Long-term responsibility in managing Baltic peatlands

Bremen I 14. V 2019

Erki Niitlaan I Estonian Peat Association
Content

Peatlands in Baltic countries
Global challenges
Alternative way of thinking
Conclusions
Disclaimer

Following presentation is not a scientific report; the figures presented are correct in „exactly wrong, roughly right“ principle. With this presentation I’m not making any statements.

This presentation is meant to help myself understand IT...
Baltic peatlands
**Baltic peatlands**

<table>
<thead>
<tr>
<th>Pristine mires</th>
<th>Forestry</th>
<th>Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>930 000, 40%</td>
<td>685 000, 29%</td>
<td>630 000, 27%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>59 000, 3%</td>
</tr>
</tbody>
</table>

Present peat production

Historic peat production

There is 2 340 000 ha of peatlands in Baltic countries | ha | Estonian Peat Association, 2019
Peat production in Baltic countries 2000 – 2017 | tons | Estonian Peat Association, 2018
Global challenges
Global challenges

Population growth

World population will grow in next 30 years by 2 billion people! www.ourworlddata.com
Global challenges

Food security

By 2050 50% more food is needed

At the same time:

- during last 150 years 50% of the planets topsoil has been lost
- about 40% of arable land is degraded
- with such speed of degradation only 60 harvest have left

World agricultural land usage is 37% i.e. 48,6 million square kilometers | World Bank
Global challenges

World energy consumption

Primary energy consumption in the world in 2015 was 160 00 TWh

Increase 27% - 61%  
WEC 2013

Hydro; 20%
Wind, solar; 31%
Coal; 15%
Oil; 18%
Nuclear; 6%
Natural gas; 10%
Wind, solar; 2%
Hydro; 7%
Nuclear; 4%
Natural gas; 24%
Oil; 33%
Coal; 30%
Global challenges

Deforestation of tropical forests

World forest coverage is 31% i.e. 40 million square kilometers | www.wikipedia.com
Global challenges

Usage of the peatlands

- Undisturbed peatlands (mires) 86%
- Agriculture 7%
- Forestry 4%
- Drained tropical 3%
- Horticultural peat production 0.05%
- Energy peat production 0.05%

Uses of the peatlands worldwide by territory | % | Strack 2008 / IPC 2008
Alternative way of thinking
Alternative way of thinking

SAMPLE 1 - 25 MWh CHP (electricity output 25 MW and heat 50 MW)

Annual fuel consumption of such CHP is about 600 000 MWh or 660 000 m³ of peat

Annually about 400 MWh of peat can be harvested from 1 ha

Production site about 1 650 ha can fuel such CHP

Energy productivity of 1 ha forest is about 300 MWh
Alternative way of thinking

During a 30 year period, 60 000 ha of forest is needed for fueling 25 MW CHP ...

... or 1 750 ha of peatland

Ratio 1 : 34
SAMPLE 2 – Horticulture

1 m³ of peat in natural condition can produce little less than about 1 m³ of milled peat

1 m³ of milled peat allows to grow on 3 – 4 m²

Average thickness of peat in deposits in Baltic countries is about 3.5 meters
Alternative way of thinking

Peat usage allows to compensate the loss of arable land by allowing soilless cultivation

PS.

Annual peat accumulation rate is 1 mm

Annual soil accumulation is 33 times slower, only 0.03 mm!

Ratio 1 : 9
Conclusion
Conclusion

Which is more responsible (peat)land management – full rewetting or responsible economical management?

Perhaps it is possible to produce peat and still be environmental friendly?
Thank you!