DESIGNED WORLD — Limit & innovate

GLOBAL COMMONS — Develop & care

BIG VILLAGE — Relate & share

POCKET LIFESTYLES — Connect & act

Sustainable **L**ifestyles **I**n **M**odels scenarios

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Intent-orientation

environmental psychology

sociology

Motivations → Behaviour Lifestyle Changes

social practice theory

social innovation

Impact-orientation

energy modelling ⇢ **IMAGE** integrated assessment model

agent-based modelling

Behaviour Lifestyle Changes → Outcomes

life cycle assessment

input-output models

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Intent-orientation **Impact-orientation**

1 Scenario narrative building blocks based on criteria and gaps in modelling

- Define scenario criteria
- Develop narratives building blocks
- Identify gaps in modelling

2 Draft scenario narratives & required inputs for quantification

- Create divergence framework
- Draft scenario narratives
- Define inputs for quantification

3 Refine scenario narratives & finalise quantitative assumptions

- Detail scenario narratives
- Refine scenario narratives
- Draft quantitative assumptions
- Finalise quantitative assumptions

4 Finalise scenario narratives & model long-term emission scenarios

- Finalise scenario narratives
- Model scenarios as emission pathways

Research outputs
- Divergent qualitative scenario narratives for systems and lifestyle change
- Quantitative long-term emission scenarios of various lifestyle changes

Scenario narration Stakeholder engagement Scenario quantification

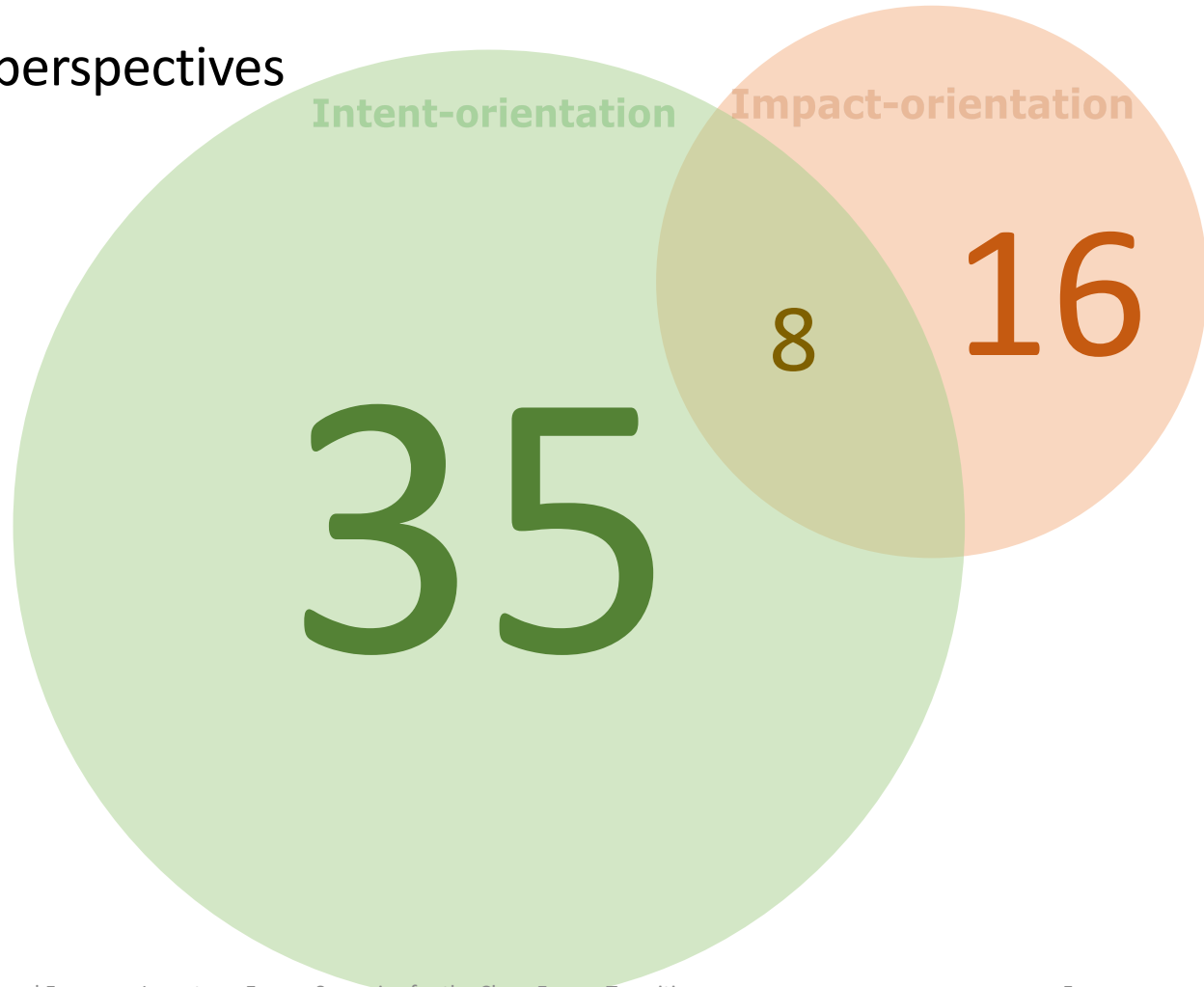**A scenario planning expert was involved throughout the process and as a co-author to follow established methodologies.**

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Co-creation with various perspectives

- advisors
- policymakers

Intent-orientation

Impact-orientation

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Define scenario criteria ✎ → Develop narratives building blocks 🔍

Scenario narratives should be:
- **Relevant**
- **Plausible**
- **Divergent**
- **Clear**
- **Challenging**

top-down / exogenous / externally-driven

individual / household ← | → societal / whole systems

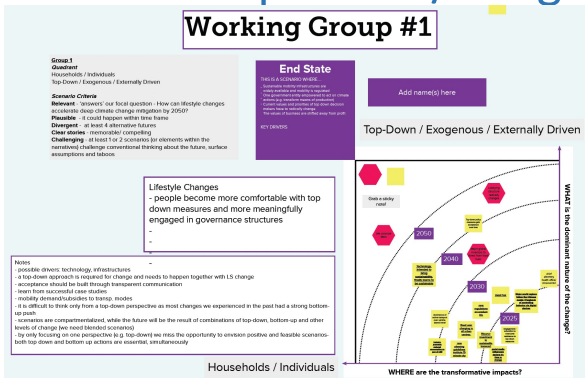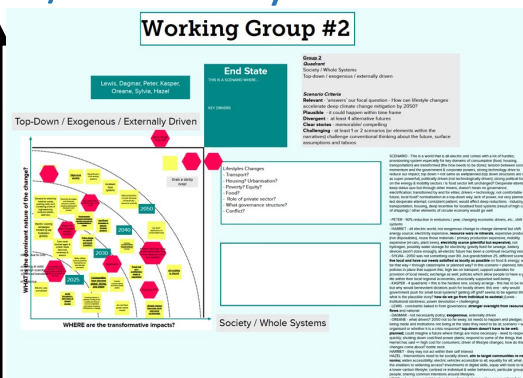WHAT is the dominant nature of change?
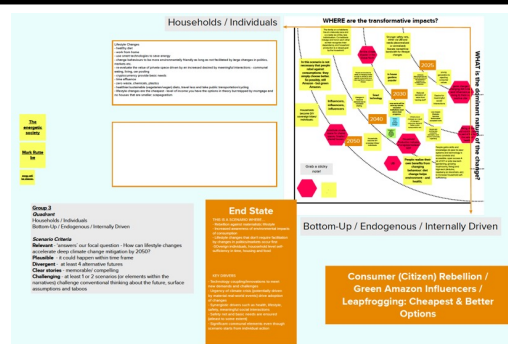
bottom-up / endogenous / internally-driven

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Reference Scenario **Tech-Innovation**	Tagline: **net-zero by tech change**
Lifestyle Scenario **Designed World**	Tagline: **sustainable lifestyles by default**
Lifestyle Scenario **Global Commons**	Tagline: **inclusive global governance system**
Lifestyle Scenario **Big Village**	Tagline: **community-based sustainable living**
Lifestyle Scenario **Pocket Lifestyles**	Tagline: **peer-to-peer lifestyle platforms**

individual values

behaviours
lifestyles
enablers
society

Pocket Lifestyles

Designed World

distributed support

centralised support

Big Village

Global Commons

collective values

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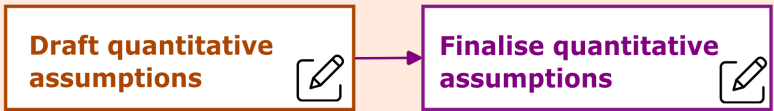| Draft quantitative assumptions ✎ | → | Finalise quantitative assumptions ✎ |
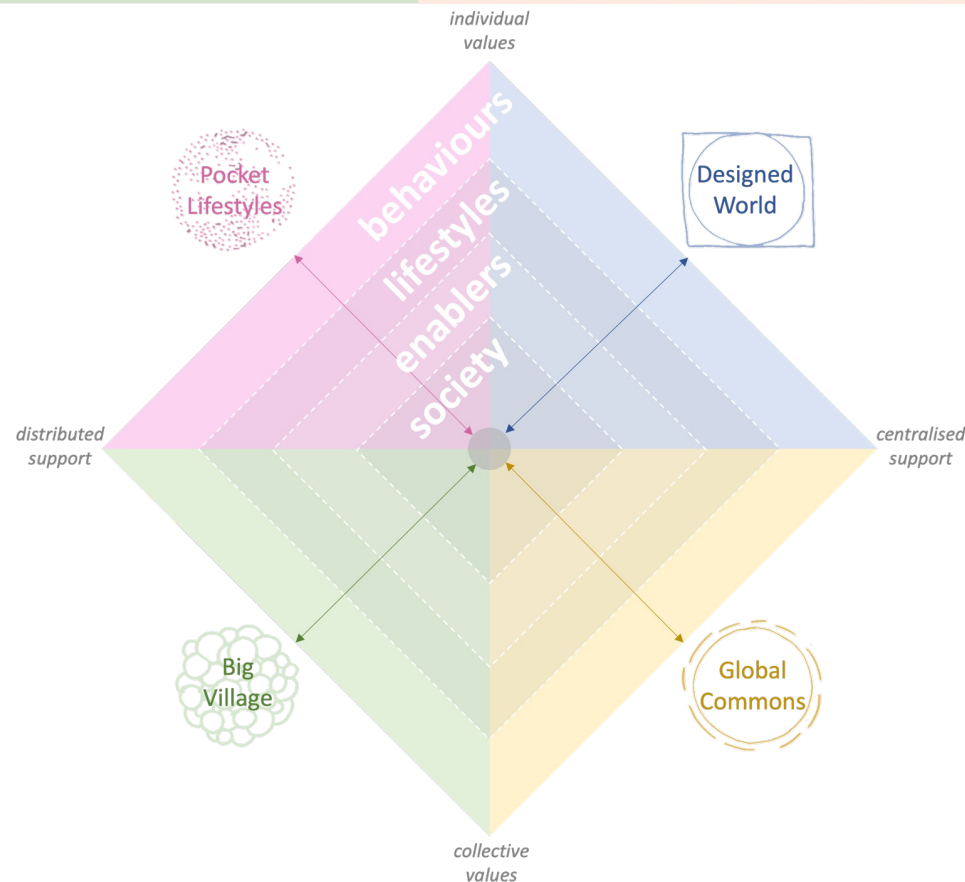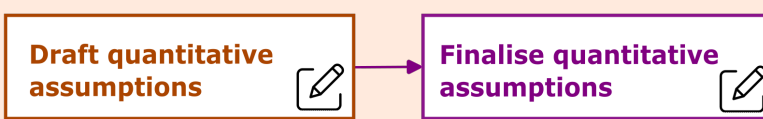
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Scenarios 🚌	TRANSPORT Actions	People Motivations	Contextual factors	Adoption rates Global North	Adoption rates Global South	Speed of transition
Designed World	Electric vehicles	EVs are cheaper in use; status	financial incentives; EV charging infrastructure (e.g. charging lanes)	High	Med	Moderately slow
	Peer-to-peer taxi services	Convenience of being driven	availability and options (e.g. Uber, Lift)	Low	Med	Fast
Global Commons	Bus & rail transport	Environmentally-conscious; choice for one long-term holiday per year over multiple holidays per year	Subsidies for public transport; frequent flyer levy; higher road taxes	High	Med	Moderately fast
	Fewer long-distance trips (e.g. international travel)		Frequent flyer levy; social norms change to slower travel	Med	Med	Fast
	Commercial car-sharing		Social norm changes away from ownership; more firms enter the market to provide sharing options (e.g. Sixt Share)	Med	Med	Moderately fast
Big Village	Staycations	simpler living; slower living; social cohesion; more time for community; environmentally-friendly	Social norms towards simpler holidays; focus on family/friends rather than destination; strong community and local governance	Med	Med	Fast
	Live closer to work, friends and family		Strong community & local governance; social & cultural norms change; local road infrastructure designed for walking and cycling;	Med	Med	Moderately fast
	Shorter workweek		Social norms change towards less focus on work and replace with time in community	Med	Low	Fast
	Carpooling		Carpooling platforms become more prominent (e.g. Bla Bla Car); carpool-lanes	Med	High	Fast
Pocket Lifestyles	Telecommuting	trendy; tech-savvy; cost-effective; social	Strong tech innovation for improved telecommuting	Med	Low	Fast
	Peer-to-peer car sharing		Platforms for shared car ownership or renting out own car (e.g. Snapp-car)	Med	Low	Moderately fast
	Active transport			Low	Low	Fast
	Efficient vehicles		Influencers; social media; marketing to encourage active transport & sustainable vehicles	Med	Med	Fast

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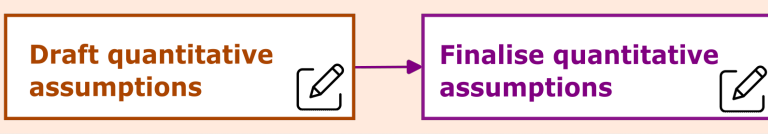| Scenarios	🏠 RESIDENTIAL Actions	People Motivations	Contextual factors	Adoption rates		Speed of transition
				Global North	Global South	
Designed World	Insulation	Cost-savings on energy bills; comfort; improved indoor air quality	Prepaid subsidies; extra incentives for housing associations & landlords (large-scale), stricter regulation for new buildings	Med	Low	Fast
	Heat pumps		Financial incentives for choosing green energy providers	Med	Low	Moderately fast
	Smart meters		Prepaid subsidies; extra incentives for housing associations & landlords (large-scale); stricter regulation for new buildings	High	Med	Fast
	Rooftop solar	Cost-savings on energy bills	Subsidies; stricter regulation for new buildings	Med	Med	Moderately fast
	Green energy providers	Convenience & ease to switch	Energy companies to provide smart meters and inform consumers about optimising energy use	High	Low	Fast
	Quookers / shower heat recovery	Comfort & convenience; cost-savings on energy bills	Subsidies for heat recovery; stricter regulation for new buildings	High	Med	Moderately fast
	Leasing efficient appliances	Convenience & ease; cheaper in the short-run	More leasing firms with affordable options	Med	Med	Fast
Global Commons	Collective heat pumps	environmentally-conscious; convenience; social cohesion;	Large-scale infrastructure of ground heat pumps for neighbourhoods; subsidies & cheaper credit for poorer households	High	Med	Moderately fast
	Smaller living space, larger public space		Designed apartment buildings and neighbourhoods with small living space and large public space	High	High	Slow
	Collective appliance ownership		Infrastructural changes for design of collective areas for shared ownership & space	High	High	Fast
	Collective green roofs /			Med	Med	Moderately fast

| Draft quantitative assumptions ✎ | → | Finalise quantitative assumptions ✎ |

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Scenarios	🏠 RESIDENTIAL Actions	People Motivations	Contextual factors	Adoption rates		Speed of transition
				Global North	Global South	
Big Village	Communal living areas & multi-generation homes	Community is central; environmentally-conscious; back-to-basics	Social norms towards simpler living; strong community and local governance	High	High	Moderately fast
	Repair, renovate & flexible/modular homes		Product designers / architects design with repair and renovation in mind	Med	High	Moderately fast
	Fewer showers		Social norms towards simpler living	Med	High	Fast
	Natural ventilation			High	Med	Fast
Pocket Lifestyles	Minimalist apartments & tiny houses	Trendy, social, tech-savvy, cost-effective	Regulation adjusted to accommodate for smaller living; social norm changes	High	High	Slow
	Adjust thermostat		Social norm changes; influencers	High	High	Fast
	Lower-heat showers			High	High	Fast
	Rent out room/house/couch		house/room sharing platforms become more prominent with proper regulation (e.g. couch surfing, Airbnb); influencers	Low	Med	Moderately fast
	Hang dry on clothing lines		Social norm changes; influencers	Med	High	Fast
	Meal prepping (i.e. reduced cooking energy demand)		Marketing; social media; influencers	High	High	Fast

Draft quantitative assumptions ✎	→	Finalise quantitative assumptions ✎

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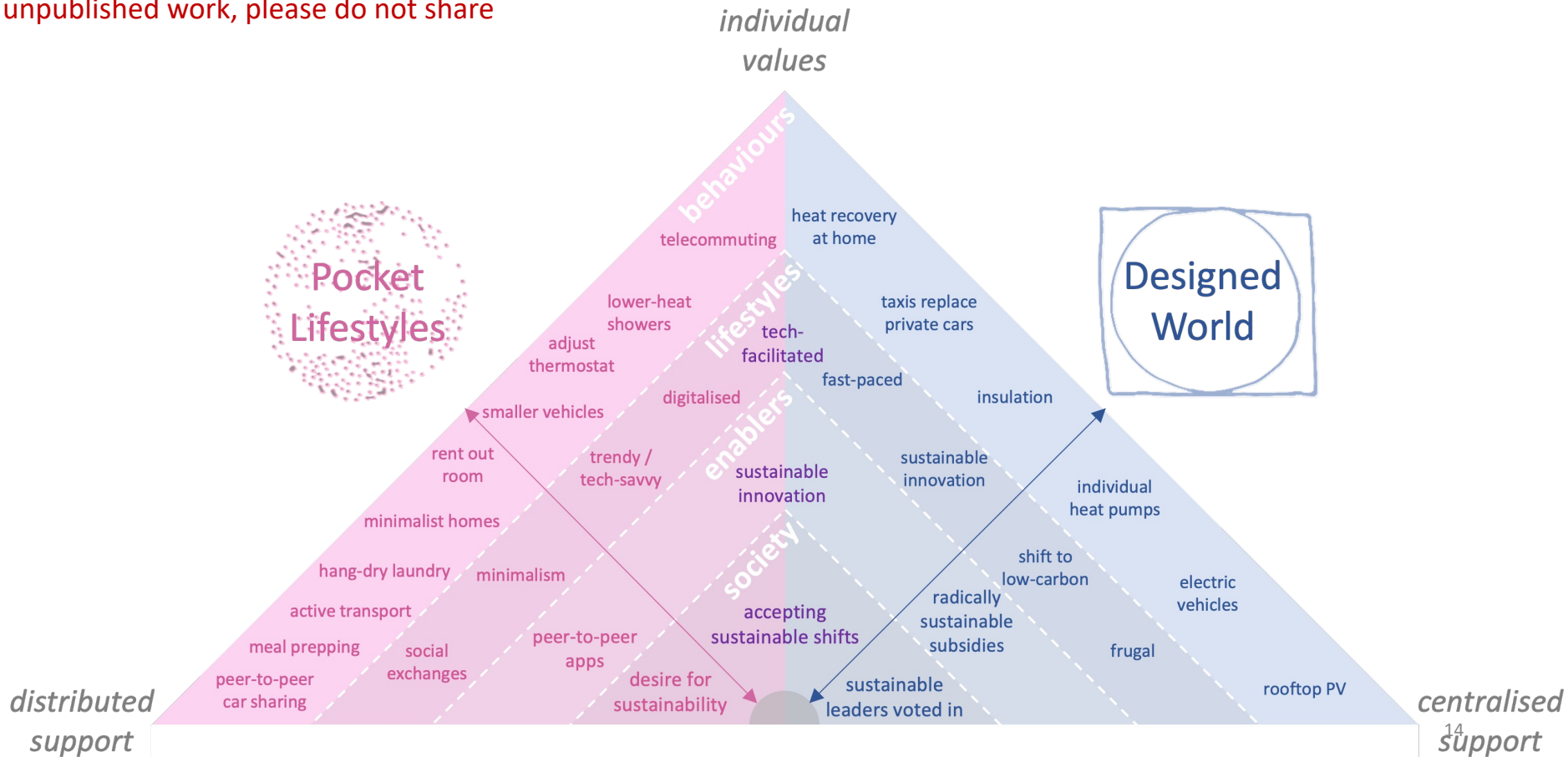| Scenarios	🍴 FOOD Actions	People Motivations	Contextual factors	Adoption rates		Speed of transition
				Global North	Global South	
Designed World	Lab-grown meat	Not vegetarian	Invest in R&D to speed up commercial lab-grown meat to make it affordable; meat tax	High	Low	Slow
	Dining out at eco-friendly restaurants	Convenience	Incentivise restaurant owners to focus on sustainability via subsidies and regulations	Med	Low	Fast
Global Commons	Flexitarian diets with optimised cooking (e.g. use *all* of animal products in meals)	Environmentally-conscious; convenience	Supermarkets stock more plant-based options, discounts on vegetables and not meat; meat tax; social norm changes around meat consumption	High	High	Fast
	Vegetable gardening		Subsidies for vegetable gardening	Low	Med	Moderately fast
	Local & seasonal food		More supermarkets prioritising local and seasonal food; subsidised	Med	High	Fast
Big Village	Vegan & sufficient diets	Environmentally-friendly; social cohesion; more time for community; simple & slower lifestyles	Social norm changes around animal-product consumption and overconsumption	Low	Low	Fast
	Communal dining		Social norm changes	Med	High	Moderately fast
	Community gardens		Neighbourhood redesigned to facilitate urban gardening (e.g. able to rent 1m2 gardens in collective gardens)	Low	Med	Slow
	Vegetarian diets		Marketing; social media; influencers; facilitating apps for recipes	Med	Med	Fast
Pocket Lifestyles	Meal / leftovers sharing via peer-to-peer apps (e.g Too Good To Go)	Trendy, tech-savvy, cost-effective, social	Marketing; social media; influencers; more peer-to-peer apps to facilitate sharing	High	High	Moderately fast
	Conscious about quantity when grocery shopping (i.e. reduced food waste)		Marketing; social media; influencers; supermarkets incentivise buying amounts you need.	High	High	Fast
	Meal prepping (i.e. reduced food waste)		Marketing; social media; influencers.	High	High	Fast

Divergent qualitative scenario narratives for systems and lifestyle change

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individual values

behaviours

lifestyles

enablers

society

Pocket Lifestyles

Designed World

peer-to-peer lifestyle platforms

sustainable lifestyles by default

lab-grown meat

telecommuting

eco-restaurants

meal sharing via apps

lower-heat showers

heat recovery at home

adjust thermostat

tech-facilitated

fast-paced

taxis replace private cars

smaller vehicles

digitalised

insulation

conscious shopping

trendy / tech-savvy

sustainable innovation

autonomous vehicles

rent out room

sustainable innovation

minimalist homes

radically sustainable subsidies

shift to low-carbon

individual heat pumps

hang-dry laundry

minimalism

active transport

electric vehicles

meal prepping

accepting sustainable shifts

peer-to-peer apps

frugal

peer-to-peer car sharing

social exchanges

desire for sustainability grassroots movements

sustainable leaders voted in transformative policymaking

rooftop PV

distributed support

vegetarian diets

less-is-more

incentives for local initiatives

redesigned infrastructure

convenience

centralised support

staycations

bus & rail transport

vegan & sufficient diets

sufficiency

community facilitation

back-to-basics

social welfare redefined

universal basic services

collaborative

fewer long-distance trips

natural ventilation

slower living

collective action

flexible schedule

commercial car sharing

local & seasonal food

communal living areas

Infrastructure for shared actions

share facilities & services

collective heat pumps

live closer to amenities

shorter workweek

Big Village

repair & renovate

larger public spaces

Global Commons

modular homes

multi-generational living

radical innovations

collective appliances

fewer showers

flexitarian diets

carpooling

communal dining

collective green roofs/gardens

community gardens

vegetable gardens

community-based sustainable living

inclusive global governance system

collective values

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Intent-orientation

Model scenarios as emission pathways

Impact-orientation

individual values

behaviours

Pocket Lifestyles

telecommuting

heat recovery at home

lifestyles

lower-heat showers

tech-facilitated

taxis replace private cars

Designed World

adjust thermostat

fast-paced

insulation

enablers

smaller vehicles

digitalised

rent out room

trendy / tech-savvy

sustainable innovation

sustainable innovation

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society

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meal prepping

social exchanges

peer-to-peer apps

frugal

peer-to-peer car sharing

desire for sustainability

sustainable leaders voted in

rooftop PV

distributed support

centralised support

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Quantitative long-term emission scenarios of various lifestyle changes
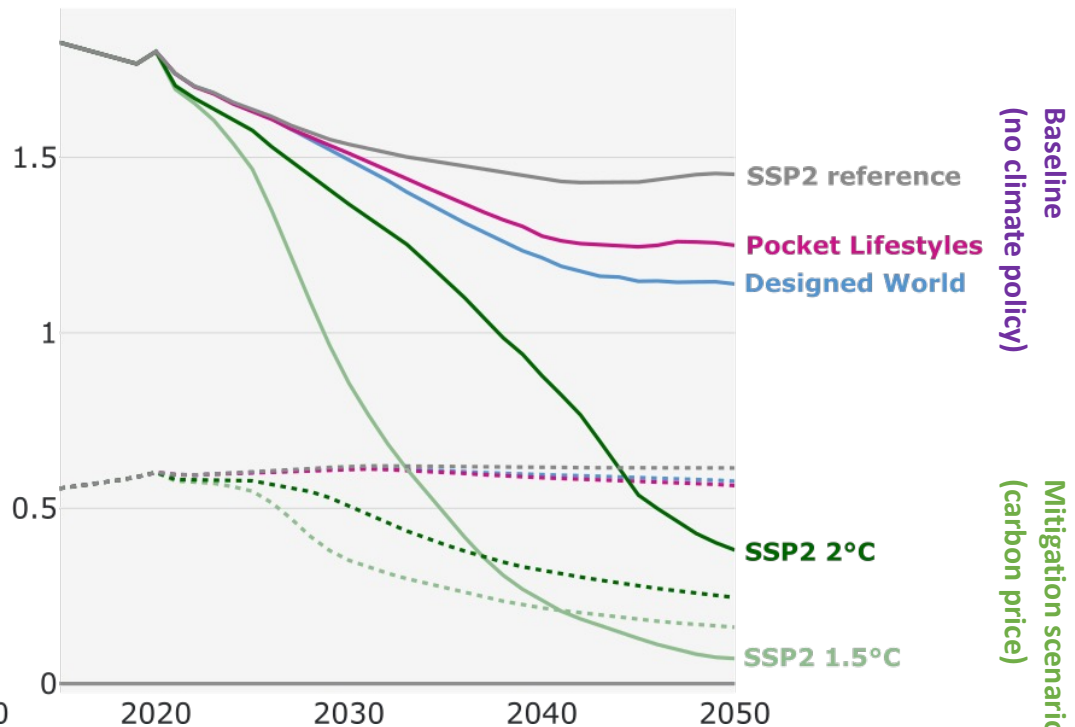
a. Transport emissions

b. Residential emissions

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Conclusions & next steps

- Transdisciplinary co-creation of scenarios with **qualitative narratives** *and* **model-based pathways**

- Account for **equity** throughout the development of the scenarios

- Next steps:
  - **outreach** via artistic visualisations with the help of graphic designers
  - **modelling food** in addition to the residential and transport sector
  - model **other scenarios**: Big Village and Global Commons
  - **endogenous** modelling lifestyle changes in IMAGE

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Thank you for your attention!

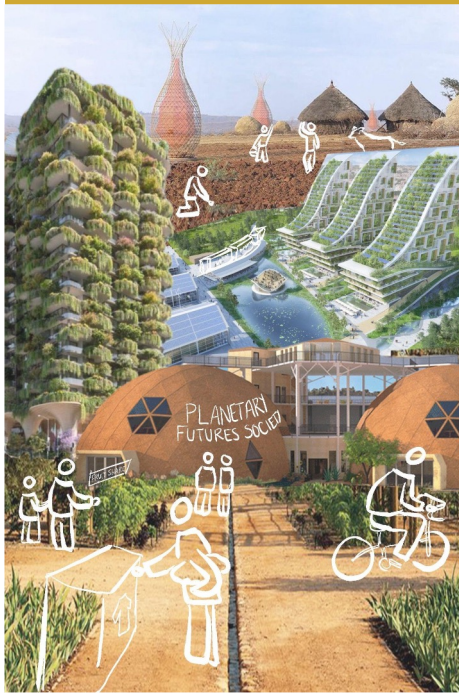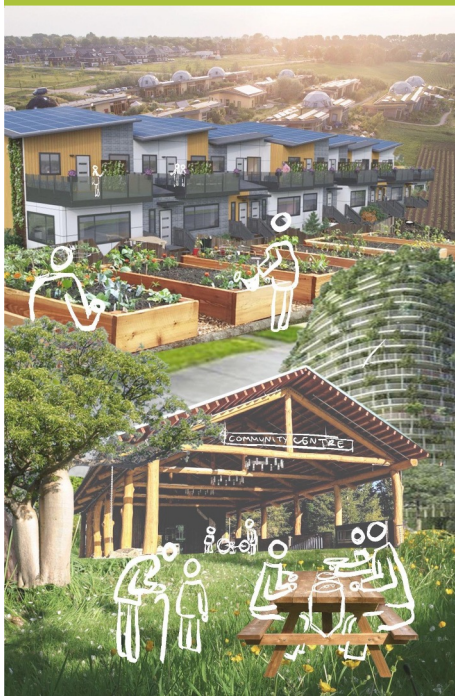**DESIGNED WORLD**
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