

Designing missions

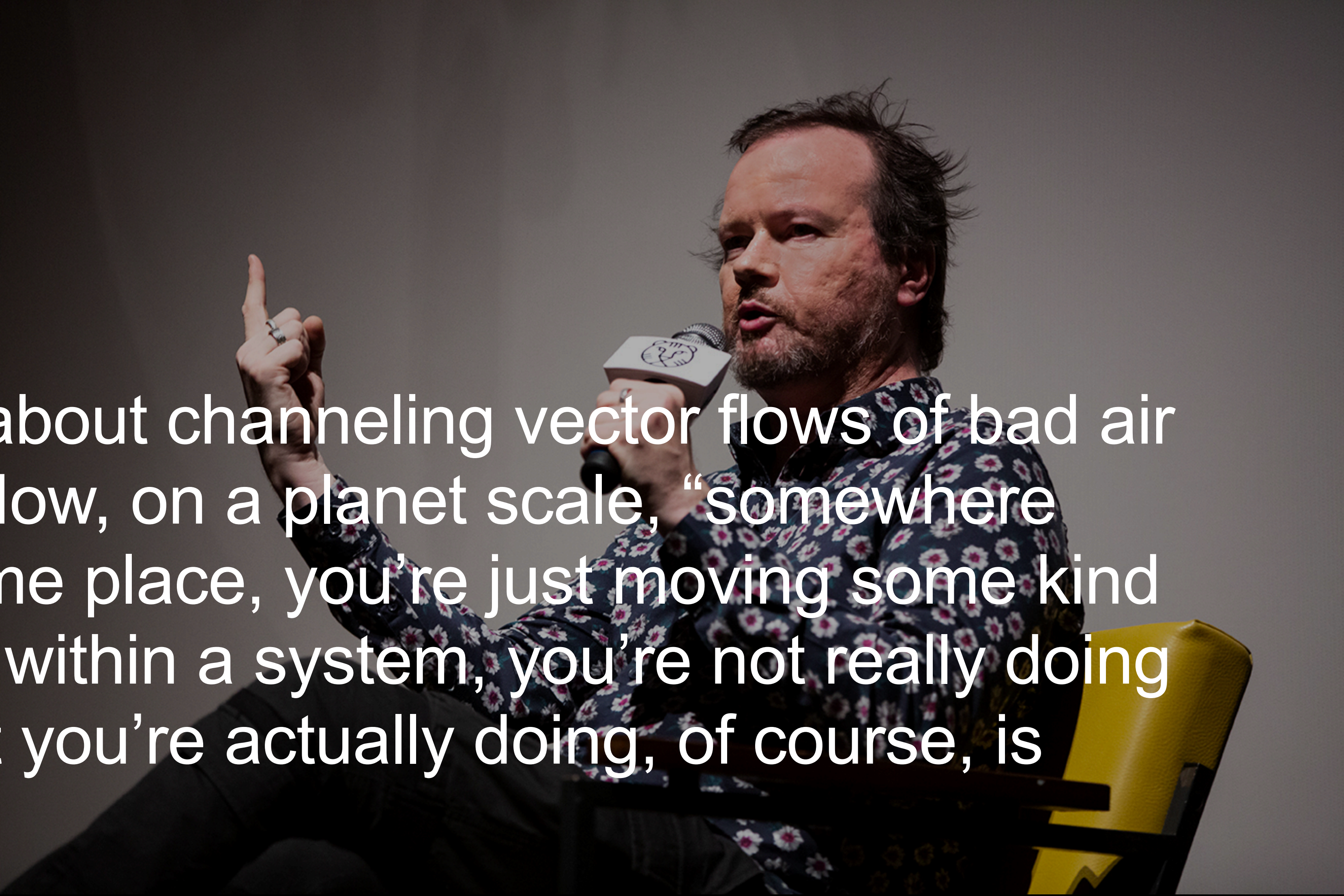
Visiting Professor, UCL Institute for Innovation and Public Purpose
Visiting Professor, Design Academy Eindhoven
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We are taking 21st century challenges, evaluating them with 20th century ideas, and responding with 19th century tools.

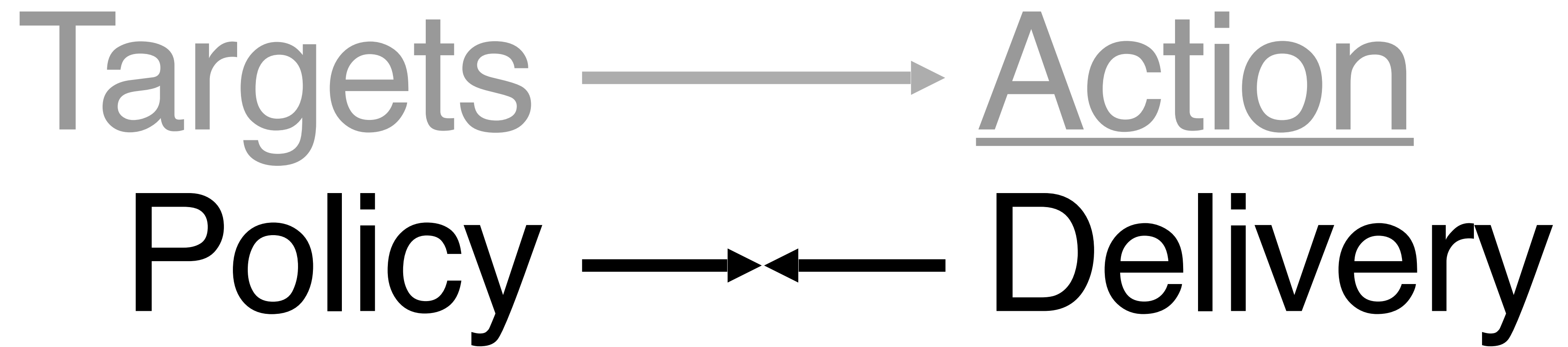
Madeleine Albright, Former US Secretary of State, 2013

A photograph of Timothy Morton, a man with a beard and long hair, wearing a dark floral patterned shirt. He is sitting in a yellow chair, holding a microphone in his right hand and pointing his left index finger upwards. The background is a plain, light-colored wall.

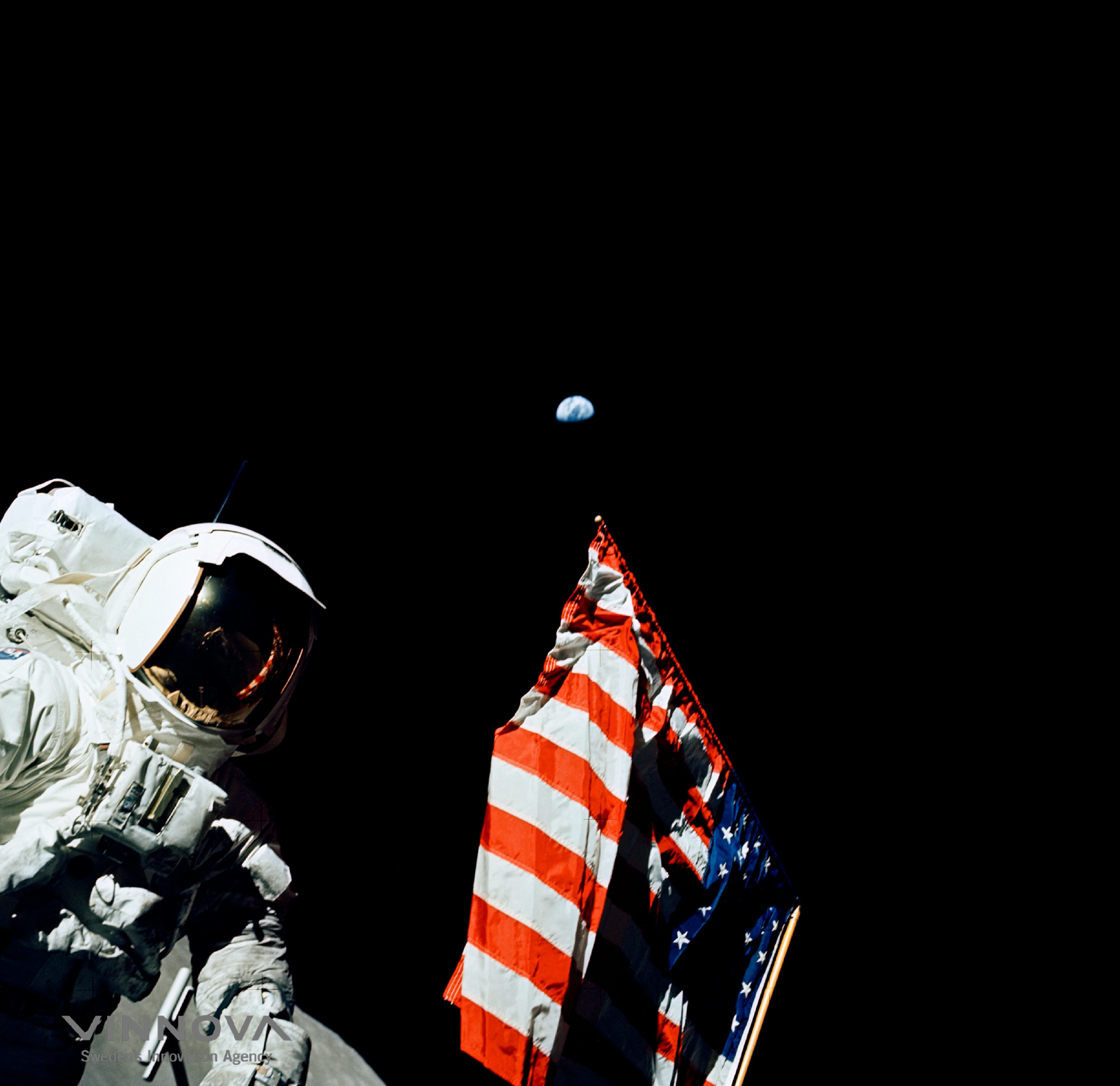
Air conditioning is about channeling vector flows of bad air somewhere else. Now, on a planet scale, “somewhere else” is just the same place, you’re just moving some kind of pollution around within a system, you’re not really doing anything. And what you’re actually doing, of course, is wasting energy.

Timothy Morton, Rice University

Targets → Action



Funding agency → Innovation agency

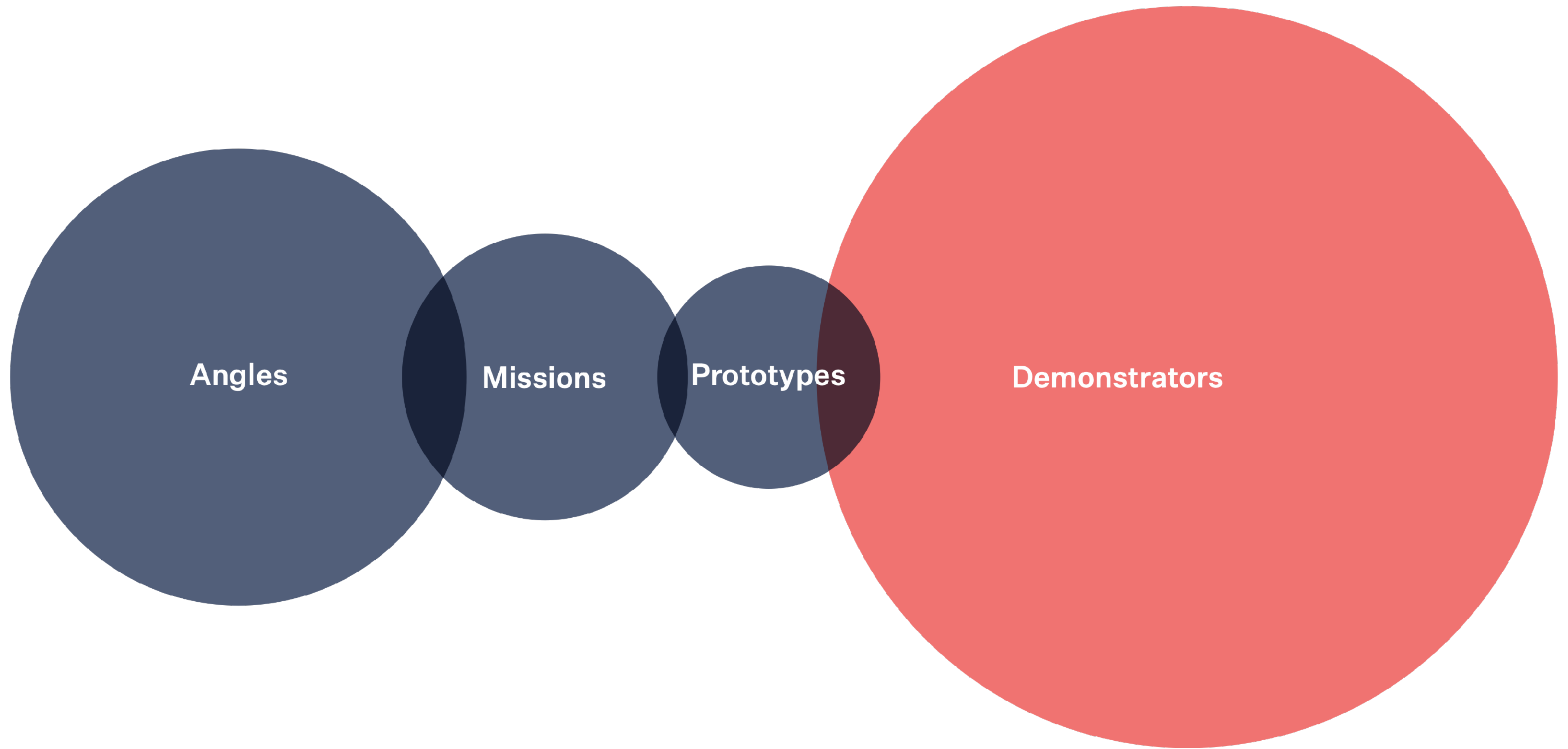


THE MOON AND THE GHETTO

An Essay on Public Policy Analysis

RICHARD R. NELSON

The risk of not doing something?





Workshop aiding Vinnova's strategy development for health and life science, featuring external collaborators and stakeholders, October 2020.



Workshop for emerging Swedish government mission around physical activity, September 2020.



Vinnova teams reviewing and analysing the systems canvases from the first three Actors Workshops for Healthy Sustainable Mobility mission.

An open morning for various Vinnova teams to review all the systems canvases from the Actors Workshops.

Desktop analysis

Insights from strategies and roadmaps

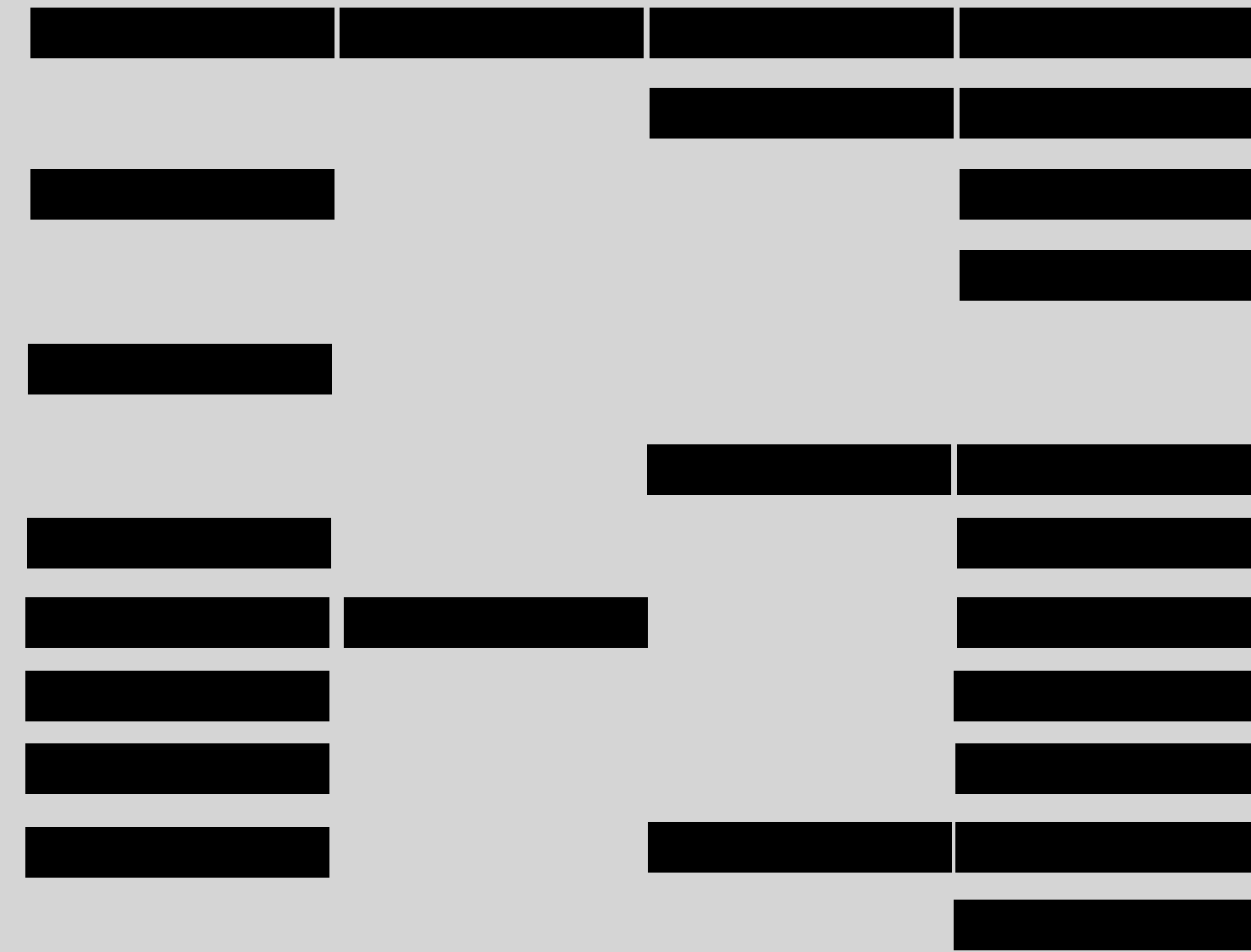
1 / National/municipal 'airgap'

National

Regional

Municipal

2 / Research and innovation in 'silos'



Safety

Health

Growth

Climate

3 / Bias away from implementation



Core R&D

Policy innovation

Behavioural

A key insight: we have all the technology we need, more or less. We just have to deliver. This means the innovation is in adapting regulation, policy change, developing business models, better understanding behavioural change, and working technology into its social, cultural and political context.

Supply-side, or 'push', interventions

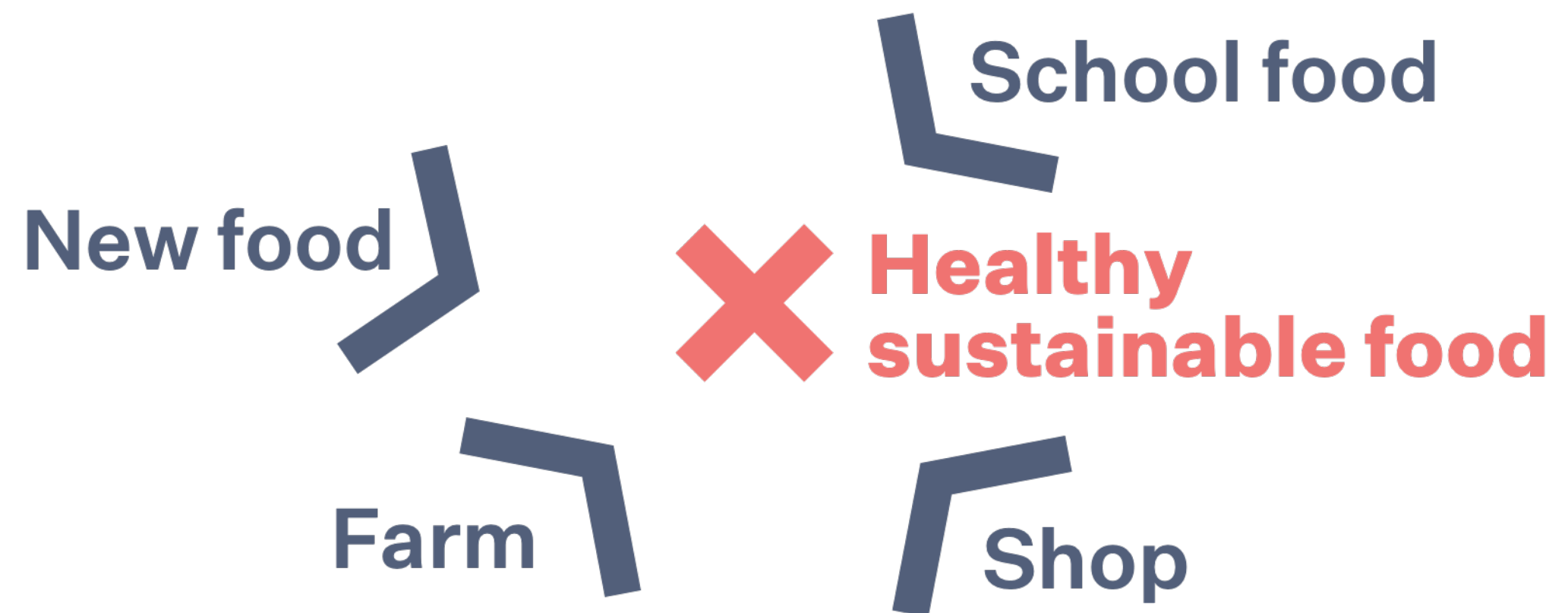
Demand-side, or 'pull', interventions

Healthy Sustainable Mobility

					Lagom mobilitet	Geofencing infrastructures and street/kerb management	Packet-switched logistics networks	Real-time traffic control systems	Procurement guidelines for S-M-L-XL municipal vehicles	Real-time privacy-preserving sensing infrastructures
Chargepoint and hub design and delivery	Public and private electric vehicles as distributed battery	Circular battery storage programmes	Procurement of electric buses and other municipal vehicles	Incentive schemes for electric car transition	Mobility grid	Develop legislation for bans on fossil-fuel vehicles by 2030				
Coherent logistics networks by rail, sea, and air	Very low emissions aviation	International fast and slow rail services	Efficient and electric shipping, ferries, boats	Long-haul electric truck infrastructures	Macromobility	Routing, load management & localisation	Taxation and levies to enable carbon pricing of aviation	Social movement campaigns to reduce aviation		
Community-scale autonomous shuttles	Micro-mobility hubs via green extended parklet model	Safe and sustainable scooters	Infrastructure for 5x increase in cycling	Policy and legislation for electric car-sharing	Micromobility	Geofencing policies, infrastructures, and campaigns for safe speeds	Campaigns and infrastructures for walkable green environments			
					Integrated teams	Integrated plans for healthy, fossil-free rural mobility	Integrated plans for New Garden City suburbs	Integrated plans for car- and large vehicle-free inner-city	Integrated planning, service design, user research, and co-design capability	Municipal and regional data science capability
			Step-down consolidation centre networks	Shared emission-free, healthy and social last-km delivery services	Retail logistics	Legislation and incentives for load management	Localised on-demand fabrication centres and policies	Design for diverse and productive high-streets and centres	Appropriate taxation for e-commerce	

Healthy Sustainable Food

	School kitchen design and procure	Circular approaches to school food waste	School food supply chain	School law change to enable food as education	School food	Training school cooks and redesigning meal culture	Student, staff and community forum			
		Core research and development into new foods	New farm design for new foods	Regulation and policy for new foods	New Food	New foods in school food programme	Marketing and media campaigns for understanding of new foods	New retail concepts for new foods		
Learning, research and education for farming	New approaches to land ownership rights	Family-owned, diverse and distributed farming	New approaches to risk-sharing and profitability	Robotics, IoT, and machine learning on the farm	Healthy, resilient farming	Community-supported agriculture models	Campaigns for Swedish restorative, clean and zero-carbon agriculture	Connecting farmer to retail in new ways		
			Traceability	Animal welfare	Traceable trusted produce	Communicable data-driven labelling systems for accurate provenance/carbon	New retail concepts enabled by zero-carbon, clean, healthy logistics			
					Modern Swedish	Swedish restorative, clean and zero-carbon agriculture	Swedish food eco-tourism	Communicable data-driven labelling systems for accurate provenance	Social dining rituals, campaigns and infrastructures	New Swedish circular, ecological, and educational retail concepts
	Circular logistics services	Phosphorus capture and re-use	Traceability and data for waste	Biofuels and energy from food systems	Circular zero-waste systems	Clear labelling for circular use models	New packaging concepts	Retail as circular hub		
Circular logistics services	Land-use regulation	Traceability data services	Reusing big box retail	Local logistics via active transport	Peri-urban and urban farming	Public spaces and streets as food production	Incentive schemes for local food			
	Farm as carbon capture and storage	Methane capture	Land ownership as ecosystem services	Biodiversity and land-use	Ecosystem services					



Input

Street

Traffic department

Output

Traffic

Inputs

Street

Outputs

- Public health
- Utilities and waste
- Public art and culture
- Urban planning
- Police and security
- Mobility, personal and public
- Environment
- Retailers
- Logistics
- Social services
- Real estate

- Improved environmental quality
- Reduced healthcare costs
- Reduced maintenance
- Increased social fabric
- Increased biodiversity
- Reduced traffic accidents
- Reduced crime
- Resilient retail
- Increased wellbeing
- Reduced flooding
- Increased cultural production

Street

Ensure that every street in Sweden is healthy, sustainable and vibrant by 2030.



Design workshop

System in the room



Micromobility startup

Car-sharing company

Environment department, municipality

National design agency

Energy company



National food agency

High school student

Chef

Food retailer and farm

Regulatory authority

A street in Stockholm

Mobility workshop, May 2019

Story

Early morning, around 05:30. The mist shrouds the street's lush trees and bushes, yet some early rays of sunlight pick out some ripe red apples amidst the leaves. Exiting stage right, a fox trots around the corner, heading for the park. A couple of cleaning robots quietly Hoover up some broken glass from near the bike lane, as a small autonomous delivery truck slides into the street.

The delivery truck pauses in front of the clothes store on the corner, hydraulic arms carefully placing a large capsule into the shared delivery box. It then sidles up the street to place a waste capsule in the delivery box's place, the low gentle whirr of its electric engines barely perceptible over the swish of its damp tyres.

Slowly, the street wakes up. By 07:45 Jonas guides his nine year-old daughter Zoe towards the shared bus that will take her to school in a nearby district. Zoe doesn't really want to go with the bus, having recently learned

Notes on latent questions in the story

An early indication that this could be a lush green environment, with food grown in the street.

The interplay between the fox and the robots suggests new relationships with non-human nature.

Infrastructure for clearing elements like broken glass suggests a prioritisation of small wheels, whether bikes or wheelchairs or equivalent.

Physical stores remain in this vision, integrated with e-commerce logistics rather than replaced by it. What's the group's view on this?

Combined infrastructures of logistics and waste in one service. Who regulates for that, and coordinates it?

A new importance for environmental aspects, such as noise. Yet tyres produce other environmental issues, such as microplastics. How might they be resolved?

Physical schools still exist, with a recognisable daily pattern. Will they?

Story continued

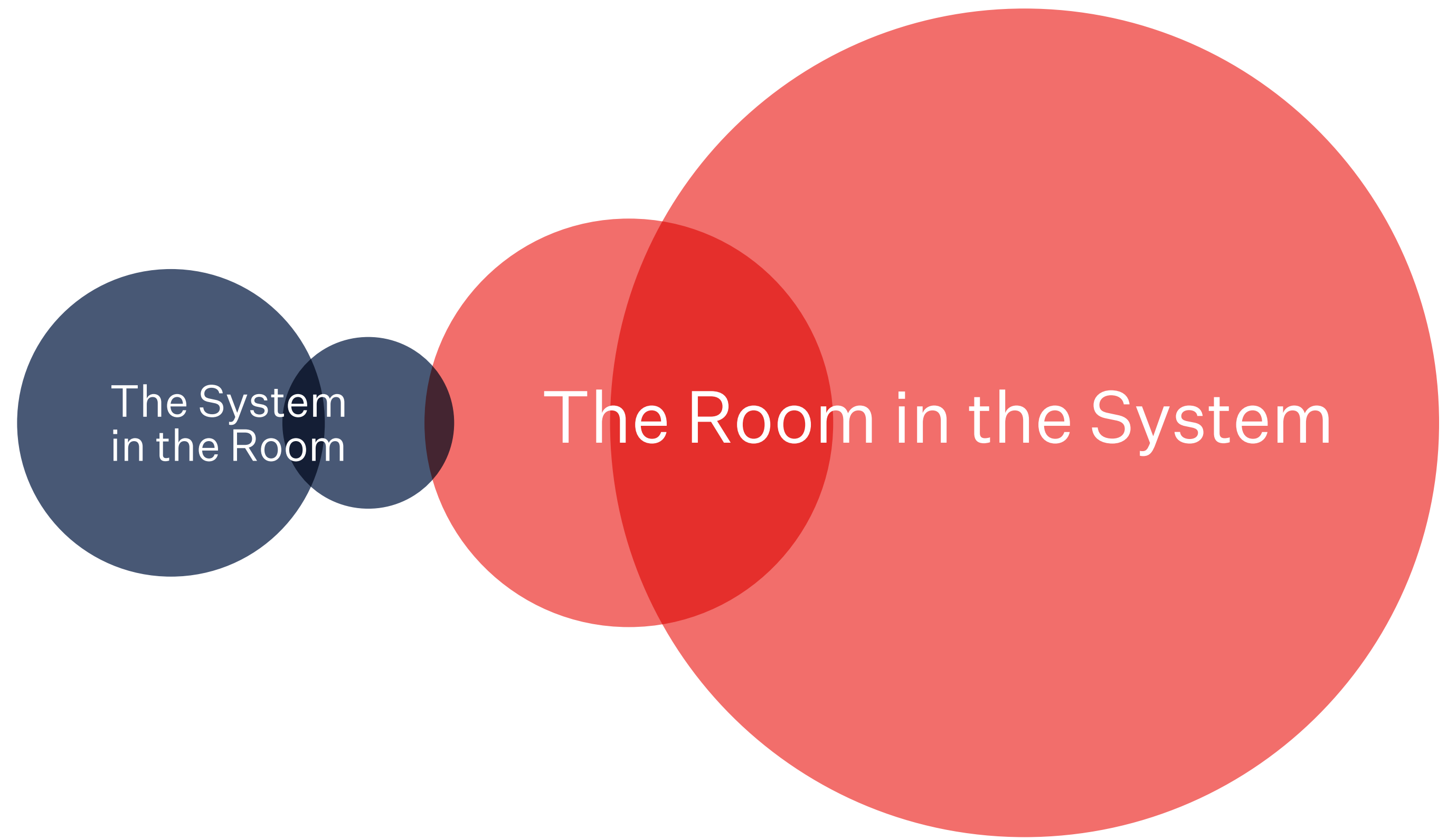
Centralstation to catch the train, glancing up at the clock by the door. She realises that she won't make it in time, pauses to fasten her *Hövding* and grabs a scooter from the dock. She glides away up the street, curving pear tree-lined paths, scooting past unripe fruit, and strawberry bushes planted next to the dock, she realises how hazy some quick travel-time calculations to a brief halt at Akim's coffee shop corner.

Alia darts in to grab *kane bryggkaffe*, hitting pause on the scooter pings the dock its new dock pings the city.

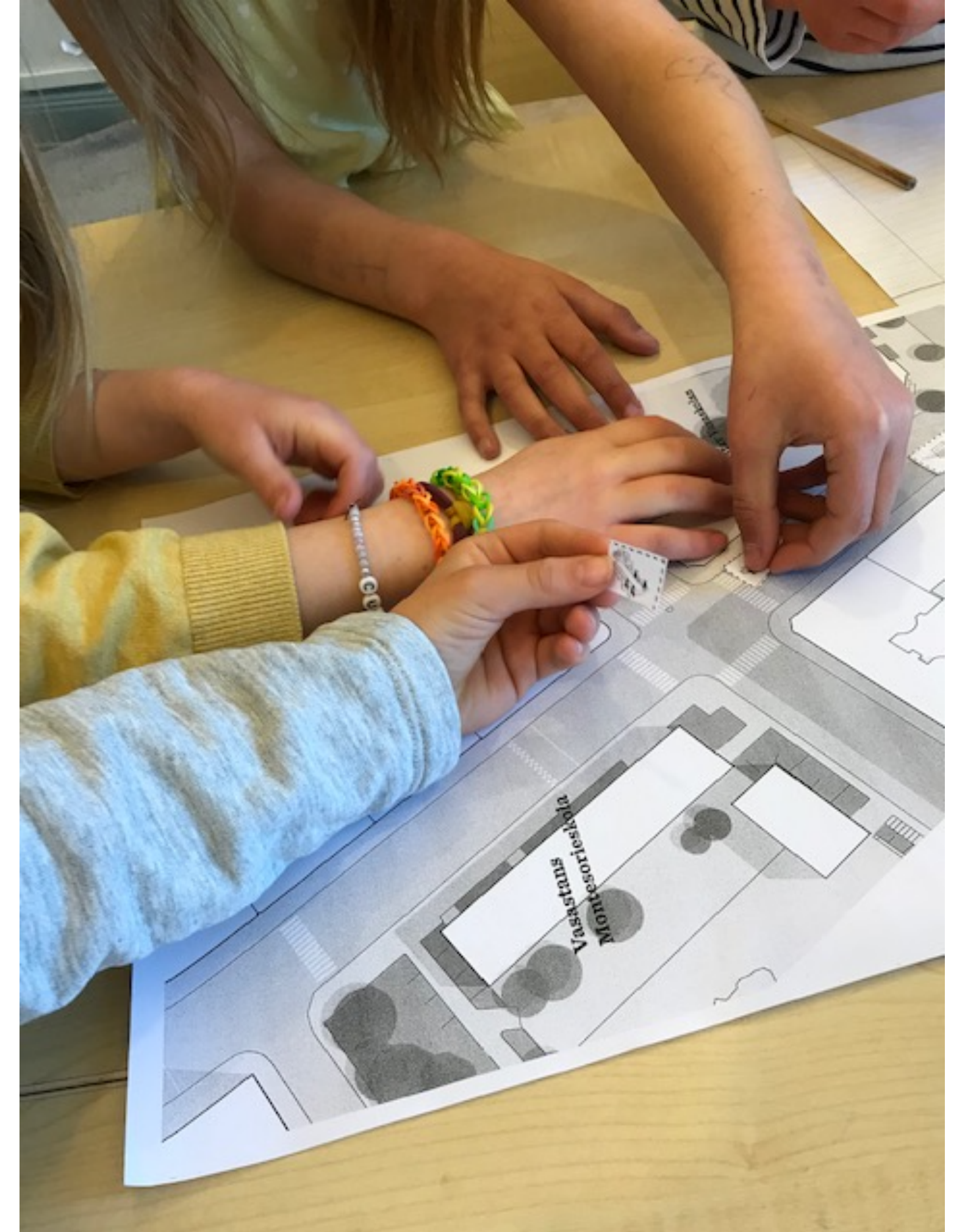
Eating her *bulle*, Alia sits outside Akim's place. The streets here are in fact covered with greenery in the absence of most cars, and all la

Living system diagram for Street mission





Participative design



Participative design



Participative design

Lyktstolpar

Café

Fontän

Strålkastare
i olika färder

Lyktstolpar

Lyktstolpar

Gungor

Lyktstolpar

Fejk-
Palmer

Lyktstolpar

Lyktstolpar





Göteborg



Helsingborg



Biodiversity

3 Increase in natural sounds in urban greenery leading to increase in mental health

3 Decrease in road traffic noise and increase in birdsong leading to increase in mental health

3 11 13 Increase in local biodiversity, leading to increased air quality, decreased noise

3 Increase in air quality leading to increase in mental health

3 11 13 Increase in sustained connection to nature leading to associated benefits to happiness, health, and pro-nature behaviour

11 13 15 Increase in biodiverse perennial meadows increasing residents' perceptions of site quality in urban green space

3 Decrease in child deaths due to decreased car use near schools

3 11 13 Increase in active travel and decrease in motor vehicles leading to carbon

3 Increase in residential greenery leading to increase in birthweight

11 13 15 Increase in local biodiversity leading to decrease in urban heat island effect

3 Decrease in urban heat island effect leading to decrease in early deaths

3 11 Increase in neighbourhood tree cover leading to better overall health mediated by lower obesity and better social cohesion

Health and wellbeing

3 Decrease in road traffic accidents with reduction in motor vehicles and decrease in traffic speed

11 13 15 Increase in sustainable timber street furniture, versus concrete, leading to increase in carbon sink and decrease in carbon dioxide

3 Increase in birdsong leading to improved recuperation from sickness

3 Increase in nearby green spaces leading to increase in walking maintenance

3 12 13 15 Increase in community gardening leading to increase in mental and physical health and wellbeing

5 Decrease in domestic violence due to nearby natural landscapes

Maintenance

11 13 16 Decrease in stormwater-related maintenance costs through increased green infrastructure

10 16 Decrease in maintenance costs through shared management

3 Lively, activated streetscapes and facades lead to increase in positive affect and lively, attentive nervous system, and decrease in

Reduction in motor vehicle use and decrease in microplastics in seas and oceans

3 Increase in active travel leading to increase in mental and physical health and wellbeing

8 9 11 12 13 Increased environmental outcomes via shared electric mobility infrastructure

Property

8 9 10 Increase in property value (if desired) due to walkable environments

3 10 16 Increase in mental and physical wellbeing leading to reduction in healthcare costs

3 Greener play areas boost children's immune systems

3 Reduction in car use and decrease in brain cancer

3 Increase in active travel leading to improved immunosurveillance against pathogens

10 11 16 Increase in publicly-accessible neighborhood nature increases sense of community

3 10 11 16 Community participation improves perceptions of pedestrian environment

Commerce

3 8 11 13 Increase in urban trees leading to decrease in building air conditioning and increase in worker productivity

8 9 10 11 Increase in retail and office rental value and occupancy levels via green, walkable environment, without increase in housing rent

8 9 11 16 Sustainable shared and equitable infrastructure for micromobility technologies

3 10 16 Increase in residential green space and access to nature beneficial for intellectual and behavioral development of children living in urban areas

Learning

3 10 16 Increase in children's play and sociability in play streets

1 4 10 Increase in children's social mobility in walkable neighbourhoods

8 9 11 16 Improvement in community participation and municipal governance via public prototyping of civic tech platforms

Social fabric

3 10 11 16 Increase in social infrastructure leading to

Increase in active travel and walkability, and reduction in cars, leading to increase in retail spend

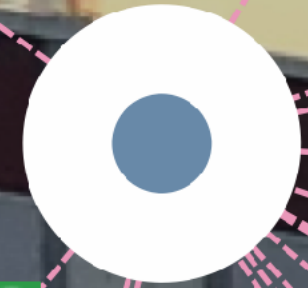
11 12 13 Carbon reduction and increased environmental outcomes via coordinated e-commerce delivery

8 9 10 11 12 Reduced road capacity for private cars leads to overall reduction in traffic and housing costs, and increased economic return through reduced congestion

10 11 16 Increase in trees and natural landscape leading to decrease in crime and reduced fear

10 16 Increase in dwell time leading to increase in social interaction leading to increase in mental health and wellbeing

3 Increase in natural sounds in urban greenery leading to increase in mental health



Biodiversity

3 5 Increase in residential greenery leading to increase in birthweight

3 Increase in birdsong leading to improved recuperation from sickness

14 Reduction in motor vehicle use and decrease in microplastics in seas and oceans

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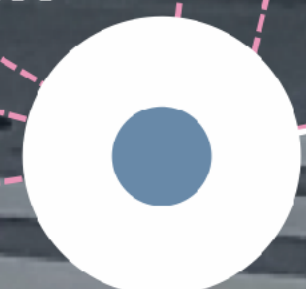
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3 Increase in air quality leading to increase in mental health



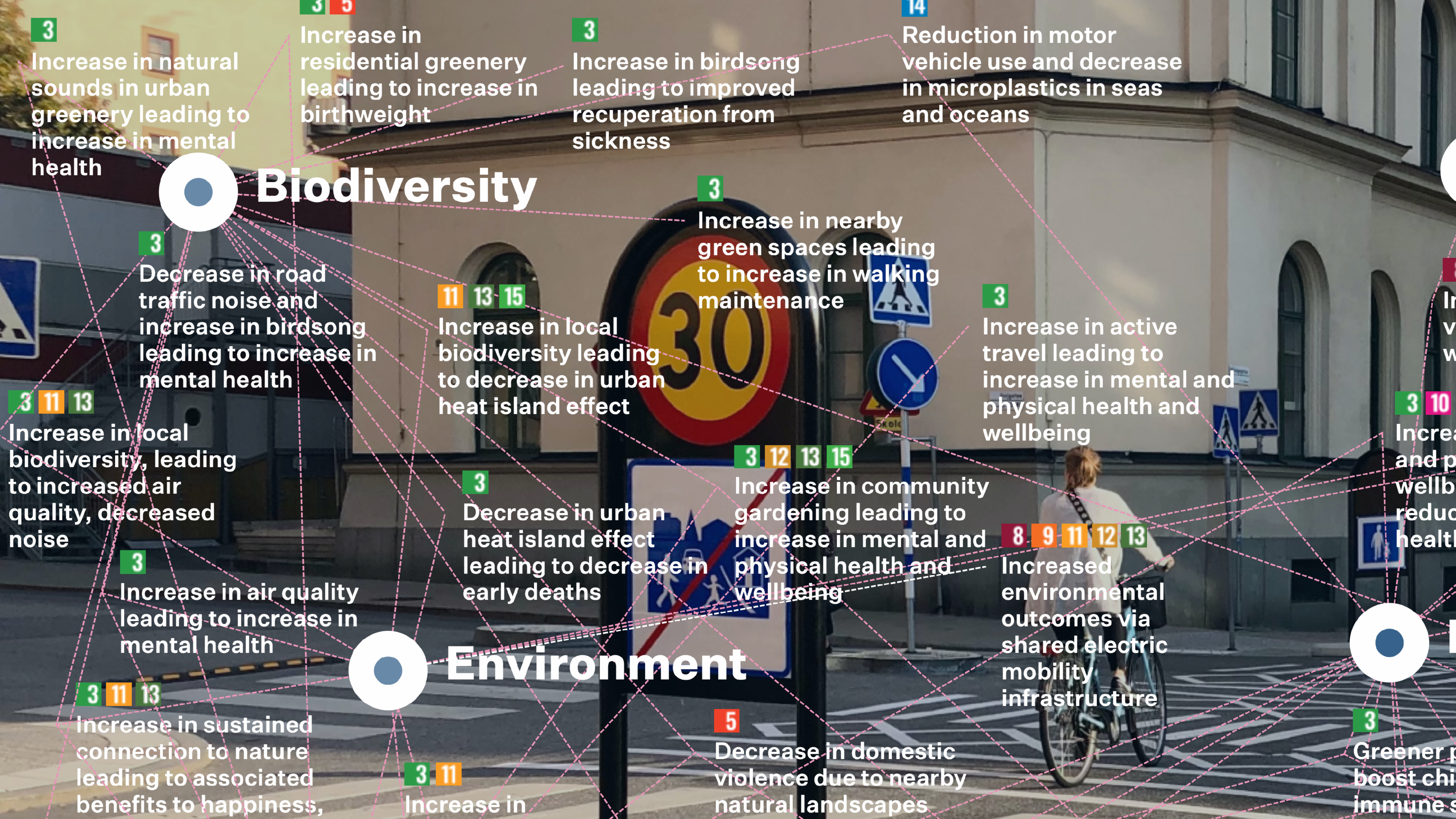
Environment

5 Decrease in domestic violence due to nearby natural landscapes

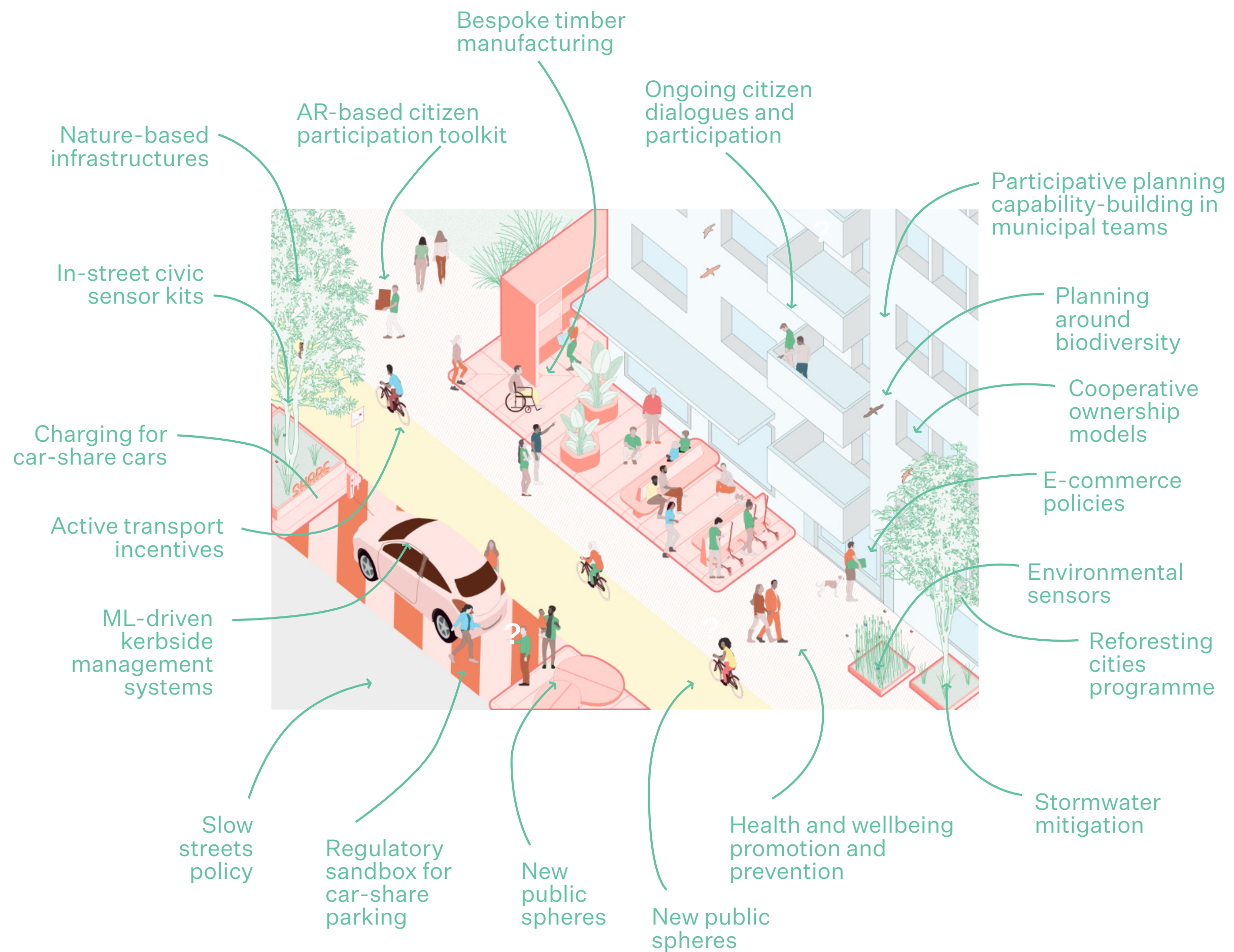
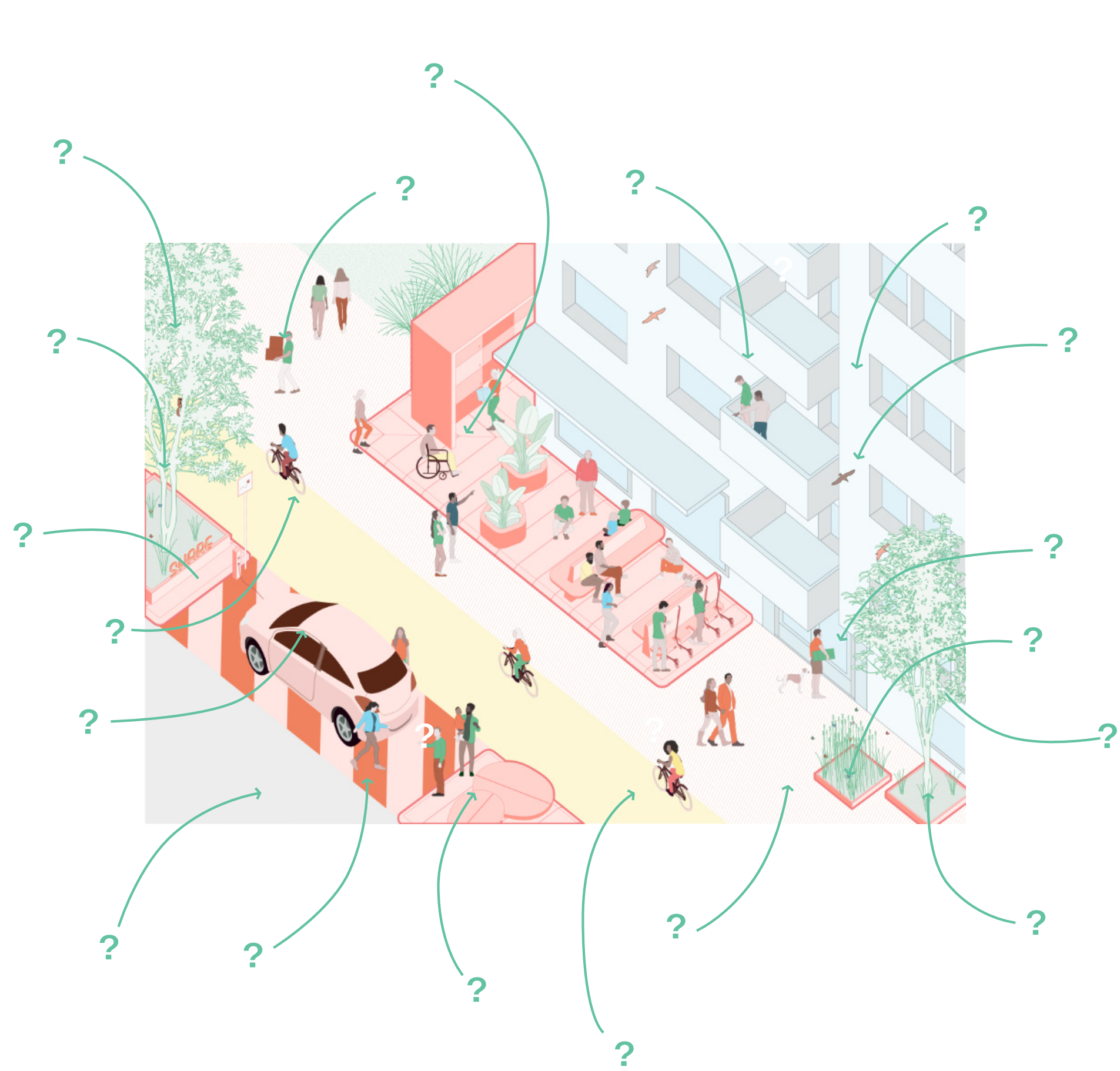
3 Greener parks boost children's immune systems

3 11 13 Increase in sustained connection to nature leading to associated benefits to happiness,

3 11 Increase in



This suggests a systemic approach to evaluating and mapping value creation, with huge implications for governance



We now have an innovation platform which allows the system to discover and demonstrate numerous innovations from different angles. It is scalable, and can now be run as a core platform for Vinnova and the wider system.

Byggsats ska förvandla p-latsen till en mötesplats

ur öppnar man upp stadens gator för något annat n bilen?
 innova-finansierade innovationsprojektet Street Moves har en potentiell lösning: en byggsats som snabbt kan förvandla ett stycke asfalt till ett regym, en lekplats eller varför inte en odling. På torsdagen invigs en första pilotgata i Vasastan i Stockholm.

Per Mattsson
 Uppdaterad: 17 september 2020, 08:40 Publicerad: 16 september 2020, 12:33



TER Götgatan på Södermalm med utställda moduler för parkering av el-scooter samt arlar.

et finns ett behov av trivsamma ytor där man bor. Och eftersom gatorna är n största gemensamma ytan vi har så borde de få den funktionen", säger niel Byström, projektledare för Street Moves på ArkDes Think Tank till

DAGENS NYHETER

Nyheter Ekonomi Kultur Sthlm Gbg Spor

STHLM i mitt hjärta Krogkommissionen Gulddraken

STHLM
Smarta gator gör staden

UPPDATERAD 2020-08-18 PUBLICERAD 2020-08-18



"Vi försöker se hur gaturummet i stadsmiljö kan användas på ett smart Beatrice Lundborg

Dansbana, studsmatta, klätt sandstrand. Nu startar ett p flera gator i centrala Stockh

Tweet
 Brad Williford @brad_in.se



Sweden's Street Moves project aims to introduce adaptable curb elements like this scooter-parking and seating unit to every street in the nation. Photo courtesy ArkDes

CITYLAB

Make Way for the 'One-Minute City'

While the "15-minute city" model pr... planning, local tv... street in

28 SEP Eur/Dollar 0.61% Pund/Dollar 0.67%

ealtid

Start Opinion Karriär Branschnytt Platsannonser Tem

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01-12-21 | WORLD CHANGING IDEAS

How to transform your street into a 1-minute city

Sweden is testing designs to help activate individual blocks, in what it calls "1-minute city" designs.



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How Sweden is taking back parking space to improve urban living

An experiment with the 'one-minute city' gives priority to pedestrians and cyclists



An architect's rendition of a new pop-up public space on Tjärhovsgatan in Stockholm, part of a Swedish government project called Street Moves. Photograph: ArkDes

Richard Orange

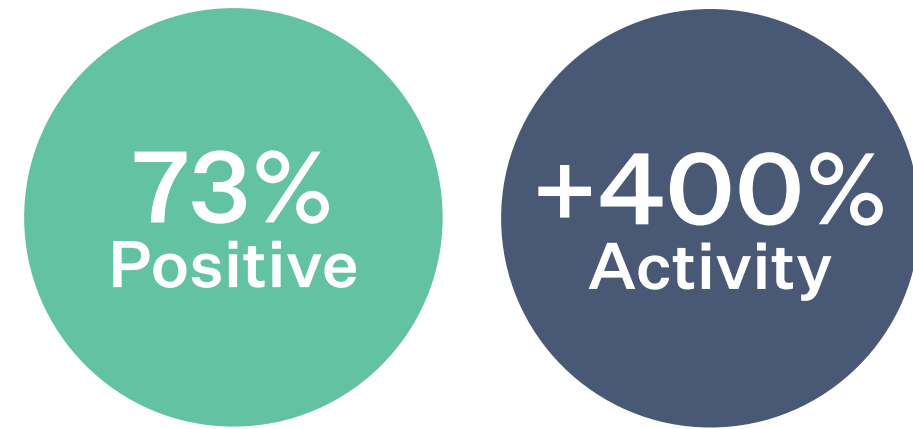
Mon 8 Feb 2021 14.48 GMT

f t e

It was a couple of parking spaces a few days ago. But now the area outside Malin Henriksson Talcoth's gourmet sausage shop in Gothenburg has a bench, a picnic table and racks for cycles and e-scooters. It also has people talking, eating and enjoying themselves

Prototyping Follow-on research

As part of the evaluation of the first prototypes in Stockholm, ArkDes commissioned Novus, a research company, to conduct in-street surveys providing qualitative feedback from residents and users of the streets.



The key result from the survey is that **73% of the respondents thought that the prototype interventions were positive** (either very positive or quite positive). Only around 10% were negative about the prototypes (approximately 3% very negative.)

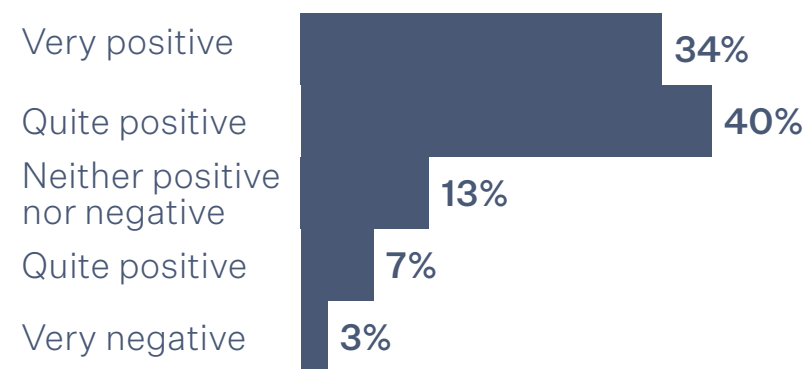
With change in mind, this is hugely useful, perhaps indicating the value of a participative approach led with some design intent, therefore that care and engagement is reciprocated. There are some variations across the streets (see overleaf.)

Given that parking space was being removed, it is highly unusual to receive such positive results. The interventions were communicated as temporary measures—on purpose, as per the half-step tactic—but the positive sentiment is clearly very strong.

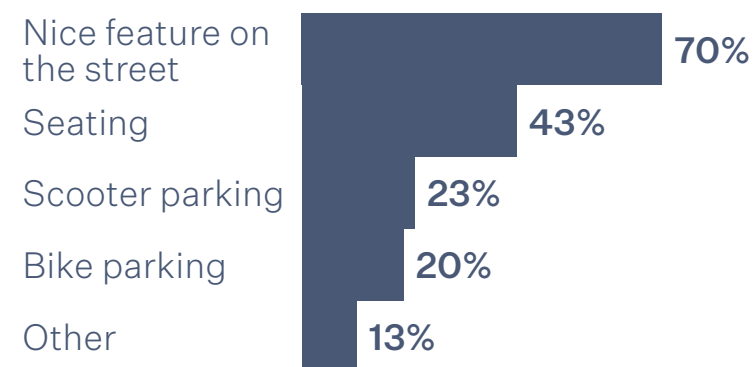
Associated research by Spacescape indicated that there was a **400% increase in activity on the street**, and from a more diverse population, in terms of age. It's worth noting that the surveys took place in October, which is already quite cold in Stockholm.

Overall feedback of the prototype core idea

How do you see the idea of placing mobility hubs, similar to the one you can see in front of you, on different streets in the city?

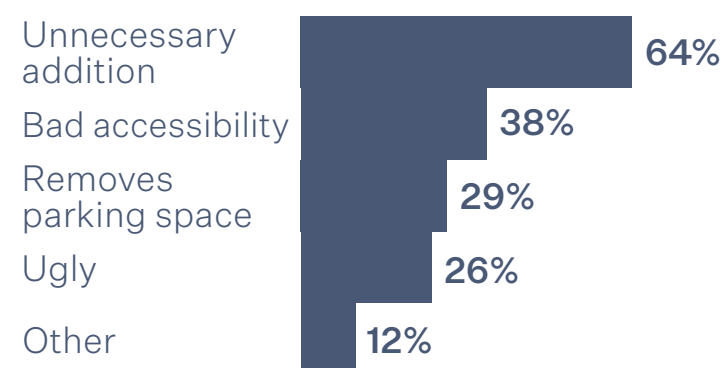


If you are positive, what is it that you like?



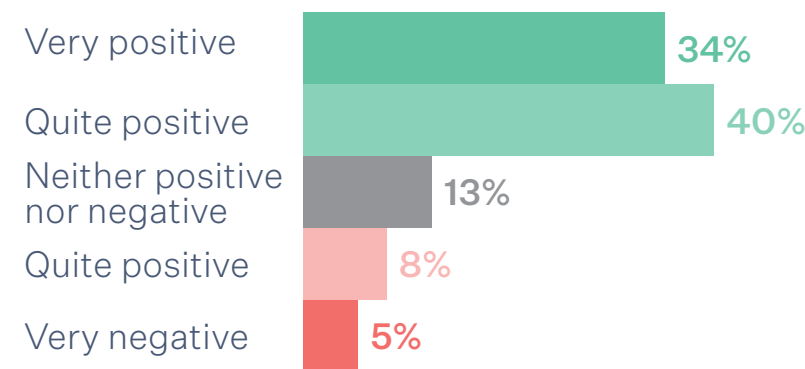
** Very low base!*

If you are negative, what is it that you don't like?

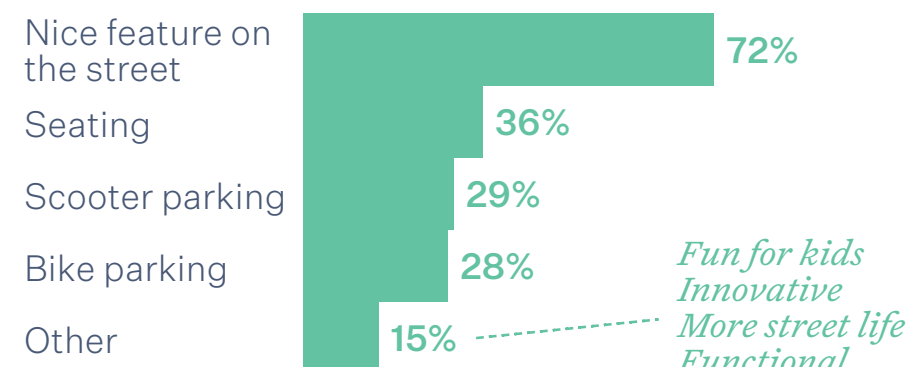


Hälsingegatan

How do you see the idea of placing mobility hubs, similar to the one you can see in front of you, on different streets in the city?

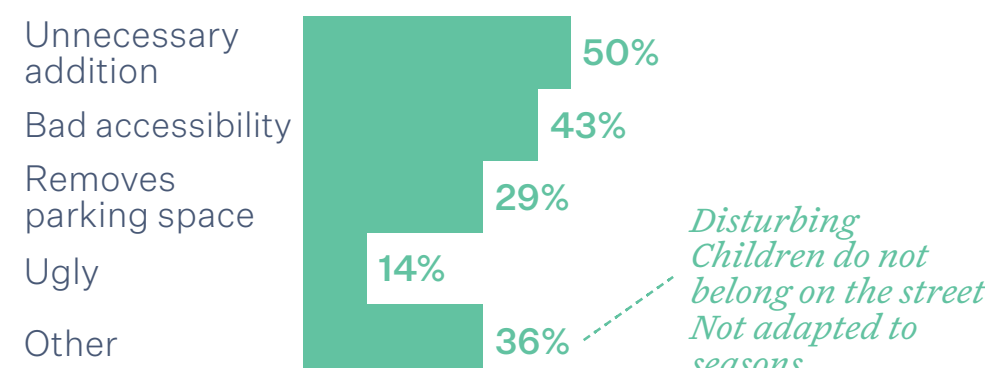


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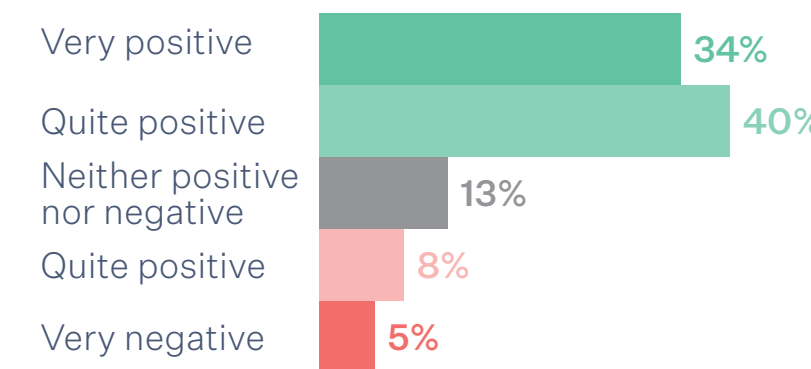
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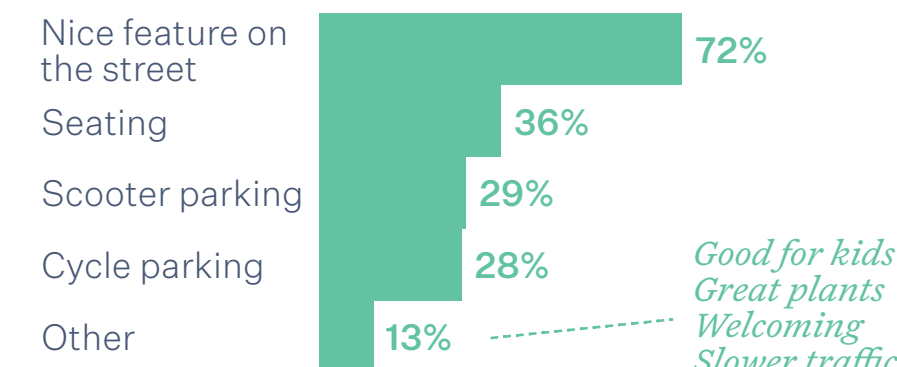


Tjärhovsgatan

How do you see the idea of placing mobility hubs, similar to the one you can see in front of you, on different streets in the city?

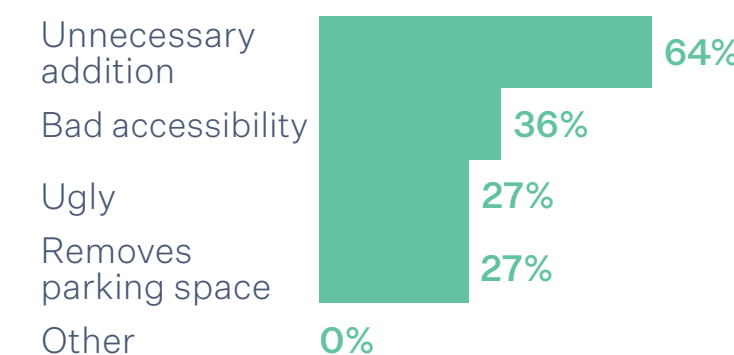


If you are positive, what is it that you like?



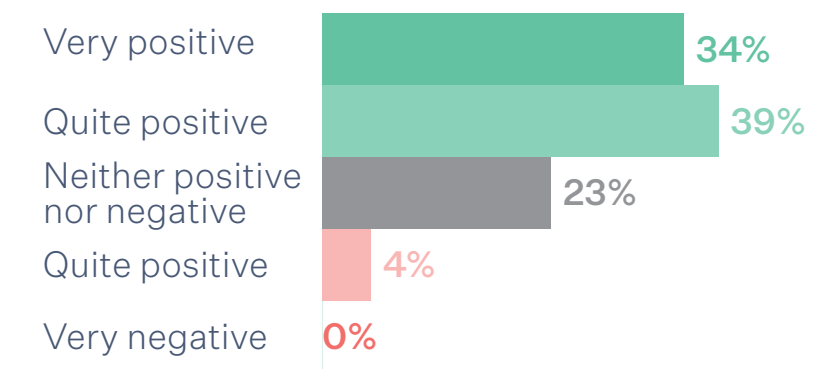
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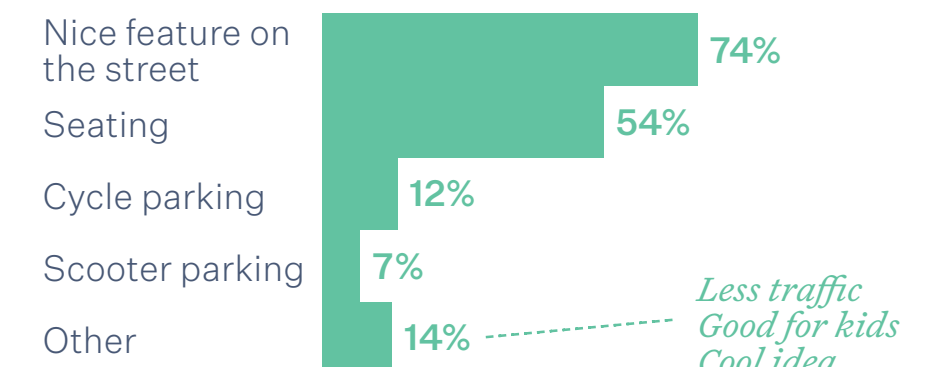


Parmmätargatan

How do you see the idea of placing mobility hubs, similar to the one you can see in front of you, on different streets in the city?

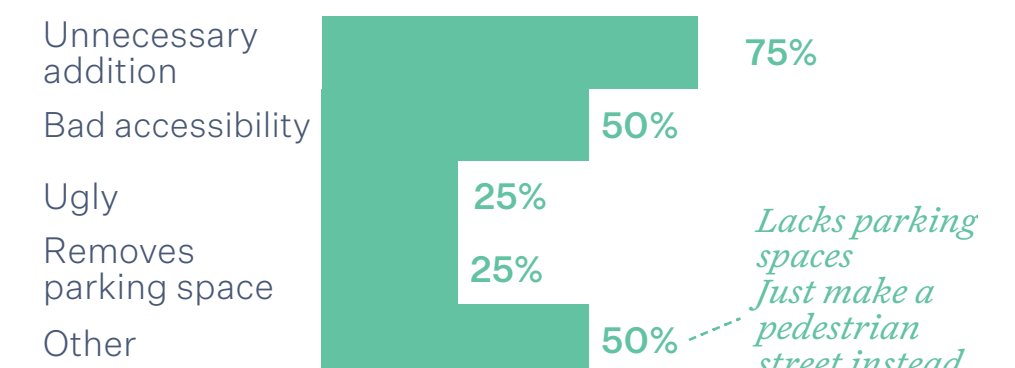


If you are positive, what is it that you like?



** Very low base!*

If you are negative, what is it that you don't like?



Note: Those who live on or around Tjärhovsgatan and Parmmätargatan, and walk through them most weekdays, are the most positive.

The survey was conducted on the prototype streets, and consisted of face-to-face interviews with passers-by (aged 15+ years). 322 interviews were conducted in total, on 8th, 9th and 12th October 2020.

106	112	104
Hälsingegatan	Tjärhovsgatan	Parmmätargatan

Margin of error for 100 interviews:
In case of outcome 20/80: +/- 7.8%
In case of outcome 50/50: +/- 9.8%

Place layers

Skills, capabilities, and cultures

In the Street mission

Physical, digital, and social interventions in streets in Stockholm, Helsingborg, and Umeå, within a wider network of nine municipalities coordinated by Viable Cities.

Place-based collaborators

ArkDes, Stockholms stad; Helsingborg stad; planning and health departments; Voi; Volvo

System layers

Skills, capabilities, and cultures

In the Street mission

Urban design/architecture; IoT, data science; user experience; micromobility, transport, and logistics; place-based governance; participative democracy; microeconomics; health and wellbeing;

System collaborators

ArkDes; Rådet för hållbara städer; Boverket; Spacescape; Stockholm Region

Standards and guidelines

Interoperable mobility standards, street furniture design guidelines, health and safety guidelines for micromobility, civic IoT privacy guidelines, street design guidelines and best practice, accessibility standards

Municipal traffic departments in Stockholm Region; Voi; Volvo M; Lundberg Design; Spa

Data, code, and services

Micromobility data standards; Real-time kerbside management systems; 'digital twins'; Internet of Things kits; environmental sensor

Stockholms stad; Helsingborg stad; Umeå s; Volvo M; Ericsson One; Vinnova; RISE

Financing

New value models, with 'total value budgeting' based on public health and wellbeing savings, environmental benefits, maintenance benefits; place-based system demonstrator innovation funding

Stockholms stad; Helsingborg stad; Umeå s; Climate-KIC

Policy

Parking space policy; street planning policy; local real estate policy; participative design and planning policy; smart city policy; arts and culture policy; licensing policies

ArkDes; Rådet för hållbara städer; Boverket; RISE; Stockholm Region

Law

Parking space law, traffic speed limits, vehicle definitions, municipal and regional governance and financing law

Transportstyrelsen (national regulatory aut

Place-based collaborators

ArkDes, Stockholms stad; Helsingborg stad; Umeå stad; Stockholm Region planning and health departments; Voi; Volvo M; Lundberg Design; Spacescape

System collaborators

ArkDes; Rådet för hållbara städer; Boverket; Voi; Volvo M; Lundberg Design; Spacescape; Stockholm Region

Municipal traffic departments in Stockholm, Helsingborg and Umeå; Stockholm Region; Voi; Volvo M; Lundberg Design; Spacescape; RISE, Transportstyrelsen

Stockholms stad; Helsingborg stad; Umeå stad; Stockholm Region; SKR; Voi; Volvo M; Ericsson One; Vinnova; RISE

Stockholms stad; Helsingborg stad; Umeå stad; Vinnova; Stockholm Region; Climate-KIC

ArkDes; Rådet för hållbara städer; Boverket; Climate-KIC; Viable Cities; Vinnova; RISE; Stockholm Region

Transportstyrelsen (national regulatory authority)

Adaptive strategy

1 Linear, waterfall, predictive, fund-and-forget

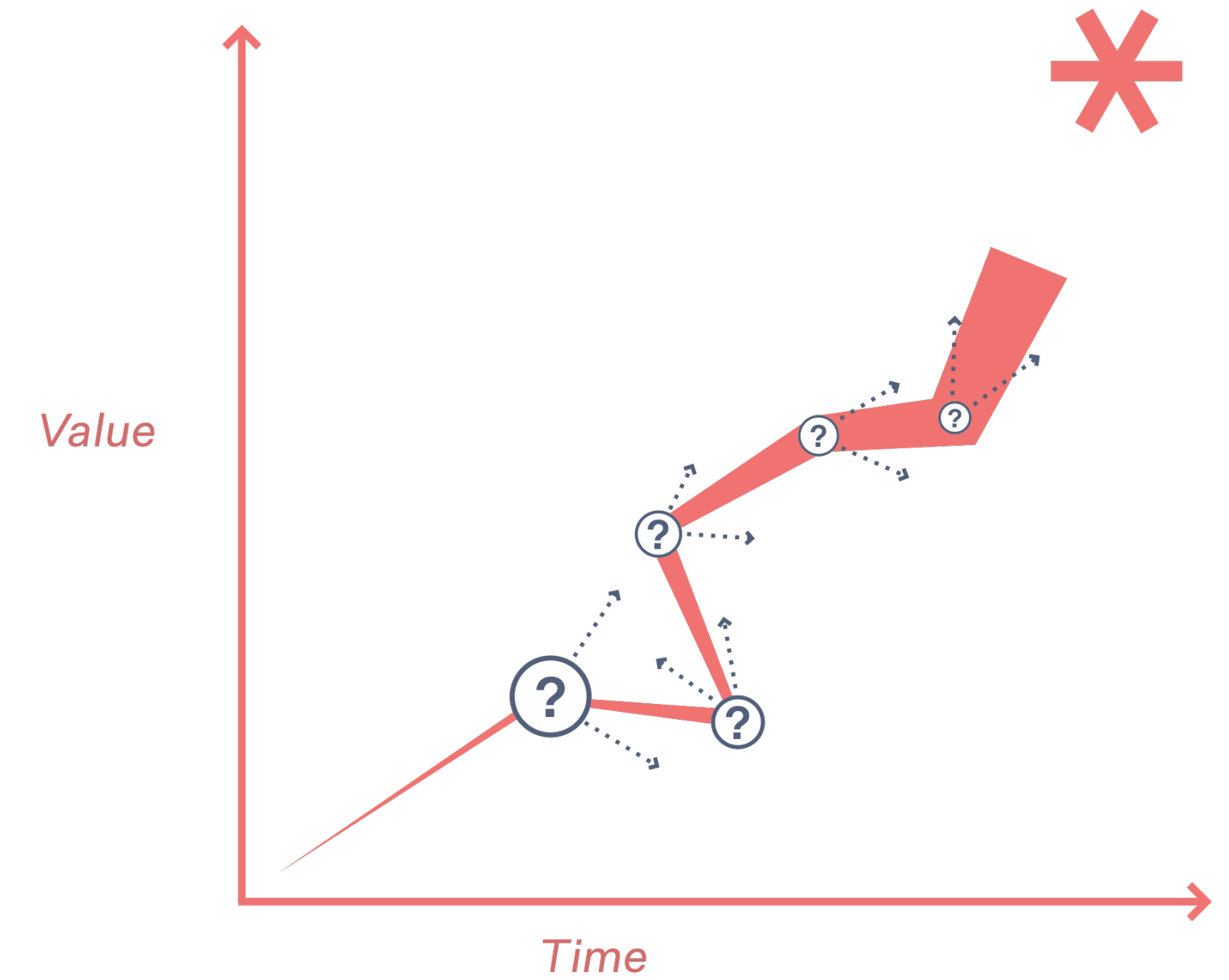
Planning and policymaking

Delivery

2 Parallel, iterative, adaptive, engaged learning

Planning and policymaking

Delivery

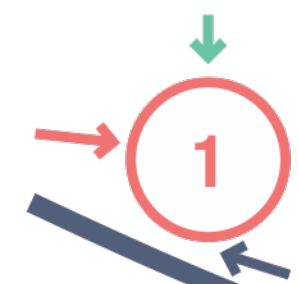


Snowball dynamic

Local political

Prototypes in one place

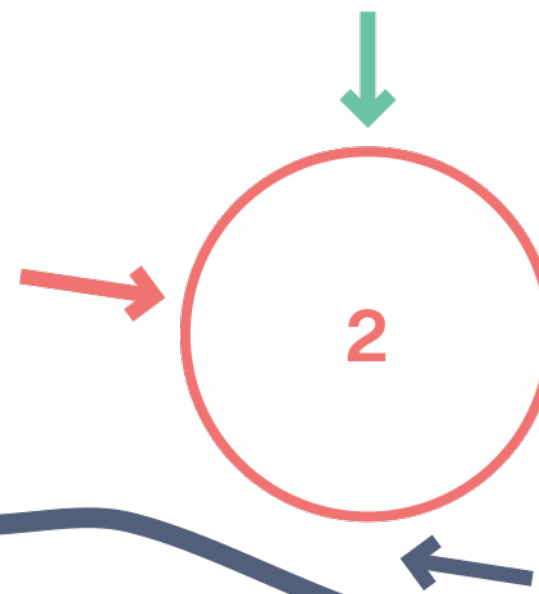
Rich small data, local learning and value



Regional political

Prototypes in multiple places

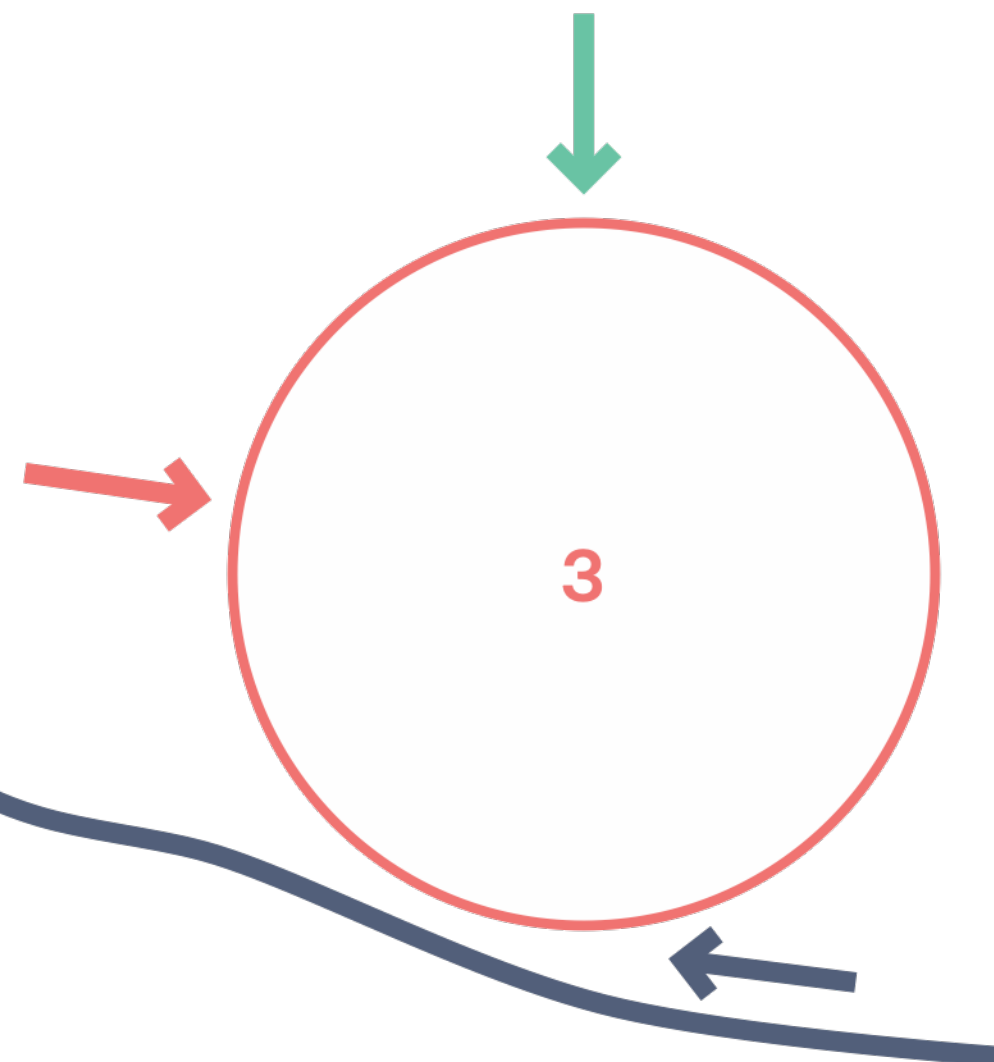
Shared learning and value, early evidence



National political

Prototypes in many places

Convincing evidence



→ Applied force
→ System friction
→ Mission gravity

Place-based innovation keeps systems complex, places tech in context, builds local capability, enables deep participation, makes things tangible, enables iteration and scaling, builds meaningful governance

- Explicitly directional mission-led approach
- Build participation from stage minus one
- Place-based innovation unlocks systems
- Identify and redeploy existing embedded value
- Technology in context of people and place
- Integrate private, public and third sectors
- Deploy prototypes for understanding and discourse
- Continuous stewardship and engagement
- Use platform strategy to scale
- Innovation agency as ‘the cement between the bricks’

- Strategic design
- Participation and co-design
- Systems thinking and acting
- Relational capabilities
- Agile management of risk, budget, resources

