FINNISH BIOECONOMY – CURRENT TOPICS

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Natural Resources Department
Director General Juha S. Niemelä
Bioeconomy in a nutshell
National Bioeconomy Strategy (2014)

VISION FOR 2025:
SUSTAINABLE BIOECONOMY SOLUTIONS ARE THE FOUNDATION OF
WELL-BEING AND COMPETITIVENESS IN FINLAND
Finnish Bioeconomy Strategy

Sustainable bioeconomy solutions are the foundation of well-being and competitiveness in Finland.

Strategic goals:
1. A COMPETITIVE OPERATING ENVIRONMENT FOR THE BIOECONOMY
2. NEW BUSINESS FROM THE BIOECONOMY
3. A STRONG BIOECONOMY COMPETENCE BASE
4. ACCESSIBILITY AND SUSTAINABILITY OF BIOMASSES

Implementation and monitoring
Bioeconomy is the Solution

- **Bioeconomy:**
  - Sustainable use of biological natural resources to produce goods, energy, food and services

- **Aims:**
  - Decrease dependency on fossil raw materials
  - Prevent deprivation of ecosystems
  - Promote economic development and create new jobs

- **Precondition:**
  - Favourable growth environment / business environment, including availability of sustainably produced raw-materials
  - Introduction of new technologies, digitalisation and new business concepts

- Finland has excellent opportunities to be a frontrunner in forest-based bioeconomy.
<table>
<thead>
<tr>
<th></th>
<th>Output million EUR</th>
<th>Value added million EUR</th>
<th>Employed</th>
<th>Exports million EUR</th>
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<tbody>
<tr>
<td><strong>Food, total</strong></td>
<td>16 093</td>
<td>4 356</td>
<td>128 400</td>
<td>515</td>
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<tr>
<td>Agriculture</td>
<td>4 822</td>
<td>1 658</td>
<td>90 100</td>
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<td>Food industry</td>
<td>11 271</td>
<td>2 698</td>
<td>38 300</td>
<td>515</td>
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<td><strong>Bioeconomy products total</strong></td>
<td>29 273</td>
<td>9 317</td>
<td>101 400</td>
<td>13 819</td>
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<tr>
<td>Forestry</td>
<td>4 232</td>
<td>2 898</td>
<td>25 000</td>
<td>68</td>
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<td>Wood products industry</td>
<td>6 870</td>
<td>1 542</td>
<td>36 400</td>
<td>2077</td>
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<tr>
<td>Pulp and paper industry</td>
<td>13 653</td>
<td>2 967</td>
<td>23 300</td>
<td>9185</td>
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<tr>
<td>Construction</td>
<td>9 228</td>
<td>3 344</td>
<td>58 120</td>
<td>100</td>
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<tr>
<td>Chemical industry</td>
<td>1 644</td>
<td>434</td>
<td>1 600</td>
<td>1 347</td>
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<tr>
<td>Pharmaceutical industry</td>
<td>1 339</td>
<td>845</td>
<td>4 100</td>
<td>932</td>
</tr>
<tr>
<td><strong>Renewable energy</strong></td>
<td>4 033</td>
<td>1 903</td>
<td>5 801</td>
<td>0</td>
</tr>
<tr>
<td><strong>Water treatment and distribution</strong></td>
<td>610</td>
<td>400</td>
<td>2 700</td>
<td>0</td>
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<tr>
<td><strong>Bioeconomy services total</strong></td>
<td>2 993</td>
<td>1 416</td>
<td>33 900</td>
<td>0</td>
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<tr>
<td>Nature tourism</td>
<td>2 737</td>
<td>1 226</td>
<td>32 000</td>
<td>0</td>
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<tr>
<td>Hunting</td>
<td>85</td>
<td>79</td>
<td>100</td>
<td>0</td>
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<tr>
<td>Fishing</td>
<td>171</td>
<td>111</td>
<td>1 800</td>
<td>0</td>
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<tr>
<td><strong>Bioeconomy total</strong></td>
<td>60 685</td>
<td>20 104</td>
<td>319 321</td>
<td>14 248</td>
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<tr>
<td><strong>National economy total</strong></td>
<td>375 777</td>
<td>163 424</td>
<td>2 509 500</td>
<td>54 221</td>
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<tr>
<td><strong>Share of bioeconomy</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Output</td>
<td>16,1 %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value added</td>
<td>12,3 %</td>
<td></td>
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<tr>
<td>Employed</td>
<td>12,7 %</td>
<td></td>
<td></td>
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<tr>
<td>Exports</td>
<td>26,3 %</td>
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Evaluation of the Bioeconomy Strategy

• Came out in November 2016
• Government has a role in:
  – creating new innovative products (R&D funding, public procurement)
  – boosting investments supporting climate targets
  – ensuring sustainable use of biomass resources
  – recognising the economic value of ecosystem services.
National Forest Strategy 2025 (NFS)

Background

- National Bioeconomy Strategy (2014)
  - The goal is to create new economic growth and jobs through new bio-based business (production and services) while securing ecosystem services.
  - Diverse role of forests in bioeconomy: substitution of fossil raw materials in products and energy, maintaining productive and healthy forest resources, carbon sequestration in wood.

- MAF conducted a participatory process to prepare the Report on Forest Policy => was given in 2014 to the Parliament
- Strategic outlines were concretized in the National Forest Strategy 2025 (new NFP)
- NFS: prioritisation of objectives, specification of more detailed activities/projects
- In the NFS the forest sector is considered broadly, including forestry, wood processing (both chemical and mechanical), non-timber forest products and immaterial services as well as ecosystem services provided by forests
Sustainable economic, ecological and social welfare from forests

- Forest industry and new products
- Wood production and active forest management
- Recreation and nature tourism
- Biodiversity
- Sustainability and resilience
- CO₂ Carbon sink

Wellfare from Forests
Vision and Strategic Goals of National Forest Strategy 2025

- **Renewal**
  - KNOW-HOW R&D
  - FLEXIBLE, EFFECTIVE AND CUSTOMER-ORIENTED ADMINISTRATION

- **Growing Welfare**
  - GROWTH, NEW AND INNOVATIVE BUSINESSES
  - PROCUREMENT OF RAW MATERIAL
  - FORESTRY IS ACTIVE AND BUSINESS-LIKE

- **Competitive operating environment**
  - EU AND INTERNATIONAL WORK
  - BIODIVERSITY, ECOLOGICAL AND SOCIAL SUSTAINABILITY

Active, sustainable and diverse use
Active and sustainable forest growth as target

- More growth
  - Breeding
  - Management practices
  - Selection of tree species

- More yield
  - Pre-commercial thinning
  - Commercial thinning
  - Rotation time
  - Short rotation forestry

- Site preparation
- Fertilization
- Ditch maintenance
Growing Stock

Growing stock volume on forest land, 1921-2013

 mill. m³


Broadleaves
Spruce
Pine
Forest Protection

- No active intervention
- Minimum intervention
- Conservation through active management

Scale: 1 million ha

Source: State of Europe’s Forests
Five strategic priorities; Employment and competitiveness, Knowledge and education, Wellbeing and health, Bioeconomy and clean solutions, Digitalisation, experimentation and deregulation
Forest Policy Framework

- National forest strategy 2025 and the Government’s Programme set key targets and actions for the forest policy.
- We have a political will that the use of wood should be diversified and increased. We also have a political will that it will be done in a sustainable way.
- Need for actions which will boost innovations, entrepreneurship, the growth of the forest sector and safeguarding biodiversity.
Implementation of the Government Programme

- 26 key projects, a total of about 80 measures
- Inputs allocated by the priorities:
  - Employment and competitiveness 170 million euros
  - Knowledge and education 300 million euros
  - Wellbeing and health 130 million euros
  - Bioeconomy and clean solutions 300 million euros
  - Digitalisation, experimentation and deregulation 100 million euros
- In addition, reducing the repair debt of the transport network 600 million euros
Bioeconomy and clean solutions

Government-term objectives for the strategic priorities

 Finland has achieved the 2020 climate objectives already during the government term. Imported fossil fuel-based energy has been replaced by clean and renewable domestic energy.

 Growth of cleantech enterprises, increase in the sustainable use of natural resources, pluriactive rural enterprises and efficient circular economy have contributed to the creation of new jobs, without compromising environmental protection.

 Profitability of food production has improved and the trade balance has risen by 500 million euros.

 Administrative burden which has slowed down renewal has been significantly reduced.
Key project: Stimulating the supply of wood and new products from forests

Key measures:
1. New tax incentives for speeding succession of forest holdings to the next generation
2. Development of forest resources data and electronic services
3. Easing of construction regulation that prevents the use of wood
4. Promotion of investments and wood product industry
5. R&D, pilot and experimental programmes in bioeconomy

Total funding: 55 M€
Implementing the government program - Forest data and electronic services

- Target; Forest resource data will be used more efficiently, and electronic services for forest owners and actors will be developed.
Promoting data mobility

Forest resources data is open and readily accessible to all

- Legislative amendments are introduced to provide open access to forest resources data
- New kinds of interfaces allow the sharing of data
- Standardised forest data creates the conditions for data transfer using compatible data systems between the actors
- Forest owners and actors have access to materials needed in the planning of the management and use of forests at the Metsään.fi service
- Forest resources data is productised into data products
Promoting electronic services

Opportunity for forest owners to manage their own affairs electronically. Increased utilisation of forest resources data.

- Metsään.fi service developed into an open portal for data transfer, services and running business
- Incorporation of forest resources data into the national service view and topographic database
- Introduction of an open access electronic timber market
- Development of a calculation service by which users of National Forest Inventory themselves can produce the necessary reports from pre-calculated data
- Development of a next-generation service platform for sharing forest data
Improving data quality

Objectives to the 2020s: Forest resources data sufficiently accurate to allow electronic timber trade better than before

- New identifiers in forest resources data: circumstances, stem number series and identifiers for the quality of the growing stock
- Updating of forest data to be improved
- Utilising data measured by forest machines
- Testing of the new opportunities offered by remote sensing in producing and maintaining forest resources data
- Developing data collection for seedling stands
- Preparation of new unbiased volume estimation models
The Forest based bioeconomy is growing - Investments and investment plans

- Recent and confirmed investments
- Preliminary investment assessments
- Preliminary investment assessments (biofuel production)
Annual Increment of Growing Stock and Drain
A circular economy
Forest Policy has been Active

- Reform of the Forest Act 1.1.2014
- Reform of the Forest Management Association Act 2014-2015
- Reform of forest administration 2012 – 2016:
  - Metsähallitus (State Forests) - State enterprise; forestry business unit incorporated 2016
  - Finnish Forestry Centre 2012 and 2015 – Reform of the role and organisation - Business activities privatised 2016
  - Act on the Natural Resources Institute Finland 2015 ->
  - Forestry Development Centre Tapio 2014 -> limited market-driven company (state owned)
- Act on the Financing of Sustainable Forestry 2014 - 2017 (state aid)
- Forest Damages Act 1.1.2014
- The Act on the Placing on the Market of Timber and Timber Products
Our Story; From Deforestation to Sustainable Forest Management

19th CENTURY
Poor agricultural country
Deforestation for construction, fuelwood, slash and burn cultivation

20th CENTURY
Development of forest industries
Increased timber prices
Forest management, forestry organisations, Sustainable forestry
Bioeconomy

21th CENTURY...
Way forward

• New investments will increase production volumes
• Use of roundwood (cuttings) will increase
• Sustainable Forest Management and Biodiversity issues will be even more important (customers and NGOs)

• The big question is how fast we can introduce newinnovate bioproducts in INDUSTRIAL SCALE!
THANK YOU!

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