Stockholm Environment Institute

# The SEI Urban Toolbox for Liveable Cities

## Co-designing an accessible urban resource

**SEI brief**
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### Key messages

- **The SEI Urban Toolbox for Liveable Cities gathers tools developed by SEI researchers in one place, to be used by city stakeholders, including city officials, residents and community groups, to enable more inclusive, resilient and sustainable cities, with more participatory planning processes that can ensure decision-making reflects the needs of all stakeholders.**
- **The Urban Toolbox has been designed with input from potential users, based on workshops held in a range of cities to understand what types of tools users find useful and which features make tools accessible to all.**
- **The Urban Toolbox is designed to be a living resource, to be updated with new tools as they are developed, and hosted on the weADAPT platform, where users can join a network of practitioners.**

The SEI Urban Toolbox for Liveable Cities, created by the SEI Initiative on City Health and Well-being (CHeW), is intended to provide accessible resources and solutions to city stakeholders, including city officials, residents and community groups, to work towards improving environmental conditions that affect their health and well-being. The implementation of CHeW has highlighted that for inclusive and sustainable cities, planning processes need to be participatory, and that tailored tools and methods can help to achieve. Through urban consultations with stakeholders, the Urban Toolbox has been designed to address the challenges they face in terms of accessing user-friendly resources with clear guidance for usage.

Available on the digital platform weADAPT, the Urban Toolbox gathers urban-related tools used in SEI research. The included tools will provide a range of resources that can be used by city stakeholders to address a variety of urban development challenges and promote more inclusive and participatory governance.

Here we describe the process used to co-design the Urban Toolbox through consultative workshops with city stakeholders. We then share the key findings of the workshops and how we designed the toolbox in response to these.

IMAGE (ABOVE): © DANIEL MWAMBA, ZAMBIA ROAD SAFETY TRUST (ZRST)

## Urban Toolbox co-design process

"Tool" in the context of the Urban Toolbox encompasses all methodologies, approaches, frameworks, guidelines, and applications that can support and inform decision-making in urban contexts. A co-design approach was used to ensure that the resources and the format of the toolbox were relevant and user-friendly. The toolbox was developed in four phases, with input from SEI researchers and potential external users of the tools: the first two phases were internal scoping exercises with SEI researchers; the third, a scoping exercise with external actors; and finally, a review by SEI researchers to finalize the toolbox.

**Phase 1 – external urban tools review**

A scoping exercise assessed existing urban tools and associated materials (e.g. academic papers and other publications) external to SEI. Using Google keyword searches, limited to English, we identified potential tools and their objectives, target audiences and approaches. This initial activity helped to identify the ways in which SEI can add value to the existing resources already present on digital platforms.

**Phase 2 – internal SEI tools review**

The second phase of the toolbox design was an internal scoping review of SEI resources that can be used in an urban context. A review of the Tools section of the SEI website helped assess which had been used in urban contexts or had potential to be applied to cities and urban settings. Associated resources (e.g. academic papers and other publications) and media were reviewed, where available, to understand how much guidance material was available for tool users. Including the CHeW project's own tools, we identified over 20 projects where tools were used in an urban context and contacted the relevant tools' developers about potential inclusion in the Urban Toolbox.

**Phase 3 – co-design workshops with urban actors**

Following the internal and external review of urban tools available, we organized face-to-face and virtual workshops with urban stakeholders across SEI's existing network of secondary and capital cities. These include the two CHeW case study cities, Udon Thani, Thailand, and Nakuru, Kenya, and Kampala, Uganda; Lusaka, Zambia; Kigali, Rwanda; and Bogotá, Colombia.

The workshops were facilitated by SEI staff and aimed to identify key urban challenges the city stakeholders would like to solve, and the types of tools that would help them to do this. The workshops also discussed preferred formats for tools and toolboxes to maximize utility, impact and influence, ranging from factors such as language, the need for "how-to" videos, accessibility offline, and the knowledge and logistic requirements to use each tool.

**Phase 4 – internal SEI co-design workshops**

Based on the feedback from the urban stakeholders in phase 3, in phase 4 we set out to better understand different aspects of the SEI urban-related tools and how to incorporate them into the Urban Toolbox designed for external actors. Discussions with SEI's own tool developers or users of the SEI tools identified in phase 2 covered three topics: whether any urban-related tools were missing from the Urban Toolbox and if any new urban-relevant tools would emerge in the coming months; how the tools should be categorized in the toolbox, such as by theme, country or user type, and what would be most useful in the toolbox design; and based on the feedback gained in phase 3, how to ensure that the toolbox can enable greater awareness, access and use of tools available.

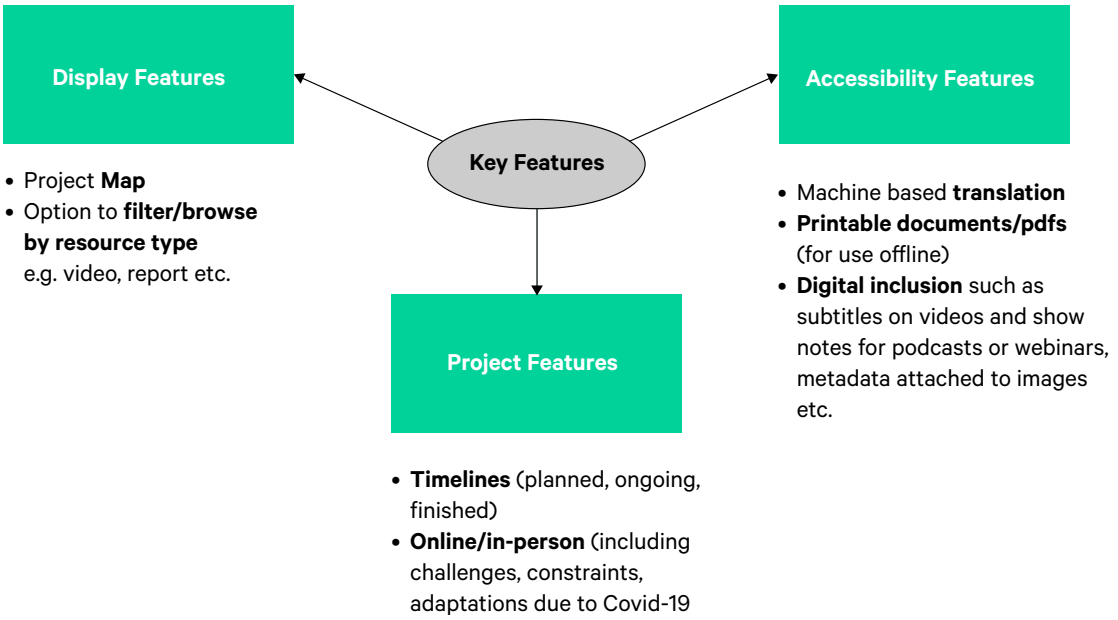
## Findings

### Phase 1 – external urban tools review

We identified 55 urban-related tools, which could be clustered into seven themes:

- gender perspectives and children's perspectives in urban planning and management
- general urban planning processes
- linking health and well-being with urban planning and management
- linking the environment with urban planning and management
- planning for informal settlements
- spatial analysis tools
- sourcebooks and key urban statistics.

Figure 1. An overview of key toolbox features discussed at the external stakeholder workshop




Different key features identified as being common to these external toolboxes were used to frame the discussion with external stakeholders and inform the design of the Urban Toolbox. We categorized these as display, accessibility and project features, as outlined in Figure 1.

### Phase 2 – internal SEI tools review

The relevant SEI tools cover three main domains: citizen science, participatory mapping and pollution monitoring. Their cross-cutting themes include health, air pollution, disaster risk reduction, climate change adaptation, and green infrastructure.

During the internal review, we consolidated these to organize the toolbox around the following main topic areas:

- residents' wellbeing – tools focusing on all aspects of residents' wellbeing such as access to water, mobility, livelihoods, intersectionality and vulnerability
- neighbourhood conditions – tools focusing on neighbourhood environments that address issues including crime, sanitation and tourism
- environmental quality and ecosystem services – tools related to challenges and risks such as urban heat islands and climate and disaster risks
- cross-cutting issues – tools overlapping across topics, such as guidance tools that can be used on multiple levels, from community to regional.

While some tools may fall into more than one theme, the tools will be assigned to the one that is most relevant.

The review also helped to identify what guidance material was already available for each tool, and what key information about each tool should be included in the toolbox, to ensure the tools could be presented in a consistent way.

### Phase 3 – co-design workshops with urban actors

Workshops were conducted with urban stakeholders in Thailand, Kenya, Uganda, Rwanda, Zambia and Colombia to help understand their needs and how they might use an Urban Toolbox. In each workshop, the participants first discussed key challenges facing their cities and what kinds of tools were being used to address them, as well as lessons learned from using the tools. Then participants discussed a selection of existing SEI tools, including tools that had been used in their city as part of CHeW, or other SEI tools that would have potential use in their city to address key challenges; they commented on their user experience and how this could be improved. In settings where SEI tools had not been used, such as the Colombia workshop, participants discussed a selection of tools using the SWOT framework (strengths, weaknesses, opportunities, threats) to explore the potential use of these tools. Participants in all the workshops also discussed how accessible tools were, in terms of their usability without expert input and free access. Table 1 provides a summary of the key points raised in discussions about select SEI tools.

The workshops highlighted that all city stakeholders wanted more public participation in data collection, which could be enabled through tools fostering citizen science or participatory mapping. The workshops also flagged that some city stakeholders felt that public participation in planning was still lacking, which could be facilitated by using appropriate tools, such as frameworks for facilitating multi-stakeholder dialogues and processes. In addition, city stakeholders highlighted that they need data to be accessible to policymakers, which can be enabled by tools that generate data to inform decision-making in an open and accessible fashion; in many contexts, citizens can also benefit from access to more data about their city.

These workshops highlighted the demand from city stakeholders for more tools to be available and accessible to address common urban development challenges. The Urban Toolbox should satisfy some of this need while working to resolve some of the limitations highlighted in Table 1 with regard to the current accessibility or user-friendliness of certain tools (see also Figure 1).

### Phase 4 – toolbox design with SEI tool developers

Once the information and feedback from city-level workshops was compiled, a workshop was held with SEI tool developers and designers to discuss how best to present their tools in the Urban Toolbox for maximum usability. Workshop participants

| Tool name | Strengths | Limitations |
|---|---|---|
| Participatory Geographic Information Systems (PGIS) for Urban Environmental Assessments | This mapping tool can be a means of complementing already existing databases at the city level on mobility, insecurity and other indicators. | The usability of this tool is limited because it requires expertise or help from an expert. Participants agreed that this tool requires expertise but is relatively easy to learn. Some of the methodologies considered are published in articles behind a paywall or are not yet published. |
| Co-created citizen science | Provides guidance on how to involve and encourage engagement of communities on relevant issues through data collection. | None were identified |
| Heart rate variability and pollution | Helpful in mobilizing the community to act by providing more data on actual pollution levels and impacts on human health. | This tool requires access to specific equipment to monitor both heart rate variability and pollution, while analysis requires specialist knowledge. |
| Open Air Laboratories (OPAL) | This tool can increase public participation in data gathering as individuals explore their local environment. | Most of the surveys are designed for the UK's flora and fauna. |
| Framework for inclusive and resilient transport against climate change | Participants found the framework for inclusive and resilient transport against climate change to be both "very useful" and "useful", in addition to being accessible. | High levels of expertise are needed for designing a project and selecting the targets in this framework; therefore, its usability is limited to those who have studied the methodology. |
| SDG Synergies | The tool can be useful to visualize progress and weaknesses in compliance with the SDGs at local and national levels, and it can facilitate participation in decision-making between local institutions. The tool can also enable citizen participation, as individuals can use the tool to find synergies in the strategies and knowledge in risk management, and the matrixes can show the interactions between the needs of citizens and the policies promoted by local institutions. | The tool is published online and publicly available in multiple languages, but its use remains limited, as it is slightly complex. |
| Equitable Mobility for City Health and Wellbeing (EMCHEW) | The methods used in this project can help to address theme of lack of safety of roads and public transportation. Participants also see a strong potential link with the regulation of bicycle and /motorcycle taxis as a transport mode. | The methods remain (at the time of the workshop) paywalled or unpublished, so they are not yet accessible. |

considered the information that needed to be presented about each tool, to ensure consistency across the toolbox and ease of use by toolbox users. The materials available for each tool were discussed, in the context of options for improving accessibility in the toolbox design (Box 1). While most of the suggestions were taken into account in the toolbox design, certain options – such as creating app versions of the tools to be used on mobile phones – would require further investment and so are not currently integrated into the toolbox.

The Urban Toolbox will be hosted by weADAPT, which is an online space for researchers, practitioners and policymakers working on climate change adaptation and related areas to share information about their projects and learn from each other. The weADAPT community consists of different users and organizations, including international and national non-governmental organizations, government ministries, universities and research institutes, civil society organizations, social enterprises and grassroots charities. Content on weADAPT can be provided as articles and case studies, a feature capitalized on within the Urban Toolbox.

### BOX 1. HOW CAN THE TOOLBOX BE MADE ACCESSIBLE?

- animation/recorded presentation showing a tool in use
- video case study of a tool being used in real-world setting
- case study examples of tools being used in real-world settings such as interviews with people who have used the tool and independent testimonials
- actor-based guidance/user pathways
- simple illustrations/graphics to summarize the tool's uses
- printable documents
- mobile version and low-bandwidth version
- machine-based translation (Google translate)
- categorization based on user groups, e.g. academic, practitioner or community member
- dynamic web interfaces, such as dashboards, internet-based versions of the tools, and apps

By hosting the Urban Toolbox on weADAPT, urban stakeholders will be able to share their insights and experiences from applying the different SEI tools with other urban stakeholders. This will provide more examples and case studies of how these tools can be applied and tailored to different contexts, and support learning on best practices for their implementation. Integration with weADAPT also supports networking and discussion between those using and contributing to the Urban Toolbox, supporting knowledge exchange and collaboration.

Each tool description contains a section highlighting complementary tools that it can be used in combination to achieve desired objectives. User-focused pathways will be developed that show how different tools can be combined to support different stakeholder groups. The Urban Toolbox guidance will highlight principles of gender and social equity to ensure users of the tools promote inclusivity in their application.

As the Urban Toolbox is intended to be a living resource, it can be continually reviewed and updated to add in new relevant tools as they are developed, with the weADAPT platform enabling new tool developers to provide the necessary information for inclusion in the Urban Toolbox. Additionally, the complementarities with the work of other urban actors such as municipal and city networks at national and international scale will be highlighted.

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