

# Co-designing sustainable urban futures

**From challenges to solutions with the  
SEI Urban Toolbox for Liveable Cities**

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**A spatial story told by Jüri...**







Jüri 2002





Image © 2025 Maxar Technologies

Jüri 2014





Jüri 2024





Jüri 2011





7 Tartu mnt

Lehmja, Harju County



Google Street View

Jul 2024

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Jüri 2024







Võsa tn, Jüri 2011





15 Võsa tn

Jüri, Harju County



Google Street View

Apr 2023

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Võsa tn, Jüri 2023







# Urban Toolbox for Liveable Cities

01 **Why** does it matter? - Background

02 **What** is the Urban Toolbox? - Introduction

03 **How** does it work? - Case studies and applications

04 **Who** we are and further collaboration



# Urban Toolbox for Liveable Cities

## 01 **Why** does it matter?





# Rapid (sub)urbanization and its challenges

## SUSTAINABLE DEVELOPMENT GOALS





# Rapid (sub)urbanization and its challenges



Source: Photo by [nguyen quan](#) on [Unsplash](#)



Source: Photo by Pok Rie



# The SEI Urban Toolbox



A section of Luthuli Avenue closed to traffic during its “Placemaking Week” to demonstrate how the street could be developed to make it safer and more accessible to pedestrians and cyclists.

Photo: Howard Cambridge / SEI.

Participatory Geographic Information System (PGIS) Mapping used as a creative method for engagement on the street.

Photo: Daniel Mwamba (Zambia Road Safety Trust).





# Core questions

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- Effective green infrastructure planning?
- Urban waste planning?
- Water, sanitation, and air quality evaluation?
- What makes a city healthy for its residents?
- Could citizens play an active role in monitoring the health of their city?



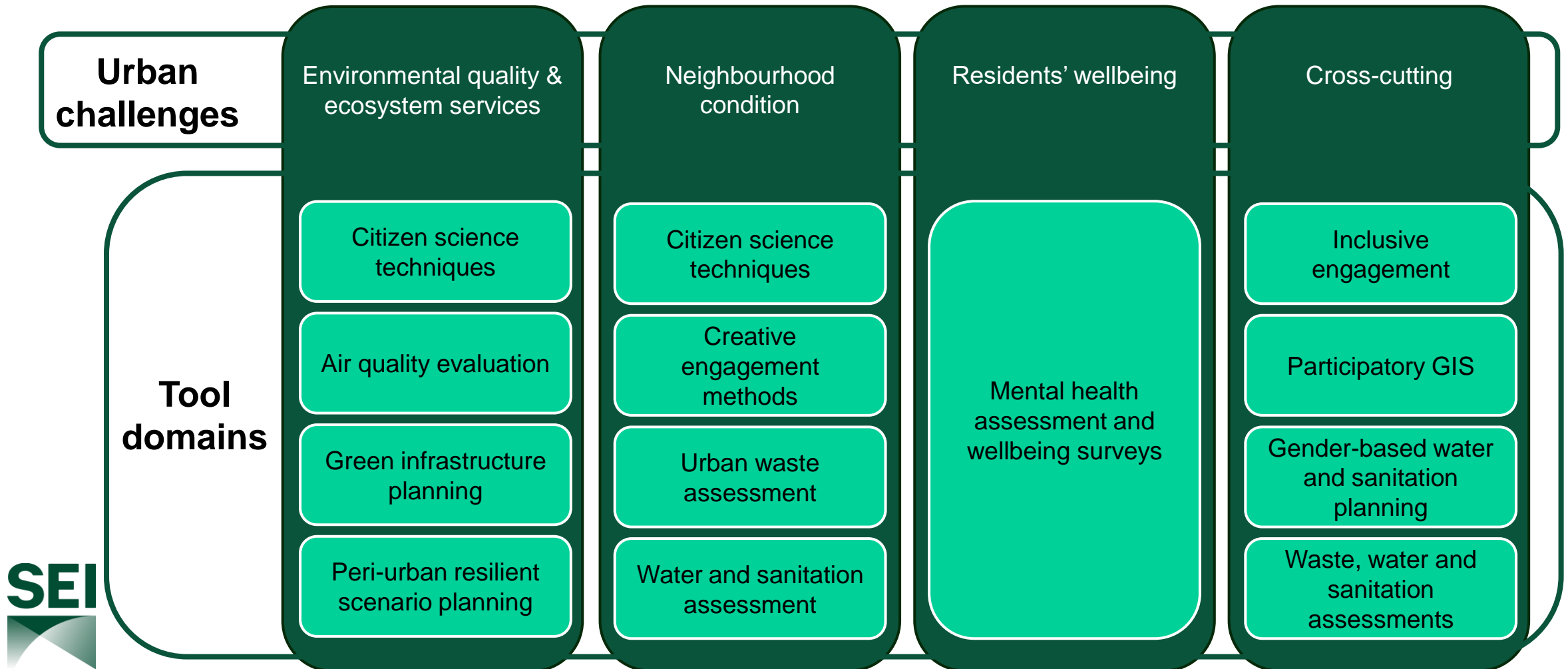


## 02 **What** is the Urban Toolbox?





# 02 What is the Urban Toolbox?





Environmental quality and ecosystem services	Neighbourhood conditions	Residents' well-being	Cross-cutting
<a href="#">B.GREEN Handbook</a> <sup>↗</sup> [Green Infrastructure]	<a href="#">Creative Drawing Approach</a> <sup>↗</sup> [Creative Engagement]	<a href="#">Wellbeing Surveys and Tools</a> <sup>↗</sup> [Mental Health]	<a href="#">EGESTABASE</a> <sup>↗</sup> [Waste, Water and Sanitation]
<a href="#">Citizen science and air pollution</a> <sup>↗</sup> [Citizen Science]	<a href="#">Digital Storytelling Tool</a> <sup>↗</sup> [Creative Engagement]		<a href="#">Empowerment in WASH Index Tool</a> <sup>↗</sup> [Water and Sanitation]
<a href="#">Co-create Citizen Science</a> <sup>↗</sup> [Citizen Science]	<a href="#">Musical Approaches</a> <sup>↗</sup> [Creative Engagement]		<a href="#">MapStakes</a> <sup>↗</sup> [Engagement]
<a href="#">LEAP (low emissions analysis platform)</a> <sup>↗</sup> [Air Quality]	<a href="#">Open Air Laboratories (OPAL)</a> <sup>↗</sup> [Citizen Science]		<a href="#">Participatory Geographic Information Systems (PGIS)</a> <sup>↗</sup> [Engagement]
<a href="#">PURE (Peri-Urban Resilient Ecosystems)</a> <sup>↗</sup> [Scenario Planning]	<a href="#">REVAMP (within Urban Circle)</a> <sup>↗</sup> [Urban Waste]		<a href="#">SDG Synergies</a> <sup>↗</sup> [Engagement]
	<a href="#">WASH Flows Tool</a> <sup>↗</sup> [Water and Sanitation]		<a href="#">WEAP (water evaluation and planning)</a> <sup>↗</sup> [Water and Sanitation]



# What does the tool look like?

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## About this tool

- How does this tool work?
- Who might use this tool?
- Which stakeholders are involved?
- What stage of the process does this tool support?

## Articles

- Tool overview
- Capabilities and resources required
- Implementation tips: key enablers and potential barriers
- Integration with other SEI tools

## Case Studies

- Application in practice
- Key findings and outcomes
- Adaptability to different contexts and levels of expertise.



# Urban Toolbox for Liveable Cities

## 03 **How** does it work?

**Tool 1: B.GREEN handbook**



**Tool 2: Wellbeing surveys and tools**





# B.GREEN

## B.GREEN HANDBOOK

Content About B.Green Languages

Green infrastructure

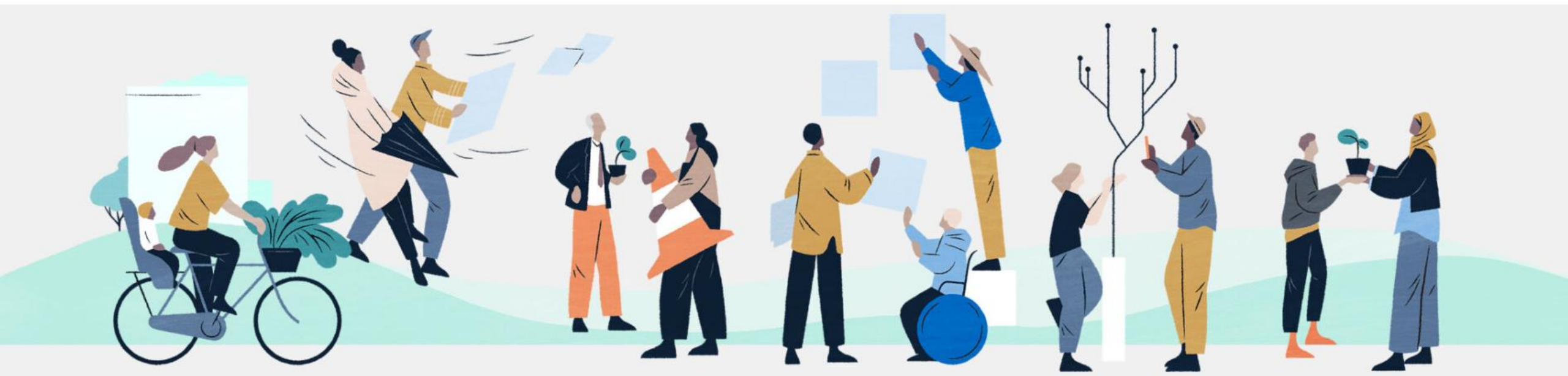
Climate Change and Resilience

Challenges for Green  
Infrastructure Planning

The Collaborative Planning  
Process

Digital Tools for Planners

Stakeholder Participation



# B.GREEN Digital tools for planners

## Data collection

EXAMPLE METHOD

Climate IoT Sensors

[+ Show more](#)

EXAMPLE METHOD

Mapping local plantlife

[+ Show more](#)

EXAMPLE TOOL

Local 3D model plant inventory

[+ Show more](#)

## 3D modelling

EXAMPLE TOOL

Using drone and headmounted AR-device for site analysis

[+ Show more](#)

EXAMPLE METHOD

Hermanninranta testing of 3D models in zoning processes

[+ Show more](#)

EXAMPLE METHOD

Allotment garden 3D modelling

[+ Show more](#)

EXAMPLE METHOD

Communication through 3D-Modelling

[+ Show more](#)

## Visualization

EXAMPLE TOOL

Using augmented reality to design green and social infrastructure

EXAMPLE TOOL

Augmented reality in the park

[+ Show more](#)

EXAMPLE TOOL

Putukaväil (Pollinator Highway) augmented reality

[+ Show more](#)

EXAMPLE TOOLS

Interactive tram stops and tour guiding apps

[+ Show more](#)





# AvaLinn app

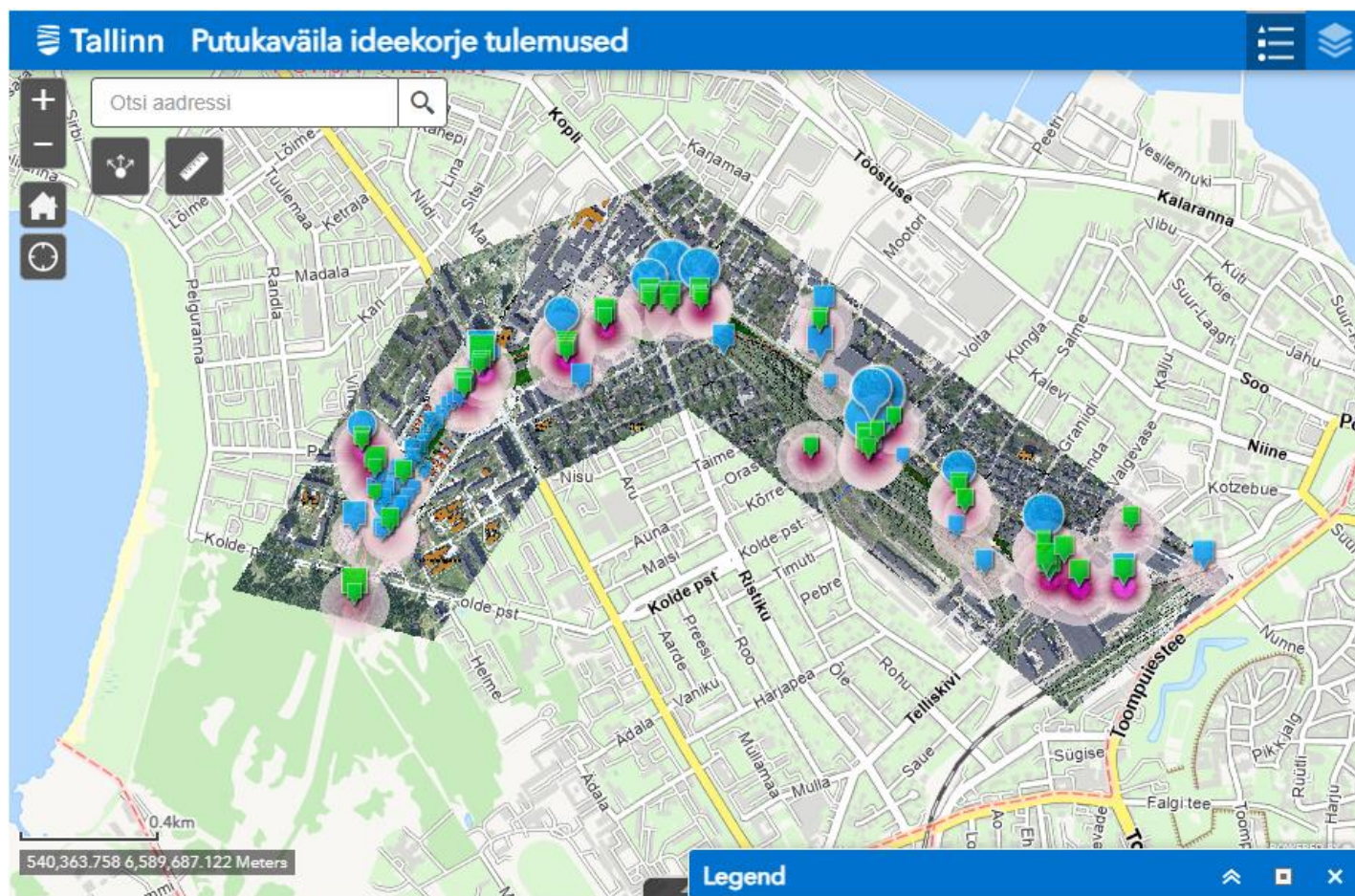


AvaLinn mobile application encourages co-creation to enable people to experience the landscape architecture solutions.

Credit: Tallinn Strategic Management Department, Spatial Design Competence Centre.



# AvaLinn app



Ideas and opinions collected with the AvaLinn mobile app, shown on the map.

Credit: Tallinn Strategic Management Department, Spatial Design Competence Centre.



# Urban Toolbox for Liveable Cities

## 03 **How** does it work?

Tool 1: B.GREEN Handbook

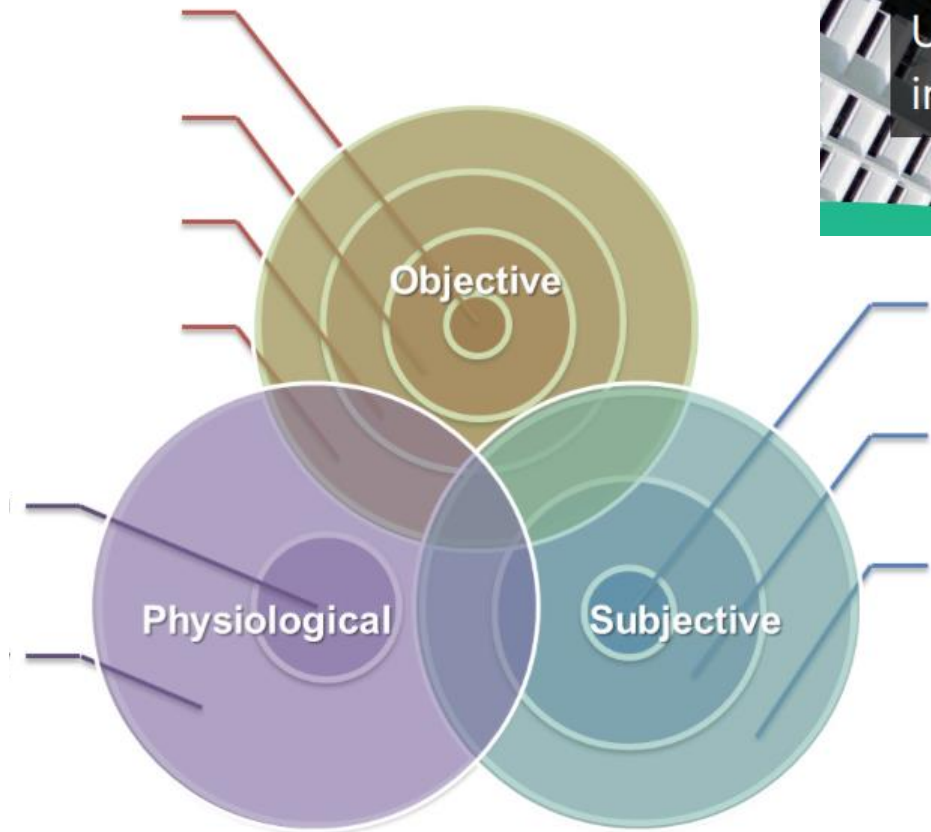


Tool 2: Wellbeing surveys and tools



# Wellbeing survey tools

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## Understanding wellbeing

Using mixed methods to understand the wellbeing of residents in low- and middle-income country cities



# Wellbeing survey tools



## Assessing Inequalities in Wellbeing at a Neighbourhood Scale in Low-Middle-Income-Country Secondary Cities and Their Implications for Long-Term Livability

Steve Cinderby<sup>1\*</sup>, Diane Archer<sup>2</sup>, Vishal K. Mehta<sup>3</sup>, Chris Neale<sup>4</sup>, Romanus Opiyo<sup>5</sup>, Rachel M. Pateman<sup>1</sup>, Casside Muhoza<sup>6</sup>, Charlotte Adeline<sup>2</sup> and Heidi Tuhkanen<sup>6,7\*</sup>

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### OPEN ACCESS

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#### Specialty section:

This article was submitted to  
Urban Ecology,  
a section of the journal  
Frontiers in Sociology

Received: 29 June 2021

Accepted: 29 September 2021

Published: 08 November 2021

#### Citation:

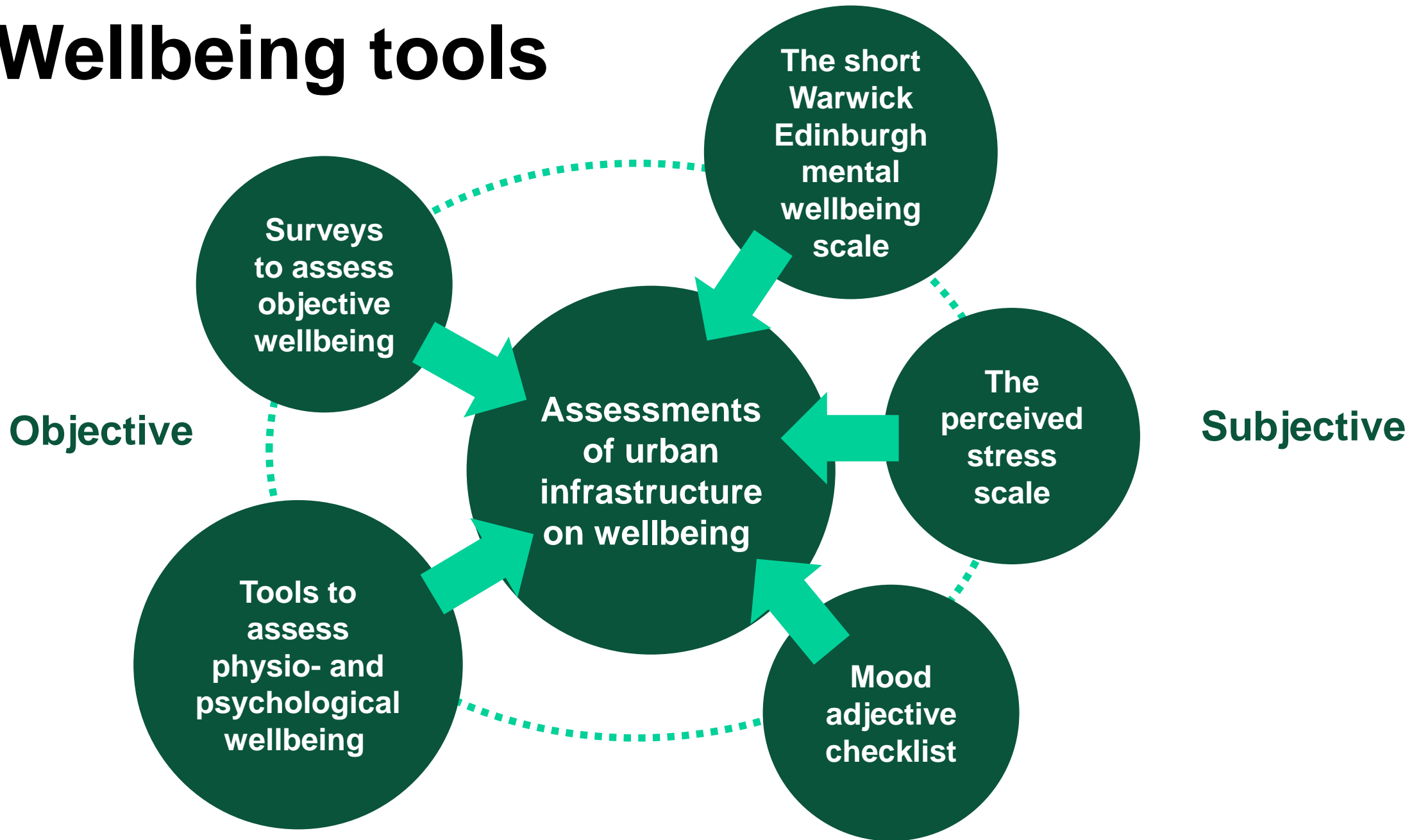
Cinderby S, Archer D, Mehta VK,  
Neale C, Opiyo R, Pateman RM,  
Muhoza C, Adeline C and Tuhkanen H  
(2021) Assessing Inequalities in  
Wellbeing at a Neighbourhood Scale in  
Low-Middle-Income-Country  
Secondary Cities and Their  
Implications for Long-Term Livability.  
Front. Sociol. 6:729453.  
doi: 10.3389/fsoc.2021.729453

To ensure future sustainability, cities need to consider concepts of livability and resident wellbeing alongside environmental, economic and infrastructure development equity. The current rapid urbanization experienced in many regions is leading to sustainability challenges, but also offers the opportunity to deliver infrastructure supporting the social aspects of cities and the services that underpin them alongside economic growth. Unfortunately, evidence of what is needed to deliver urban wellbeing is largely absent from the global south. This paper contributes to filling this knowledge gap through a novel interdisciplinary mixed methods study undertaken in two rapidly changing cities (one Thai and one Kenyan) using qualitative surveys, subjective wellbeing and stress measurements, and spatial analysis of urban infrastructure distribution. We find the absence of basic infrastructure (including waste removal, water availability and quality) unsurprisingly causes significant stress for city residents. However, once these services are in place, smaller variations (inequalities) in social (crime, tenure) and environmental (noise, air quality) conditions begin to play a greater role in determining differences in subjective wellbeing across a city. Our results indicate that spending time in urban greenspaces can mitigate the stressful impacts of city living even for residents of informal neighborhoods. Our data also highlights the importance of places that enable social interactions supporting wellbeing—whether green or built. These results demonstrate the need for diversity and equity in the provision of public realm spaces to ensure social and spatial justice. These findings strengthen the need to promote long term livability in LMIC urban planning alongside economic growth, environmental sustainability, and resilience.

**Keywords:** wellbeing, equity, urban, planning, livability, greenspace (Min-Max BI, global south)



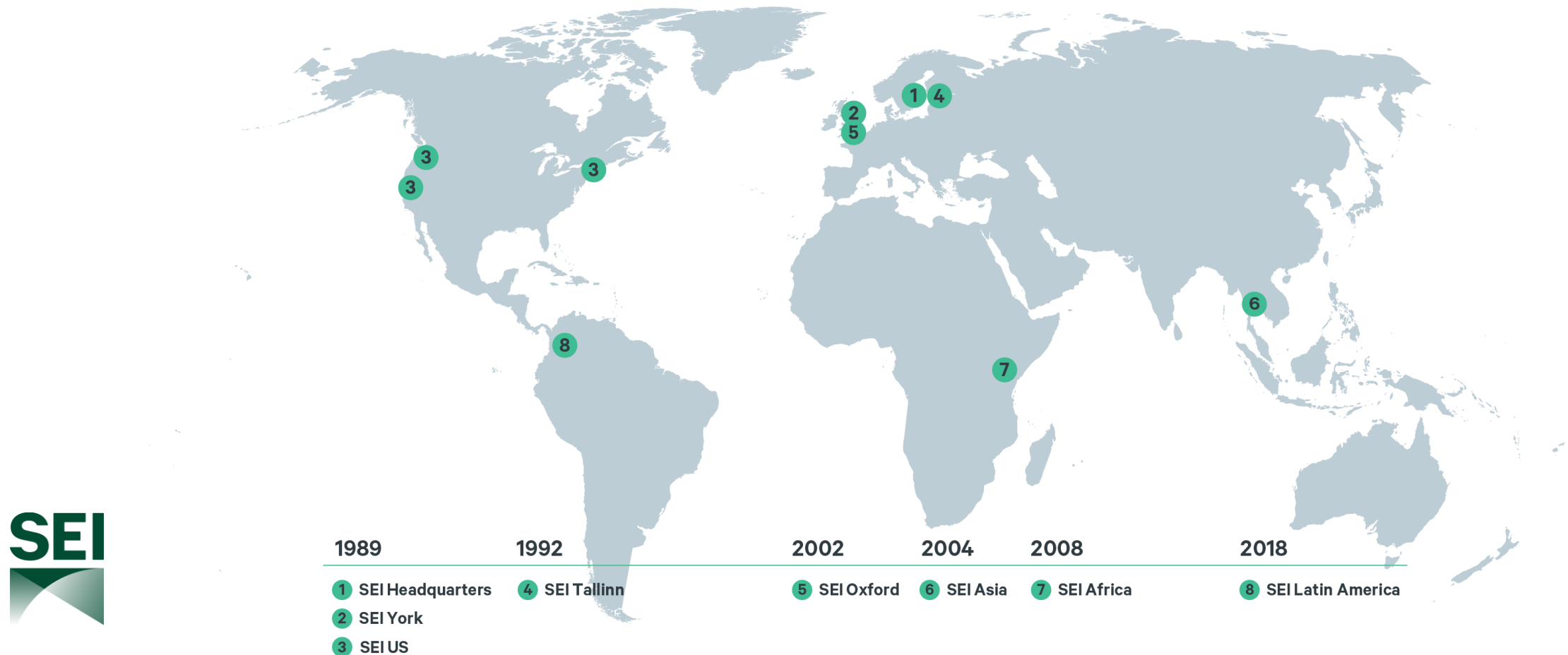
# Wellbeing tools





# Urban Toolbox for Liveable Cities

## 04 Who we are & further collaboration



# Reference & materials

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SEI Urban Toolbox  
for Liveable Cities



Kestliku ja kvaliteetse  
ruumi planeerimise  
tööriistakast



The Podcast:  
City Health and  
Wellbeing



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**Aitäh! Thank you!**