

Development of Benchmarks for LCA-Based Environmental Information on Consumer Products, Services and Consumption Patterns

Nissinen Ari et al., Finland

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NATIONAL CONSUMER RESEARCH CENTRE



GAME AND FISHERIES RESEARCH

Development of Benchmarks for LCA-Based Environmental Information on Consumer Products, Services and Consumption Patterns

Presentation in 24th LCA Discussion Forum, 2.12.2004, in Lausanne, Switzerland

by

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PROJECT

Background

- Action programmes for sustainable consumption and production (UN, Finland, etc.)
- IPP, integrated product policy (EU)
- The Finnish Environmental Cluster Research Programme, www.environment.fi > Research > Research programmes > Finnish Environmental Cluster Research

Time frame of the project

1.9.2003 – 31.12.2005

PROJECT

Purpose

- to promote the use of LCA-based product information and sustainable consumption.

Aims

- to develop benchmarks to which the LCA results of various products can be compared,
- to develop quality descriptions and criteria for suitable LCA studies, and
- to study how consumers understand the benchmarks.

TASKS

'Popularise' LCA

Brochures
website

Seminars

**Study how people understand
results / presentations**

**Develop presentation
formats**

Articles,
reports

**Develop benchmarks for
LCA-based results**

**Develop quality
assessment of LCA**

**Survey
LCA-studies**

Survey LCA-studies

- CSA, Int J LCA etc.

Develop quality assessment of LCA for the benchmarking-purpose

- criteria, assessment in expert group
- contact Yrjö Virtanen, yrjo.virtanen@mtt.fi

Develop benchmarks for LCA-based results

- damage points, based on the average daily environmental impacts of Finnish people
- a product:
 - ‘everyday product’ familiar to consumers,
 - LCA-study of good quality & possible to modify and update to Finnish conditions

Modify and update LCA studies to Finnish conditions

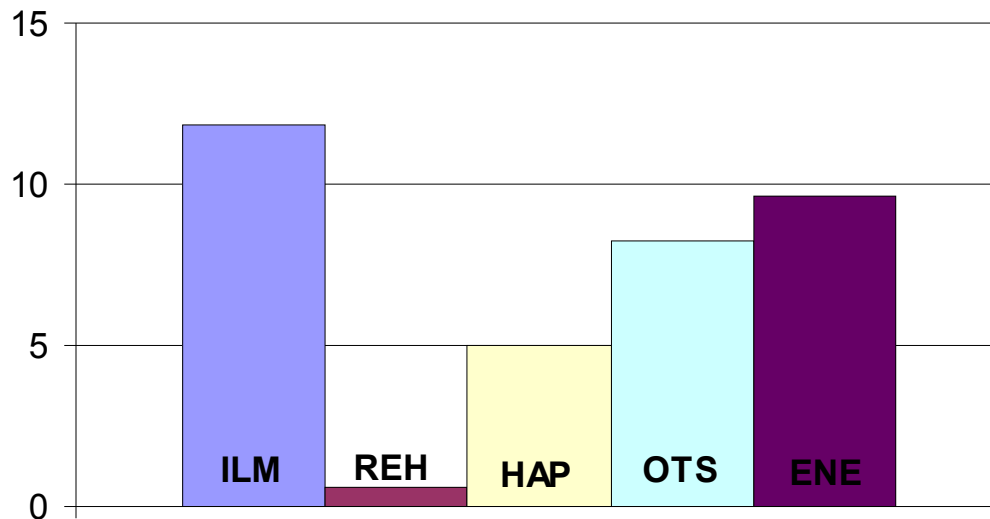
Product/service	LCA	Modifications and updating to Finnish conditions
Rye bread	Grönroos and Seppälä 2000. Agricultural production systems and the environment. The Finnish Environment 431. (only abstract in English)	Updated nutrient leaching & eutrophication of waters, electricity in Finland
Emmental cheese	Voutilainen et al. 2003. Environmental impacts and improvement possibilities of Emmental blue-label cheese. Maa ja elintarviketalous 35. (only abstract in English)	Updated nutrient leaching & eutrophication of waters, electricity in Finland
Laundry	Saouter, van Hoof, Feijtel, Owens 2002. The effect of compact formulations on the environmental profile of northern European granular laundry detergents. Part II: LCA Int J LCA 7 (1) 27-38.	Consumption of electricity and water of typical washing machine, 40 C, Electricity and wastewater treatment in Finland
Apartment	Koskela, Seppälä, Leivonen 2002. Environmental impacts in assessing the ecoefficiency of buildings. The Finnish Environment 585. (only abstract in English)	Updated electricity and district heating in Finland, electricity of appliances in the apartment not included
Car drive	(Schweimer and Levin, Life cycle inventory for the Golf A4. downloaded from www.volkswagen.-environment.de)	Energy consumption and emissions of vehicles from national model (made by VTT Technical Research Centre of Finland), EURO 3 norm Fuel production (gasoline in Finland)

Characterisation factors and impact assessment: DAIA, Seppälä et al.

Presentation format: A,

Benchmark: average daily impacts per person

% of average daily impacts per person



Car drive 21 km

ABBREVIATIONS:

ILM = Climate change

REH = Eutrophication of waters

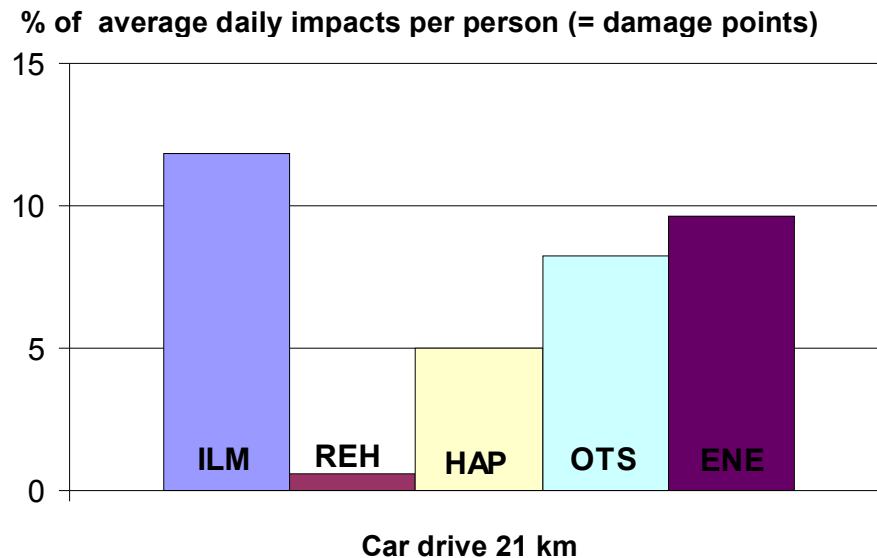
HAP = Acidification

OTS = tropospheric ozone

ENE = primary energy consumption

Presentation formats: A (again)

Presentation format A. Compare car drive to the average daily environmental impacts of Finnish people



ABBREVIATIONS:

ILM = Climate change
REH = Eutrophication of waters
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ENE = primary energy consumption

More information of the average daily environmental impacts of Finnish people:

These have been calculated from the annual emissions and energy consumption in Finland, divided by the number of inhabitants and days. ...

Please notice, that products have also other environmental impacts (page 15).

Presentation format: B, = each environmental problem in it's own figure, several products as benchmarks

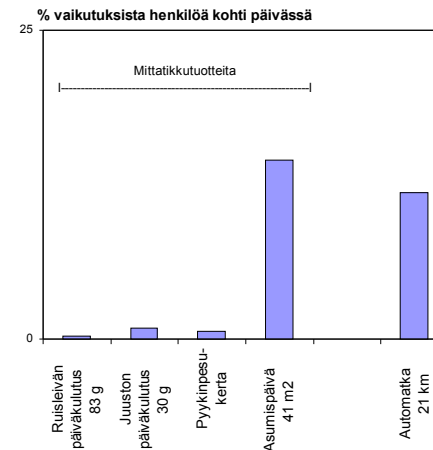
Esittämistapa B. Vertaile automatkaa Mittatikkutuotteisiin – ympäristöongelmittain

Vertaile automatkan erilaisia ympäristövaikutuksia muiden tuotteiden tyypillisestä päiväkäytöstä aiheutuviin ympäristövaikutuksiin.

Voit myös vertailla kuvien asteikkoon, eli henkilöä ja päivää kohti laskettuihin ympäristövaikutuksiin. Nämä on laskettu päästöistä ja energiankulutuksesta Suomessa. Esimerkiksi vesistöjä rehevöittävien päästöjen osalta huomioon on sis otettu teollisuuden, maatalouden ja yhdyskuntien ravinnepäästöt Suomessa. p.k. tarkoittaa päiväkulutusta.

Huomaa, että kuvassa esitettyjen lisäksi tuotteilla on muitakin olennaisia ympäristövaikutuksia (sivu 15).

Ilmastonmuutos

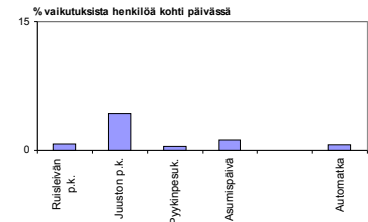


Tutkijoiden mielestä tämän esittämistavan vahvuudet ovat:

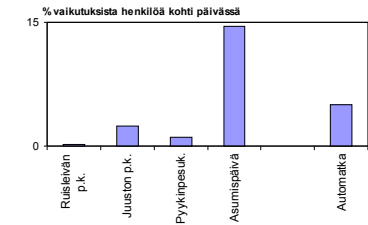
- selkeys ja yleiskuvan saaminen, koska yksinkertainen vertailu moniin tuotteisiin
- katsoja voi arvottaa ympäristöongelmat itse, koska kukin on omassa kuvassaan ja ongelmat ovat:
- kuvia on monta.

Mikä on Sinun näkemyksesi tästä esittämistavasta?

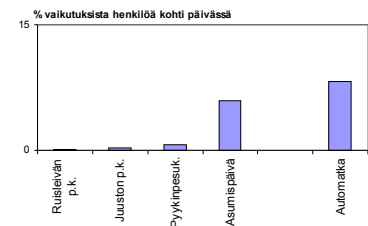
Rehevöityminen



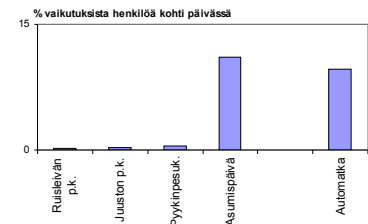
Happamoituminen



Alailmakehän otsonin muodostuminen

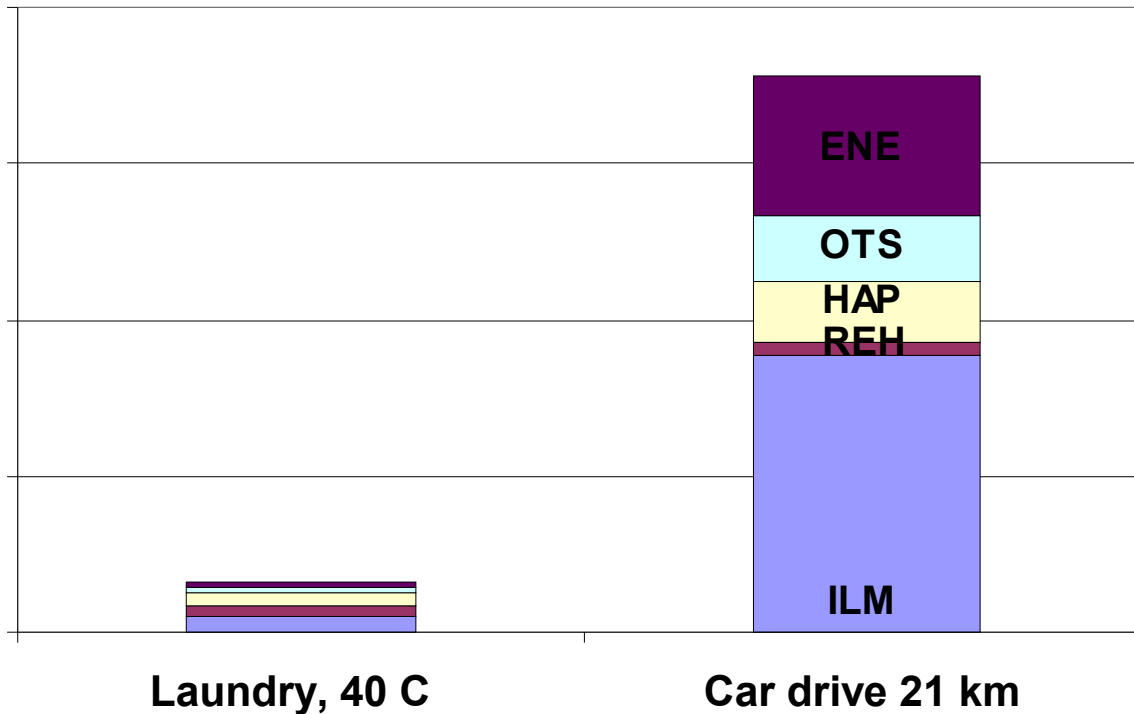


Energiankulutus

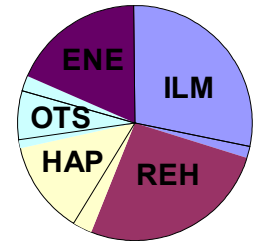


Presentation format: D, Benchmark: laundry

weighted and aggregated environmental effects



WEIGHTINGS:



ABBREVIATIONS:

ILM = Climate change

REH = Eutrophication of waters

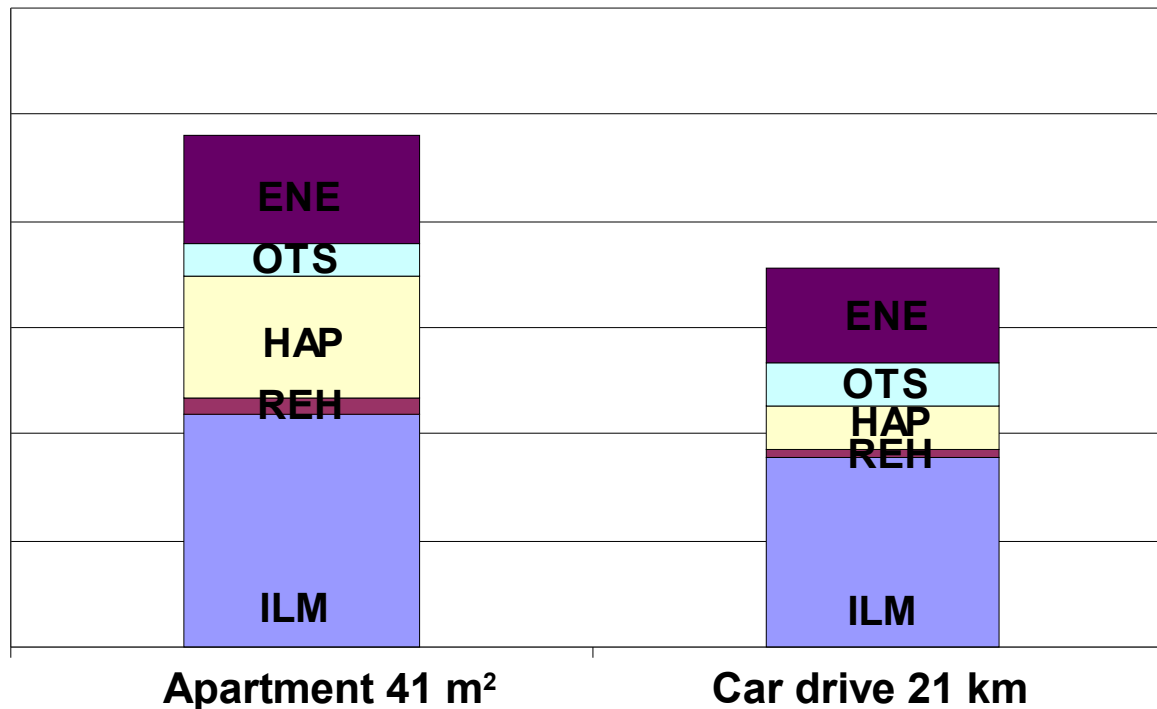
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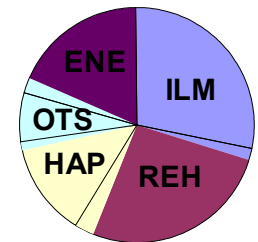
ENE = primary energy consumption

Presentation format: D, benchmark: apartment ('warm building')

weighted and aggregated environmental effects



WEIGHTINGS:



ABBREVIATIONS:

ILM = Climate change

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OTS = Trophospheric ozone

ENE = Primary energy consumption

Some feedback and conclusions so far

Topical and important work

Stimulates new thoughts about the contribution of different products to environmental problems

Difficult to understand for many people,
too bureaucratic and scientific brochure and presentations?

All presentation formats provide relevant, different
information, no 'winner' so far

'Where can we find these comparisons in the future?'

'Please continue!'