Forestry in Austria – Current State, Challenges and Prospectives

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Roadmap

Basic facts & figures

Austrian federal forests

Harvesting systems & costs
Total area: 8,387,175 ha
Forest area: 3,991,000 ha
Forest cover: 47.60%
Forest area/inhabitant: 0.5 ha

Source: ÖSTAT
Forest ownership distribution

- Private Forests < 200 ha: 48.3%
- Private Forests > 200 ha: 22.4%
- Federal Austrian Forests: 15.7%
- Provincial Forests: 1.5%
- Communal Forests: 2.2%
- Community Forests: 9.9%
Forest management area

- Commercial forest - high forest: 76%
- Protection forests without profit: 12%
- Protection forests with profit: 7%
- Commercial forest - coppice stands: 2%
- Forest areas without commercial yield: 3%
Annual growth and utilization in Austria

Source: Büchsenmeister, 2011

- Private forests < 200 ha
- Private forests > 200 ha
- Austrian federal forests

%
Annual cut in Austria

![Bar chart showing annual cut in Austria from 2000 to 2015 for roundwood and firewood.](image)
Austrian federal forests

> approx. **10%** of land area
> approx. **15%** of forest area
> approx. **70%** of lakes
Austrian federal forests
Business segments

Sustainability Guiding Principle

Forest/ Timber
- Timber supply
- Hunting
- Fishing

Real Estate
- Real estate
- Tourism
- Land resources
- Water
- Creative industry

Services
- Forest technology
- Ecosystem management
- Forest services

Renewable Energy
- Small hydropower
- Wind power
- Forest biomass
- Photovoltaics
Austrian federal forests
Operating performance 2015

- Own timber: 45.5%
- Timber trade: 12.2%
- Hunting: 9.4%
- Fishing: 6.0%
- Renewable energy: 1.3%
- Real estate: 17.8%
- Services: 7.7%

Other: 6.0%

Total: 100%
Austrian federal forests
Key figures 2015

- EBIT (earnings before interest and taxes) 25,5 Mio. €
- Total area: 850,000 ha; Forest area: 510,000 ha; Annual cut: 1,527 Mio. m³
- Revenues: 79,42 €/m³; Harvesting costs: 26,70 €/m³
- 1,096 Full-time equivalent employees, from that 525 forest workers
Felling and processing methods in Austria (2015)

Source: Holzeinschlagsmeldung, 2015

83,33% 16,67%
Timber extraction methods in Austria (2015)

- Skidders (incl. horses and hand delivery): 43.1%
- Forwarder & tractor trailers: 35.6%
- Cable yarders: 19.8%
- Others (e.g. helicopter): 1.6%

Source: Holzeinschlagsmeldung 2015
Forest road network density

<table>
<thead>
<tr>
<th>Category</th>
<th>Road Network Density [m/ha]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small-scale Forest Owners</td>
<td>49.1</td>
</tr>
<tr>
<td>Private Companies</td>
<td>41.8</td>
</tr>
<tr>
<td>Federal Austrian Forests</td>
<td>33.7</td>
</tr>
<tr>
<td>Total</td>
<td>45.0 (Source: Austrian Forest Inventory 92-96)</td>
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</tbody>
</table>
Ground based harvesting system
Whole-tree cable yarding system
Direct profit contribution

Thinning/Single tree selection
Whole tree cable yarding

Costs/Revenues [Euro/m³]
DBH [cm]

Costs
Revenues

Costs [Diamonds] Revenues [Squares]
Whole tree cable yarding SWOT-Analysis

Harvesting residues
Efficiency
Stand damage
Physical workload
Recruiting & Training

Forest protection
Nutrient loss

Working accidents
Length measurement

Harvesting residues
Efficiency
Stand damage
Physical workload
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Forest protection
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Length measurement
Ash spreader on a carriage
Mechanized timber harvesting
Cost comparison

- Chain Saw and Tower Yarder with Processor: €26.5, €43.5
- Cable Assisted Harvester and Forwarder: €17.5, €29.0
- Harvester and Forwarder: €15.5, €21.5

Costs [Euro/m³]
Working accidents
Chain saw versus harvester

Source: Niedersächsische Landesforste
More reasons for pushing new technologies onto steep slopes

◆ Discussions about state of the art „whole tree cable yarding“ technology in steep terrain (nutrient loss, residual stand damage, working accidents).

◆ Lack of qualified workforce for harvesting with the chain saw.

◆ Considerable thinning requirements in steep terrain.
Harvester and forwarder integrated winch systems

HAAS HIGHGRADE (JOHN DEERE)
HERZOG ALPINE SYNCHROWINCH (PONSSE)
KOMATSU SPW
HSM FORCE-SYNCHRO DRIVE HSW 15
Anchor machine winch systems

ECOFORST T-WINCH

HAAS UNI WINCH

HERZOG SYNCHROWINCH MW500
..... the machine must remain stable and have traction without cable assist.
Thank you for your attention