Cascading use of wood in Germany: A status report and proposals for reform

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Starting point: Closing of Material Cycles within the Bioeconomy

• Only a bioeconomy which pursues sustainability goals, may contribute to solve the big ecologic and economic challenges of the future

• Political objective is the closing of material cycles by the recovery of residues and cascading use

• In this way, resource productivity increases
Cascading Use - Definition

• Cascading use of biomass takes place when it is processed into a bio-based final product and this final product is utilised at least once more either for material use or energy

(Carus et al. 2014)
The Wood Cascade

- **Forest wood**
  - **Material use**
    - **Waste wood**
      - **Single-stage cascade**
    - **Energy use**
      - **Multi-stage cascade**
Material and Energy Use of Forest Wood and Waste Wood in Germany 2001-2013

Base data: Weimar/Mantau 2006; Mantau/Sörkel/Weimar 2007; Mantau 2012; Weimar/Döring/Mantau 2012; Mantau 2013; Weimar 2015.
The Wood Cascade

Forest wood

Material use

Waste wood

Energy use

Multi-stage cascade

Single-stage cascade

50%

20%

80%
Governance of Cascading Use of Wood

Circular Economy Law:
a) Waste hierarchy
b) Waste Wood Ordinance
c) Separate collection
d) Recycling quotas
e) Rules on end-of-waste
f) Product Responsibility

Multi-stage cascade

Forest wood

Material use

h) Rules for timber construction

Waste wood

Energy use

g) Renewable Energy Law
a) Waste Hierarchy according to Article 4 WFD

1. Prevention

2. Preparing for Re-Use

3. Recycling

4. Recovery

5. Disposal

- Requirements for choice and optimization are complex

- German Circular Economy Act opens up possibility for ordinances which concretise the waste hierarchy for specific material flows

- German government did not yet make use of this enabling clause
b) Waste Wood Ordinance 2002 (AltholzV)

- Material and energy recovery equally recognized as high-value recovery

- Adjustments in the classification system are necessary
c) Separate Collection and d) Recycling Quotas

- **Separate collection** demanded by EU-WFD for at least: paper, metal, plastic, glass and bio-waste

- **Recycling quotas** of 50% for paper, metal, plastic, glass
- 70% for construction and demolition waste by 2020

- **New Ordinance on Commercial Waste:**
  - Separate collection also for waste wood
  - Recycling quota in § 6 par. 5 (30%)
e) Rules on End-of-Waste

- Identification of end-of-waste is **important** for **market entry** of products

- Any **declaration** of any authority is **not required**

- This may lead to **legal uncertainties**

- **Amendment** of the law should be considered

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f) Product Responsibility

• Pre-condition for the repeated material use is a product design that supports **separability** and **low pollution loads**

• **Take-back-obligations** may help to secure a recyclable design of wood products

• **Exist in France for furniture**, financed by a declared charge on the product price
Governance of Cascading Use of Wood

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- f) Product Responsibility

- Forest wood
- Material use
- Waste wood
- Energy use

Multi-stage cascade

h) Rules for timber construction

- Renewable Energy Law
g) Promotion of Bioenergy

- Support of energy use of wood by
  - Renewable Energy Sources Act (EEG)
  - Renewable Energies Heat Act (EEWärmeG)
  - Market support programme incentivising wood based firing in households

- Reduced value added tax (VAT) rate of 7% instead of 19% for wood pellets and firewood

- Decrease of support within new EEG 2017, but still competition of material with energy uses
Governance of Cascading Use of Wood

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f) Product Responsibility

Multi-stage cascade

Forest wood

h) Rules for timber construction

Material use

Waste wood

g) Renewable Energy Law

Energy use
h) Legal Framework for Timber Construction

- **Building law:**
  - Adapt rules on stability for multi-storey buildings and on fire protection

- **Building products law:**
  - Push standardisations
  - Reward sustainable building products

- **Promote wood constructions**
  - Support programmes
Proposals for Redesigning the Legal Framework

- Revise Waste Wood Ordinance
  - Adjust to waste hierarchy and to technological innovations
  - Clause on end-of-waste

- Further reduce competition with energy uses - esp. for wood-fired power stations

- Promote timber construction
  - Adapt building law
  - Push standardisation
  - Market support programme

Thank you for your kind attention!

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