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Concept of the cascade use of wood and the related reporting



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Outline

- Why measure cascade use?
- The cascade use concept
- Advantages of a cascade use indicator
- How to measure it?
- Challenges
- Conclusions



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Why measure it?

- **Resource specific** indicator;
- **Material efficiency** of the sector assessed;
- **Complete Indicator** reflecting the entire sector;
- No impact by changes in trade balances;
- **Monitoring progress made** towards circular economies / green economy;
- Little additional reporting effort in the long term.



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The cascade use concept

*“The same biogenic resources are used sequentially: first (and possibly repeatedly) for **material applications** and then for subsequent **energy applications**.” [FPAMR 2014]*

*“The **overall use** of wood raw material **divided** by its **roundwood component**; the cascade factor is a measure of the extent to which the (...) wood-processing industry has succeeded in increasing the utilization of wood co-products and recycled fibres.” [INDUFOR 2013]*

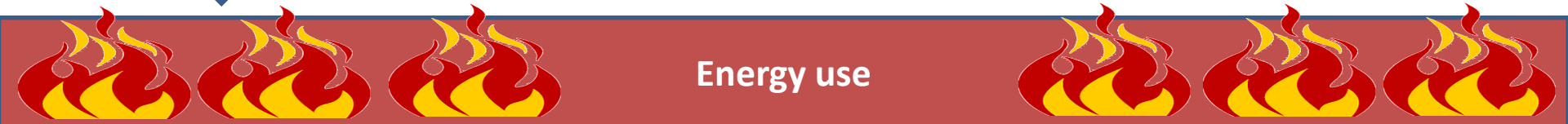
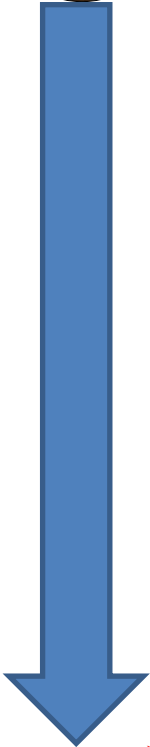
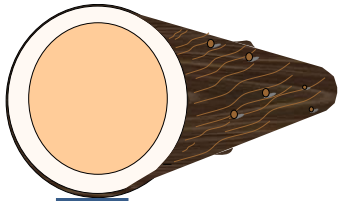
... used by the UNECE/FAO in the context of the wood resource balance



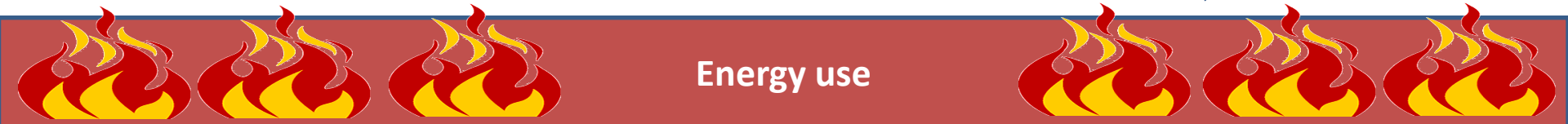
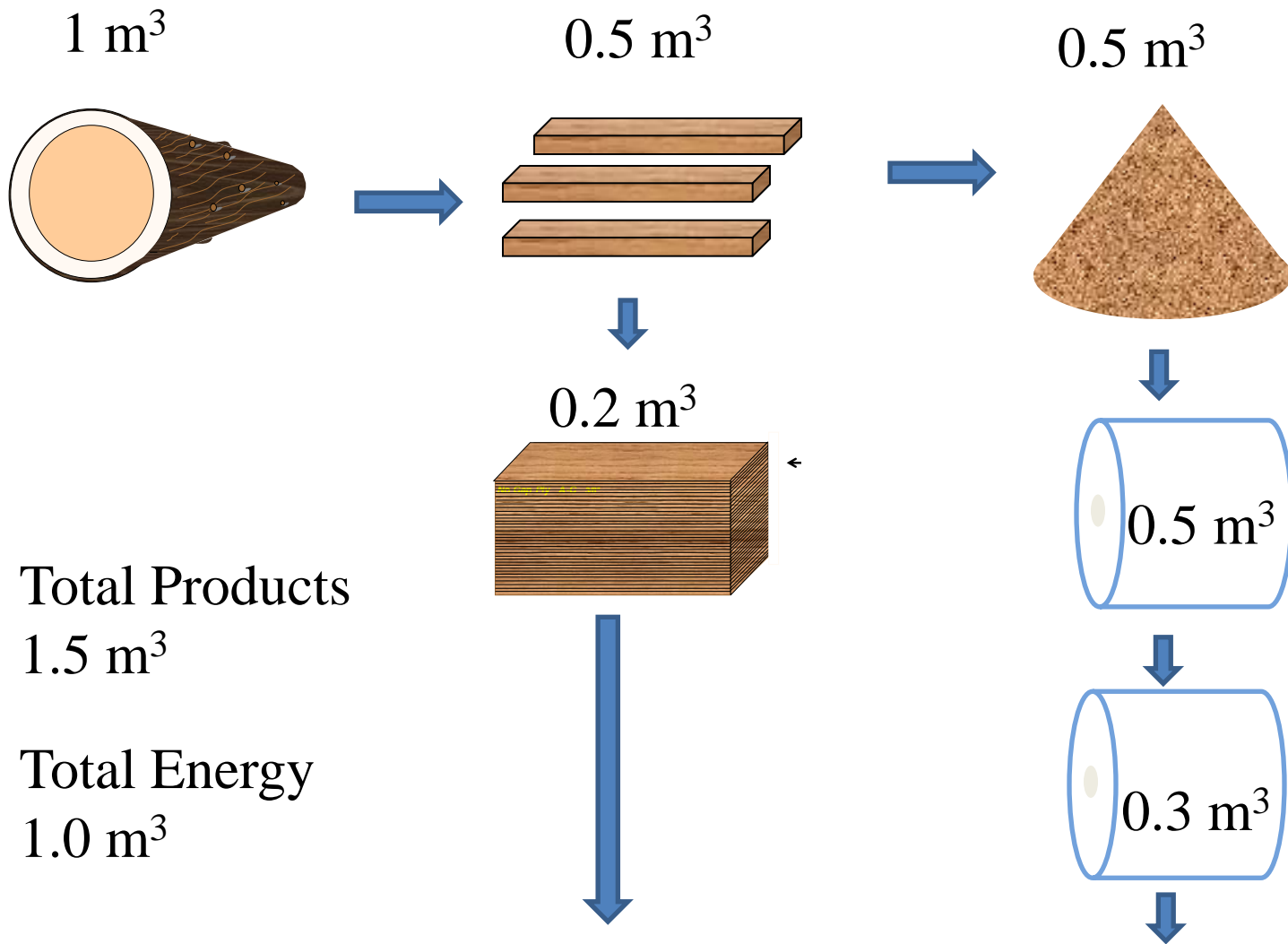
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1 m³

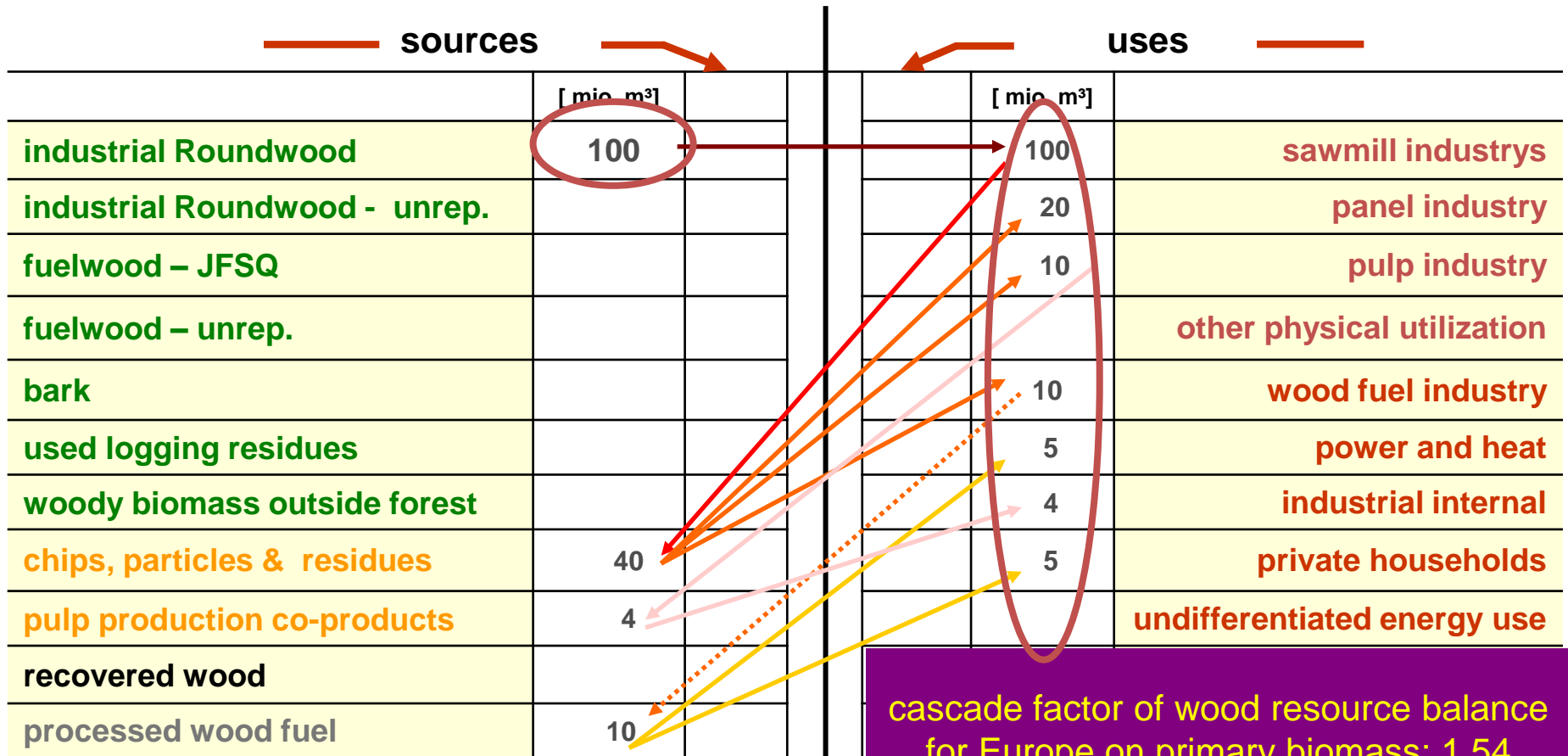


Energy use



The cascade use concept - example

(EUwood study, Mantau et al. 2010)



cascade factor of wood resource balance for Europe on primary biomass: 1,54

∑ total sources in example: 154 100% 100% 154 ∑ total uses⁷

Raw material

IMPORT

Industrial roundwood production AND wood fuel production

EXPORT

IMPORT ???

Chips and particles

Post consumer recov. wood

Recovered paper for recycling?

EXPORT ???

Production

Sawnwood

Wood based panels

Pulp

Processed wood based fuels

Energy use

**Wood in domestically
produced forest products**

=

Numerator

Solid wood equivalents

Energy use

Raw material data

=

Denominator

To be defined and applied in
a constant manner

Wood in domestically produced forest products

Data:

Joint Forest Sector Questionnaire
+ Industrial Roundwood balance

Energy use data:
Joint Wood Energy Enquiry

Raw material data:

Joint Forest Sector
Questionnaire + Industrial
Roundwood balance

Limits of the indicator

- Needs to start from the **net apparent consumption** of wood fibres.
- Requires good set of ***national conversion factors***;
- Information on **recycled fibres required**
- **Balanced national wood balance** required;



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Conclusions

The cascade use indicator

- ... allows for monitoring progress made by the forest sector towards a green/circular economy ;
- ... is MUCH better than simple ratio of industrial roundwood production/wood fuel production;
- ... is closely tied to wood balances which is a challenge AND opportunity for data quality and availability;
- ... will require cross-sectoral (country experts, UNECE ToS, etc.)

...IT IS POSSIBLE!!!



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THANK YOU FOR YOUR ATTENTION

For more information please visit: www.unece.org/forests or contact florian.steierer@unece.org



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