



AMSTERDAM INSTITUTE FOR
ADVANCED METROPOLITAN SOLUTIONS

Engineering the future city.

Introduction to Urban Living Labs
Leendert Verhoef





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RESEARCH THEMES AMS INSTITUTE

Working on metropolitan challenges



Smart Urban Mobility

Ensuring an accessible and liveable city by developing smart and sustainable and seamless mobility solutions that can be integrated into the urban fabric.



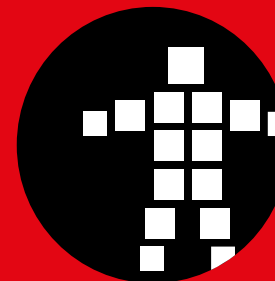
Metropolitan Food Systems

Designing inspiring scenarios to make food systems more sustainable and future-proof, by focusing on core elements such as: economic development, health, mobility and regional attractiveness.



Urban Energy

Accelerating the urban energy transition, by combining integrated innovations in energy systems with urban (re-)development.



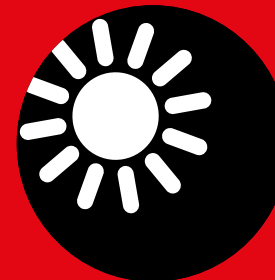
Urban Data & Intelligence

Mobilize new analytical tools to better use urban (big) data and improve city life, while strengthening and safeguarding the democratic values of citizens and society.



Circularity in Urban Regions

Redesigning resource flows that drive urban activities, whilst establishing integral sustainable urban ecosystems, supported by a new, resilient economic model.



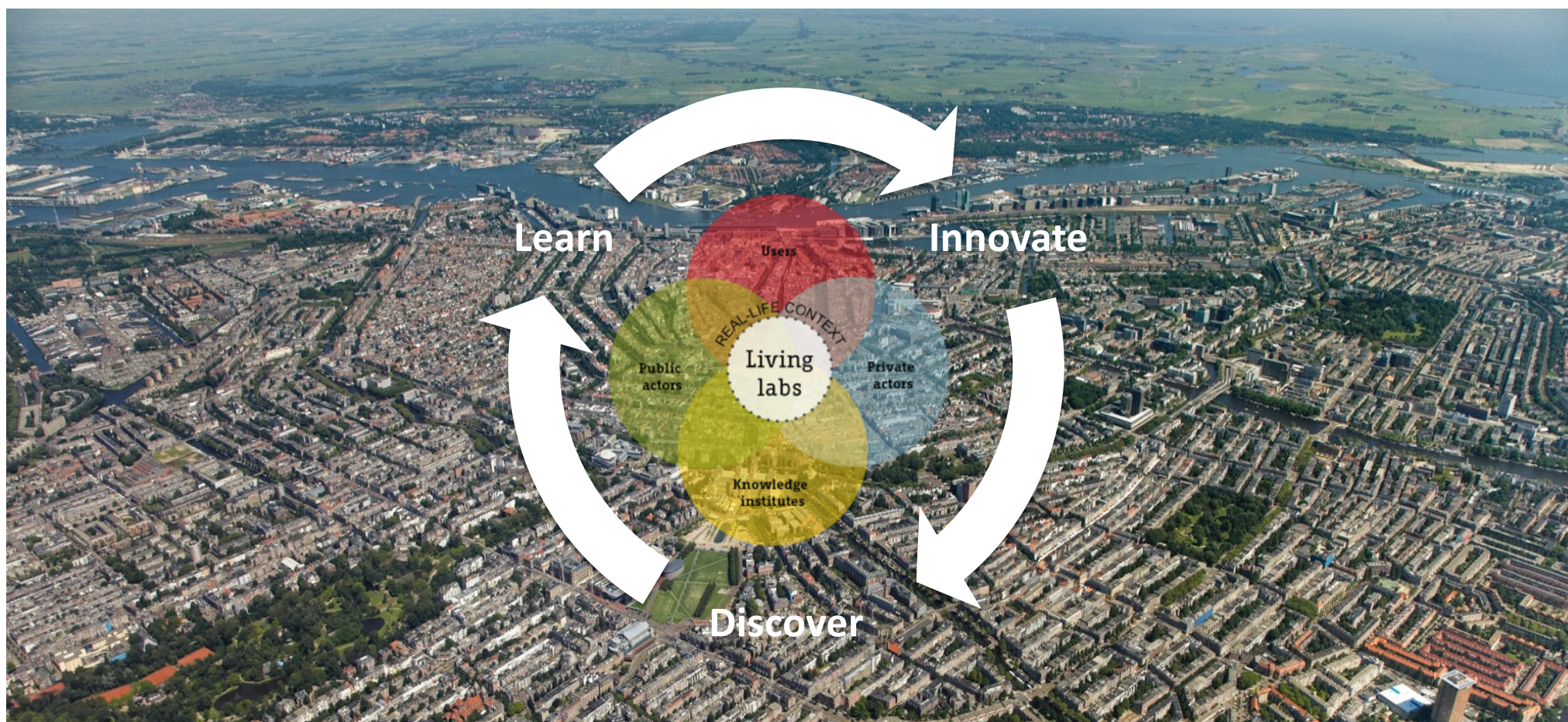
Climate Resilient Cities

Building preparedness and resilience by reducing cities' weaknesses and the impact of climate change: environmental, health related and societal.



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AMS INSTITUTE APPROACH



BUT WHAT IS A LIVING LAB?

“... user-centered, open innovation ecosystems based on a systematic user co-creation approach, integrating research and innovation processes in real life communities and settings”

<https://www.openlivinglabs.eu>

“... to work together on the iterative development of innovations in their real-life use context”



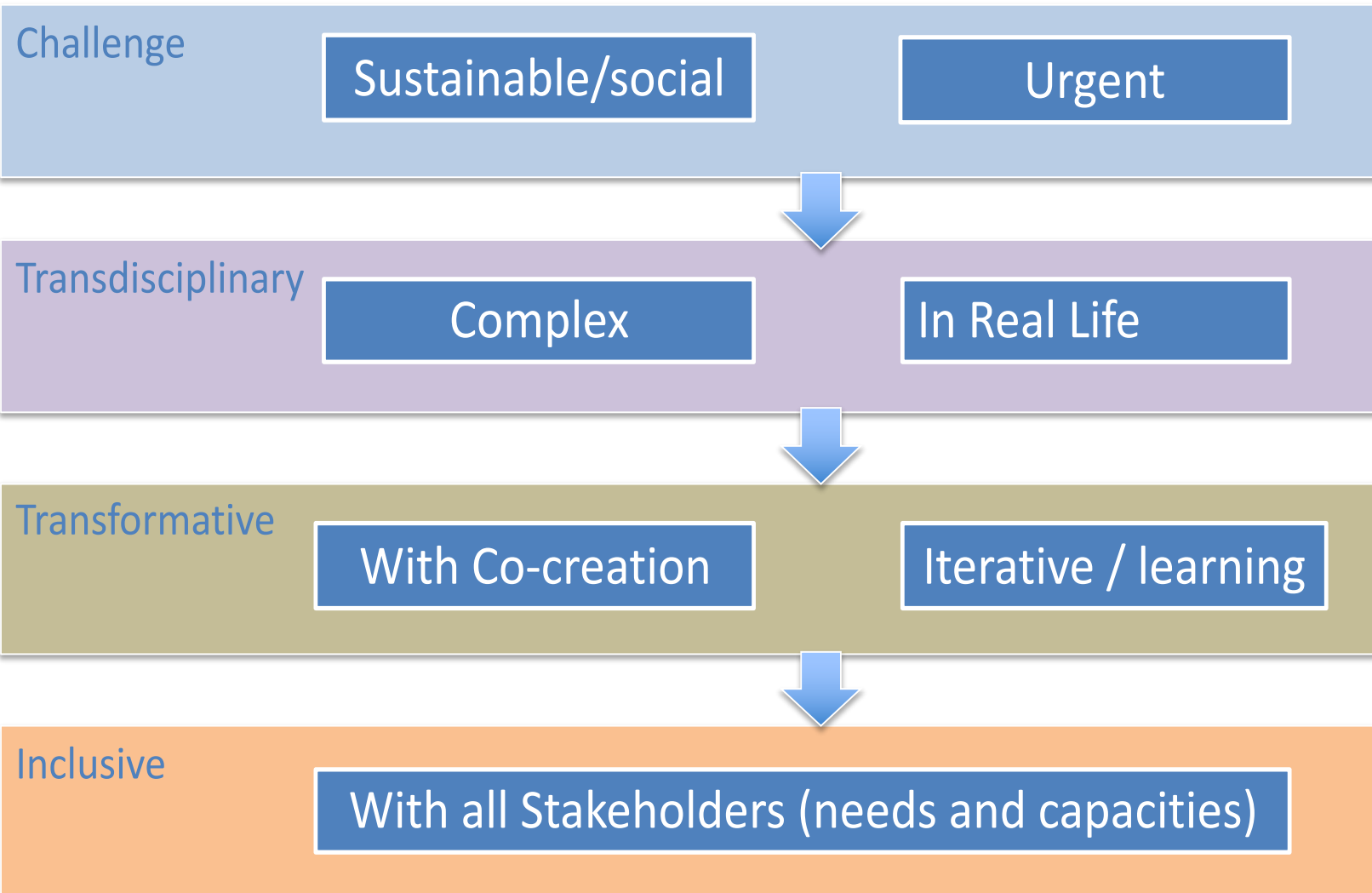
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... A NEW WAY OF INNOVATION IN THE CITY...

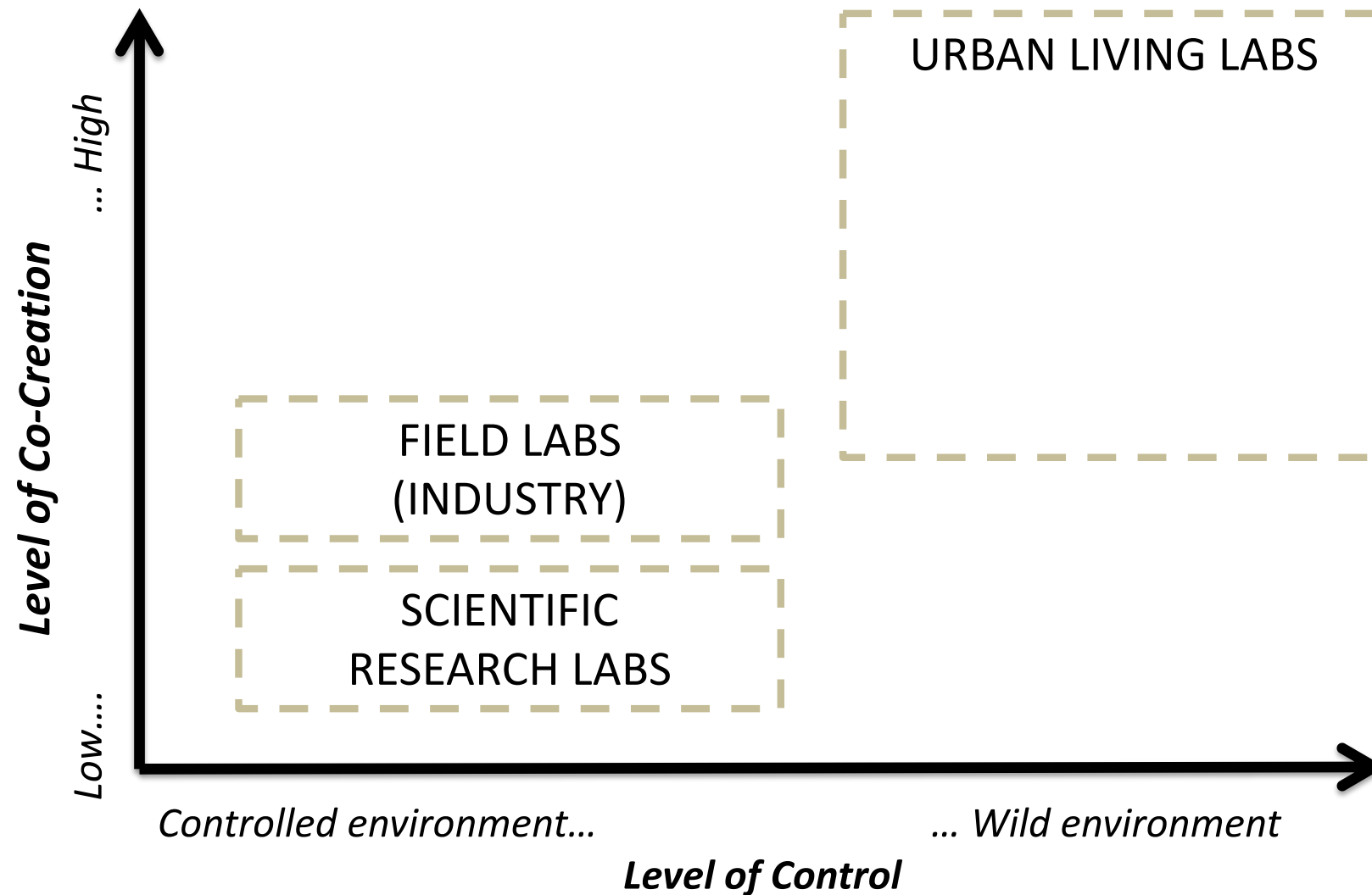


WHERE LIVING LABS CAN MAKE THE DIFFERENCE

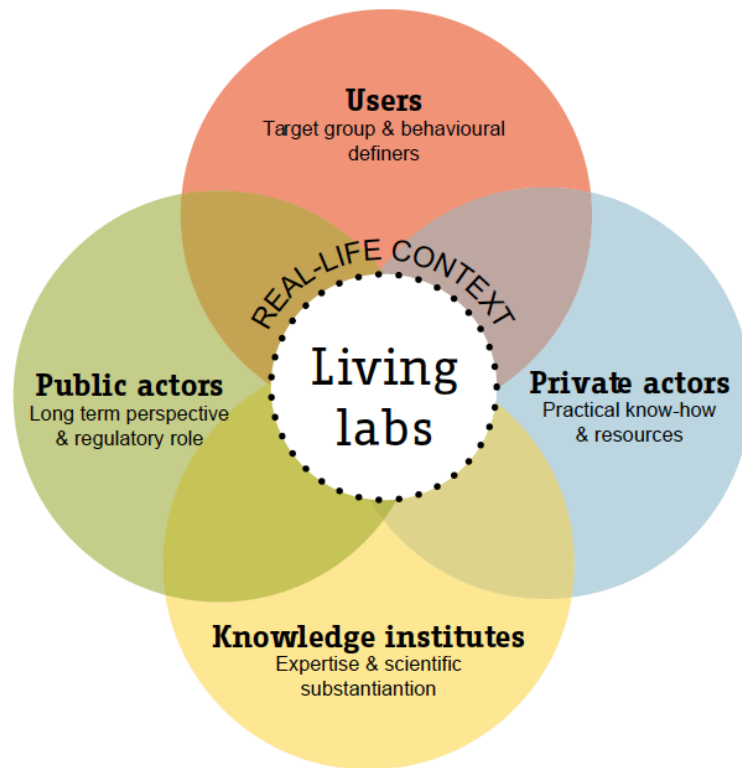
Urgent, social, complex challenges can best be solved iteratively with stakeholders



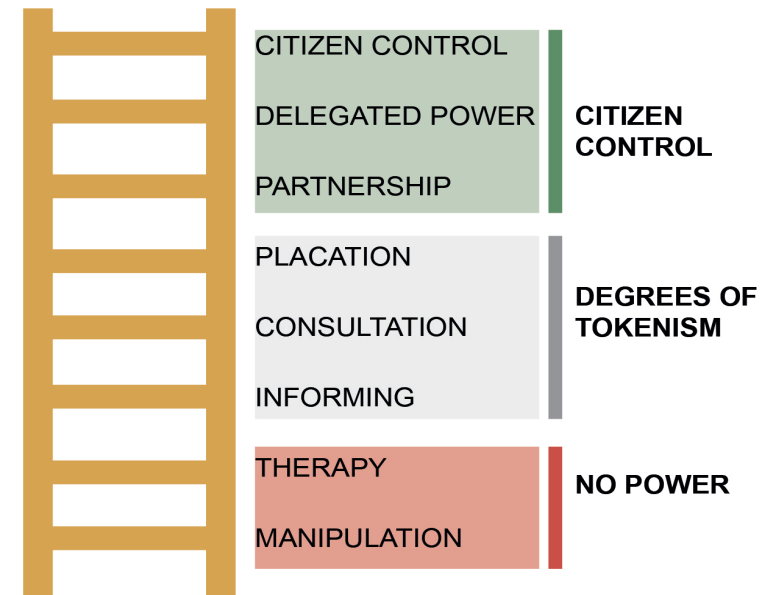
TYPES OF LABS



WHO ARE THESE STAKEHOLDERS?



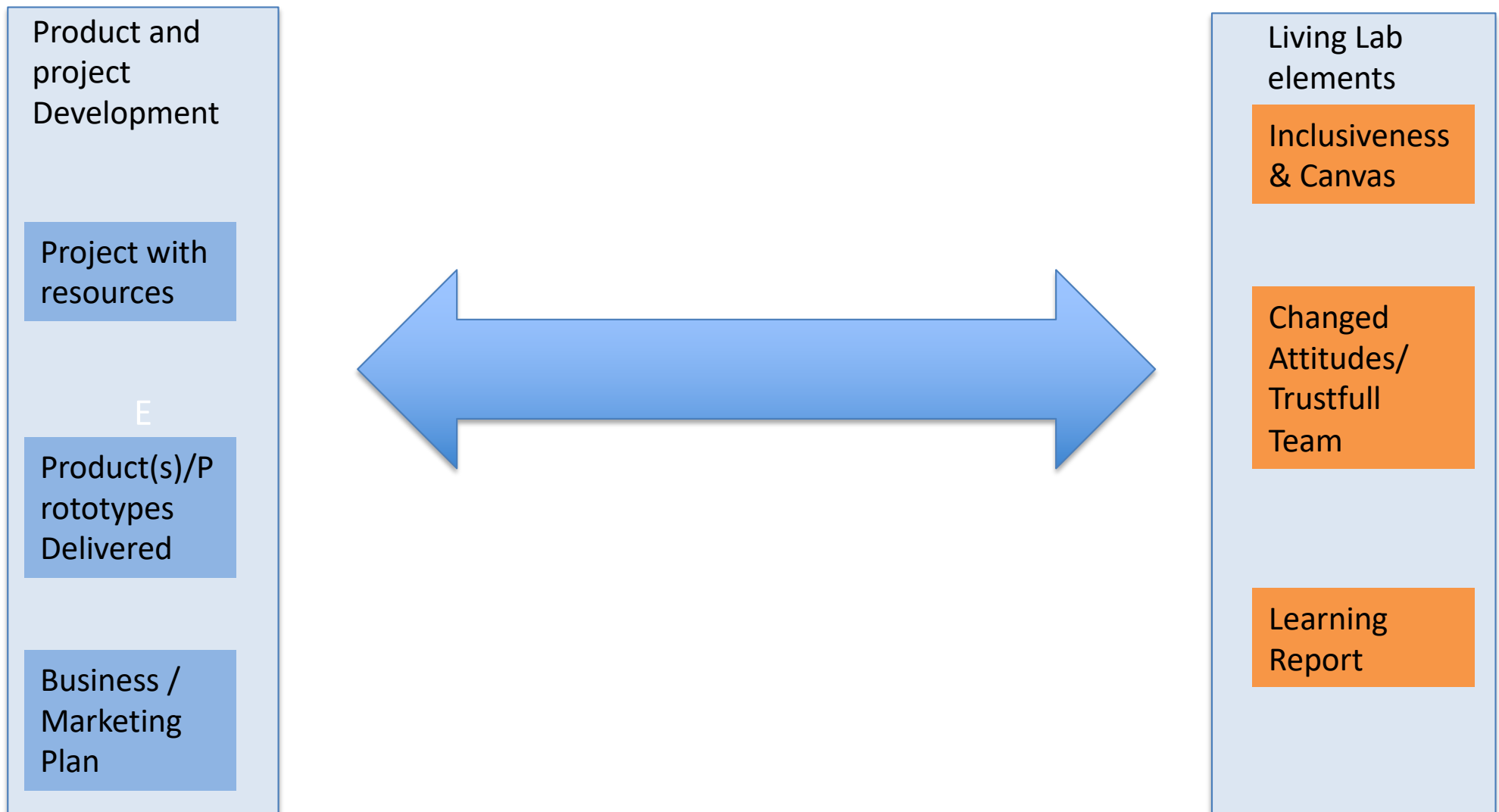
LADDER OF PARTICIPATION (ARNSTEIN, 1969)



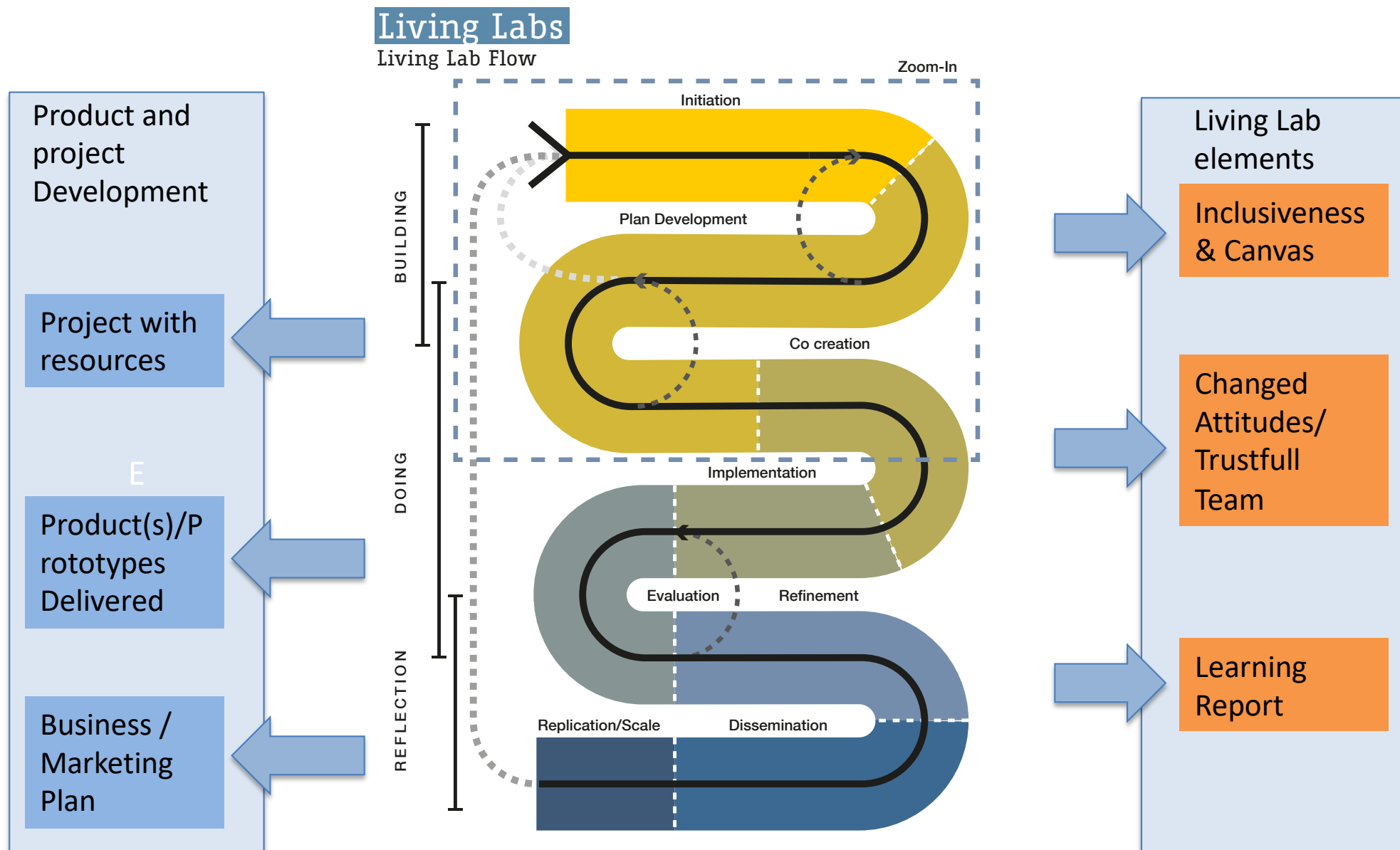
Source: Steen, K.Y.G., Van Bueren, E.M., *Urban Living Labs: A Living Lab Way of Working AMS Research report*, AMS Institute, June 2017

TWO WORLDS: PROJECTS VS LEARNING

Connecting the world of projects (real estate) with the approach of co-creation, operationalising inclusiveness, changed attitude, and a learning/iteration approach



THE AMS URBAN LIVING LAB WAY OF WORKING



SIMPLE TOOLS TO HELP SOLVE COMPLEX PROBLEMS

Intake : Relevance, Transdisciplinary, Real Life, inclusive / empowered

Product and
project
Development

Project with
resources

E

Product(s)/P
rototypes
Delivered

Business /
Marketing
Plan

Design

Build tool

Operate (and experiment)

Impact / Learn tool

Living Lab
elements

Inclusiveness
& Canvas

Changed
Attitudes/
Trustfull
Team

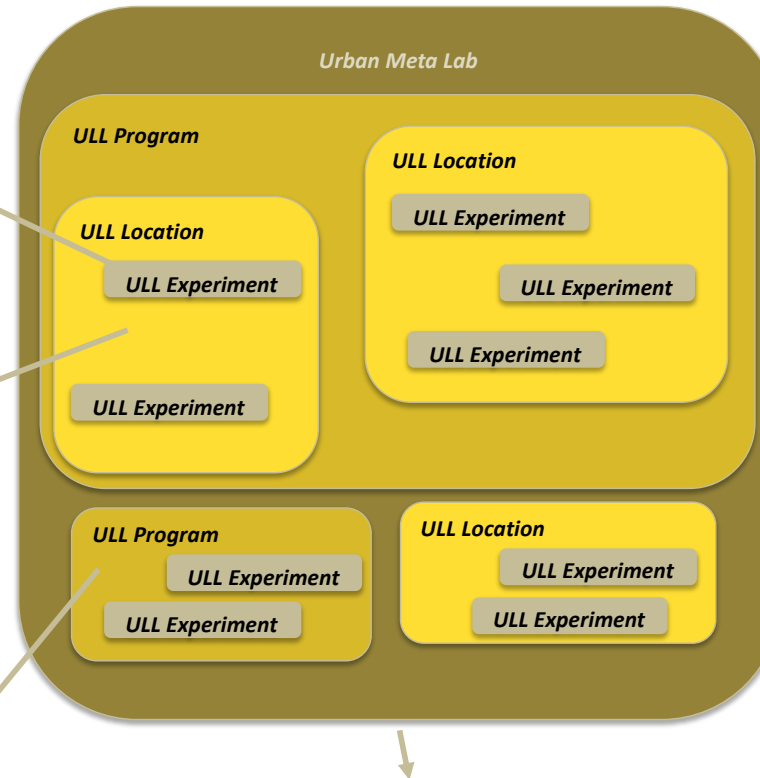
Learning
Report

TAXONOMY OF A LIVING LABS

ULL Experiments 'An ULL Experiment is the **collection of activities needed** for conducting an experimentation project in a real-life setting in a city.'

ULL Location 'An ULL Location is a **physical demarcated area**, a "laboratory", that is available for experimentation and where multiple ULL Experiments take place.'

ULL Program 'An ULL Program is the substantive **set of related measures or activities with particular long-term aims** that are pursued through one or more ULL Locations, or through multiple stand-alone ULL Experiments throughout a city.'



Urban Meta Lab 'An Urban Meta Lab is a collection of multiple ULL Locations and/or ULL Experiments and focuses on the **exchange of knowledge, upscaling and replication of innovations**.'



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The culinary heritage of cities

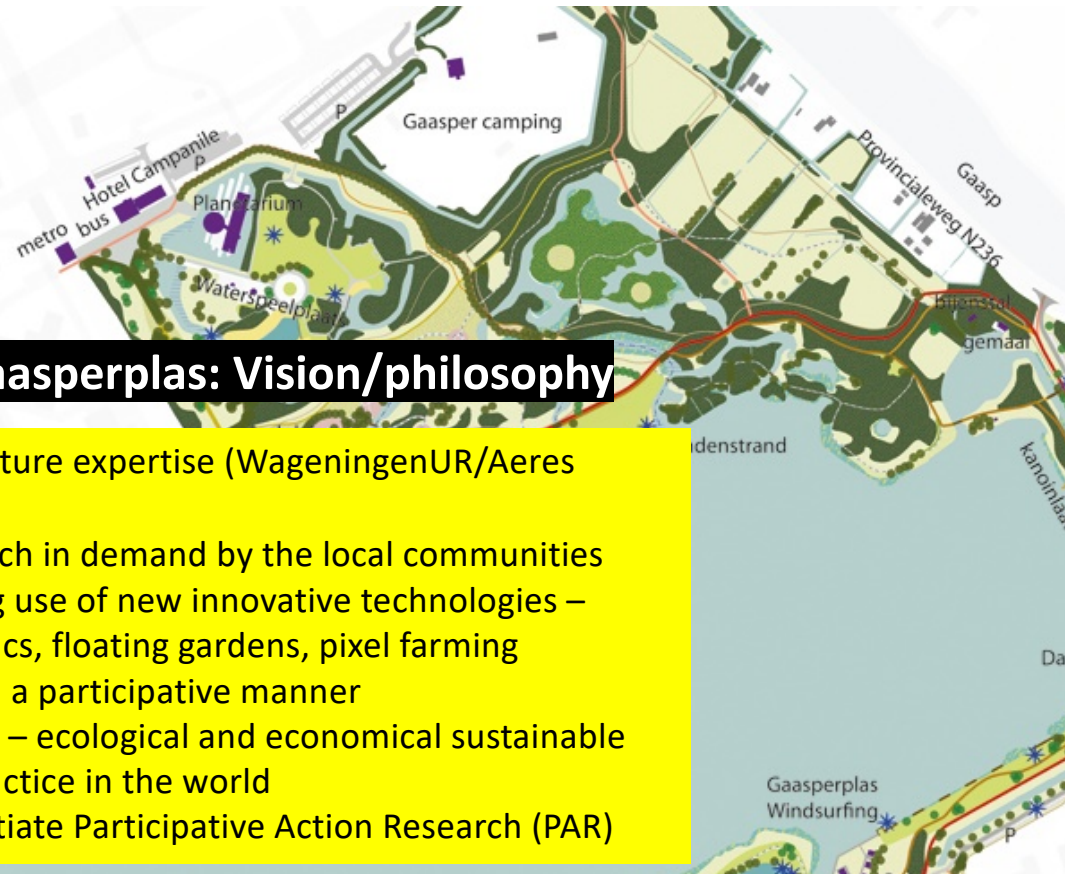
Smart, sustainable and local production of vegetables and herbs at Amsterdam to appreciate the culinary heritage and wellbeing of the multicultural communities living in cities

Exploration



Urban farming at Gaasperplas: Vision/philosophy

- ☐ Use professional agriculture expertise (WageningenUR/Aeres Hogeschool)
- ☐ Grow crops that are much in demand by the local communities
- ☐ Urban farming – making use of new innovative technologies – green houses, aquaponics, floating gardens, pixel farming
- ☐ But not top down but in a participative manner
- ☐ Sustainable in two ways – ecological and economical sustainable
- ☐ Objective: New best practice in the world
- ☐ Create a living lab to initiate Participative Action Research (PAR)



Kitchen garden



Urban greenhouses



Vertical farming



Food Forestry

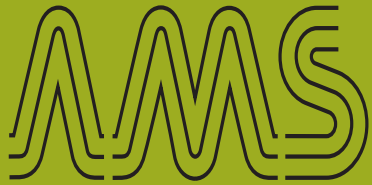


Field crop systems



Floating farming





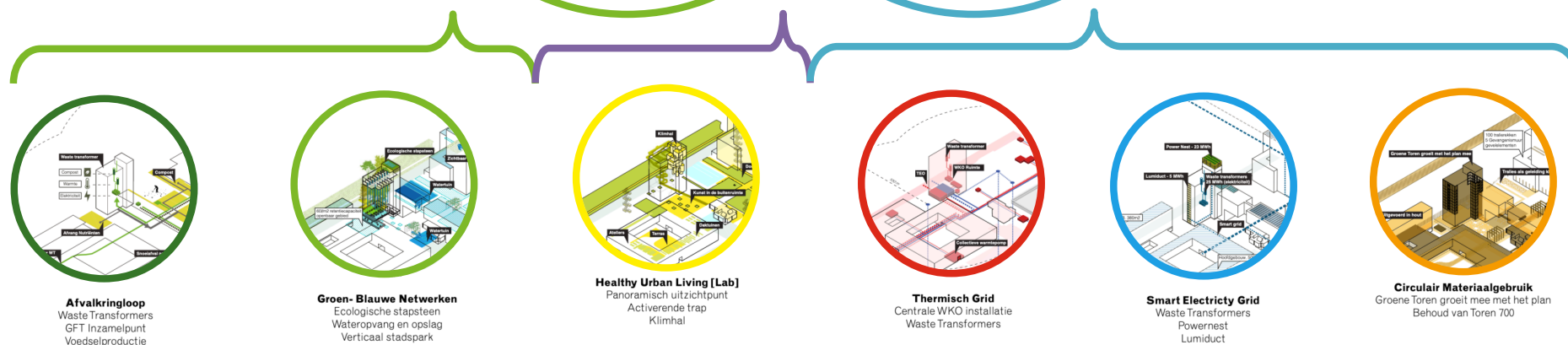
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BajesKwartier: Een living lab in 'De Groene Toren'

Als kloppend hart van de wijk verbindt het diverse systemen en stromen. Het is de plek waar duurzaamheid waarneembaar en ervaarbaar is voor iedereen.



*The Green Tower can be an example of a replicable and integral concept for a **Circular Sustainability Hub** that accelerates Circular Urban Development.*



Four Bajes Living Lab Challenges:

Towards a Closed Biological Cycle:

- *How can the Green Tower function as a Circular Urban Food System in which nutrients and resources from waste produced in the Bajes Kwartier can be recovered on the highest circularity level possible?*

Towards a Closed Material Cycle:

- *How can the Green Tower become a circular building?*

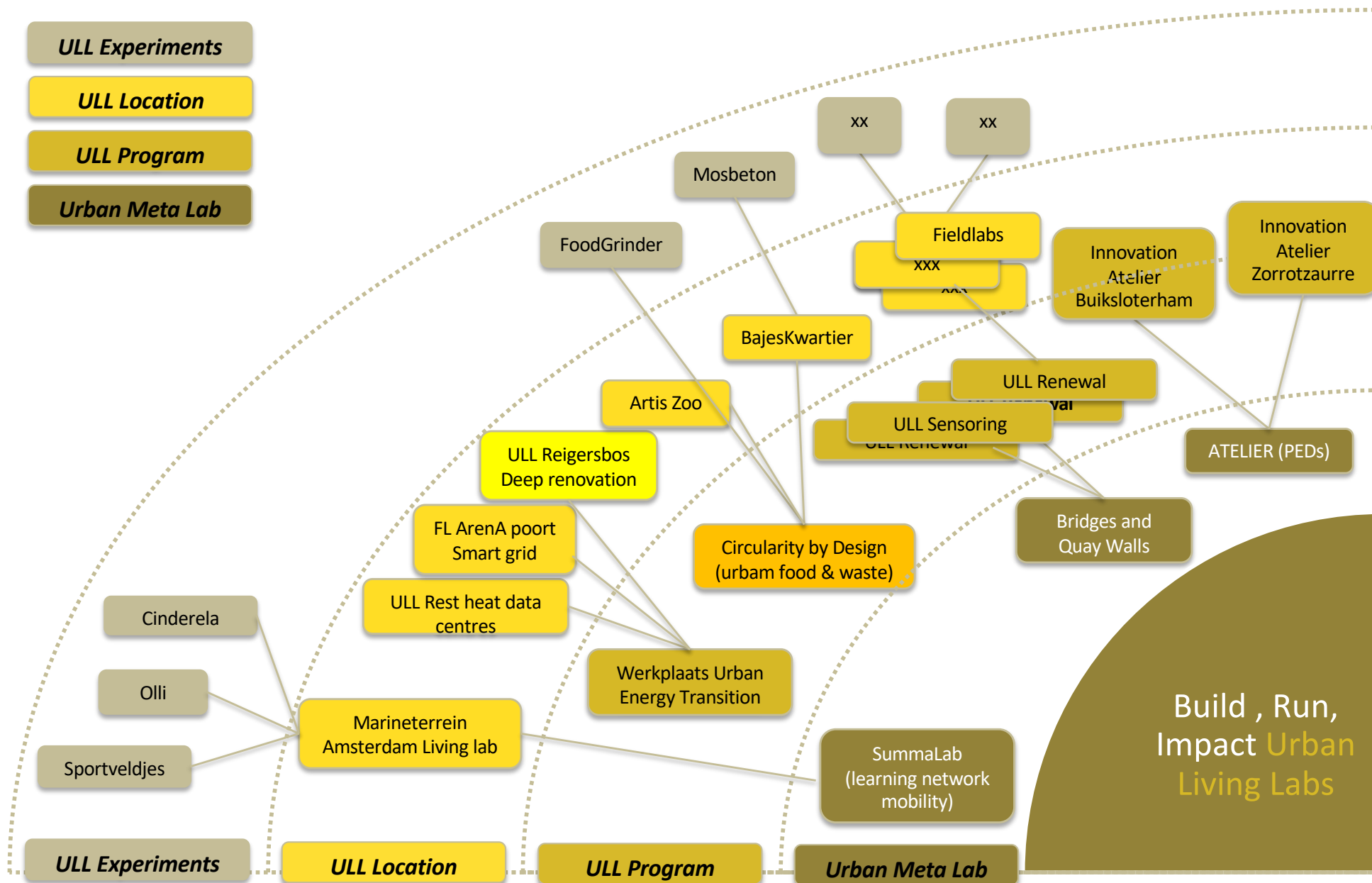
Towards a healthy living environment and Social Acceptance:

- *How can the Green Tower facilitate a Green Vertical Park that contributes to a healthy living environment for the inhabitants of Bajes Kwartier?*

Towards a replicable Circular Sustainability Hub concept:

- *How can the Green Tower be a fully Circular Building that acts as Sustainability Hub for the Bajes Kwartier?*

AMSTERDAM IS BECOMING A NETWORK OF LABS...





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Characteristics of Living Labs, 17 August 2020

