



Schweizerische Eidgenossenschaft
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Department of the Environment,
Transport, Energy and Communications

Federal Office for the Environment FOEN
Forest Division

Cascaded Use of Wood

The Green Life of Wood

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Cascaded Use of Wood

Current situation

- Energy and resource needs are increasing as a result of population trends and economic growth.

The problem: resource scarcity

- The availability of non-renewable resources is limited
- Renewable resources have two main limitations: land and time needed to grow them
- Competition between material and energy use of biomass

Contribution to finding a solution

- Cascaded use is a way of using resources efficiently
- Resource efficiency

Sources:

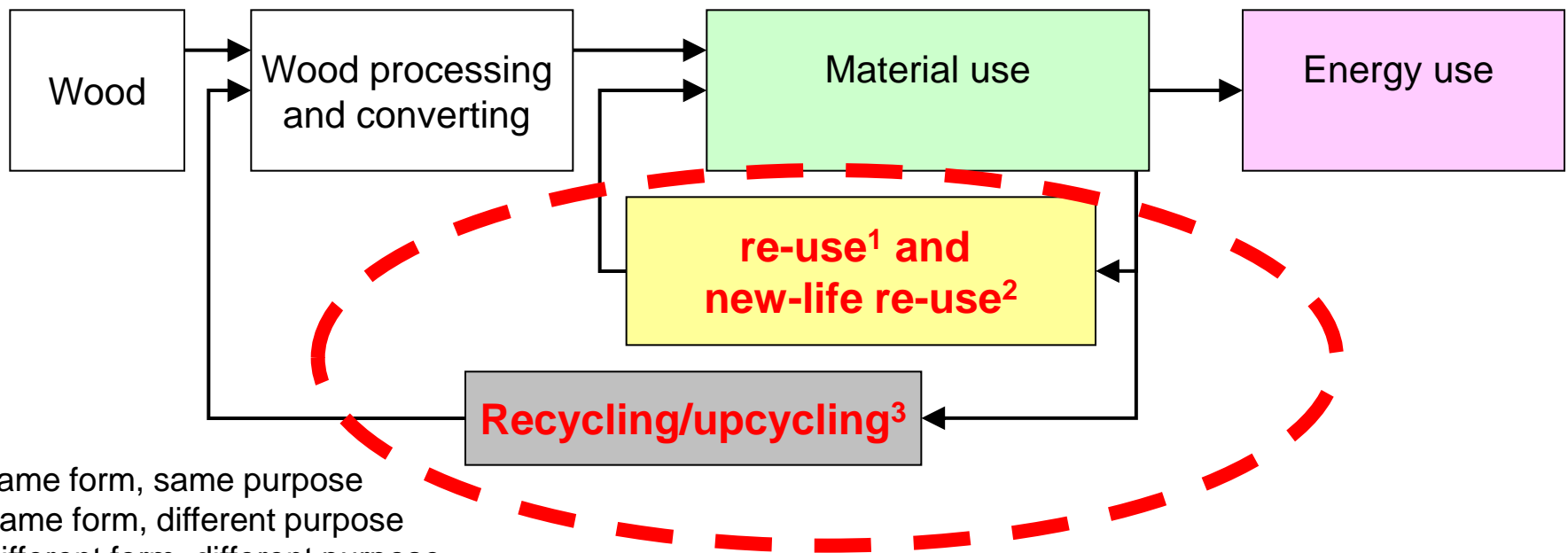
EPEA, Holznutzung in einer Kaskade. S. Rickert-Kruglov. 9.Biomassetagung. 5.11.2009. Birkenfeld Wuppertal Institut, Kaskadennutzung von nachwachsenden Rohstoffen. K. Arnold et al. August 2009



Cascaded Use of Wood

Definition of cascaded use

The principle of cascaded use is that **the same biogenic resources are used sequentially**: first (and possibly repeatedly) for material applications and then for subsequent energy applications.



¹ same form, same purpose

² same form, different purpose

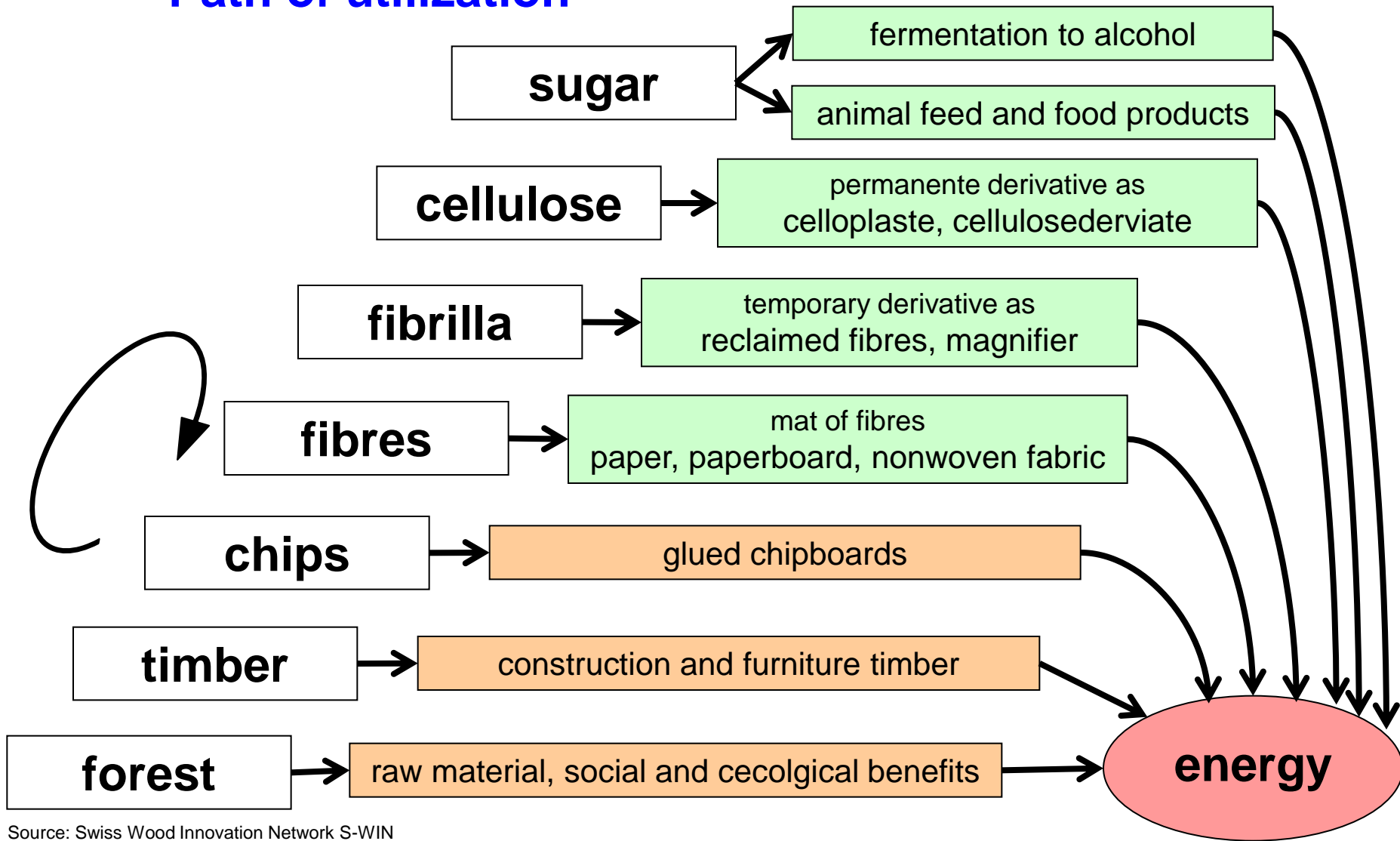
³ different form, different purpose

Source: Bienge 2010, FOEN 2010



Cascaded Use of Wood

Path of utilization



Source: Swiss Wood Innovation Network S-WIN



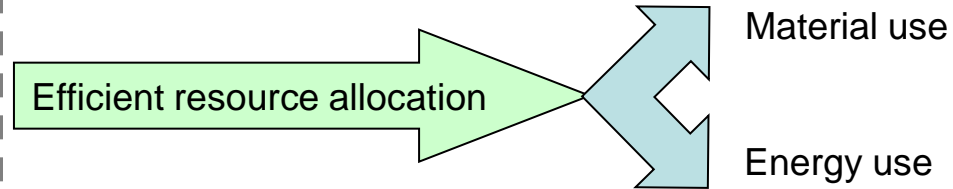
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Focus: sustainable supply of wood



How much wood can Switzerland's forests sustainably supply in a way that is consistent with our forest policy and its objectives?

Focus: resource-efficient use of wood
- **cascaded use**

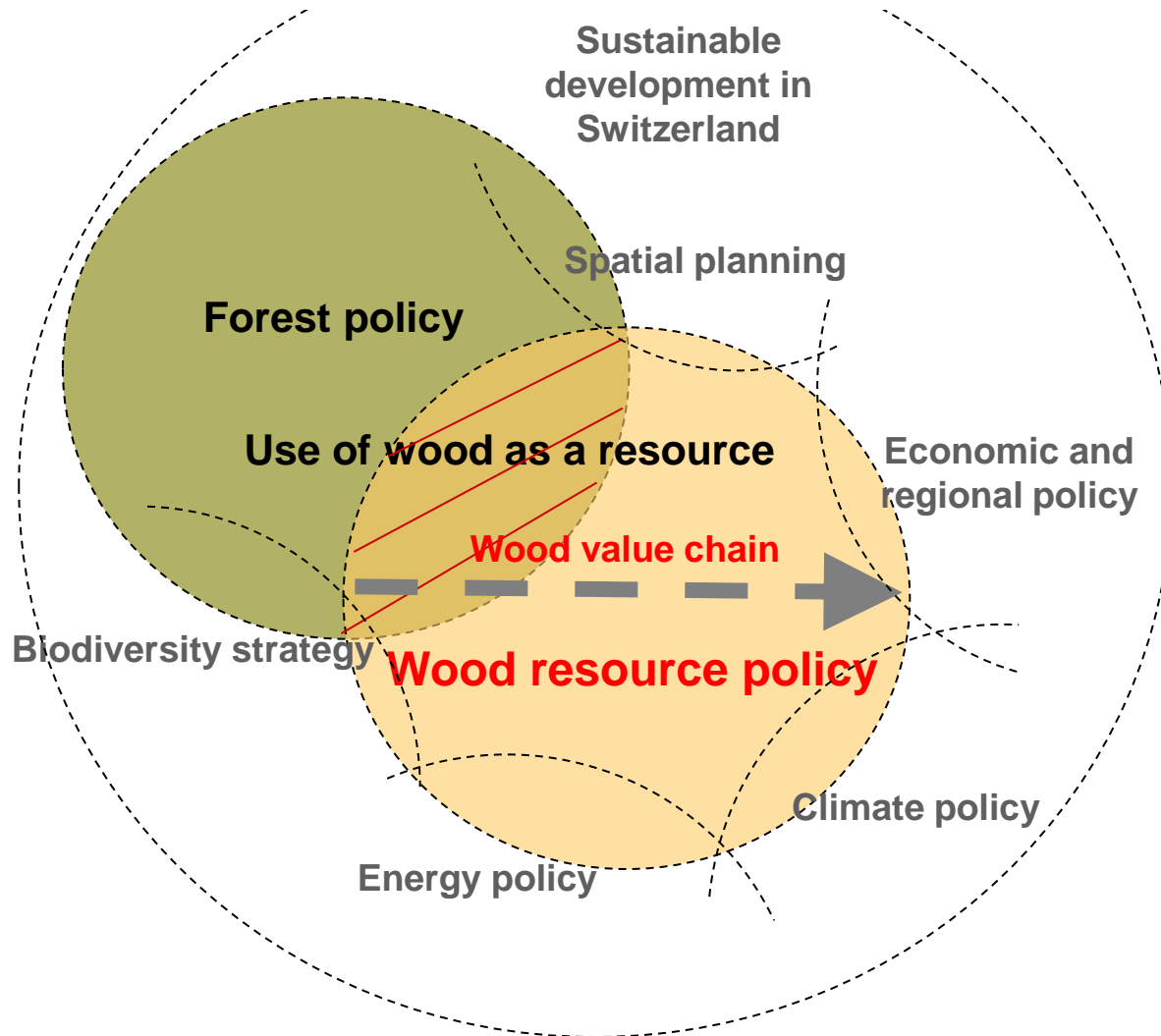


What, from the point of view of both forest policy and the economy, would be a resource-efficient allocation of wood?

Achieve a sustainable supply of wood from Swiss forests and ensure resource-efficient application based on **optimised cascaded use.**



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Current projects @ Swiss FOEN

- Swiss National Forest Inventory (NFI)
- Wood utilisation potential
- Forest statistics
- Material flow of wood
- End use of wood
- Updatingecoinvent (LCA)
- Value added to wood when used in material and energy applications



Cascaded Use of Wood

What is needed to implement it

- Knowledge about quantity and quality of resources
- Transparency within value chains
- Modifying product specifications/design
- Knowledge of macroeconomic effects

- Reviewing the sustainability of cascaded compared with conventional use, paying particular attention to:
 - Raw material/disposal costs avoided vs. more complex logistics
 - Emissions avoided vs. greater technical complexity



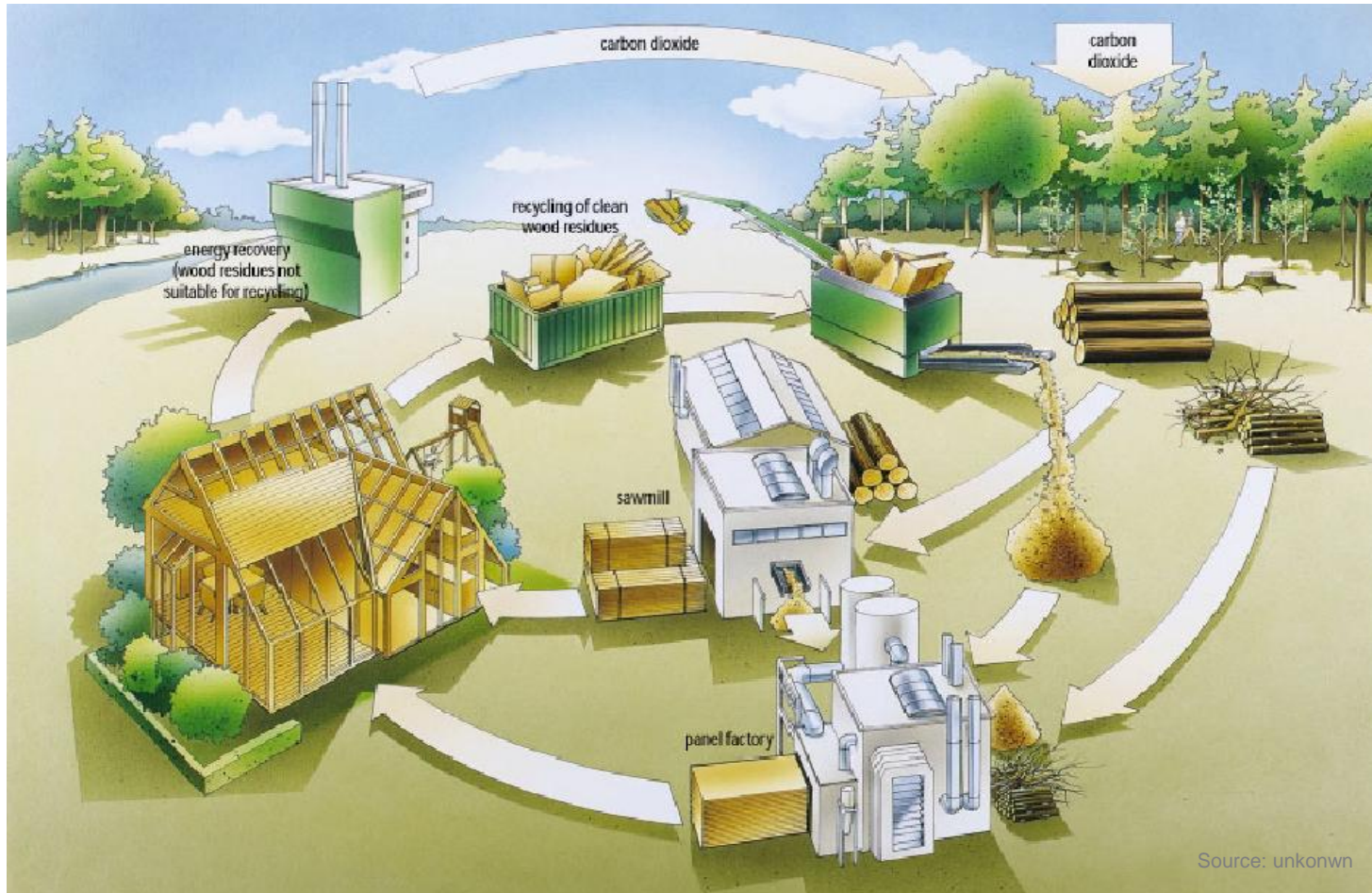
Cascaded Use of Wood

Questions for policymakers, industry and society

- Can our society afford to use renewable resources inefficiently?
- What market signals are needed to enable economic stakeholders to run their businesses in a resource-efficient way?
- What sort of policy environment is needed to encourage businesses to be resource-efficient?
- What information do we need to be able to measure resource efficiency?
- What is the optimum form of cascaded use in the case of wood?
- What key technologies still have to be put in place for cascaded use to be optimally implemented?
- ...



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For further questions:

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