Climate Change - the Perspective of Forestry in Central Europe

Ute Seeling

11 November, Geneva
Future climate characterized by

increasing temperature

- higher level of the average temperature
- longer heat periods in summer time
- less days with deep frost in winter

higher frequency of extreme weather events
... higher level of the average temperature ???

Tree species in forest stands ?
Beech ? Other broadleaves, oak ?
Spruce, pine Douglas fir ?

Diverse mixture of tree species
High percentage of broadleaves

... stand stability ?
.... timber market ?
.... forest work ?
... harvesting broadleaf trees ???

Young stands

> 80 % motor manual felling

< 20 % harvester felling
### Impact of climate change on forest work

#### Harvesting broadleaf trees

<table>
<thead>
<tr>
<th>Stand Type</th>
<th>Method Percentage</th>
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</thead>
<tbody>
<tr>
<td>Young stands</td>
<td>&gt; 80 % motor manual felling</td>
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<tr>
<td></td>
<td>&lt; 20 % harvester felling</td>
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<tr>
<td>Old grown stands</td>
<td>100 % motor manual felling</td>
</tr>
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<td></td>
<td>Transport by skidders</td>
</tr>
</tbody>
</table>
... longer heat period in summer time ???

insufficient water supply for trees, heat resistance ?
increasing risk of forest fires
heat stress for forest workers

.... suitable equipment ?
.... flexible working hours ?
.... training for health care?
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Gefährdungsstufen für die Befahrbarkeit von Waldböden in Niedersachsen

- **Stufe 1**, geringes Befahrbarkeitsrisiko
- **Stufe 2**, mäßiges Befahrbarkeitsrisiko
- **Stufe 3**, hohes Befahrbarkeitsrisiko
- **Stufe 4**, sehr hohes Befahrbarkeitsrisiko

Abbildung 6 (NFP): Die Gefährdungskarte für Waldböden bildet die Befahrungsempfindlichkeit ab.
… less days with deep frost in winter ???

Wet soils in the main harvesting months

Detailed concepts for soil protection

Technological improvements
... less days with deep frost in winter ???

Wet soils in the main harvesting months

Detailed concepts for soil protection

Technological improvements

Special equipment for harvesting machines
UN/FAO/UNECE Workshop “Impact of climate change on forest work”

… less days with deep frost in winter ???

- Wet soils in the main harvesting months
- Detailed concepts for soil protection
- Technological improvements
- Special equipment for harvesting machines
- New harvesting procedures (horizontal cable cranes)
- Adapting felling seasons

… felling old grown broadleaf trees in summer time ?
Events with extreme weather conditions

.... heavy rainfall

.... heavy storm
... heavy rainfall ???
... heavy rainfall ???

In mountainous regions: risk of severe erosion
Summary

Climate change will severely influence forests and forestry in Central Europe.

With regard to forest work there are many open questions.
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