

FORE SCENE workshop “Industry / Economy”

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Resource-efficient transport

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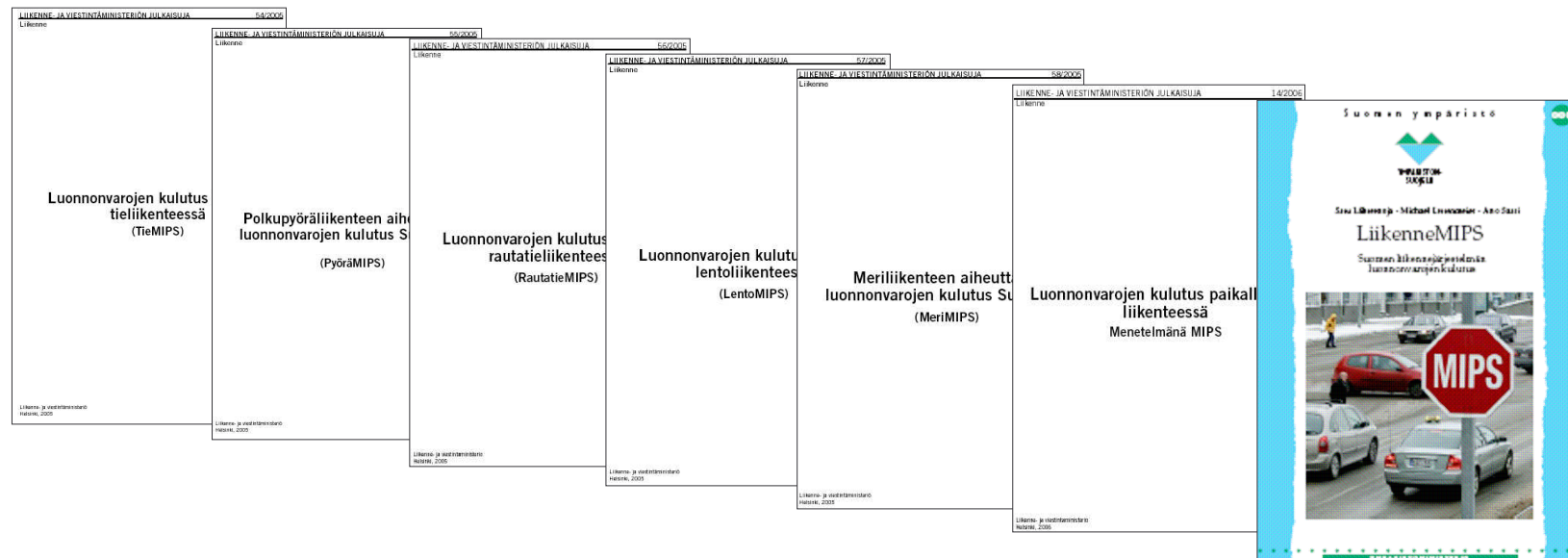
The Finnish Association for Nature Conservation



- Biggest Finnish environmental NGO
- 33 000 members
- 76 corporate members
- 15 regional organisations,
209 local societies
- Appr. 40 employees
- Participating actively in political discussion and preparation of legislation
- Biodiversity, municipal planning , EU, Baltic Sea, energy and climate change, sustainable resource use, sustainable lifestyles, waste prevention, ...

FIN-MIPS Transport – reports

- Case study reports (in finnish): www.mintc.fi/julkaisut
=>Publications 54-58/2005, 14/2006
- Transport system report: The Finnish Environment 820, www.ymparisto.fi/julkaisut (soon also in english)
- Transportation Research Part D 11 (2006) 227-232, other articles coming, SCORE conference (Nov. 2006) proceedings



MIPS – useful indicator of resource efficiency

material input

→ life-cycle-wide
natural resource
consumption of the
commodity

service unit

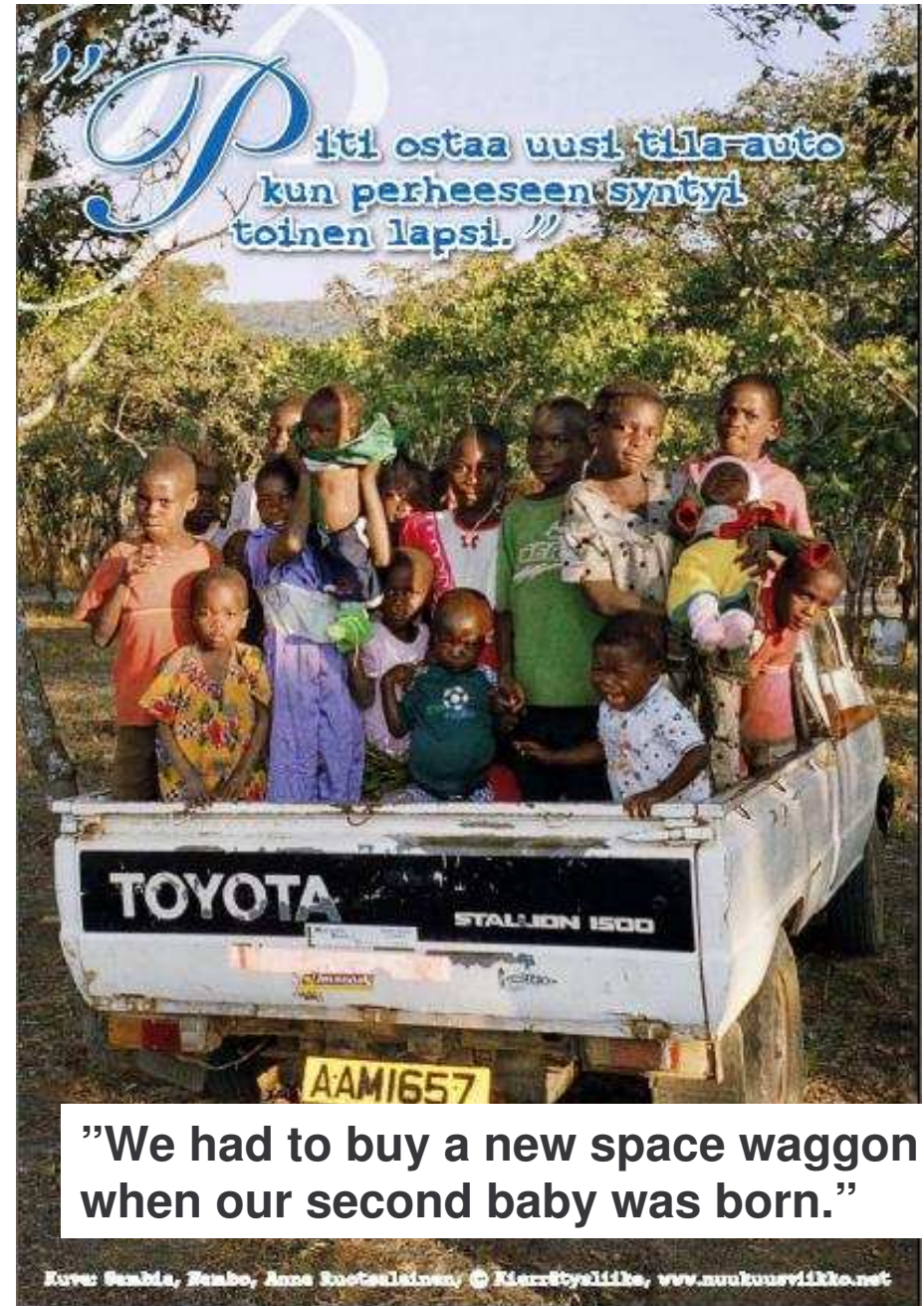
→ life-cycle-wide
benefit produced
by the commodity

MIPS-related indicators: versatile and understandable

- economy level:
300 shopping bags per capita per year
- company / product level:
primary steel 9 kg/kg, primary aluminium 38 kg/kg
- household level:
wind power 0,07 kg/kWh, average power 0,5 kg/kWh
- counselling, advising, education tools:
several tons of resources for one small ring...

Where to go? - in general

- Factor 10, transport cannot be excluded
 - Relevant contribution to overall consumption (25 % in TMR, 30 % in CO2)
 - Transport is linked to everything – no sustainability without sustainable transport
- Global carrying capacity
- Future of export industry



Dematerialization targets

- **Factor 4**: doubling global welfare and halving material flows by 2050
+ 2,75 % p.a. increase in eco-efficiency
- **Factor 10**: decreasing material flows of industrialized countries to 1/10 by 2050, maintaining at least present welfare
+ 4,5 % p.a. increase in eco-efficiency
- 30 years update of **The limits to growth**:
+ 4 % / p.a. increase in eco-efficiency \approx Factor 8

MIPS values for goods transport

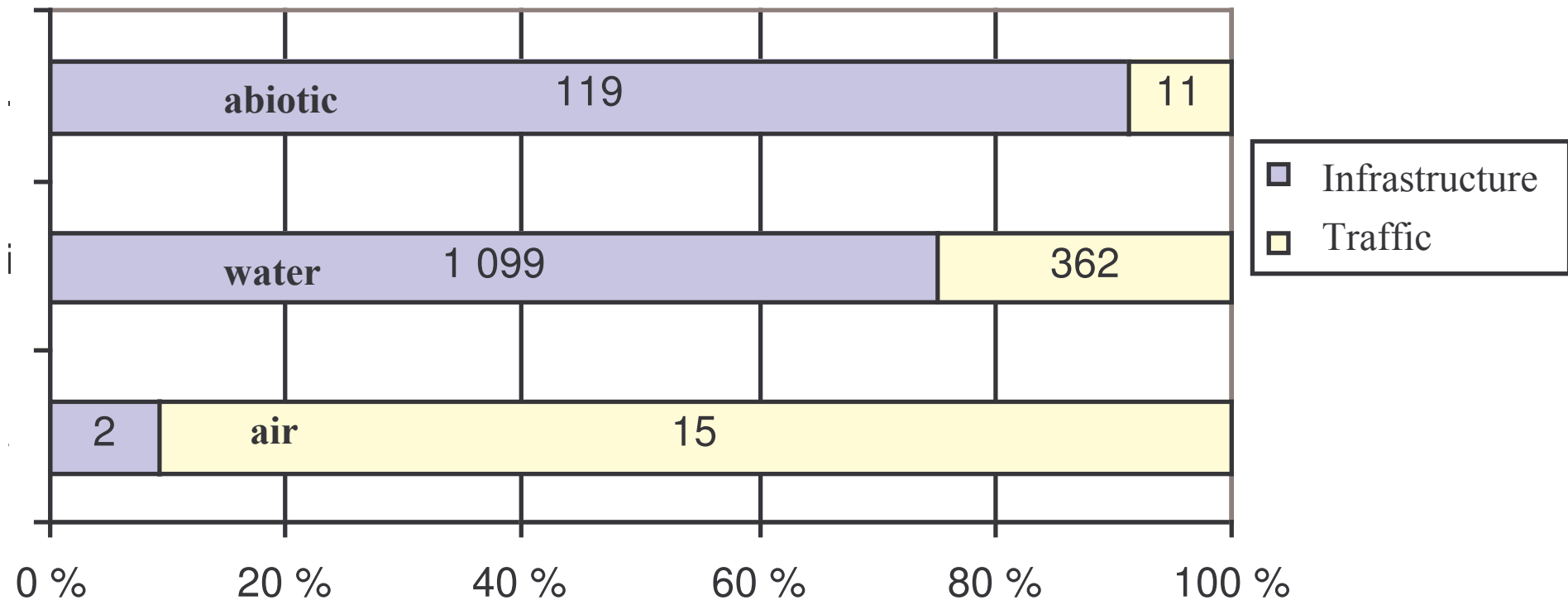
transport (Finland)	kg abiotic / ton km	kg biotic / ton km	kg water / ton km	kg air / tn.km	kg soil / ton km
lorry	0,4	-	3,6	0,06	-
railway	0,5	-	15	0,02	-
air (domestic)	5,6	-	266	2,8	-
air (intercont.)	0,6	-	9,1	1,3	-
sea (short dist.)	0,7	-	3,1	0,13	-
sea (intercont.)	0,08	-	0,6	0,10	-

MIPS values for passenger transport

transport (Finland)	kg abiotic / person km	kg biotic / person km	kg water / person km	kg air / pers. km	kg soil / person km
car	1,44	-	12,4	0,14	-
bike	0,38	-	12,1	0,02	-
bus	0,32	-	2,79	0,06	-
train (long dist.)	1,37	-	29,3	0,04	-
sea (baltic area)	0,26	-	2,42	0,31	-
air (domestic)	0,56	-	26,6	0,28	-
air (intercont.)	0,06	-	0,91	0,13	-

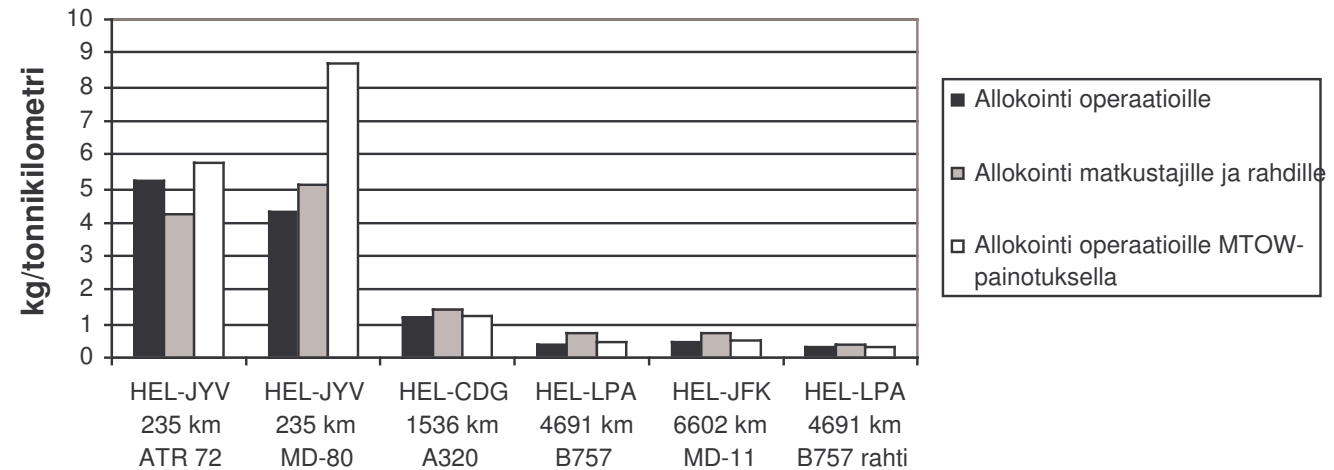
High share of infrastructure

Total resource consumption of transport in Finland, Million tonnes / yr.

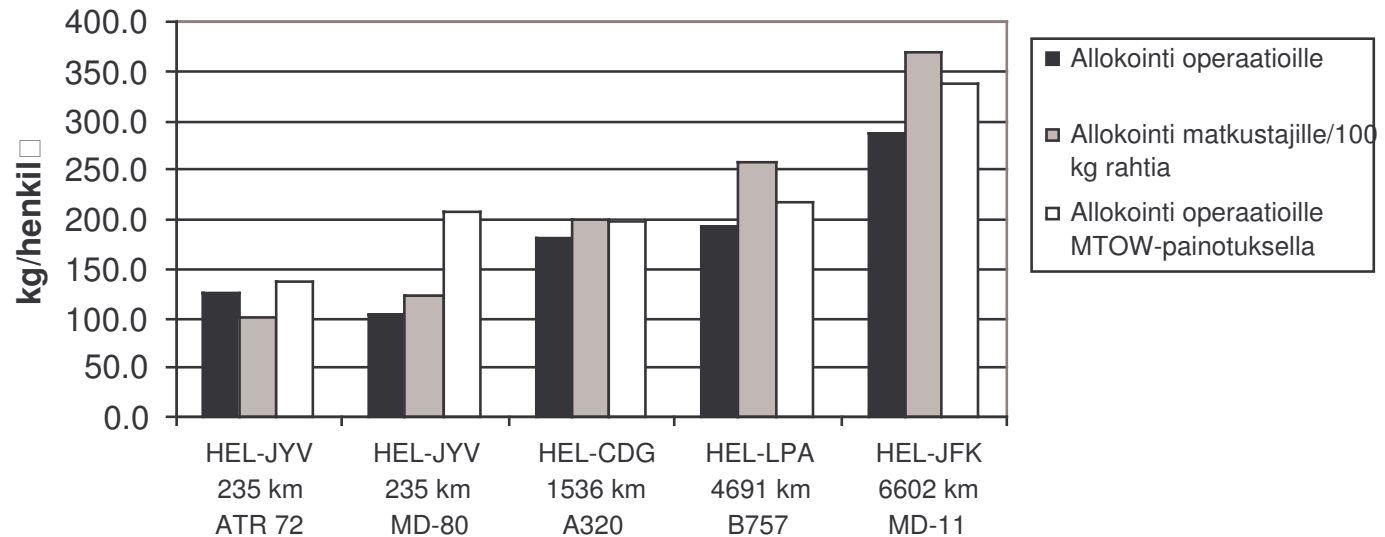


Efficiency vrs. growing consumption

MIPS: abiotic resources, kg / passenger km



MI: abiotic resources, kg / trip

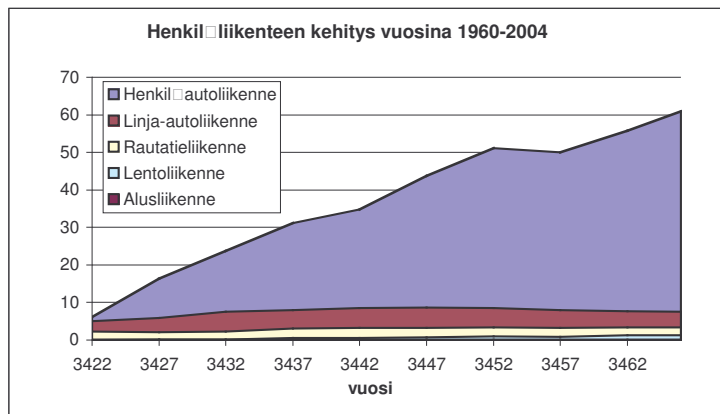


Speed consumes resources

Example	Difference in abiotic resource consumption
Motorway vrs. regional road infrastructure	Factor 12
Helsinki - Tallinn, car ferry vrs. express boat	Factor 7
Consignment FIN-DE, air vrs. road transport	Factor 7

Where to go?! - in terms of transport (1)

- Lower traffic volume



Where to go?! - in terms of transport (2)

- Low-infrastructure system
=> avoid shift of problems e.g. from energy use to physical nature use

transport (Finland)	kg abiotic / tonne km	kg air / tkm
lorry	0,4	0,06
railway	0,5	0,02

Where to go?! - in terms of transport (3)

- Less speed

This will go a hundred
times faster!

Yeah - in the
wrong direction...

Resource-efficient transport – positive visions?

- Locality / decentralisation?
- Happiness without driving and flying around?
- Culture of slowness?

To cut costs
we have
moved the
health
service to
China.

Please take
a ticket for
check-in.

Resource-efficient transport – how to get there?

- Low-infrastructure
=> planning, pricing, awareness,
maintenance, ...
- Low traffic volumes
=> pricing, planning, awareness, ...
- New transport culture: less speed, less cars, ...
=> awareness, pricing, planning, ...

Thanks!

Finnish Association for Nature Conservation

www.sll.fi

www.mips-online.fi

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Drawn pictures: www.seppo.net

