



Ympäristöministeriö
Miljöministeriet
Ministry of the Environment

Resource Efficiency Indicators in Finland

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Potentials & Challenges

- Finland has a **strong bio-capacity** (esp. on forests & water ecosystems)
- Finnish economy is **strongly dependent of foreign natural resources** - about 50 % of domestic production is based imported materials
- a big part of domestic production is **consumed abroad** – about 50 % of domestic production is exported
- the economy produces **both high as well low value-added products**
- the forest sector in Finland is under a substantial **structural change**
- bio-economy **potentials** exists, are under wide interest and promotion
- the mining sector is only **evolving** (on the contrary of many other European countries), semi-rich reserves exists
- **water** reserves are substantial
- **ecosystem benefits, incl. intangibles, are remarkable** – natural processes; cultural & welfare services
- there are **conflicting interest** on the use natural resources & ecosystem services

Government Program 2011

Includes a strategic objective to Ecologically and Socially sustainable economic growth by:

- *Striving for a Finland that is among the world leaders in environmentally friendly, resource and material-efficient economies and as developer of sustainable consumption and production methods*
- Taking measures to meet the set environmental goals are taken in all sectors of society
- and e.g. Strengthening and diversifying the economic structure

Environmental-economic assessments done

ENVIMAT (TMR, environmental impact, value added, employment)

- macroeconomic input-out modeling integrated to the LCA
- estimates of the **key sectors** and their potentials on resource efficiency in Finland 2012
- **scenarios** including reduction options (e.g. minerals and biomass)

Testing the optional EU indicators on resource use

- domestic vs. global perspective, insourcing vs. outsourcing the resource use and the environmental impact related
- DMC -> **TMR, RMC**
- the role of **additional indicators** (on drivers, impacts, state, responses) not systematically assessed yet

Resource Efficiency Scenarios 2008 – 2030

Base Scenario	2008	Growth % / a	Change % 2030/2008
Background indicators			
Population, 1 000 pers.	5 313	0,4	10
Gross Domestic Product , bill. €, at 2008 prices	186	<u>1,4</u>	35
Natural resources			
Direct Material Input (DMI) , Mt	183	<u>2,5</u>	71
Raw Material Consumption (RMC), Mt	212	0,4	9
Raw Material Consumption per capita, tons	40	<u>0,0</u>	-1
Raw Material Consumption / GDP, g/€	1 141	<u>-1,0</u>	-19

Source: ENVIMAT-Scen, Ilmo Mäenpää, University of Oulu / Thule Institute, 13.3.2013

RMC: import and export included; unused uptake/extraction excluded

Strategies & Indicators for Resource Efficiency

National Program for Resource Efficiency (under development)

- Indicators to be defined; some headlines identified:
 - ✓ Total / Raw Material Consumption by the Finnish economy
 - ✓ Core economic sectors on TMR/RMC
 - ✓ Thematic sectors: water, bio, minerals (and their nexus)

National Strategy for Bio-economy (draft)

- Indicators are defined for monitoring including:
 - ✓ Raw material consumption / value added (for bio-resources)
 - ✓ Raw material consumption / GHG emissions avoided
 - ✓ Total use of natural resources
 - ✓ Possible new indicators under development for ecosystem services & natural assets

Program on sustainable consumption and production (updated)

- Thematic sectors: housing, transport, food
- Indicators defined based on existing data sources:
 - ✓ Energy saving, CO₂ emissions, food consumption (meat, vegetables) etc.; green public tendering procedures (share of all); resource efficiency (TMR/GDP)
- Monitoring linked to several national strategies

Strategies & Indicators for Resource Efficiency

National Strategy on Energy and Climate (updated 2013)

- Including national targets on GHG emissions, energy saving, renewable energy, etc.
- Use of existing indicators and databases for monitoring

National Europe 2020 program (updated 2013)

- Includes targets for CO₂, renewable energy and energy saving (EU target & national targets in 2011 & 2020)
- Does *not* include targets or indicators for material resource use

Water use

- Research work and testing on scarcity indicators done
- Climate sustainability one aspect to be treated on the 2. run on national water resources management plan (2014)
- Water scarcity uncommon (occasional)

Land use

- Some targets to be included on European forest convention: e.g. reducing forest fragmentation through relevant measures
- Land use planning mainly powered by the local government

Databases

Statistics Finland

- Environment and Natural Resources

https://www.tilastokeskus.fi/til/ymp_en.html

- Environmental accounting (only in Finnish) – e.g. the time series on total use of natural resources and the GDP

<http://tilastokeskus.fi/tup/ymptilinpito/index.html>

Findicator.fi

- Up-to-date information on key social indicators. The service provided by the Prime Minister's Office in collaboration with Statistics Finland and a number of other information providers

<http://findikaattori.fi/en>



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Additional information

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