Catalyzing Action:
EU Sustainable Lifestyles Roadmap & Action Plan 2012-2050

26-27 November 2012

D-mat

Wuppertal Institute for Climate, Environment and Energy

SPREAD Sustainable Lifestyles 2050

EUROPEAN COMMISSION European Research Area

SEVENTH FRAMEWORK PROGRAMME

Funded under Socio-economic Sciences & Humanities

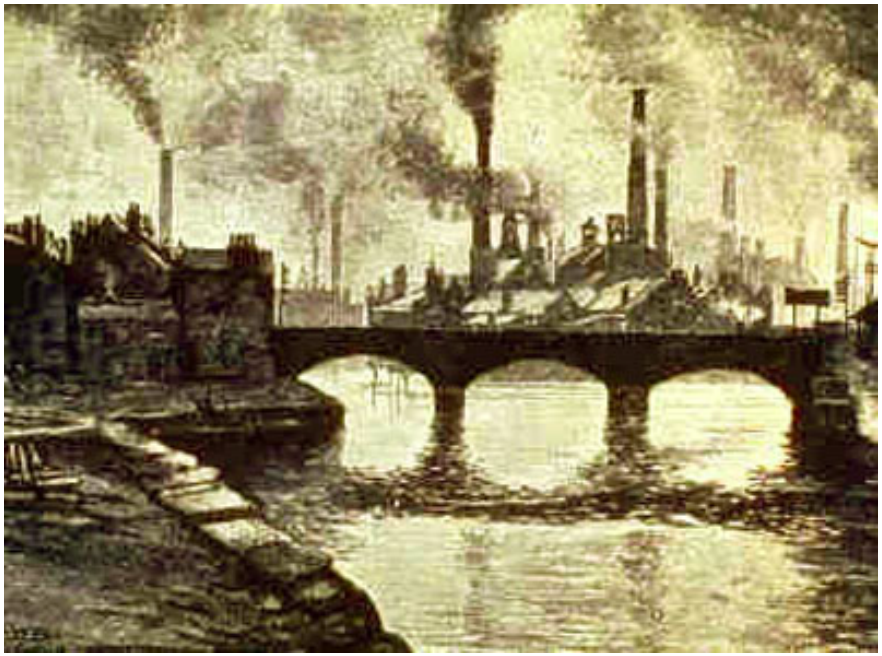
What is a sustainable lifestyle in the EU?

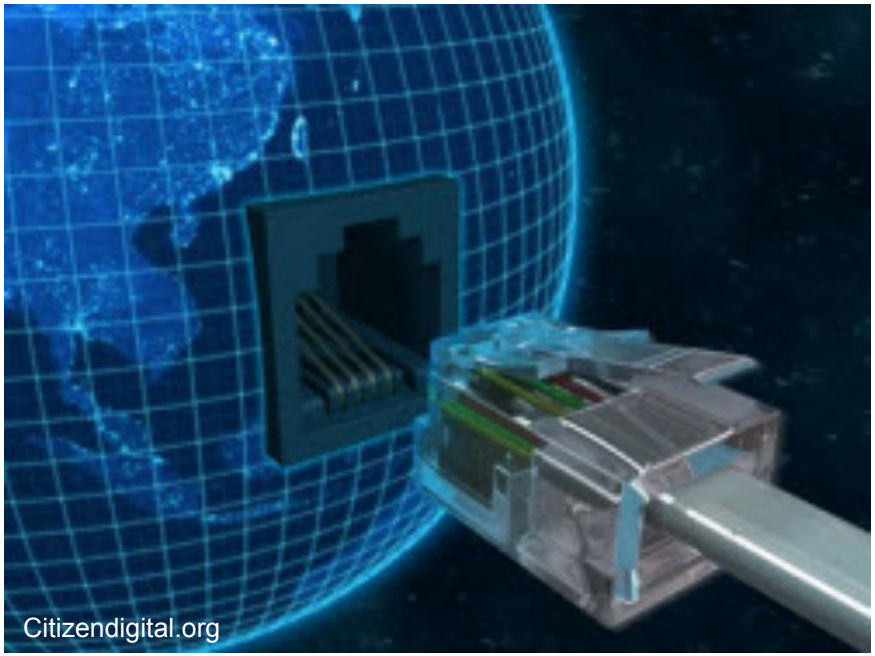
Michael Lettenmeier
Director, D-mat ltd.
Consultant, Wuppertal Institute for Climate, Environment and Energy

D-mat

Wuppertal Institute for Climate, Environment and Energy

One of the biggest lifestyle changes we know

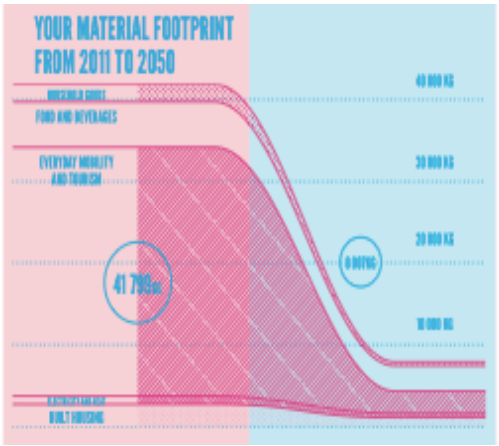


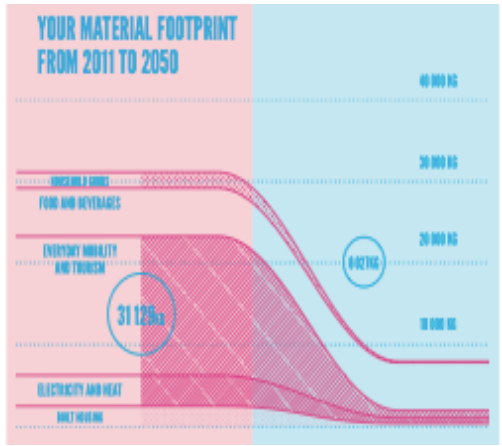


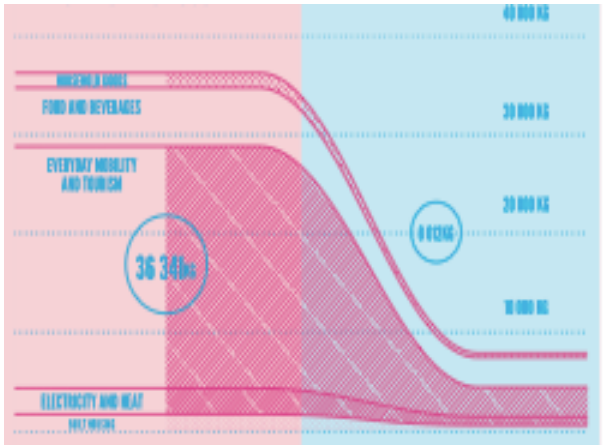
D-mat

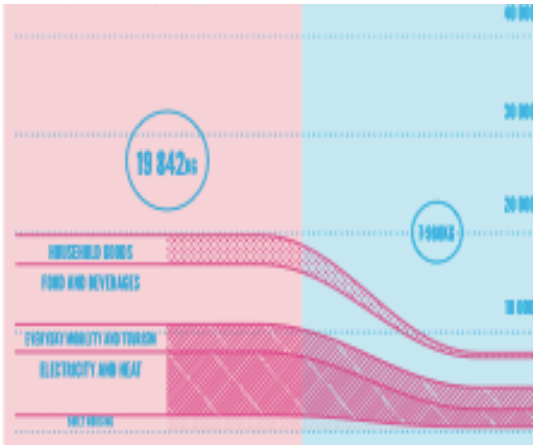
Wuppertal Institute for Climate, Environment and Energy

Bad news: our current lifestyles are far from sustainable



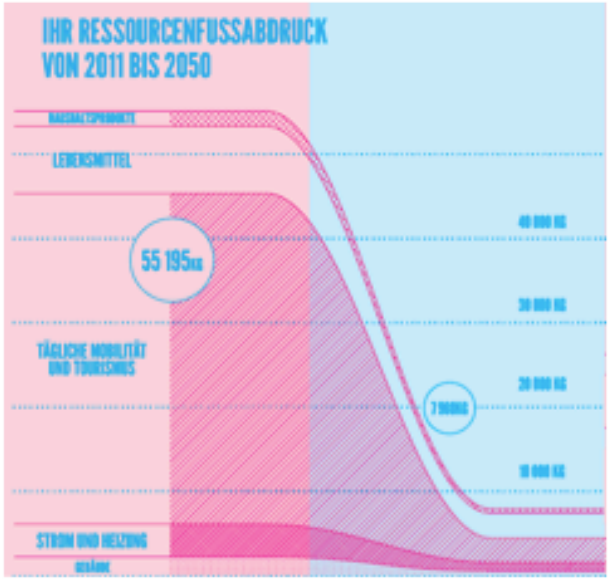




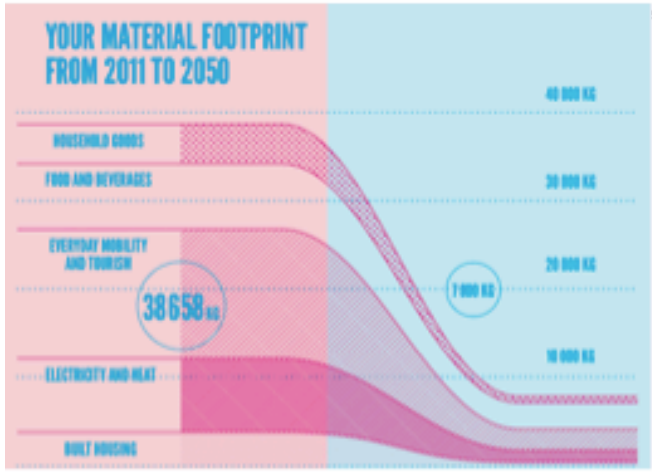


Good news: We know where to go. And some people are already there!

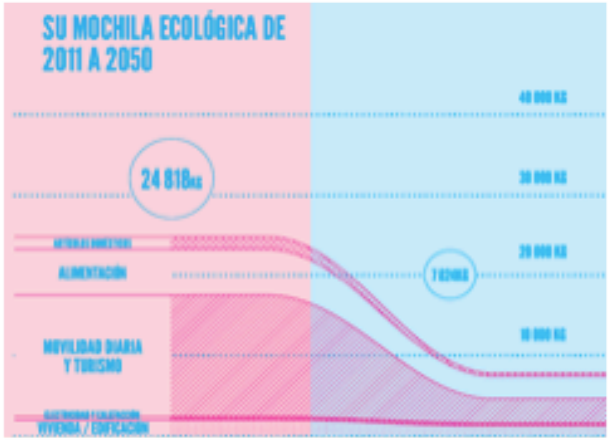
D-mat



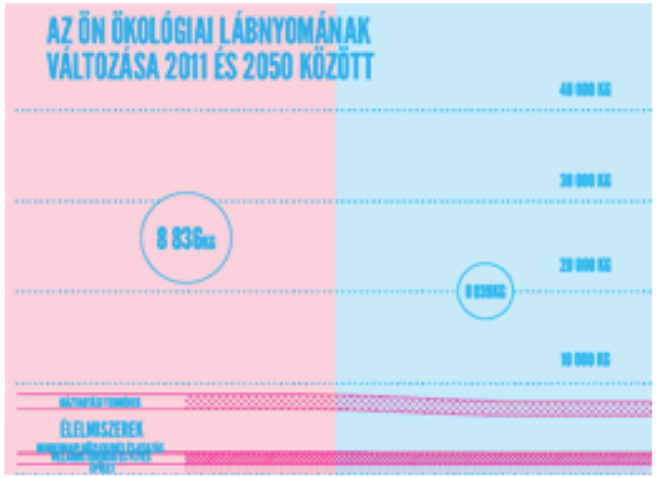
Bernd, Germany
55 000 kg



Kirsti, Finland
39 000 kg



Iria, Spain
25 000 kg



Péter, Hungary
9 000

Many ways of achieving 8000 kg

D-mat

Wuppertal Institute for Climate, Environment and Energy

How did the SPREAD scenarios reach lifestyles of 8000 kg material footprint?

In the SPREAD Sustainable Lifestyles 2050 project we have defined the material footprint of a sustainable lifestyle at 8000kg for one person per year. This forms the fundamental assumption on which each of our four developed and previously described scenarios are built.

The material footprint of 8000 kg consists of household goods, food and beverages, everyday mobility and tourism, electricity, heating and housing. However, the composition of the footprint is not the same for everyone. The share of each consumption domain in the annual material footprint of 8000 kg depends on the changes the drivers have brought about.

All four scenarios, however, share the following assumptions about technology and lifestyle patterns:

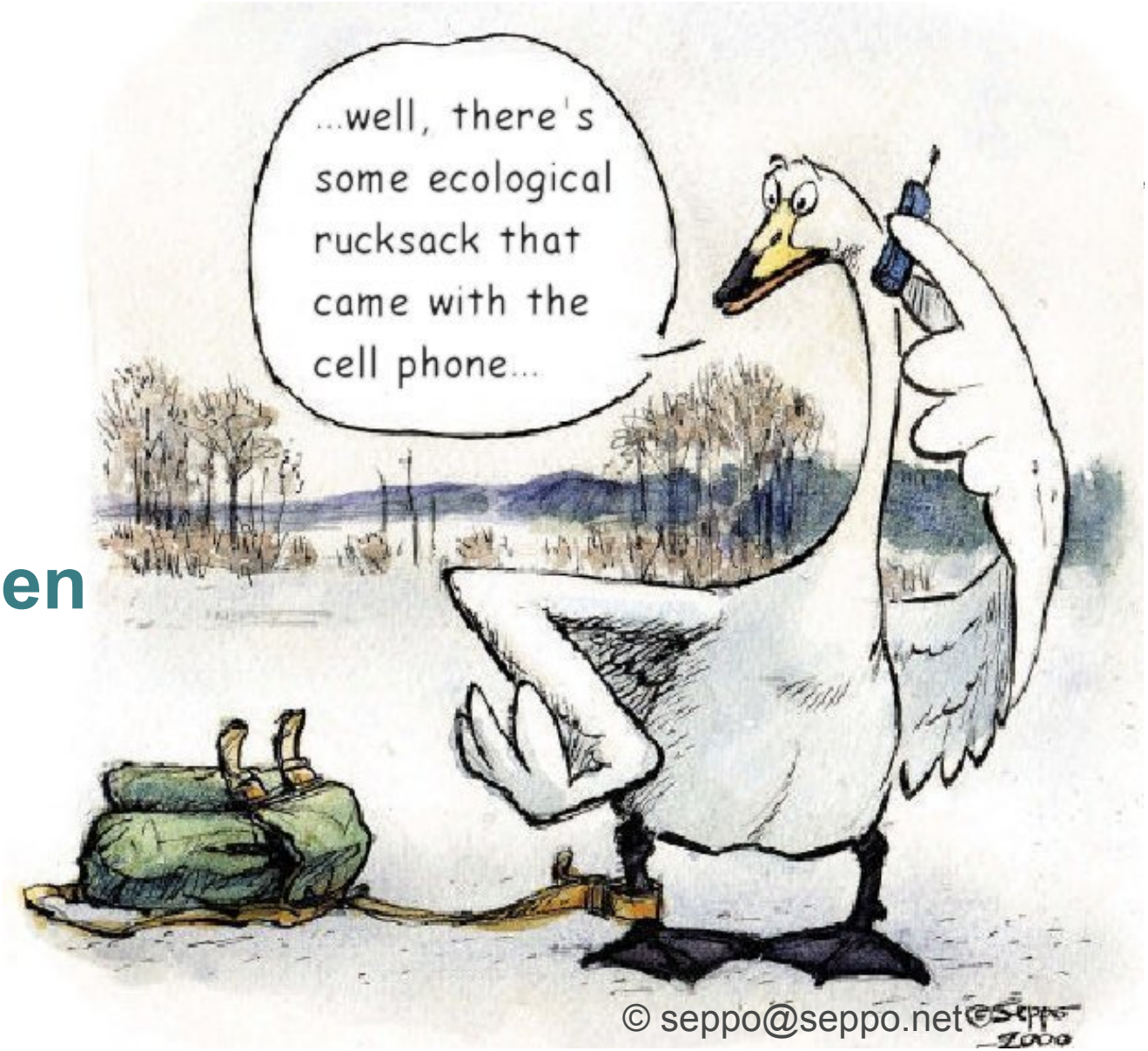
- virtually zero-emission electricity production
- radical reduction of energy required for heating and cooling of buildings, both in new and existing ones
- decreased need for mobility and radically reduced levels of private car use
- reduced consumption of meat

The following table provides an explanation on how each scenario differs in terms of reaching the 8000 kg target in the different lifestyle domains.

Material Footprint (kg/person/year)	Singular Super Champions	Central assumptions on technology	Central assumptions on lifestyle	Governing the Commons	Central assumptions on technology	Central assumptions on lifestyle	Local Loops	Central assumptions on technology	Central assumptions on lifestyle
Food	2500	Hi-tech organic.	Price mechanism, sustainable elite, low to no meat, efficient diets (economy-ecology-health).	2500	High-yield plants, synthetic meat, less waste.	Smaller energy intake, no appetite for meat, healthy diets.	3300	Efficient production and plants, less transportation	Optimal food intake, use of food services, no leftovers
Housing: building	1500	Global zero energy technology (no heating or cooling), longevity of buildings, but mostly newly built, flexibility of flats, upcycling of construction materials.	Small, smart flats, flexible space use, dense living.	1400	Smart homes, retrofitting functional, space-efficient flats.	Few new buildings, efficient space use, mainly from wood, virtual services reduce need for space at home, home replaces office.	1300	Modular infills help in using existing infrastructure. Wooden construction increases.	Less appliances, less rooms, less living space, more shared spaces outside the home.
Housing: eletricity	300	The energy demand of housing and ICT has decreased, thanks to efficient technological solutions. Highly resource-efficient and carbon-neutral wind, as well as solar power.	Energy demand has decreased in housing and ICT, but not substantially, as ICT is everywhere.	300	Reduced energy consumption but ubiquitous ICT, based on electricity and super grid, diverse renewable resources, distributed production, fossil fuels phased out, lots of players in energy market.	Ubiquous ICT, homes replace offices and meeting locations, limited amount of 3D-products.	400	Breakthrough in solar panel technology, local energy sources, no or few energy exports, different CO2 and resource intensities, efficient neighbourhood-level CPH production for home and work.	Less appliances, less rooms, less living space.
Mobility (daily and tourism)	2800	0.2-0.4 kg/km. Dense local service network as a result of economic efficiency and super-efficient logistics systems, shift in urban infrastructure from car traffic to smart mobility based on efficient Personal Rapid Transportation systems, expensive high-volume fast rail network between agglomerations (new but efficiently used infrastructure).	5000-15000 km/yr. People live near and move after work in(to) extremely dense areas of excellence, healthy mobility patterns major part of daily exercise, transparent pricing boosted awareness and phased out car use in urban areas, prices reduce traveling in general, but many people still travel occasionally, only full planes and other vehicles.	2700	0.3 kg/km. Smart and individually customised public transport, car-sharing, slow air travel (e.g. solar zeppeline). Maintenance of existing basic infrastructure.	9000 km/yr. Car-sharing, minimal commuting (e.g. no more offices), personal optimisation, direct behavioral feedback,virtual consumption reduces travel needs.	1500	0,25 kg/km. Cycling routes, reduced travelling means that old railroad and ship stock and infrastructure are still sufficient and in use.	6000 km/yr. No need to go far, regional holiday, high recreational value of local biodiversity reserves. Home delivery of everything. Work and home in the same place. Journeyman, travel once in your lifetime.
Product consumption	500	Extremely efficient ICT solutions (sensors, centralized computing, cloud farms), use of abundant instead of scarce materials for ICT, combination of longevity and sophisticated recycling.	Low to no-material elite: dematerialisation is cool. People invest in themselves.	500	Modular appliances. Centralised cloud farms, optimal location. 3D component printing. Recycled materials.	Less ICT appliances. Virtual consumption reduces overall resource use. Small amount of tailored personal goods. 3D shopping culture.	400	Local maintenance, reuse and recycling services. Longevity and user-centric tailoring of products. Light ICT.	Services replace owning. Less goods at home.
Leisure time	300	Improved resource efficiency of ICT.	Educational services.	400	Improved resource efficiency of ICT.	Virtual entertainment.	400	Dense urban structure.	Services widely used.
Others	300			200			700		
Sum	8000			8000			8000		

Material Footprint:

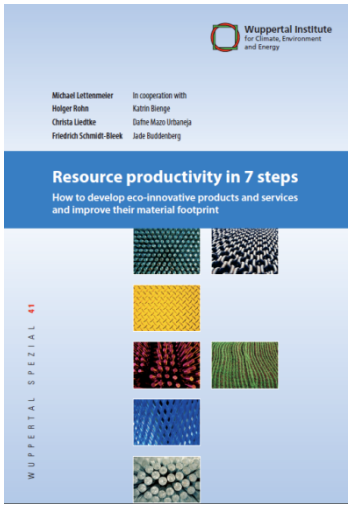
The invisible material burden our products are carrying

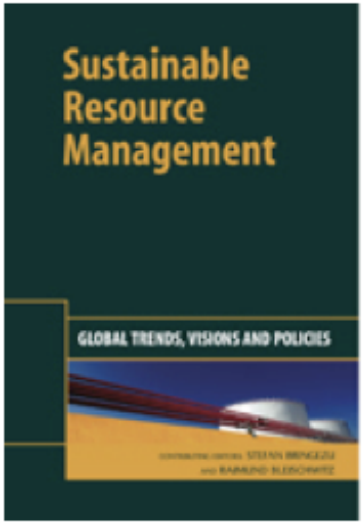


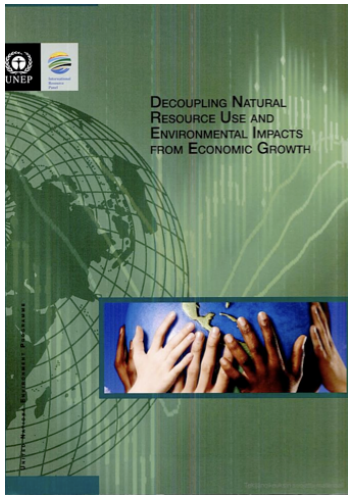
Sustainable use of natural resources

D-mat

Wuppertal Institute for Climate, Environment and Energy







Equal share of resource use within one planet

"The industrial countries act as if there were several earths available. Thus, without a radical increase in resource productivity there will be no sustainable development."

Schmidt-Bleek (2009): The Earth.

Source: Wuppertal Institute 2007

Material footprint =

D-mat

Wuppertal Institute for Climate, Environment and Energy

Amount of consumption x Material

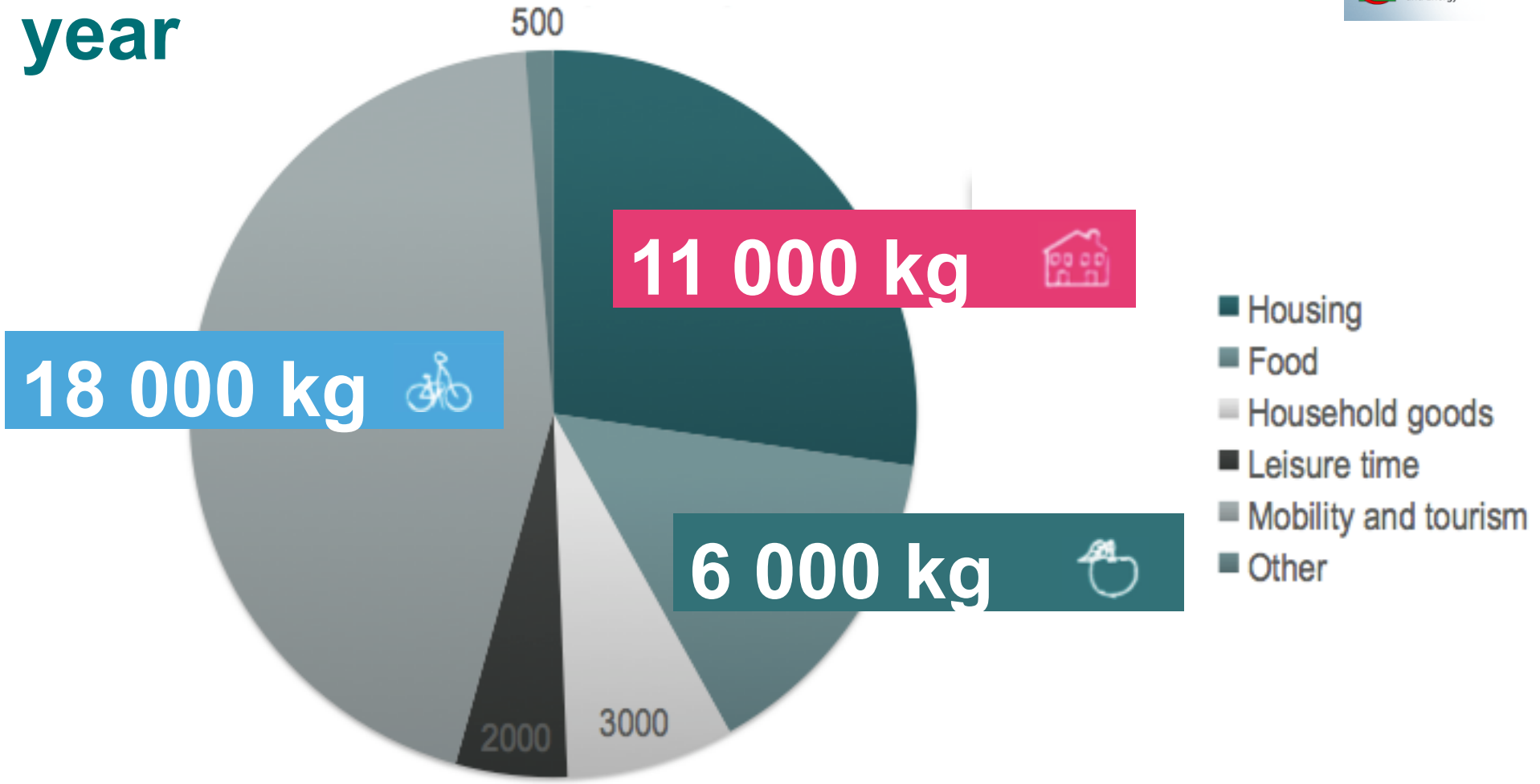
© seppo@seppo.net

© seppo@seppo.net

Material footprint today: 30 000 – 50 000 kg per person in a year

D-mat

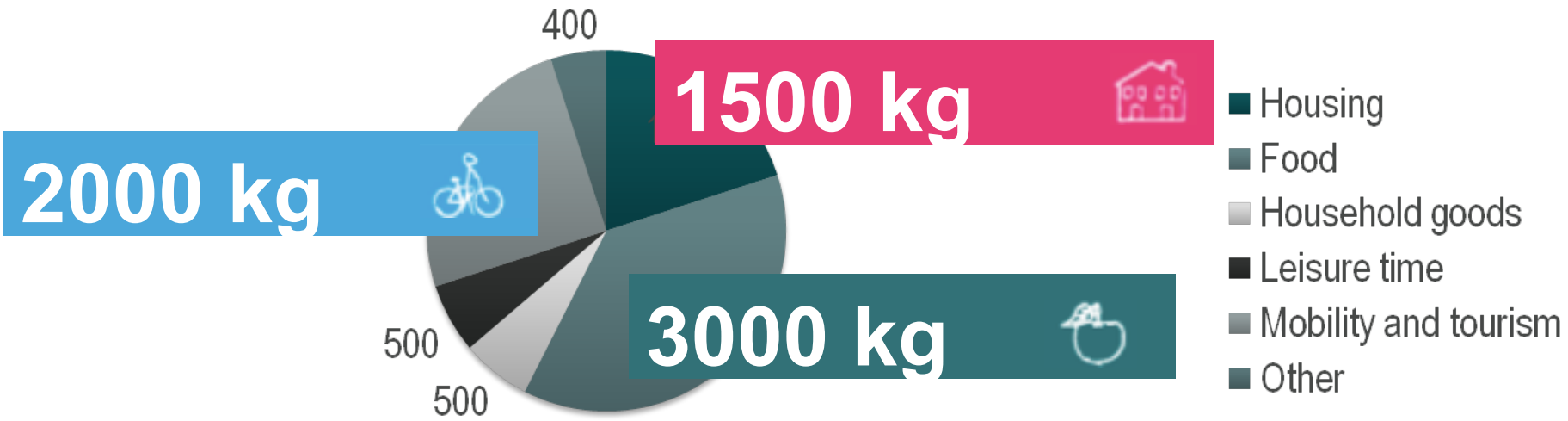
Wuppertal Institute for Climate, Environment and Energy



Sustainable material footprint: 8000 kg per person in a year

D-mat

Wuppertal Institute for Climate, Environment and Energy



Food: from 6000 to 3000 kg

D-mat

Wuppertal Institute for Climate, Environment and Energy

Food: from 6000 to 3000 kg

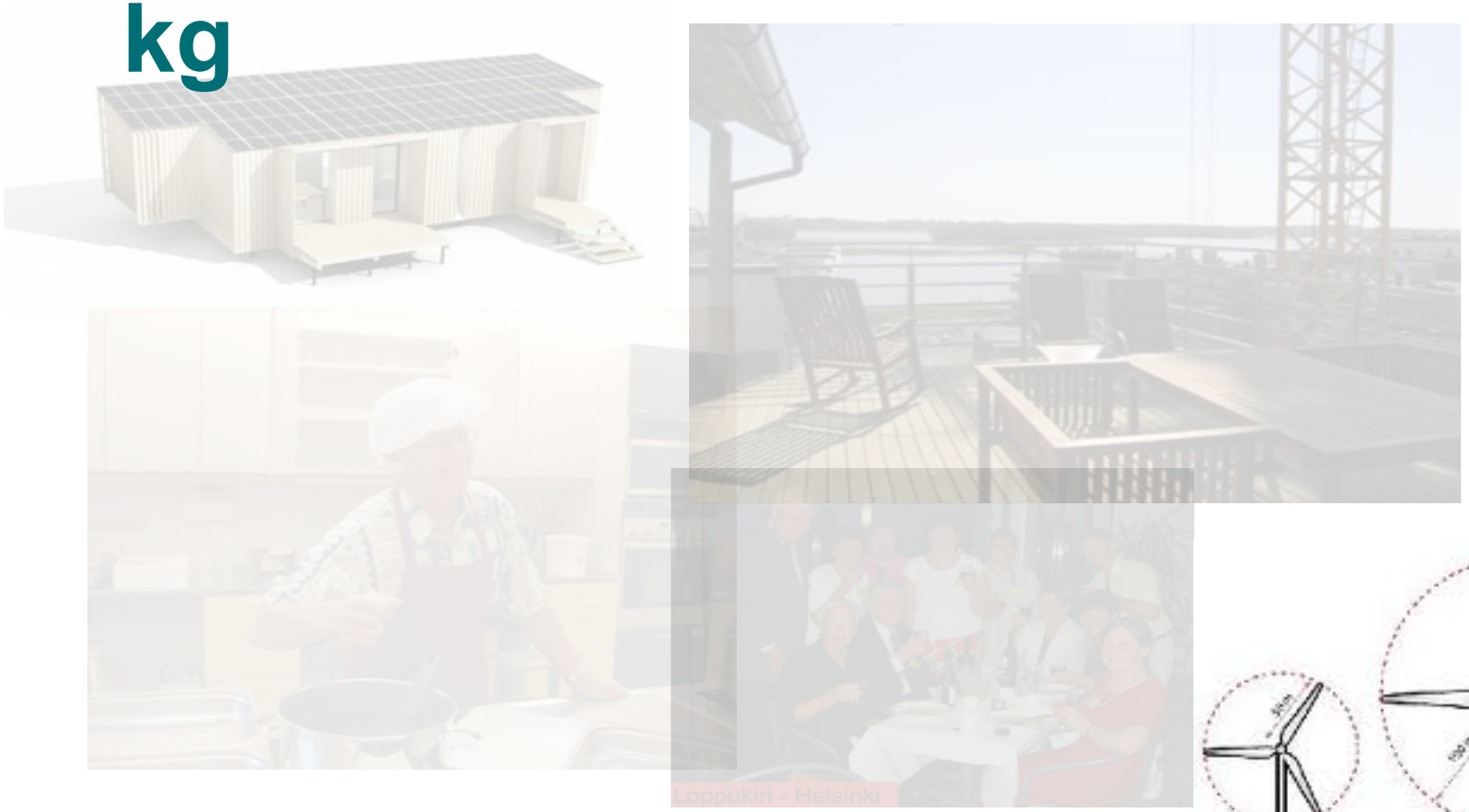
D-mat

Wuppertal Institute for Climate, Environment and Energy

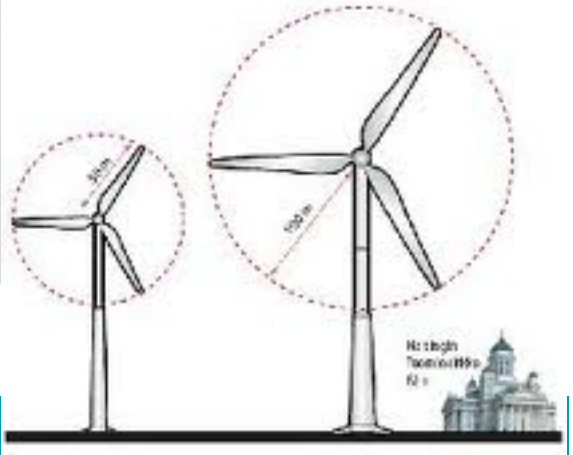
Housing: from 11 000 to 1500 kg

D-mat

Wuppertal Institute for Climate, Environment and Energy



A++++++++++



Housing: from 11 000 to 1500 kg

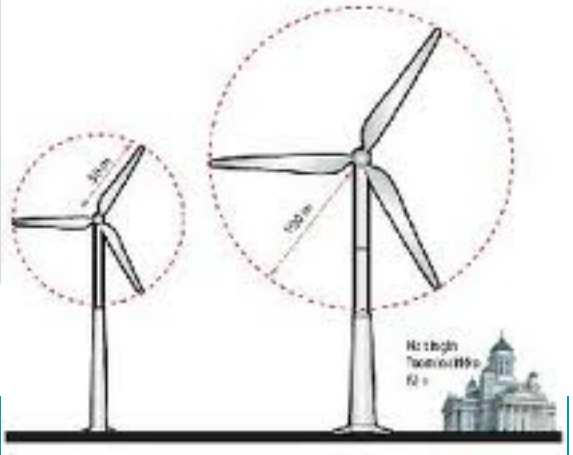
D-mat

Wuppertal Institute for Climate, Environment and Energy

resource-efficient
zero energy houses

20 m^2 per person

wind and solar power



A++++++++++

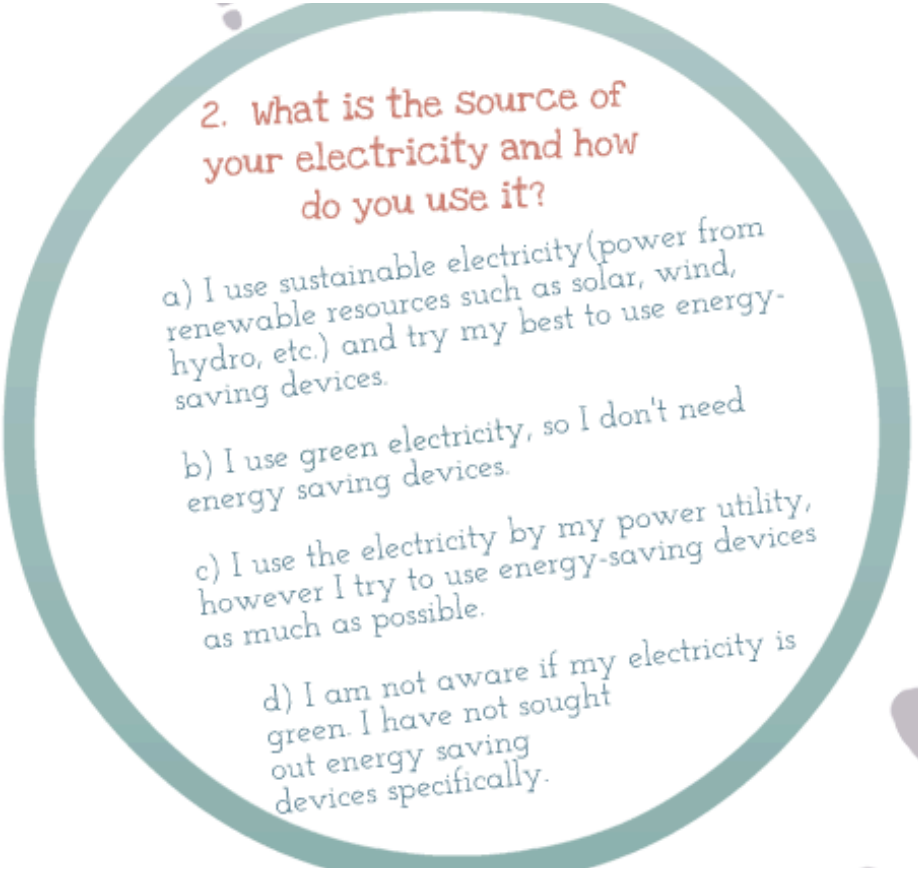
Mobility: from 18 000 to 2000 kg

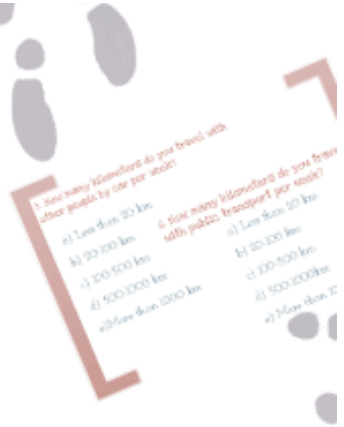
Mobility: from 18 000 to 2000 kg

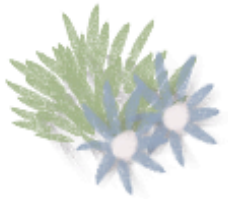
How heavy is *your* lifestyle?

D-mat

Wuppertal Institute for Climate, Environment and Energy







Beginner

Trainee

Average

Advanced

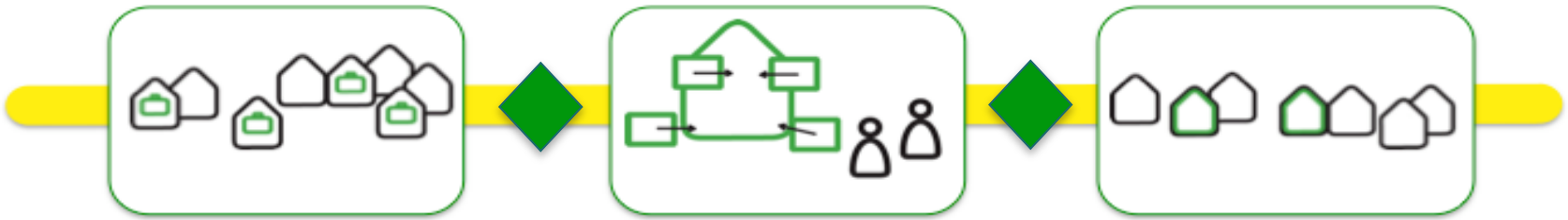
Forerunner

Households will not do it alone

Policy

Entrepreneurship

SusLab: speeding up innovation



Insight Research

Proto-typing

Field testing

Thank you!

Michael Lettenmeier

D-mat ltd.

Wuppertal Institute for Climate, Environment and Energy
Research Group Sustainable Production and Consumption

Phone: +358 (0)40 54 12 876
E-Mail: michael.lettenmeier@wupperinst.org

www.facebook.com/materialfootprint
www.d-mat.fi
www.wupperinst.org
www.mips-online.info

“EU Sustainable Lifestyles Roadmap and Action Plan to 2050” – Key Findings of the **SPREAD** Sustainable Lifestyles EU Social Platform project

D-mat

Wuppertal Institute for Climate, Environment and Energy

What is a sustainable lifestyle in the EU?

- **Michael Lettenmeier** (D-mat and Wuppertal Institute)

- Reaction panelists and audience:
- **Richard Spencer** (ICAEW) and **Per Stoltz** (IKEA)