

25.4.2022

Design Approaches to Sustainable Consumption

# One-planet lifestyles – And how make people aware of their relevance?



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# Michael Lettenmeier

- Helsinki University – Post-doc
- D-mat Ltd. – CEO, founder
- Wuppertal Institute – Consultant
- Material and carbon footprints
- Footprint calculators
- Sustainable resource use
- Sustainable welfare
- Research
- Consulting
- Training
- Climate Puzzle

SITRA

FI / SV / EN

## TESTAA, OLETKO UHKA VAI MAHDOLLISUUS?

Ovatko elämäntapasi ympäristön puolella vai sitä vastaan? Pikatestin tuloksena saat sinulle räätälöityjä vinkkejä, joilla säästät aikaa ja rahaa sekä parannat elämänlaatuaasi. Ja luonto kiittää!

ALOITA ELÄMÄNTAPATESTI

Testi on tehty 1 203 494 kertaa ja keskimääräinen hiilijalanjälki on **7 000** kg CO<sub>2</sub>e

Laskenta: D-mat oy  
Testin laskentaa on päivitetty 19.2.2021

Tämä teos on lisensoitu Creative Commons Nimeä-EiKaupallinen-JaaSamin ja 0 Kansainvälinen-lisensillä  
Lue lisensioinnista lisää täältä: [Sitra:n 100 filosofian teos ja Elämäntapatesti: Lisenssi](#)  
[Elämäntapatestin laskentaperusteet \[pdf\]](#)



***Does anyone remember what happened  
2<sup>nd</sup> August 2023?***

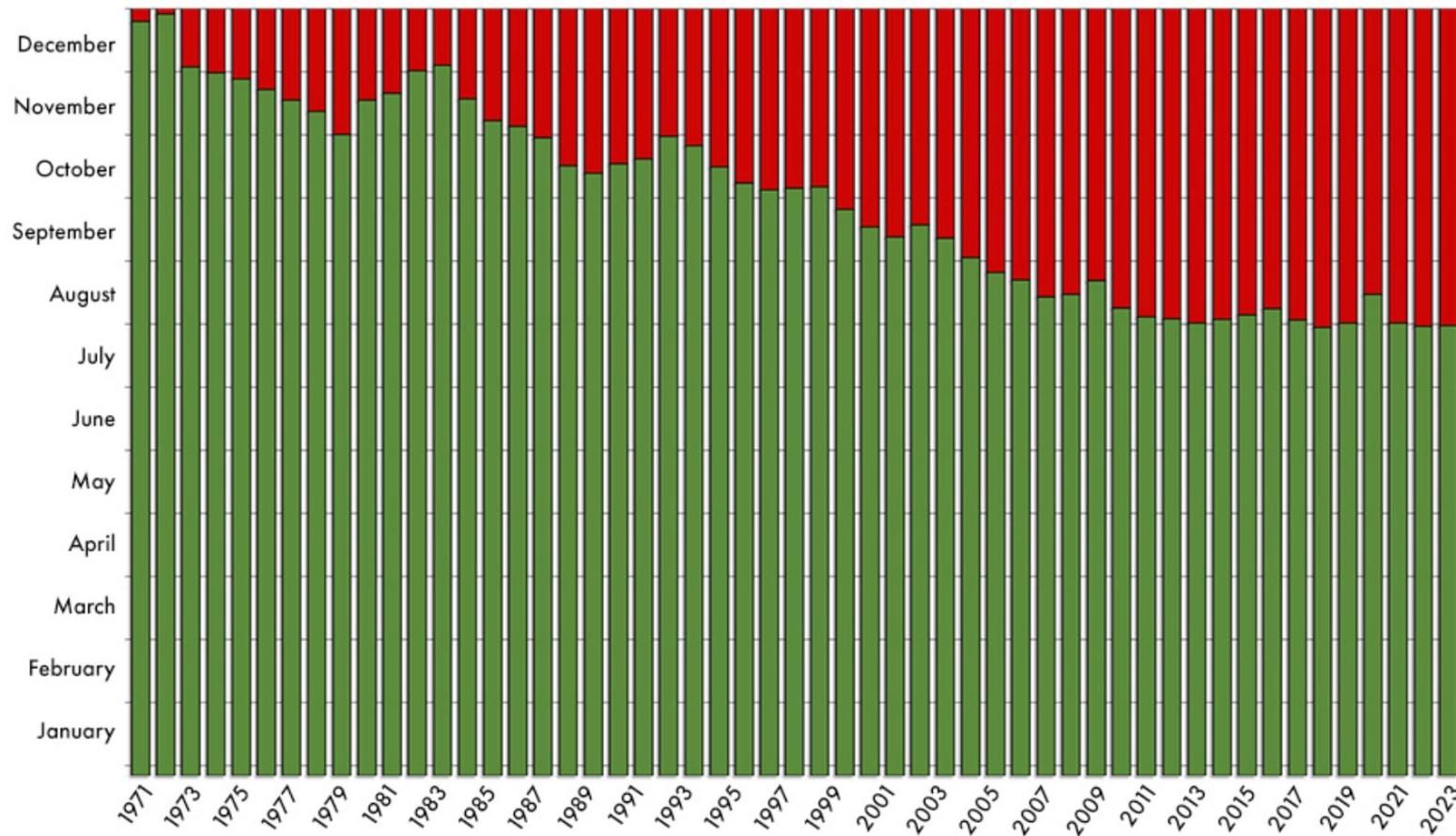


1 Earth

# Earth Overshoot Day 1971 - 2023



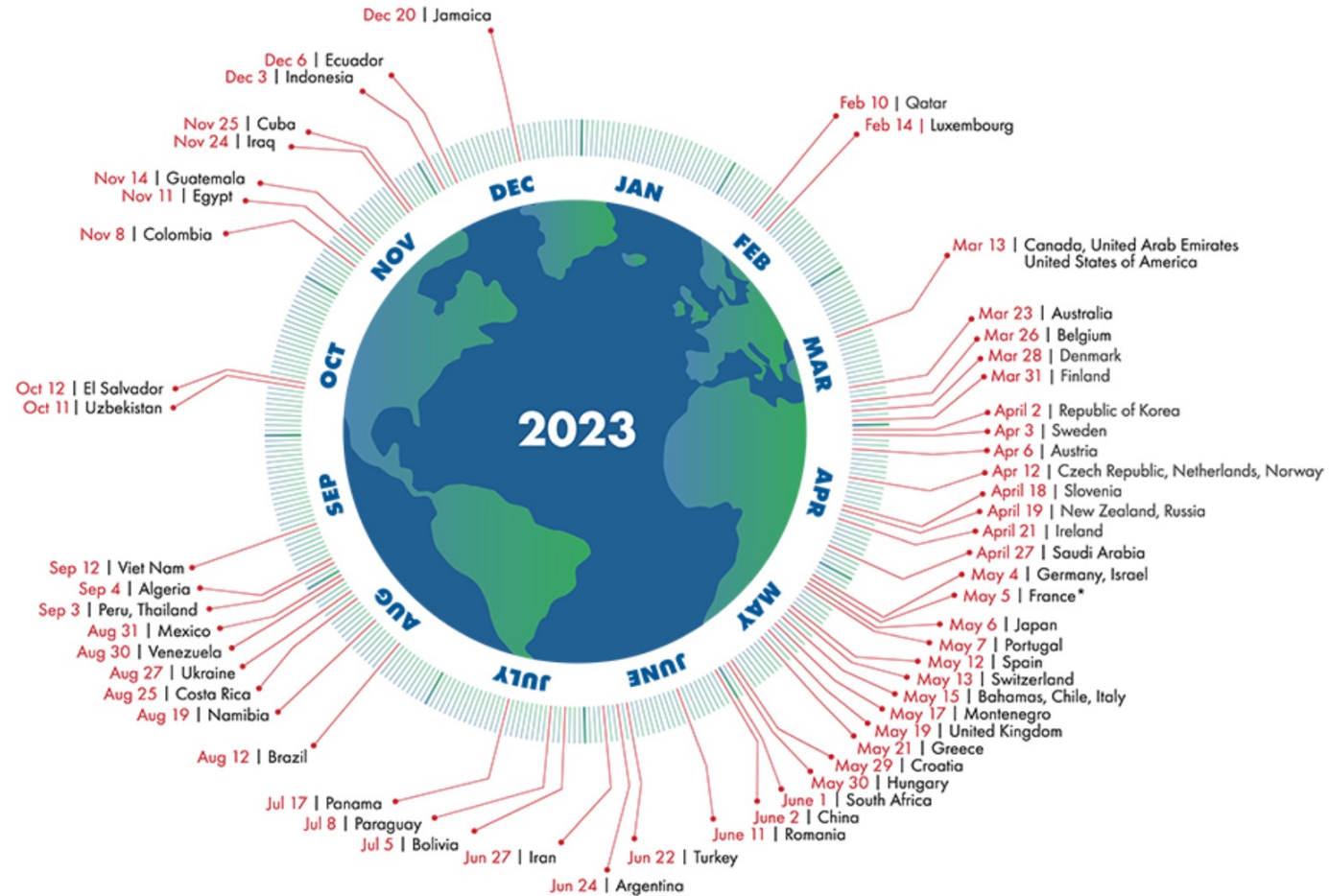
1.7 Earths



Source: National Footprint and Biocapacity Accounts 2023 Edition  
data.footprintnetwork.org

# Country Overshoot Days 2023

When would Earth Overshoot Day land if the world's population lived like...



For a full list of countries, visit [overshootday.org/country-overshoot-days](https://overshootday.org/country-overshoot-days).  
\*French Overshoot Day based on nowcasted data. See [overshootday.org/france](https://overshootday.org/france).

Source: National Footprint and Biocapacity Accounts, 2022 Edition  
[data.footprintnetwork.org](https://data.footprintnetwork.org)



# *Our ecological sustainability gap*



"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

# *Our footprints affect the whole world*

D-mat

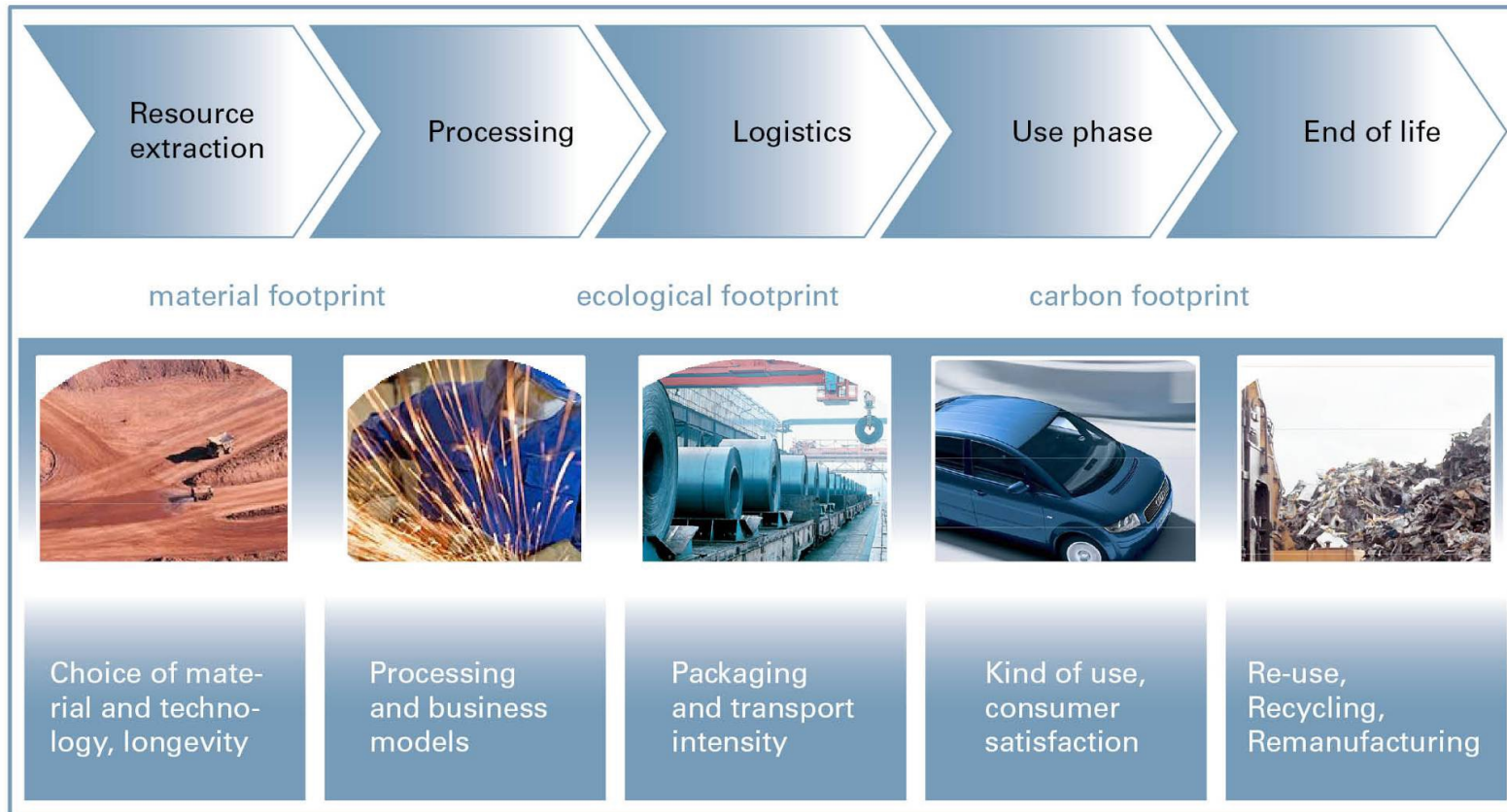


Source:  
<https://op.europa.eu>

Pixabay.com

Pixabay.com

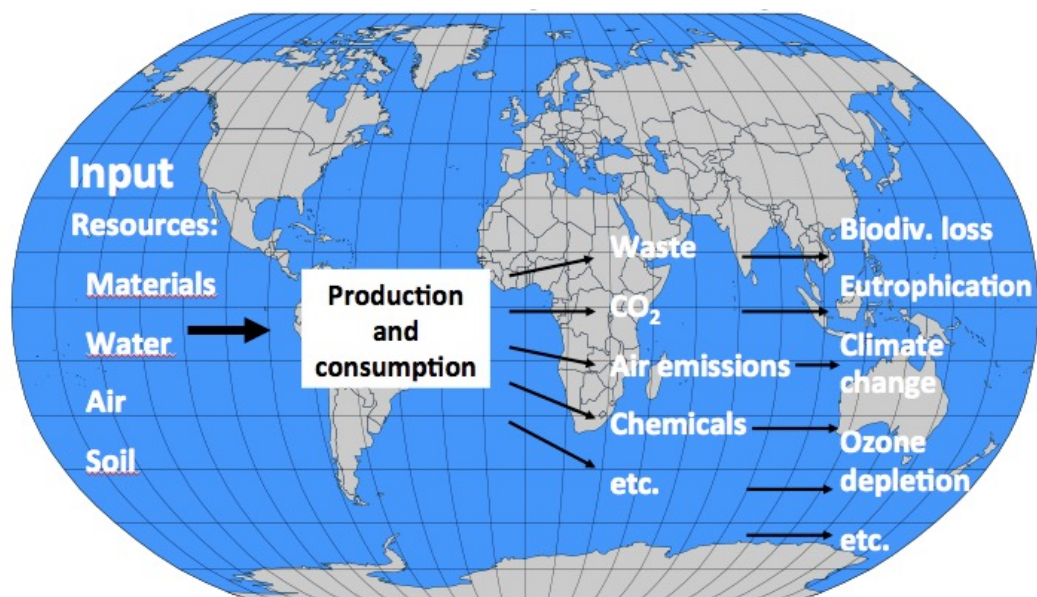
# Life-cycle perspective crucial



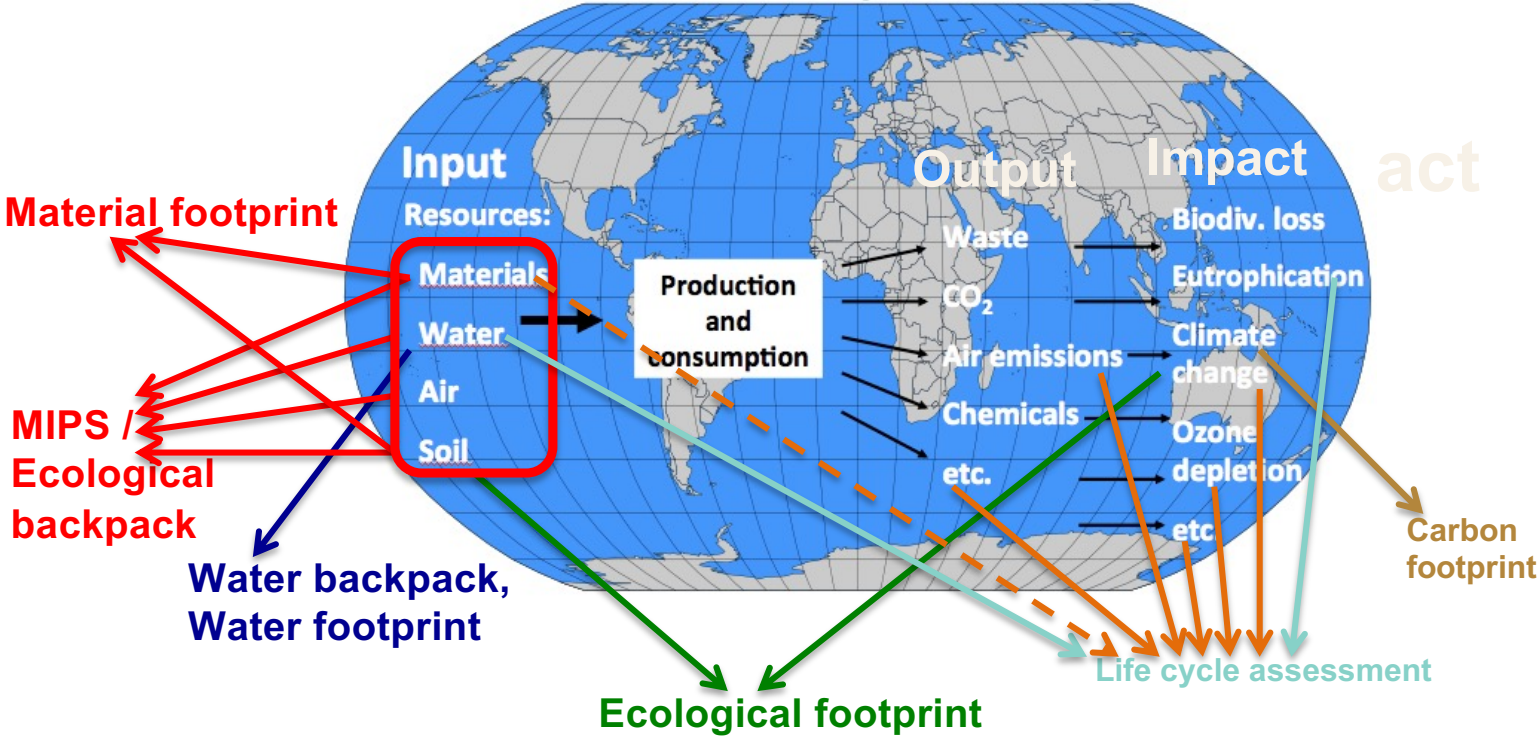
Source: Wuppertal Institut



# Life cycle: input – output – impact

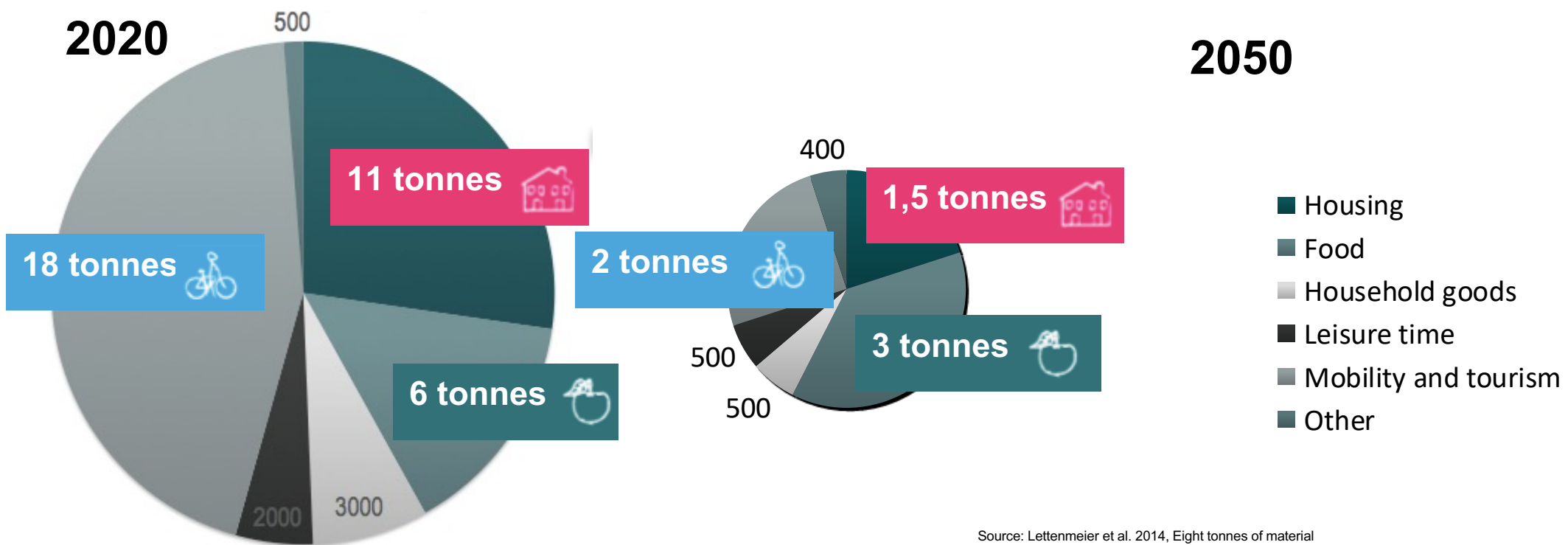


# Input, output, impact: what to quantify

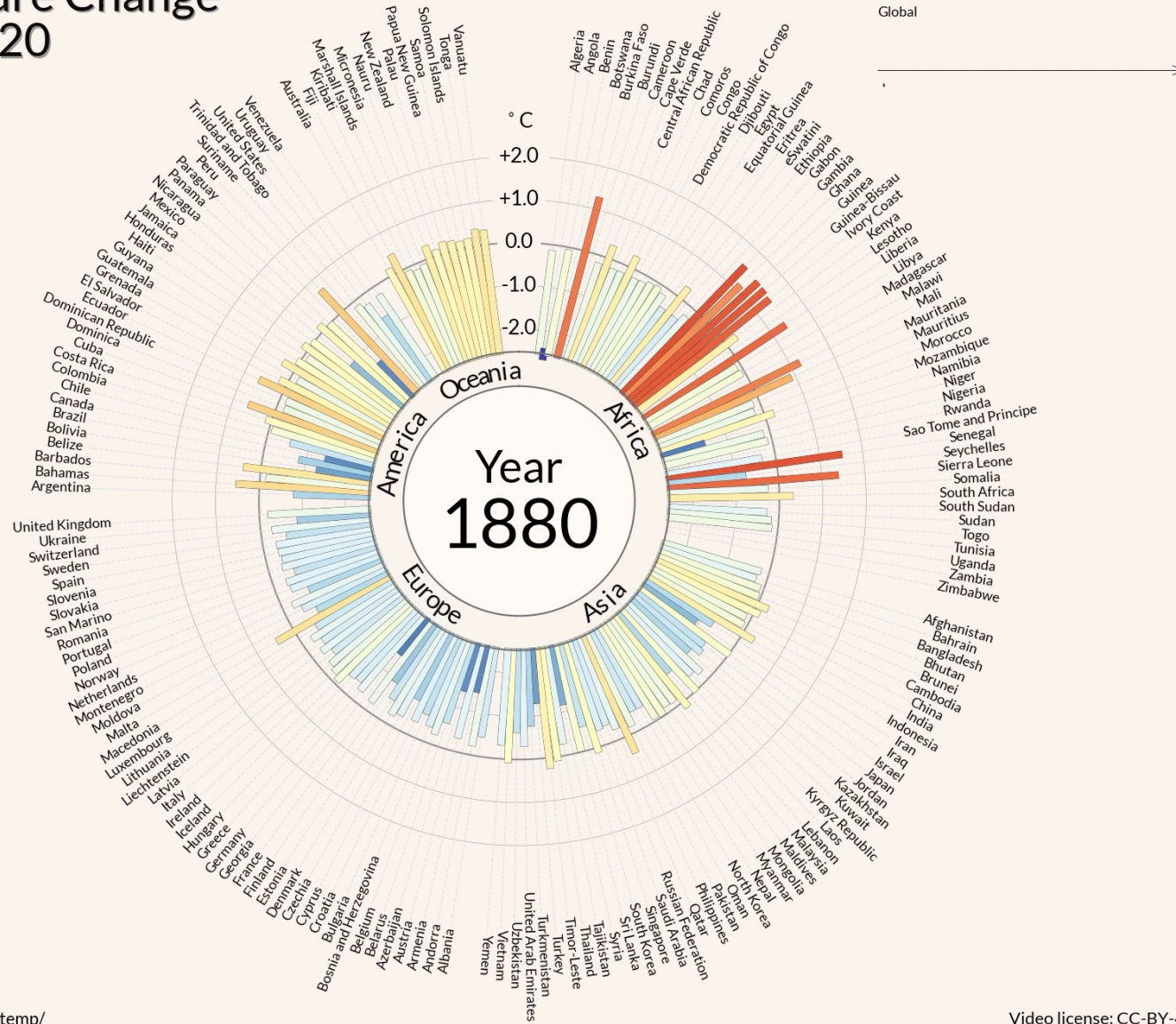


# The Sustainable Consumption Challenge

## Lifestyle Material Footprint from 40 to 8 Tonnes



# Temperature Change 1880 - 2020



Data source:  
NASA GISTEMP  
<https://data.giss.nasa.gov/gistemp/>  
Temperature anomaly base period 1951-1980.

Video license: CC-BY-4.0  
Antti Lipponen (@anttilip)

# Climate change is here and now



Sources: ABC news, CNN, Reuters, Science Daily, Global National BBC News, The Guardian, Weather.com

# International Climate Discussion

## Paris Agreement 2015

- We limit global warming to well below 2°C, preferably 1.5°C

## IPCC 2018

- Global warming has to be limited to 1.5 °C
- Already 2°C means so much more destruction and suffering

## UN Emissions Gap Report 2020

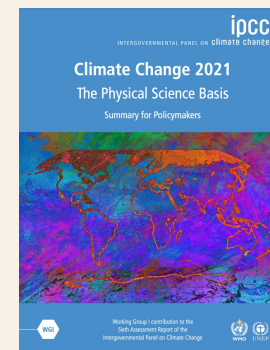
- Lifestyle changes necessary

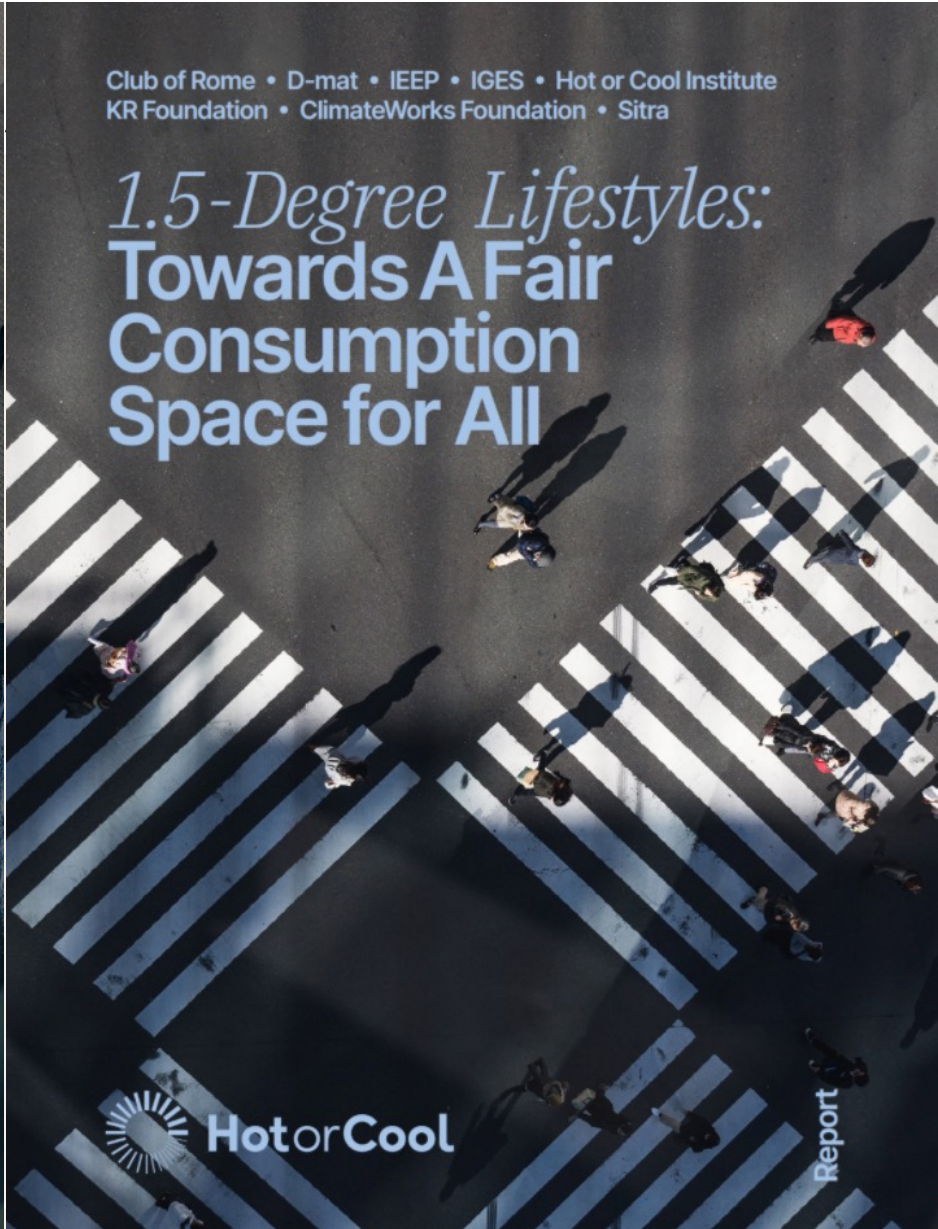
## IPCC 2021

- Global warming is already at more than 1°C but 1.5°C might still be reachable
- Unprecedented development t already visible around the world
- The worst case scenarios will probably be avoided

## IPCC 2022

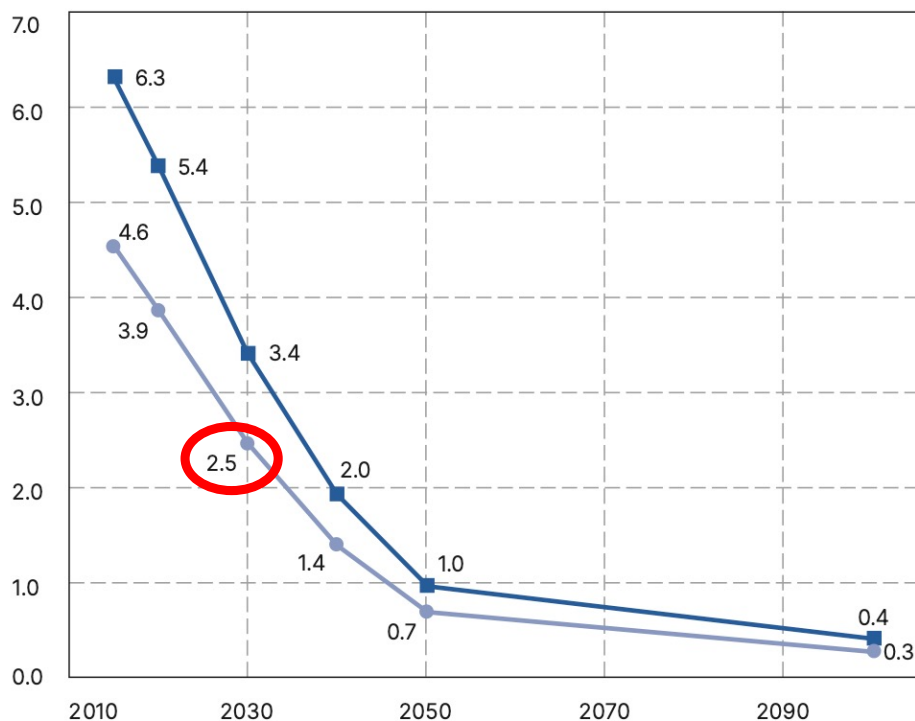
- 1.5°C window closing
- Demand-side measures absolutely necessary





# Carbon (Footprint) Budget

Carbon Footprint Budget (tCO<sub>2</sub>e/cap/yr)



- Total carbon footprint 1.5 degree (tCO<sub>2</sub>e/cap/yr)
- Lifestyle carbon footprint 1.5 degree (tCO<sub>2</sub>e/cap/yr)

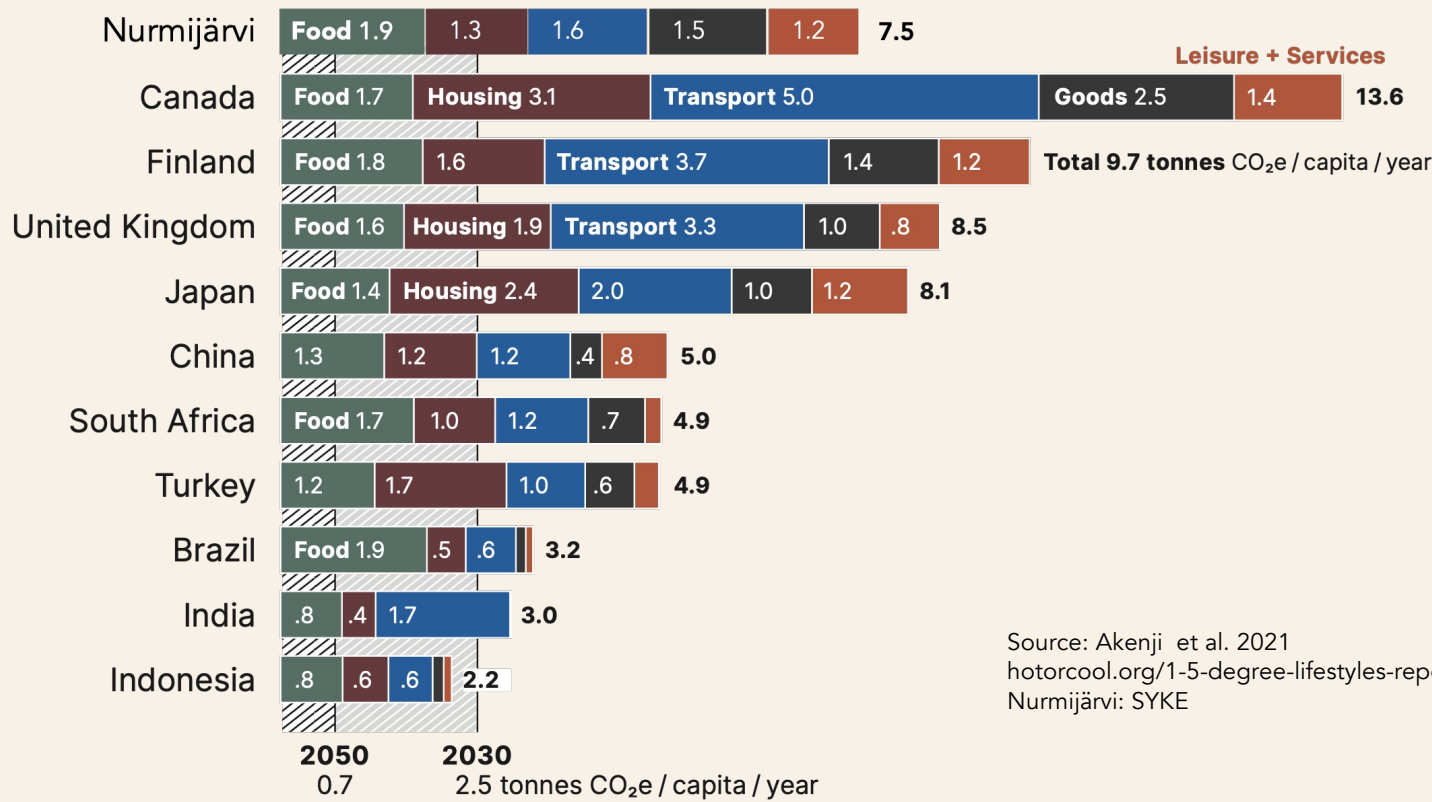
Note: Global total emission budget was calculated as a mean of "A2" scenario from Ranger et al. (2012) and "Low Non-CO<sub>2</sub>" and "All Options" scenarios from Van Vuuren et al. (2018) for 1.5D Scenario. The emission budget was divided by population projections from United Nations (2017) and multiplied by the household footprint share estimated by Hertwich and Peters (2009) to estimate lifestyle carbon footprint budget.





# Carbon footprint now and targets 2030 & 2050

From 10 tonnes to 2.5, 1.4 and 0.7 tonnes



Globally unified targets for the lifestyle carbon footprints

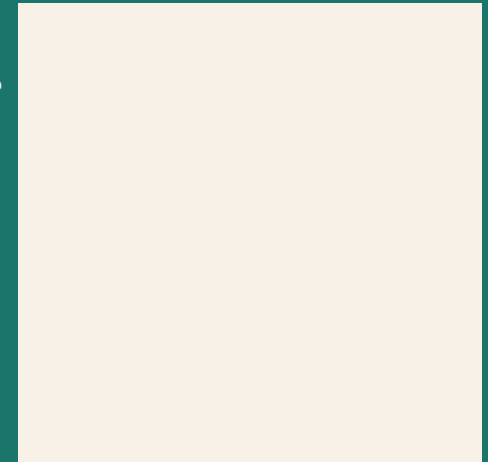
Source: Akenji et al. 2021  
 hotorcool.org/1-5-degree-lifestyles-report  
 Nurmijärvi: SYKE



# Carbon Footprint



Carbon intensity



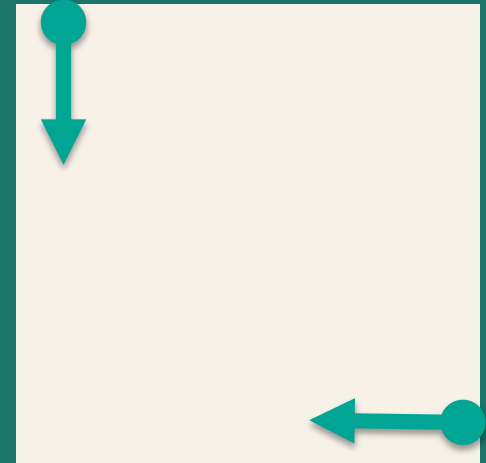
Consumption amount



# Carbon Footprint



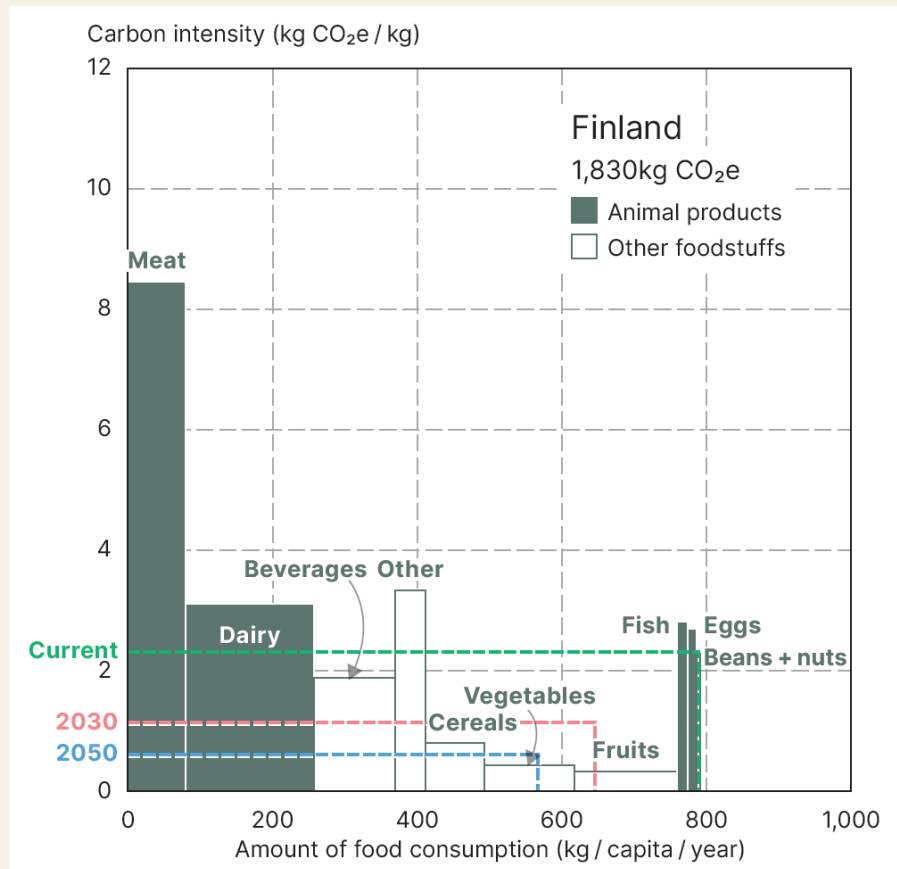
Carbon intensity



Consumption amount



# Carbon Footprint of Foodstuffs in Finland



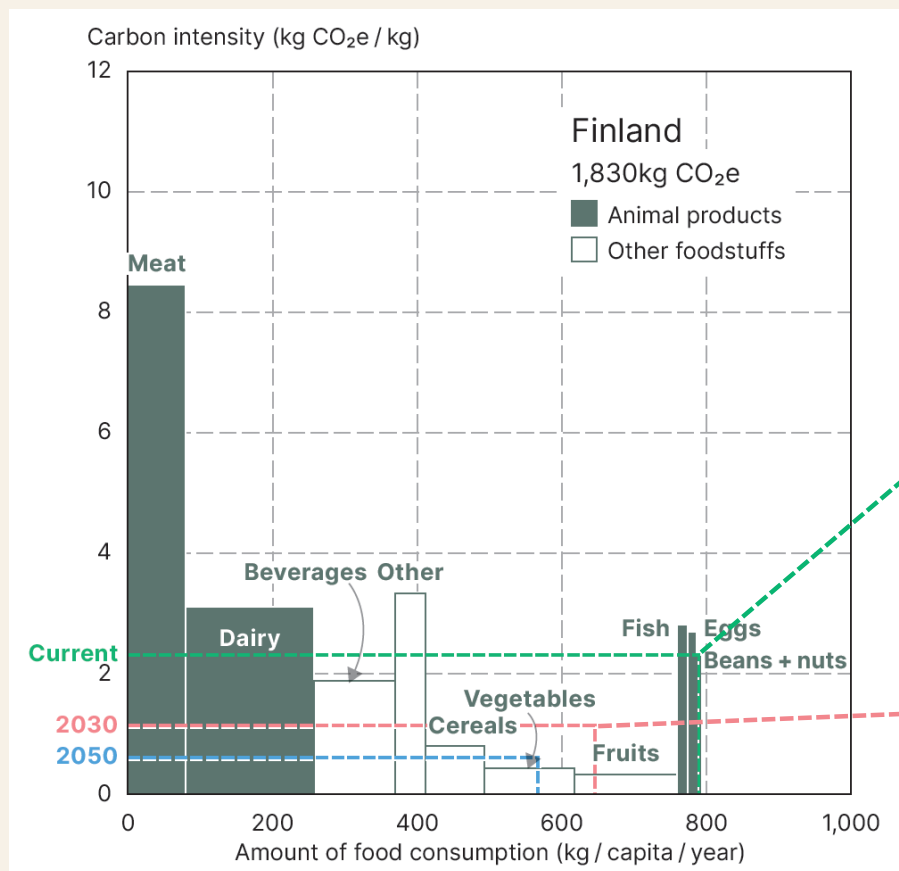
## Carbon Footprint

- 1830 kg (range 3/10)
- 19% of whole footprint
- 73% of target for 2030

## Out of this carbon footprint is

- 71% animal-based (36% of consumption)
- 37% meat products (10% of consumption)
- 30% dairy products (22% of consumption)

# Foodstuffs: present vs. targets

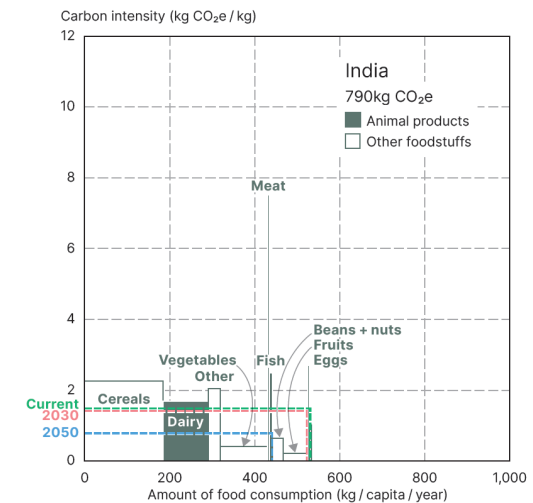
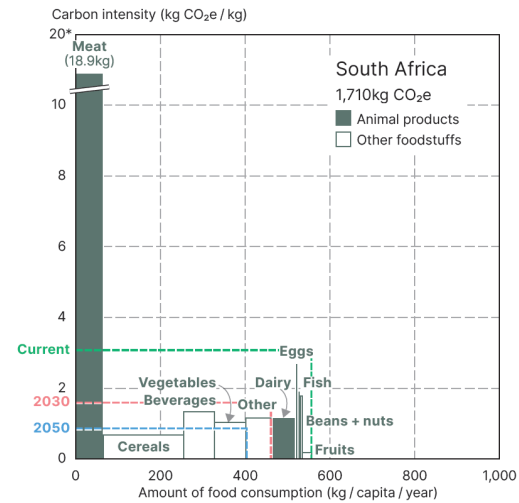
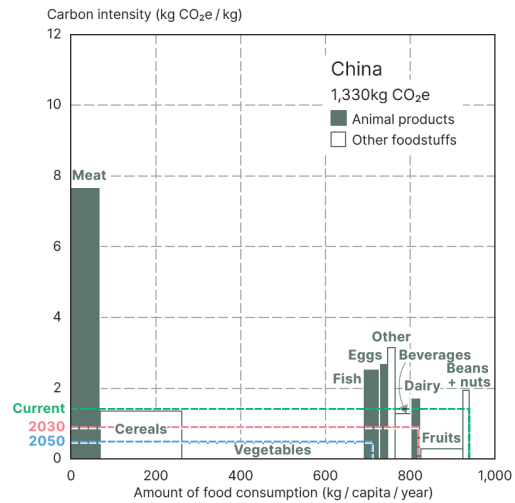
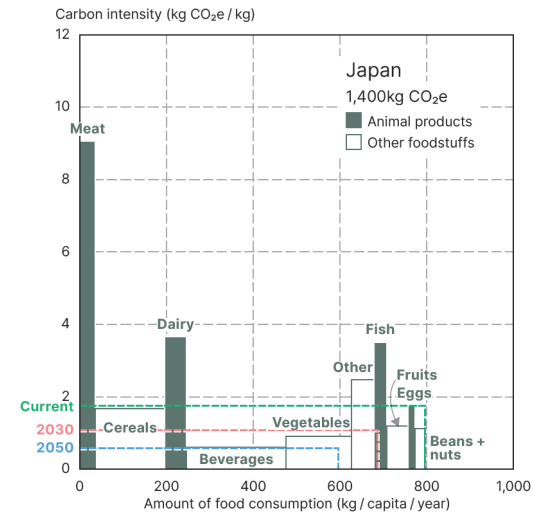
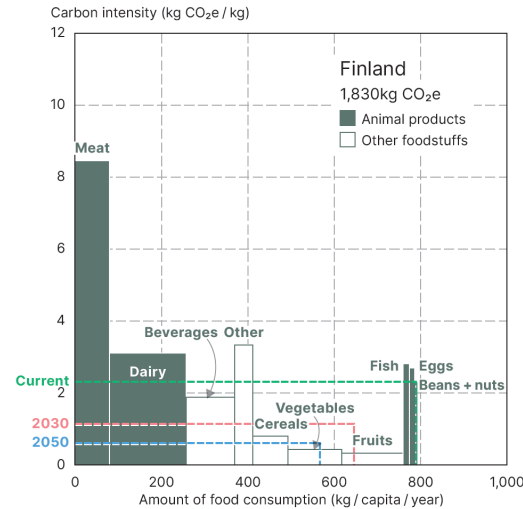
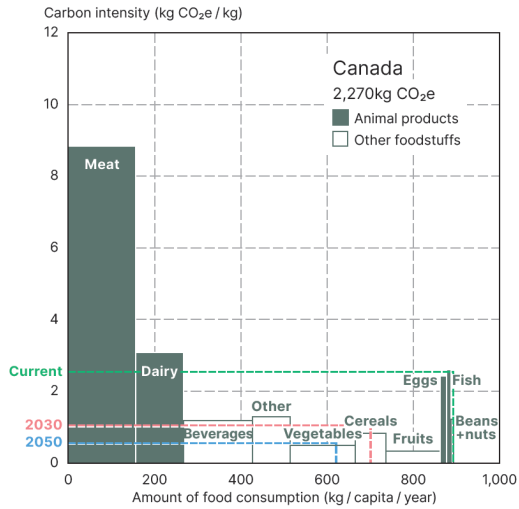


2019:  
790 kg  
\* 2,3 kg/kg  
= 1830 kg

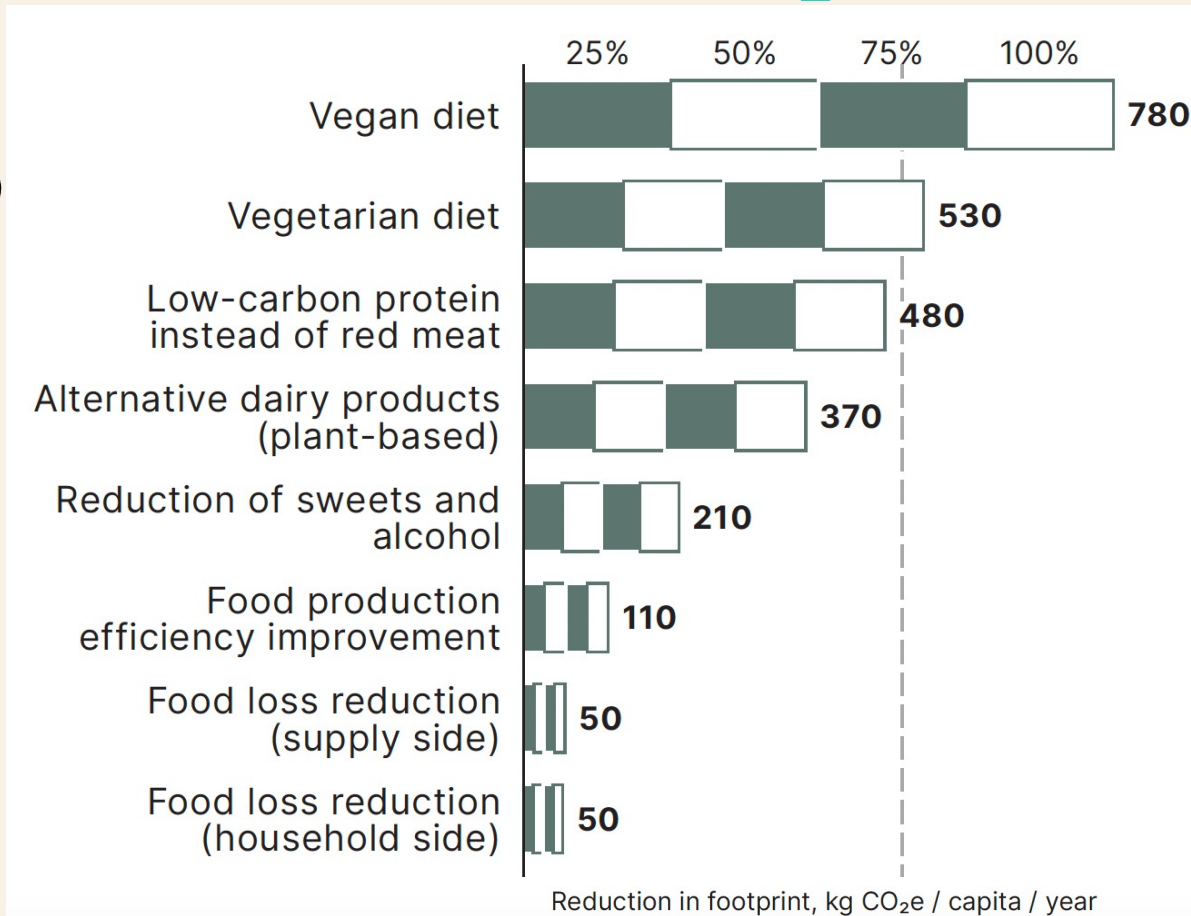
2030:  
~ 650 kg  
\* ~ 1 kg/kg  
= ~ 650 kg

Source: Akenji et al. 2021  
[hotorcool.org/1-5-degree-lifestyles-report](http://hotorcool.org/1-5-degree-lifestyles-report)

# Food: Comparison



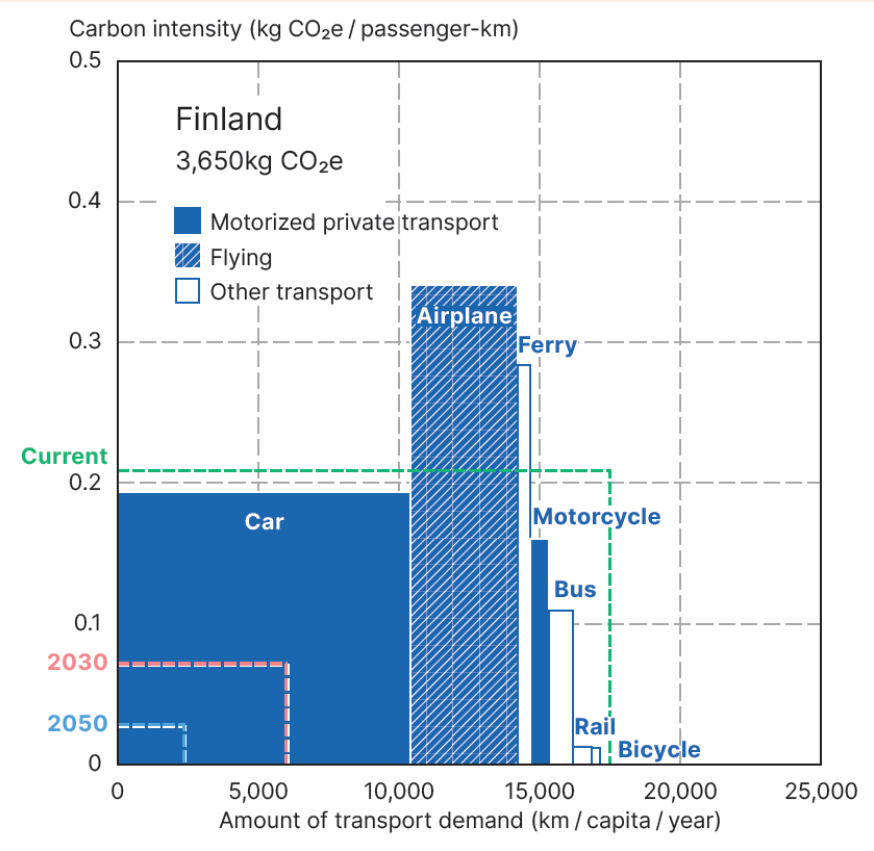
# Food: most relevant reduction options



Source: Akenji et al. 2021  
[hotorcool.org/1-5-degree-lifestyles-report](http://hotorcool.org/1-5-degree-lifestyles-report)



# Carbon footprint of mobility in Finland



## Carbon footprint

- 3650 kg (range 2/10)
- 38% of whole footprint
- 146% of target for 2030

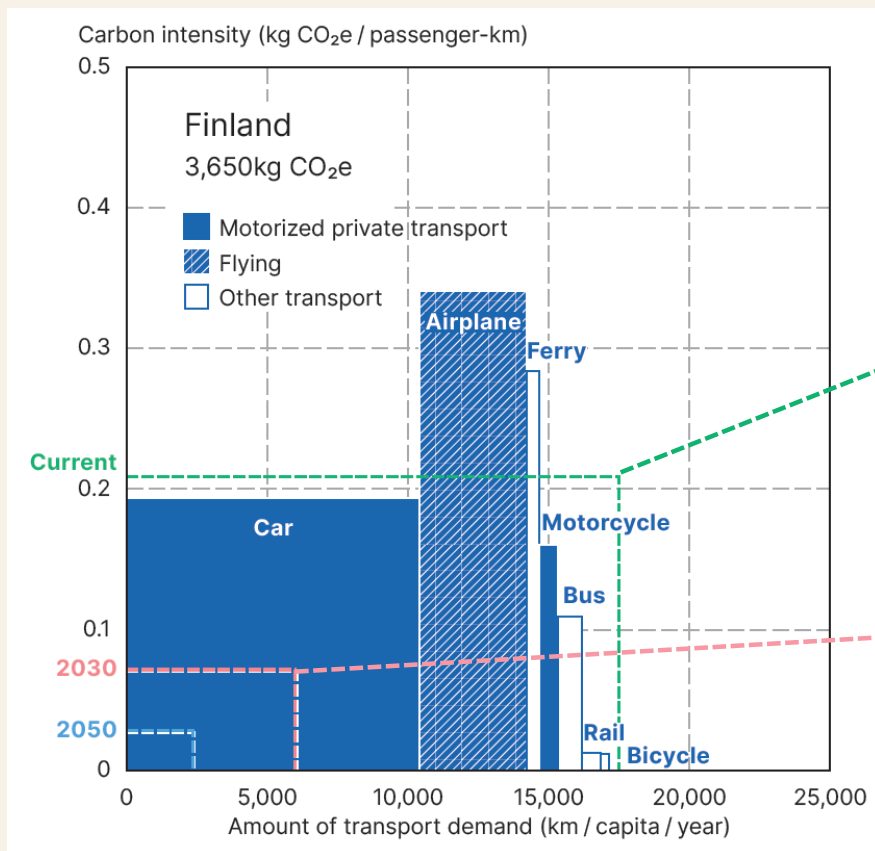
## Out of this footprint is

- 55% from car-driving (60% of consumption)
- 35% flying (22% of consumption)
- 4% ferries (3% of consumption)

Source: Akenji et al. 2021  
[hotorcool.org/1-5-degree-lifestyles-report](https://hotorcool.org/1-5-degree-lifestyles-report)



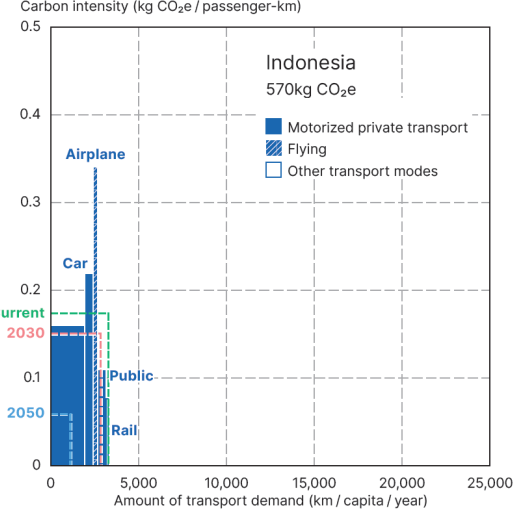
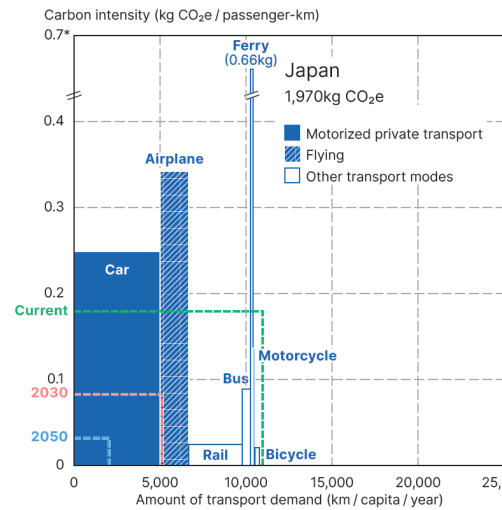
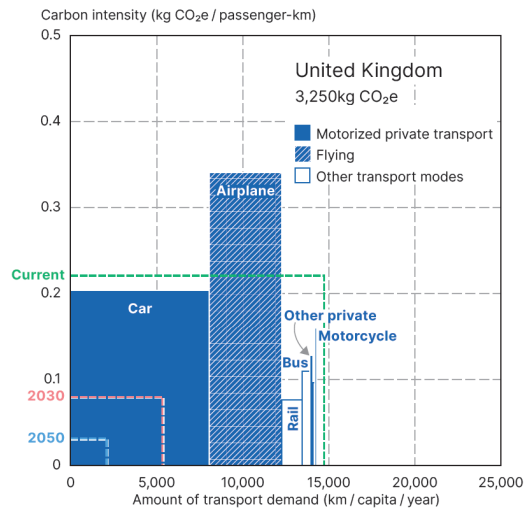
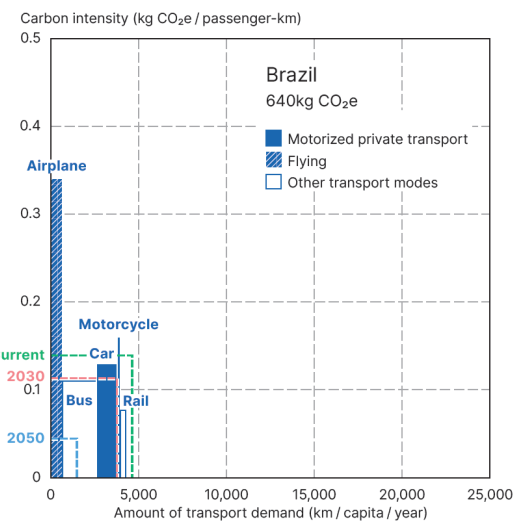
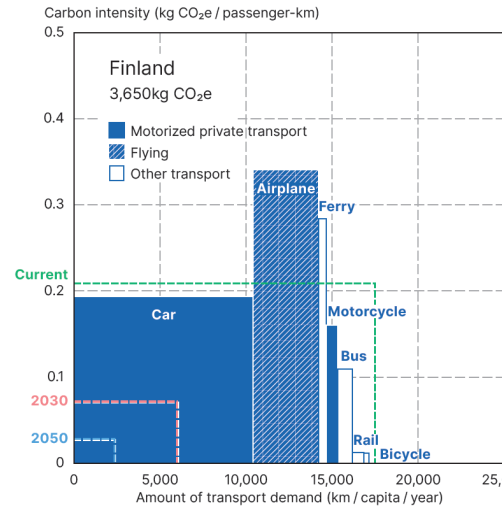
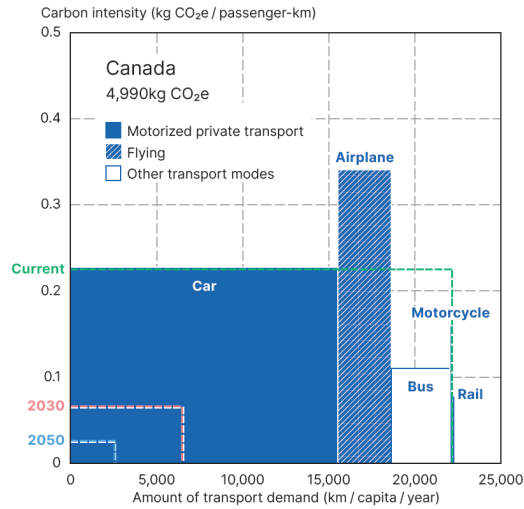
# Mobility: present vs. targets



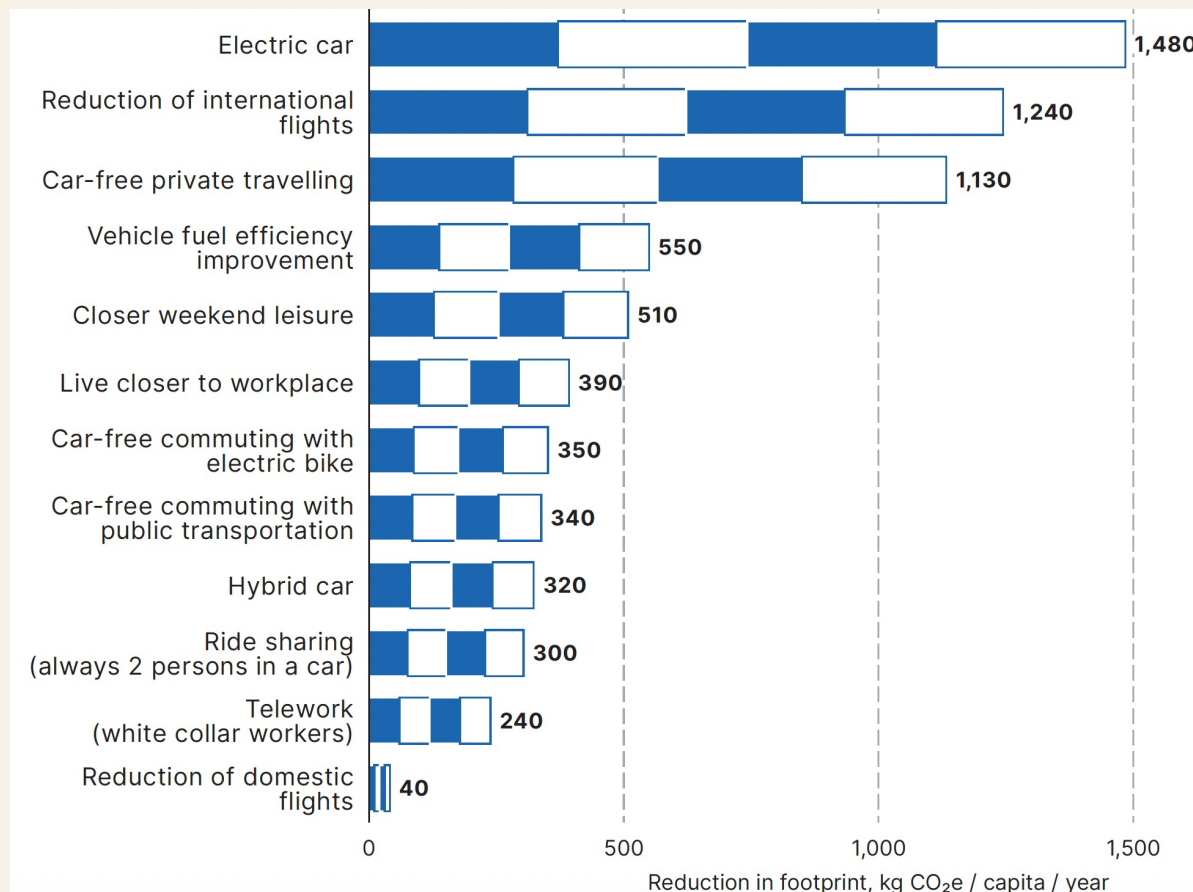
2019:  
17 500 km  
\* 210 g/km  
= 3650 kg

2030:  
n. 6500 km  
\* n. 70 g/km  
= n. 450 kg

# Mobility: Comparison



# Mobility: most relevant options



Source: Akenji et al. 2021  
hotorcool.org/1-5-degree-lifestyles-report



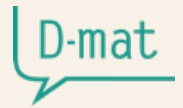
# The Climate Puzzle

- Planning and educational game on scientific basis
- Paris Agreement from a lifestyle perspective
- Answers to common questions and concerns about sustainable lifestyles
- Learn about your own carbon footprint's relation to the 1.5-degree target
- Choose sustainable lifestyle actions to reduce your carbon footprint
- Make your footprint reduction plan till 2030 and try out your actions
- Personal plan – discussion – education – research

1-5  
Pers.

13 +

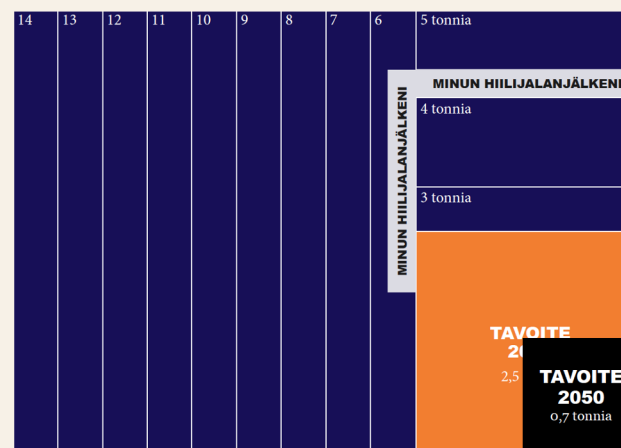
50-75  
Min



Open package

Mark starting point  
= your carbon footprint

Choose goal



# Choosing options (1/2)

## Option cards

- Description in the back
- Several sizes of some options
- Doubling (or so) size with empty pieces
- Halving (or so) by covering with other piece(s)



## Choosing options (2/2)

### Choose

- Options you could already do
- Options you can't do yet but by 2030

### Avoid

- Options you already do
- Overlapping options (or at least take it into account)

### Add

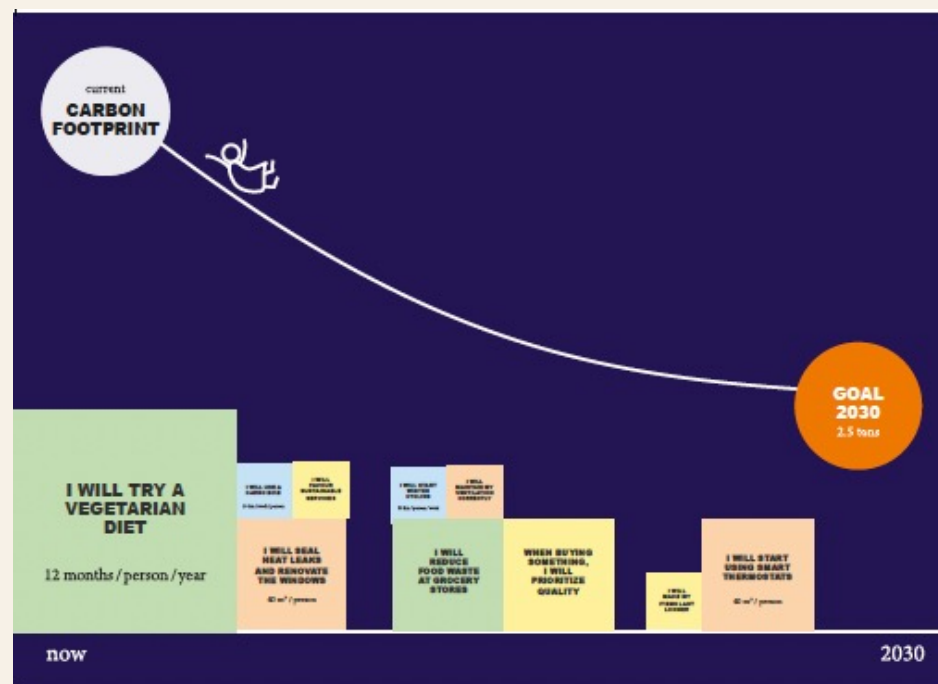
- Options that fit into your lifestyle but are not in the puzzle
- Make a rough quantification of their effects and mark them by post-its into your board



# Timeline

## Other side of gameboard

- Make your personal climate plan 2030
- Choose the suitable time to start implementing each option
- From now till 2030
- You are free to choose the time but you may remember that the earlier the better

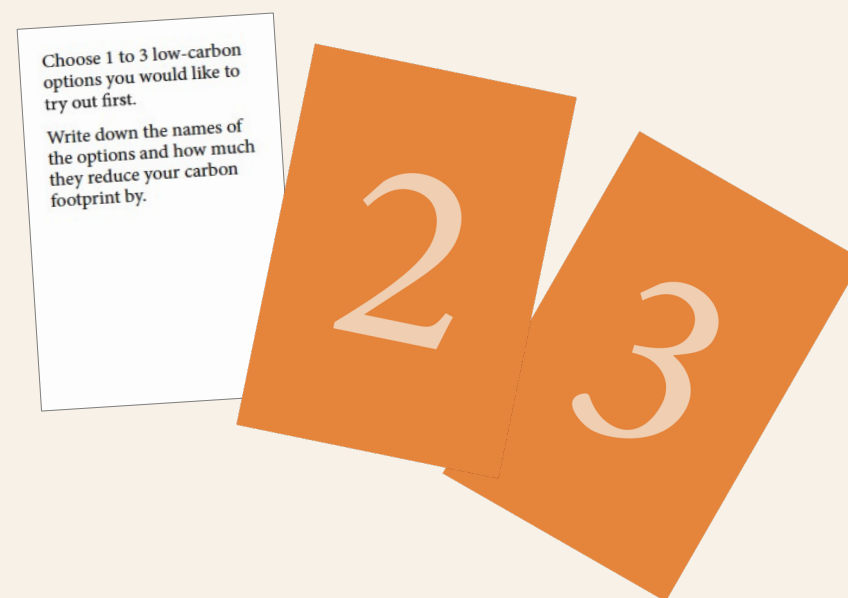




## Action cards

### Action cards

- Choose options for your own experiments
- Utilize the action cards for planning your experiments



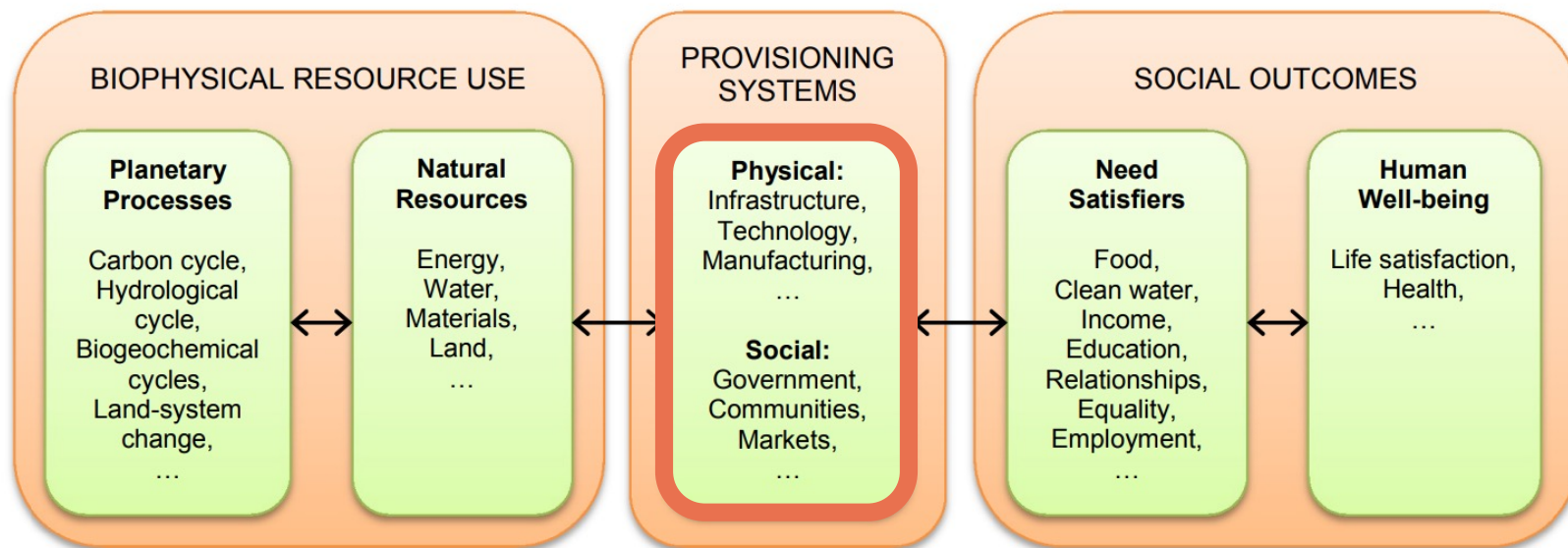
## Design for One Planet

# Df1P

## Solutions for our sustainable future



# Framework showing the link between planetary processes and human well-being



Source: Steinberger et al.

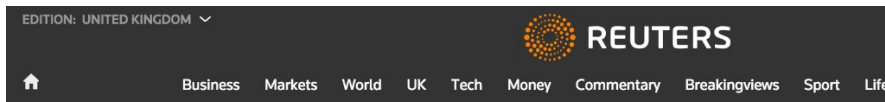
# The growing trend of plant-based food



https://oumph.se/en/



http://goldandgreenfoods.com/



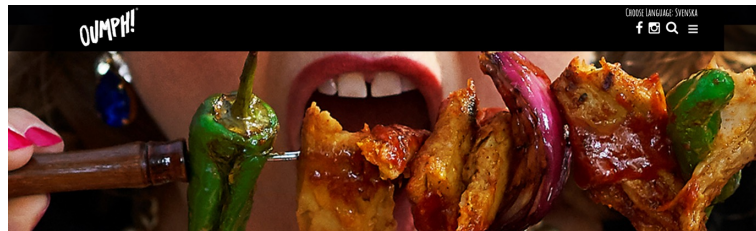
HEALTH NEWS | Mon Sep 26, 2016 | 8:33am BST

## Investors urge food companies to shift from meat to plants



By Simon Jessop | LONDON

A group of 40 investors managing \$1.25 trillion in assets have launched a campaign to encourage 16 global food companies to change the way they source protein for their products to help to reduce environmental and health risks.



www.oatly.com/

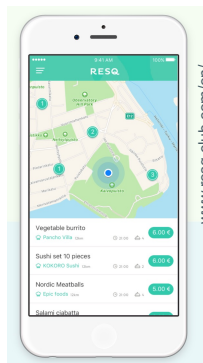
### INGREDIENTS

Haferbase (Wasser, Hafer 10%), Rapsöl, Säureregulator (Dikaliumphosphat), Calciumcarbonat, Calciumphosphat, Jodsalz, Vitamine (D2, Riboflavin und B12).

Where does it come from?

### NUTRITIONAL VALUE

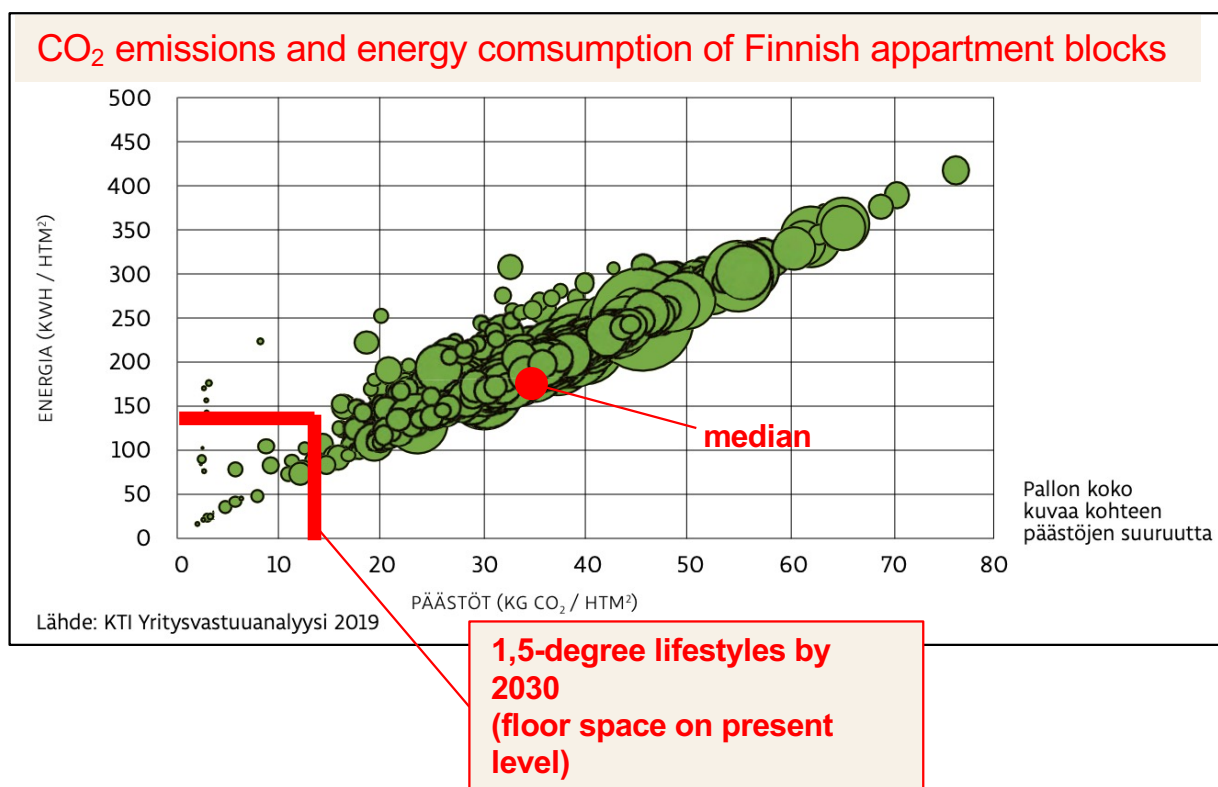
Nährwerte pro 100 ml:  
 Energie 247 kJ/59 kcal  
 Fett 3,0 g  
 davon gesättigte Fettsäuren 0,3 g  
 Kohlenhydrate 6,6 g  
 davon Zucker 4,0 g\*  
 Ballaststoffe 0,8 g  
 Eiweiß 1,0 g  
 Salz 0,10 g  
 Vitamin D 1,5 µg (30%\*)  
 Riboflavine 0,21 mg (15%\*\*)   
 Vitamine B12 0,38 µg (15%\*\*)   
 Calcium 120 mg (15%\*\*)   
 Beta-Glukane 0,4 g



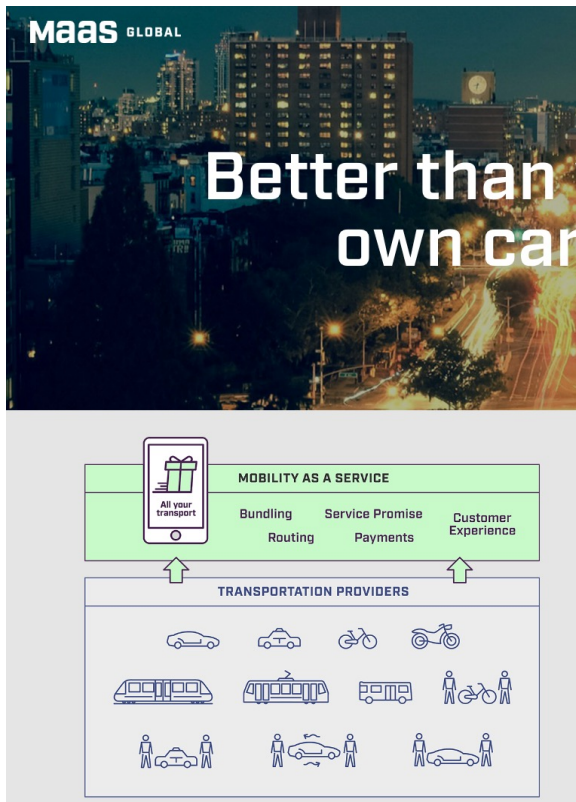
www.resq-club.com/en/

Lettenmeier 2024

## Business potential: Who is going to do this job?



# The new flexibility – Mobility as a Service (MaaS)



**MaaS Finland to revolutionize the global transportation market**

**MONTHLY MOBILITY**

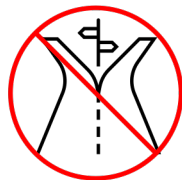
Enjoy unlimited local public transport and bike share use, with a monthly quota of points to use freely on taxis, rental cars, long-distance trains and value-added services. Earn extra points by making smart travel choices.

# Politics – Some examples of opting out

## Welsh freeze all new road building projects

the Welsh government wants to shift money from new roads to maintaining existing routes and investing in public transport.

Wales is aiming to reach net-zero carbon emissions by 2050.



## France ban short haul flights.

government banned journeys that could be made under two-and-a-half hours - to reduce climate impacts from flying

Instead, the government want to promote train travel









DeCarbon  
Home

# When are we gonna take climate change seriously?

Michael Lettenmeier

"Leisure flights  
to Lapland  
destroy  
250,000  
people's living  
prerequisites"

YLE 8 Jan 2024

Ilmasto

## Lapin lentoturismi vie elämän edellytykset 250 000 ihmiseltä, väittää ilmastotutkija

Lappi on saanut kuluvana talvena ennätysmäiset määrät turisteja. Kasvanut lentoturismi vaikuttaa ilmastoon. Ministeri tyrmää huolen lentämisen vaikutuksista.



Kuuntele juttu 6:06



Lappiin on lentänyt vuodenvaihteessa päivittäin tuhansia turisteja. Kuva Rovaniemeltä lähtöruuhkasta. Kuva: Jyri Tynkkynen / Yle

“Avaava  
tulokulma”

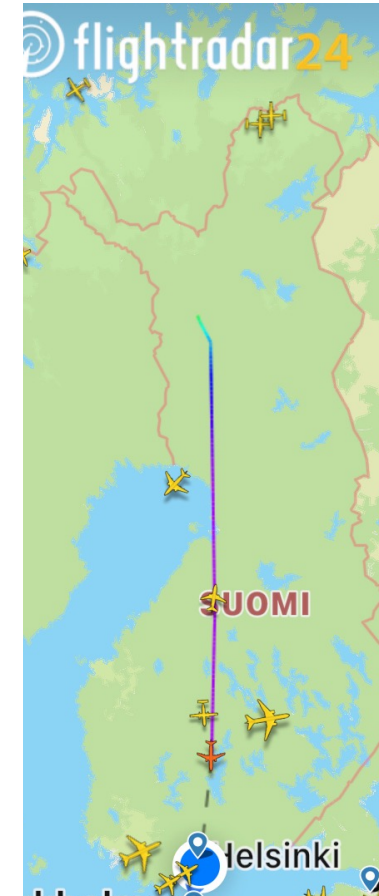


“Paska-  
puhetta”



800,000  
people's  
return flights  
to Lapland

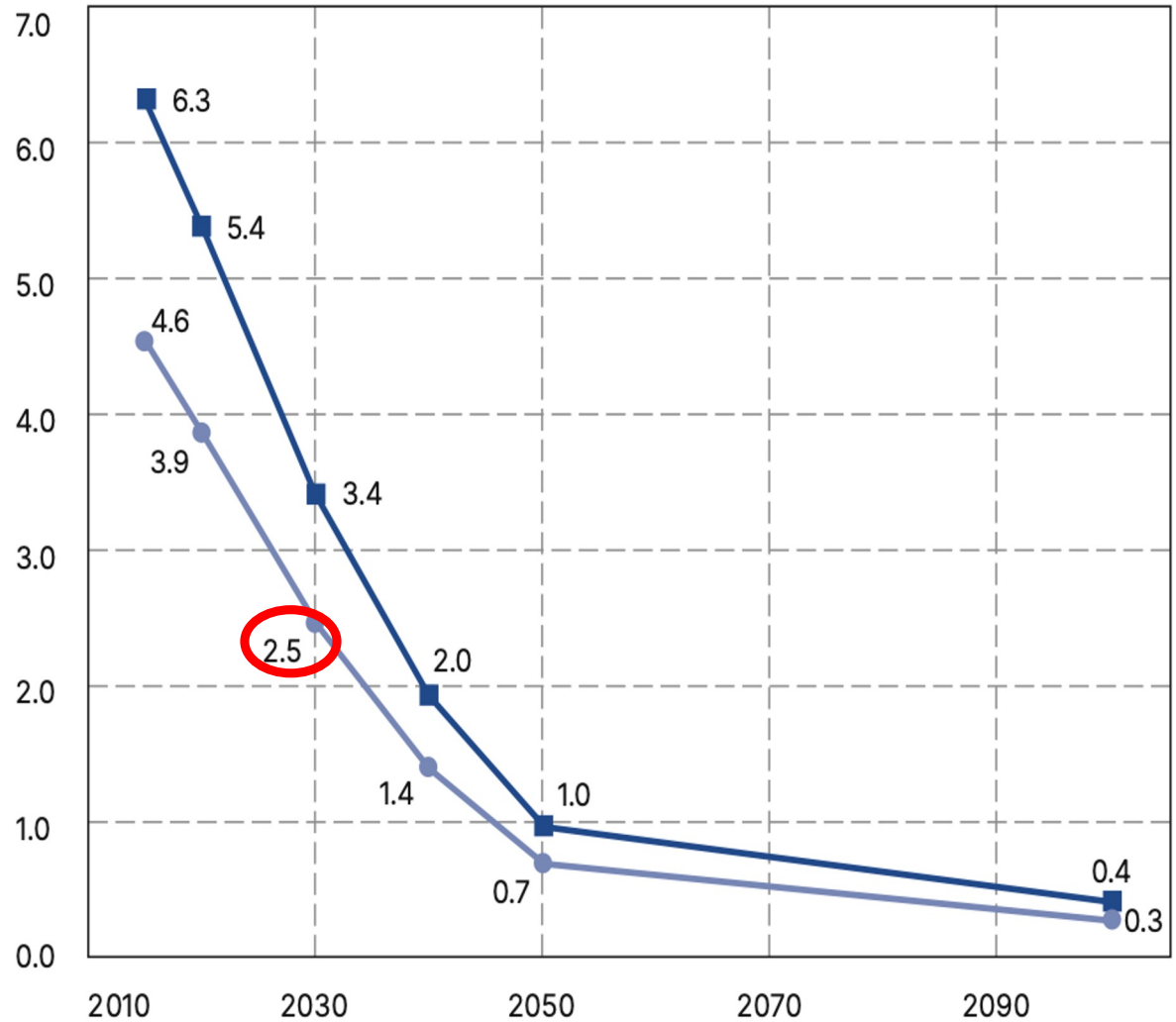
~600,000  
tonnes CO<sub>2</sub>e



600,000  
tonnes CO<sub>2</sub>e  
~250,000  
people's  
carbon  
budget  
(2030)

Carbon Footprint Budget (tCO<sub>2</sub>e/cap/yr)

Lähde: Akenji et al. 2021  
[hotorcool.org/1-5-degree-lifestyles-report](http://hotorcool.org/1-5-degree-lifestyles-report)



# Flights or food&housing?



# Continuing soft speech?

## Ikävimpiä asioita ilmaston lämpenemisestä ei edes sanota ääneen, sanoo Kerttu Kotakorpi

Ilmastonmuutos koskee ihan kaikkia, eikä se missään nimessä ole Suomelle tai suomalaisille mitenkään positiivinen asia, meteorologi Kerttu Kotakorpi sanoo. HS:n Puheenvuoro-sarjassa esitetään kiinnostavia keskustelunavauksia.



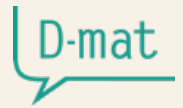
Meteorologi Kerttu Kotakorpi pyöräilee läpi vuoden. KUVA: MIKA RANTA / HS



# ...and skipping the 1.5-degree target?



# Group assignment



Make a suggestion on how to communicate one-planet lifestyles to people in an effective way related to your group's topic

- Urgency
- Importance
- Effectiveness
- Acceptance
- Etc.

25.4.2022

Design Approaches to Sustainable Consumption



# Kiitos!

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#onepointfive | #puolitoista | #climatepuzzle | #ilmastopalapeli