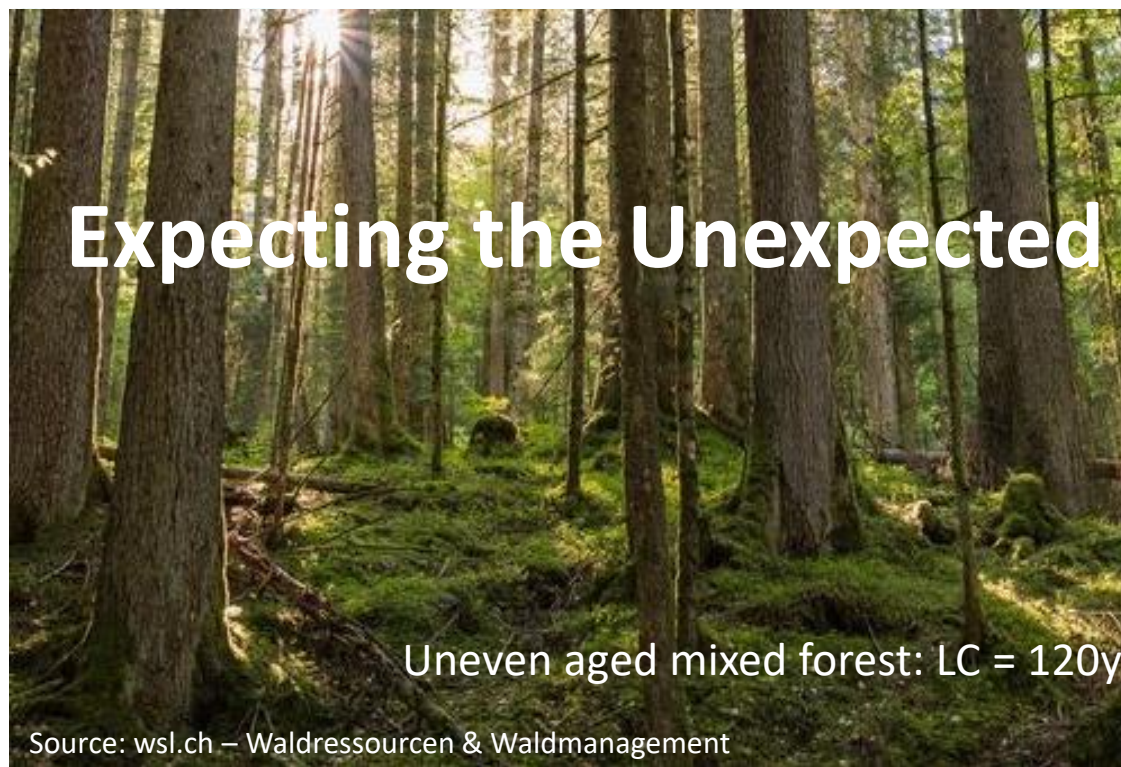
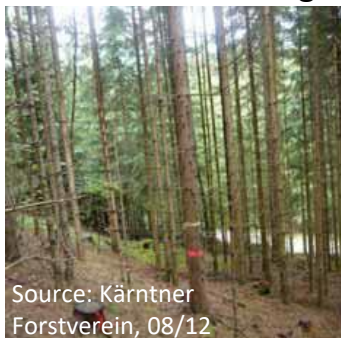


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Primary Thinning



Structural Thinning



Light-growth Thinning



Clearance Cut



Clear Cut





ARPAF: CiculAlps – Valorising Forest Potentials

Upgrading unexploited potentials

a) Lower quality timber assortments

65% saw logs, 30% Industrial Wood, 5% Fuel Wood
residual forest wood: branches, stem foot, etc.

b) Timber residues in the saw-mill industry

35-40% waste - minimization & up-cycling saw by-products:
DE: ~17 Mio. m³ (Mantau, 2008); AT: 9,3 Mio. m³ (Moser, 2008).

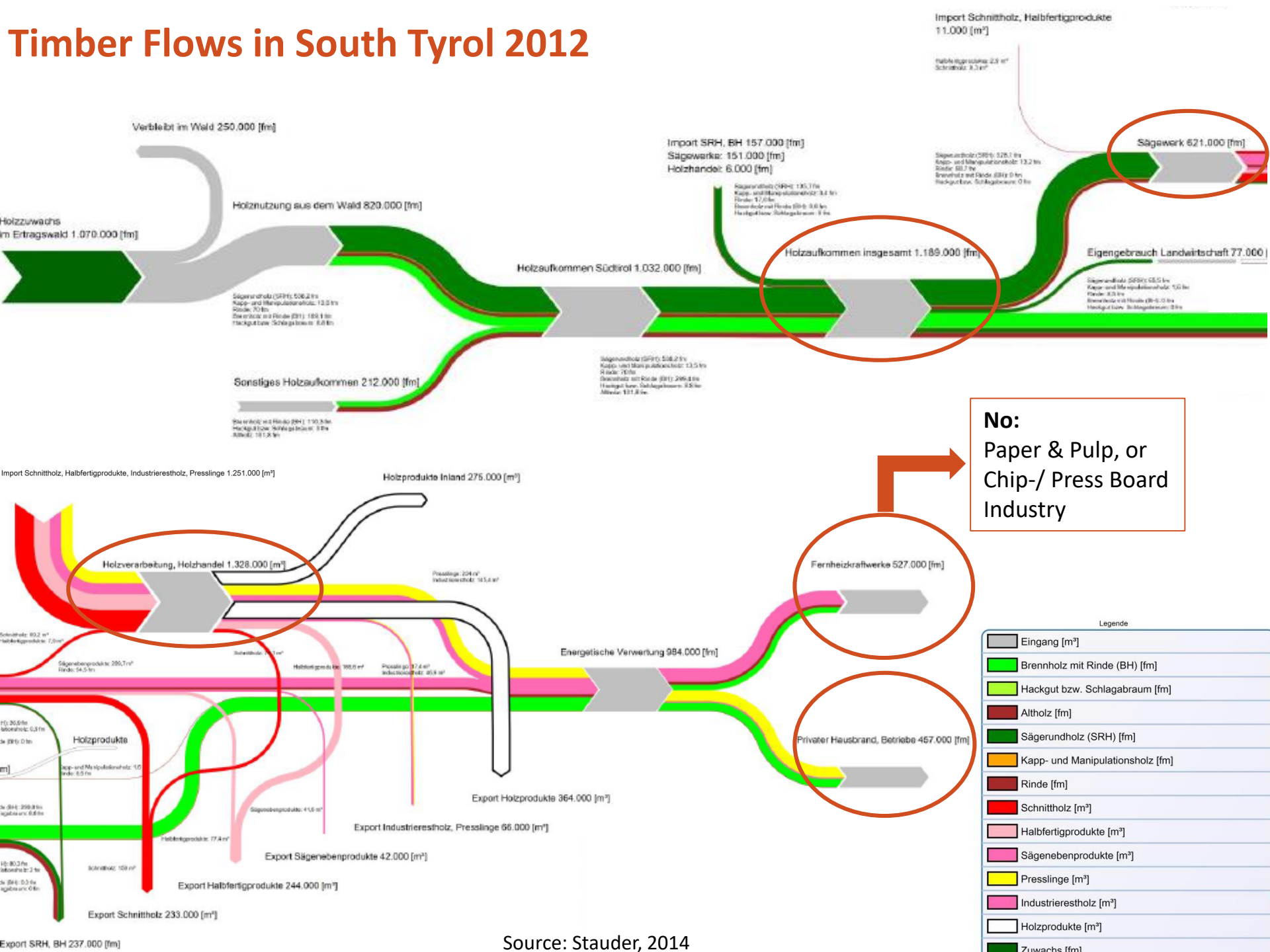
c) Demolition Wood

Paper & Pulp; Chip-/Press-board; Bio-Energy

Promote & optimize the material use





Availability is dependent from the demand for sawn timber

Timber Flows in South Tyrol 2012



No:
Paper & Pulp, or
Chip-/ Press Board
Industry

VA from South Tyrolean Timber in € - from 1 solid m³ over bark (SOB)

Value Chain Actors	Degree of Refinement	VA raw material Farmer: €/m ³ SOB	Increase of the REGIONAL VA	Regional VA €/m ³ SOB
Farmer & (Int. Sup.) DHP		36	x 3.3	118
Farmer – Saw-mill & (Int. Sup.) Wood Panel		63	x 2.2	140
Farmer – Saw-mill & (Int. Sup.) Carpenter/Timber-House		66	x 4.7	309
Farmer – Saw-mill & (Int. Sup.) Joiner		82	x 14.0	1.154



Discussion

- Logistical Solutions & Forestry 4.0
- Forest & Timber Competence Centres
- Trans-boundary & Cross-Cutting Governance

Managing the Un-Expected
Valorising Cross-Cutting Potentials