Interaction with consumers:
1.5 lifestyle project and its progress

IGES　SCP

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Background: why do we need 1.5-degree lifestyle?

…Strengthened multilevel governance, institutional capacity, policy instruments, technological innovation and transfer and mobilization of finance, and **changes in human behaviour and lifestyles are enabling conditions** that enhance the feasibility of mitigation and adaptation options for 1.5-degree-consistent systems transitions. (high confidence) (IPCC, 2018)

The transition to a net-zero greenhouse gas emissions economy is not just about technology and jobs. It is about **people and their daily life** (...) **Individual lifestyle choices can make a difference** (and lead to solutions to climate change) while improving the quality of life. (European Commission, Long Term Climate Neutral Vision. 2018.)

"**Lifestyle innovation**", in which each **citizen transforms his or her lifestyle** to a sustainable one, has a significant impact on climate change, both **directly and indirectly**, through consumption behaviour and the use of fuels, energy and resources. (Long-term strategy as a growth strategy under the Paris Agreement. 2019.)
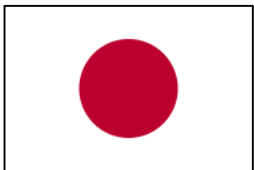
1.5-degree project: Phase 1

- Published at the WRF in Belgium in February 2019
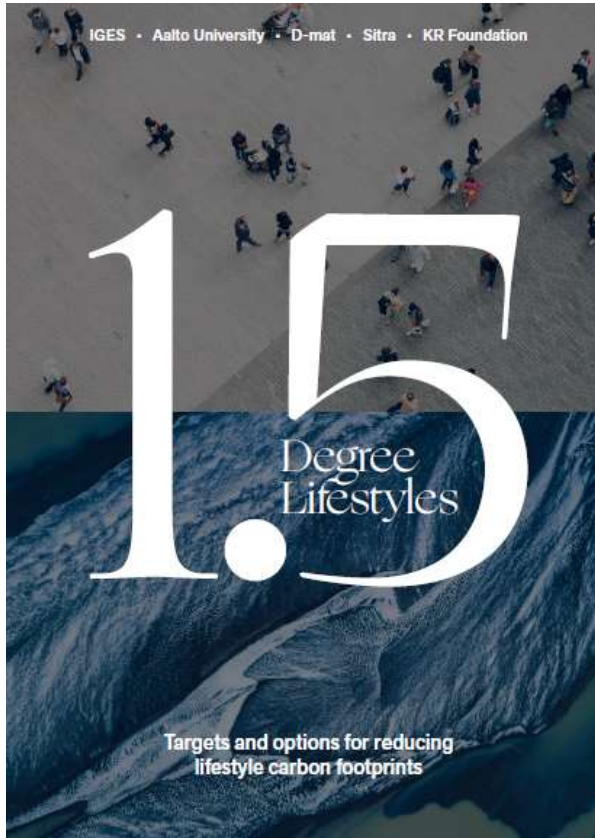
➢ Provided quantitative analysis of the impact of consumers on climate change through their lifestyle using **lifestyle CF**

➢ Explored targets of lifestyle CF (gCO_2e per capia):

global average: **4.6** (2010) ➔ **2.5** (2030) ➔ **0.7** (2050)

Japan: **7.6** (2017) ➔ **2.5** (2030) ➔ **0.7** (2050)

Finland: **10.4** (2017) ➔ **2.5** (2030) ➔ **0.7** (2050)

Brazil:: **2.8** (2017) ➔ **2.5** (2030) ➔ **0.7** (2050)

Lifestyle is defined as 'clusters of habits and patterns of behaviour **embedded in a society** and facilitated by institutions, norms and infrastructures that frame individual choice' (Akenji and Chen 2016).

Lifestyle Carbon Footprint (CF): Greenhouse gas emissions from the lifecycle of products and services consumed by households, including **indirect** emissions such as from production, transportation to final disposal, as well as **direct** emissions

1.5-degree project: Social experiment (Phase 2)

☐ To investigate how to enable changes of lifestyle

☐ To develop a prototype of a City Lifestyle Scenario with citizens' participation (Thinking Lab.)

➢ A social experiment has been carried
   out in 6 cities in 5 countries
   - Sao Paulo in Brazil
   - Cape Town in South Africa
   - Delhi in India
   - Nonthaburi in Thailand
   - **Kyoto** and Yokohama in Japan

Kyoto's case

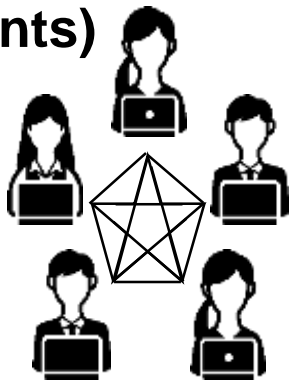**Quantitative analysis of lifestyle CFP at national and city level**
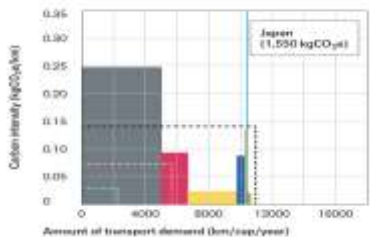
City scenario

Option catalogue (65 decarbonised options)
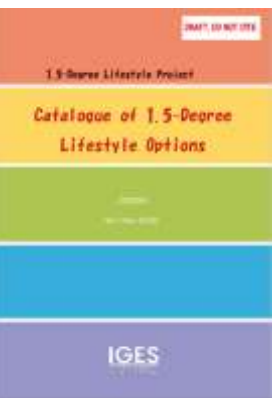
On-line puzzle game
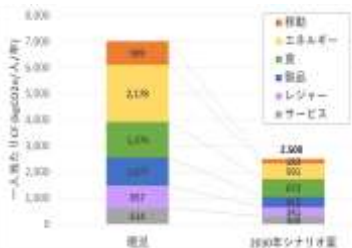
Recruitment (29 participants)

Online workshop 1
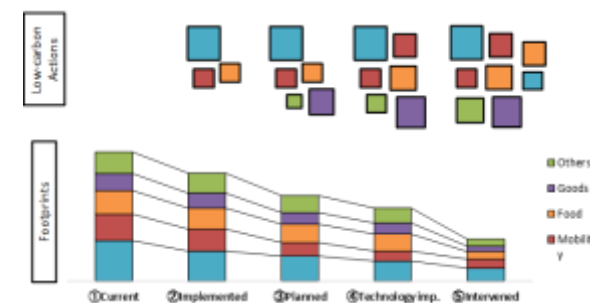
Household experiment (two-weeks)

Online workshop 2

Main findings – current implementation status

☐ All options are feasible as they have been implemented/are expected to be implemented by at least one or more participants

☐ 30% of the options have already been put into practice, but 50% of them still need to be tried out.

Implementation status in the past year	Kyoto
1 Almost 100% implemented	**16%**
2 Almost 75% implemented	**17%**
3 Almost 50% implemented	11%
4 Almost 25% implemented	10%
5 Not implemented (almost 0%)	**46%**
Total	**100%**

Implementation status in the household experiment	Kyoto
1 Almost 100% implemented	**23%**
2 Almost 75% implemented	**14%**
3 Almost 50% implemented	10%
4 Almost 25% implemented	8%
5 Not implemented (almost 0%)	**45%**
Total	**100%**

Domain: Mobility

Options that are available in daily life and can be decided by the individual are already in place.

Options that are not optional, do not exist nearby, are expensive, or not possible to decide alone, or difficult to understand, are not implemented.

Mobility

	Implementation level *
Use bus and bicycle instead of taxi	0.76
Buy in bulk	0.55
Eco-driving	0.55
Private rail travel	0.48
Fun in the neighbourhood	0.45
Long holidays in Japan/community	0.45
Use train instead of plane	0.41
Use train instead of car	0.34
Live close to working place	0.31
Compact-city	0.28
Private bus travel	0.28
Bicycle/Train commuting	0.21
Bus commuting	0.14
Ridesharing	0.14
Use bus instead of car	0.10
Car sharing	0.10
Hybrid vehicles	0.10
Light-duty vehicle	0.07
Telework	0.03
Online homecoming	0.03
Electric vehicles	0.03
Plug-in hybrid vehicles	0.03

(* % of those who have done 75% or more)

Domain: Housing and energy *

Housing	Regulate temperature by clothing		0.76
Housing	Heating by air-conditioner		0.45
Housing	Simple window insulation		0.45
Housing	LED bulb		0.41
Housing	Compact housing		0.41
Housing	Electrifi cation with IH cooking heater +renewable ener		0.21
Housing	Thermal insulation renovation		0.14
Housing	Hot water supply by heat pump (Eco-cute)		0.14
Housing	Power generation by rooftop solar panels		0.14
Housing	Nudging saves energy		0.10
Housing	Switch to 100% renewable energy electricity		0.10
Housing	Hot wate supply by solar water heater		0.07
Housing	Life cycle carbon minus housing		0.03
Housing	Zero-energy house		0.03
Housing	Nearly zero energy housing		

Domain: Food

Domain	Options		Implementation level
Food	Reducing food loss at home		0.83
Food	Reducing food loss at restaurants		0.83
Food	Refrain from smoking and drinking alcohol		0.76
Food	Balanced and healthy home cooking		0.69
Food	Balanced, healthy drinks and snacks		0.55
Food	Balanced and healthy taking-in meal		0.55
Food	Seasonal production and consumption of vegetables		0.48
Food	Eating out in a balanced and healthy way		0.41
Food	Local production and local consumption of vegetables		0.28
Food	Poultry based diet (White vegetarian)		0.14
Food	Vegan food		0.07
Food	Switch to alternative meats		0.07
Food	Seafood-centered diet (Pescatarian diet)		0.07
Food	Vegetarian food		0.03

(* % of those who have done 75% or more)

Main options tried out for the 2 weeks household experiment (number of people)

Conditions not suitable 6%
Improvement 21%
As usual 73%

Option	Number
Buy in bulk	14
Private bus travel	10
Online homecoming	10
LED bulb	10
Seafood-centered pescatarian diet	15
Local vegetables	15
Vegetarian food	14
Balanced&healthy drinks and snacks	13
Vegan diet	12
Seasonal vegetables	11
Balanced&healthy home cooking	11
Balanced&healthy take-out meal	10
Reducing food loss at home	10
Switch to alternative meats	10
Poultry based white vegetarian	10
Carefully select/use up daily necessities/consumables	10

Obstacles to behaviour change
(from the household experiment diary)

Lack of infrastructure, products and services

Infrastructure, products and services exist but are not well known.

Does not fit in with the rules of the workplace, community, etc

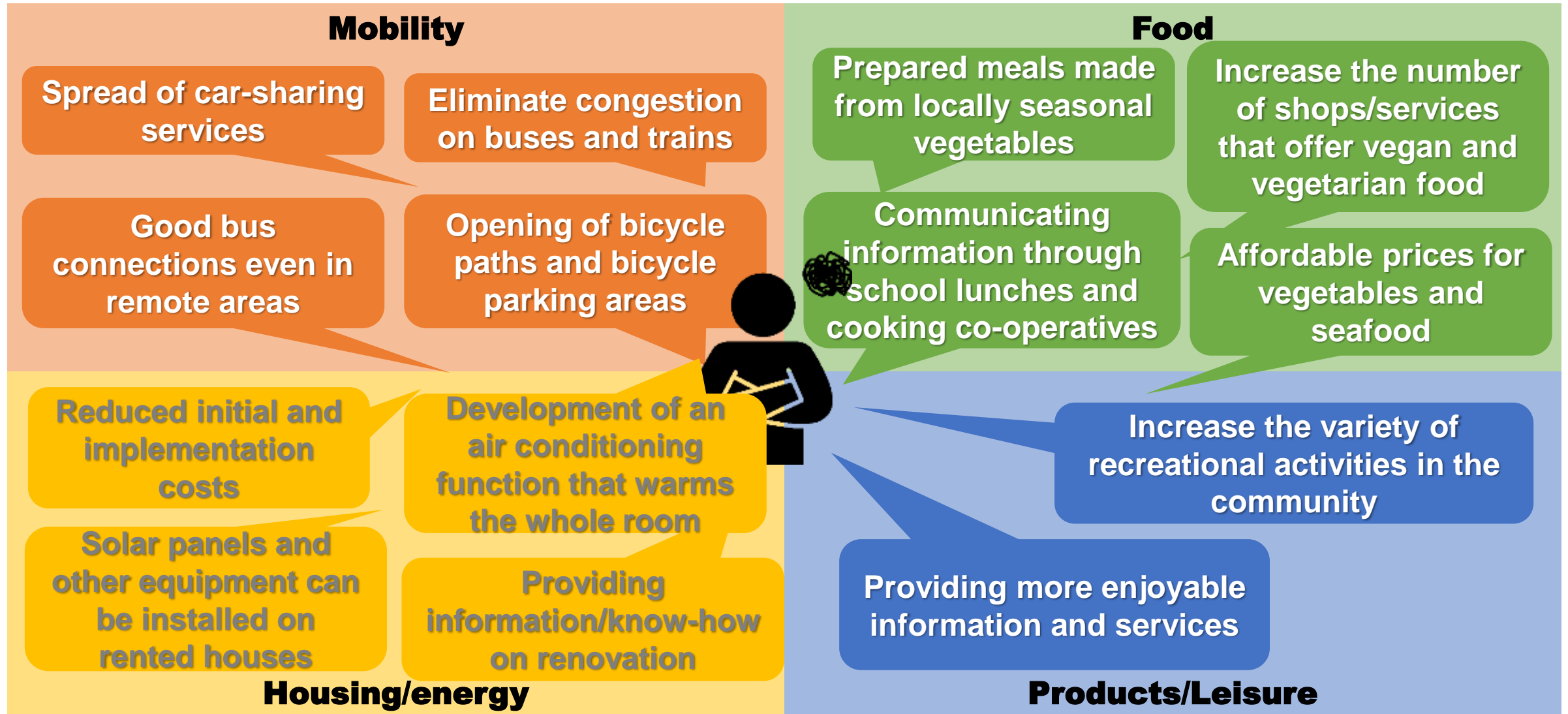**Conflicts with other people's needs**

Conflicts with personal needs

High costs

Low accessibility

Expected enabling conditions for behaviour change (from the household experiment diary)

Mobility
- Spread of car-sharing services
- Eliminate congestion on buses and trains
- Good bus connections even in remote areas
- Opening of bicycle paths and bicycle parking areas

Food
- Prepared meals made from locally seasonal vegetables
- Increase the number of shops/services that offer vegan and vegetarian food
- Communicating information through school lunches and cooking co-operatives
- Affordable prices for vegetables and seafood

Housing/energy
- Reduced initial and implementation costs
- Development of an air conditioning function that warms the whole room
- Solar panels and other equipment can be installed on rented houses
- Providing information/know-how on renovation

Products/Leisure
- Increase the variety of recreational activities in the community
- Providing more enjoyable information and services

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Obstacles	Enabling conditions	National & Local governments	Business	Citizens & CSOs
Infrastructure, Service or Goods do not exist (Ex. Rental Zero-Energy Houses)	Infrastructure, Service or Goods are provided	Reviewing regulations, Infrastructure development, Investment promotion, Public procurement	Provision of goods and service, Joint-development of goods and services with governments & citizens, Services improvement	
Infrastructure, Service or Goods exist but are not well known (Ex. 100% Renewable Energy Contract)	Information on infrastructure, services or goods are provided	User-friendly information provision, Labeling, Media campaign	Provision of user-friendly information, Consulting services (e.g. transportation), Provision of searching service apps, etc., Events	Joint-event with local governments or business
Infrastructure, Service or Goods exist but are too expensive (Ex. Zero-Energy Houses)	Infrastructure, Service or Goods become more affordable	Tax reform, Subsidy, Price reduction	Provision of more affordable goods and services	
Infrastructure, Service or Goods exist but are too difficult to find and access (Ex.1 Vegan Foods 2 Car sharing)	Infrastructure, Service or Goods become more easily accessed found & obtained	Support citizens & business to create more accessible goods or services	Provision of searching service, mobile apps, etc.	Mapping of goods and services in cooperation with local business, co-ops, etc. Identifying locally available goods and services
Taking the option might cause conflict with other daily needs (Ex. Commuting to workplace on Bus & sending elder family to hospital.)	Options where different needs are met together available	Support citizens & business to create and share options	Services improvement, Joint-development of goods and services with governments & citizens	Group buying, Joint-development of goods and services with governments and business (e.g. Living lab), Sharing citizens' wisdom
Taking the option might cause conflict with others' needs (Ex.1 Online home-coming does not make grandparents happy 2. Vegetarian foods are good for parents but questionable for kids)	Options where needs of different people are met together are available	Support citizens & business and share options	Joint-development of goods and services with governments & citizens	Joint-development of goods and services with governments and business (e.g. Living lab), Sharing citizen's wisdom
Taking the option does not go along with the informal rules or norms of the community or workplaces (Ex.1 Adjust clothes, 2. Can't install rooftop PV on historical areas)	Informal rules and norms are revisited and modified for encouraging low-carbon actions	Support community actions, Encourage business to change office rules, Initiate public-citizen collaboration	Services improvement, Joint-development of goods and services with governments & citizens, Joint-event with citizens groups & communities	Local events / workshops, Revision of rules in cooperation with governments and business

Roles of Government and local authorities

Roles of business sector

Collaboration between citizens, businesses and government

Collaboration and co-creation by stakeholders toward 1.5-degree target
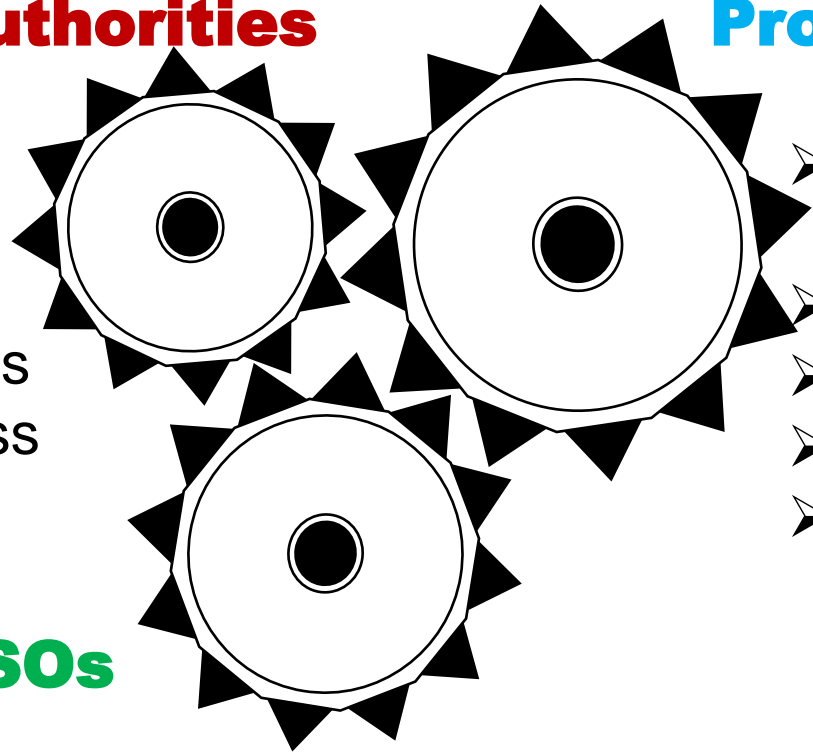
Government and local authorities

- Transition management
- Infrastructure for sustainable choice
- Financing, taxes and subsidies
- Motivation for citizens/business

Producer/Business sector

- Innovative products and services
- New business model
- Information/consultation
- Investment
- Workplace reform

Consumers/citizens/CSOs

- Options for sustainable choices
- Joint-development of goods and services with governments and business (e.g. Living lab),
- Grass-root Initiatives and dissemination actions in community/workplaces/schools

Acknowledgements