

REACH OUT

shaping climate resilient cities



Integrating climate services into cities' municipal planning

1st REACHOUT Policy brief
September 2023



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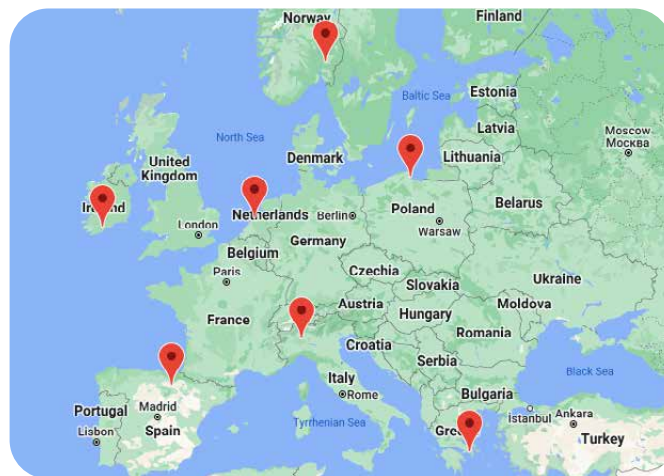
What is REACHOUT



REACHOUT is a research and innovation project financed under the European Green Deal. It aims to further develop city-oriented climate services across Europe, i.e. services that provide cities with tailored climate information in order to help them make decisions towards a climate resilient future.

The “REACHOUT” project aims to improve the uptake and success of climate services. It works with a diverse group of European cities in co-creation hubs for climate services innovations. These hubs involve city representatives working with tool developers to co-create climate information services and tools that provide added value to cities and are easy to understand and use. With four small size cities (Lillestrøm, Cork, Gdynia and Logrono) and three large cities (Milan, Athens, Amsterdam), both heat and flood related hazards are addressed, as well as cities with advanced and less advanced adaptation capacities are covered.

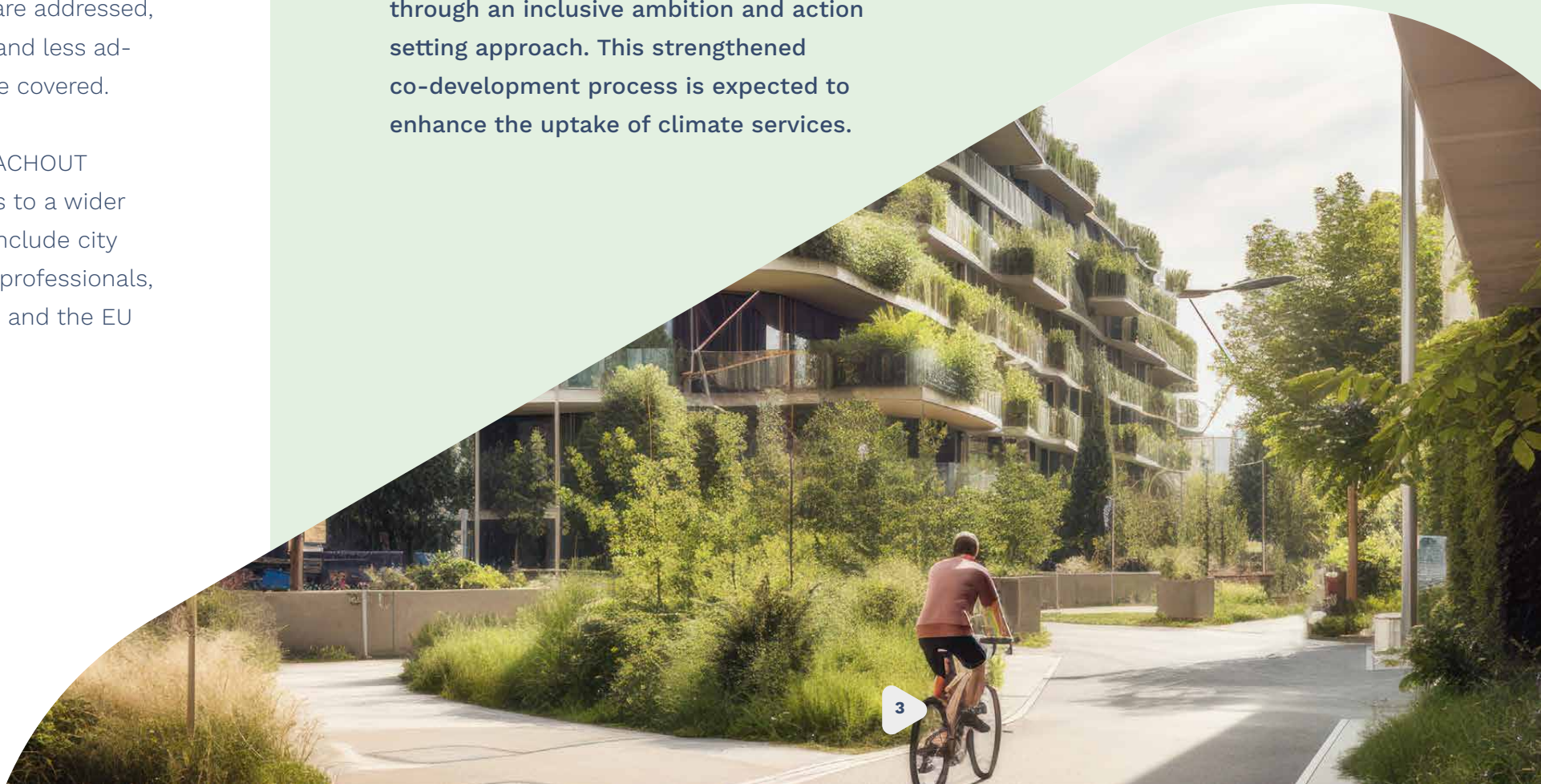
In a series of 4 Policy briefs REACHOUT communicates its main findings to a wider audience of stakeholders that include city urban planning and adaptation professionals, the climate service community, and the EU adaptation policy makers.



Key Messages

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- Adaptation solutions are urgently needed and cannot be taken in isolation.
- Climate adaptation needs to be comprehensively integrated into municipal planning to leverage multiple benefits for urban areas, combining adaptation, mitigation and development (so-called climate resilient development).
- Climate services shall support the “new” narrative of climate resilient development, through an inclusive ambition and action setting approach. This strengthened co-development process is expected to enhance the uptake of climate services.
- Ways forward and examples are presented describing how climate services and tools can support climate resilient development in urban areas.
- For successful upscaling of climate services, barriers related to the enabling environment both at demand and supply side need to be addressed.





The changing practice of urban adaptation to climate change

Cities are complex decision-making environments where multiple challenges such as spatial planning, mobility, housing, urban greening, climate mitigation and climate adaptation are interacting. The summer of 2023 is clearly demonstrating that climate change and its variety of impacts are very visible to the public and are offering pressing challenges to policy makers. Adaptation solutions are urgently needed and cannot be taken in isolation. For instance, the massive heat waves in Southern Europe are affecting the most vulnerable, e.g. babies and elderly people, and particularly in spaces and areas without much ventilation, cooling and shade (urban heat islands). This example clearly shows that solutions for this climate-related challenge touches upon multiple policies and urban planning aspects with respect to infrastructure, greening, housing,

health, and social well-being. In earlier years when climate policies were emerging, city governments were stimulated or demanded to provide dedicated urban adaptation plans responding to experienced and projected climate risks. Often, these plans ended up being check-box-exercises rather than being implemented.

In recent years, the notion that climate adaptation should be better integrated across policy domains to realize more sustainable and transformative change is gaining traction. Most European cities face multiple transformation challenges with respect to energy, transport and socio-economic issues. The EU-missions on Adaptation and on Cities encourages urban areas and regions to develop systemic pathways towards climate resilience and carbon neutrality. Also, the latest IPCC Assessment Report highlights the great potential of climate resilient development pathways to integrate climate adaptation and mitigation into urban development.

Municipalities across the EU are increasingly aware of the need to better integrate climate adaptation into other urban development plans

Spain: Heat strokes and dehydration deaths soared in summer of 2022, the hottest year on record



Children cool off at an urban beach at Madrid Rio park in Madrid, Spain, Monday, June 26, 2023. Spain sweltered in its first official heat wave of the year on Monday as the government announced a new agency to investigate and alleviate the effects of extreme temperatures on human health. (AP Photo/Manu Fernandez)

Ciaran Giles

The Associated Press
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MADRID - Deaths in Spain from heat stroke and dehydration in the hottest months of 2022 -- the hottest year on record -- jumped by 88% compared to the same period in 2021, the National Statistics Institute said Tuesday.

Example of massive heat-waves in Southern Europe

and actions. Space for urban development is often limited and claimed for many different purposes by various stakeholders. Therefore, it is desirable if new investments, urban policies, and climate action plans consider multiple and sustainable benefits for development and mitigation, while reducing climate change risks simultaneously. The aspiration for climate resilient development is evident, though, the actual implementation is not necessarily well known and straight forward. In order to be successful, the climate services that support urban planning and policies need to be co-created in an inclusive manner with a wide set of stakeholders, in an enabling environment and backed with an evidence-based decision-making

process. At the heart lies the question: **“How does climate resilient urban development look like in practice and can we co-develop supporting guidance, tools and services?”**

There are already examples available in the context of climate resilient development (e.g. watch the [Heatwave tips from Athens: Cool routes app, new pocket parks and renovating a Roman aqueduct \(euronews.com\)](#)) from some of the front-runner and often larger cities. Some cities like **Milan**, are integrating climate change adaptation into specific trajectories for example urban renewal, greening and urban mobility. Larger cities tend to have resilience officers and staff dedicated to adaptation, and

those cities tend to work on comprehensive climate strategies trying to connect climate risk to e.g. social vulnerability, blue-green infrastructure, and/or health risks. At the same time, many other cities do not have fully fleshed out climate adaptation plans and certainly no integrated urban resilience plans yet, covering adaptation, mitigation and development.

This first policy brief from the REACHOUT project shares results after 1,5 years of project implementation. The project’s main aim is to co-develop knowledge and information, packaged as climate services and tools, that support the process of climate resilient urban devel-

opment. As the first one in a series of 4 the current brief starts from the **city perspective**, as it aims to offer insights in what city needs are and how climate services can be further developed to suit their needs. In addition, it outlines success factors and barriers in the co-creation process of climate services that can support climate resilient development.

‘Bosco verticale’ in the city of Milan

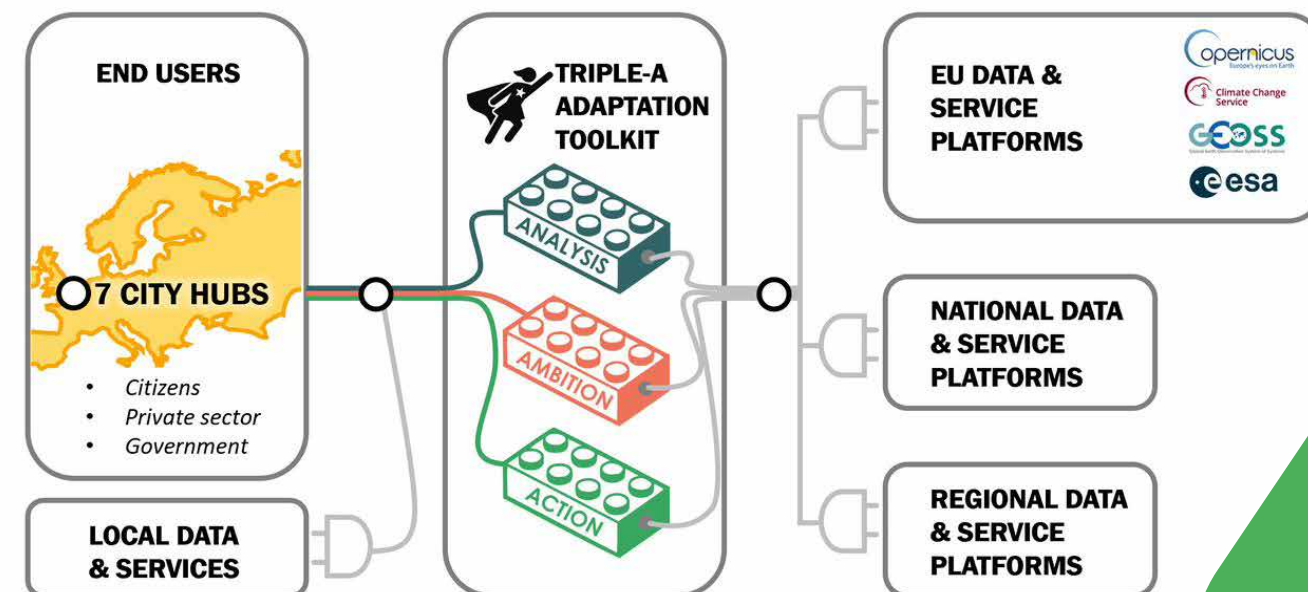


A leap forward for climate services

During the last decade, climate services proved to be an important aid for informed decision making on climate adaptation in the European policy arenas at different governance scales. As part of its adaptation strategy, the European Commission has stimulated the growth and establishment of climate

services. Moreover, European and national platforms offer data and tools (e.g. Climate-Adapt, Copernicus, EEA Risk datahub) which seek to enhance climate-service uptake. A general concern of both scientists and practitioners, however, is that climate services are not successful in reaching the last mile to support adaptation planning. This has already led to a shift from climate services that are science-driven, to services that are user-driven and science-informed and include practices such a co-production and tailoring climate information to user contexts¹.

¹ Boon et al. <https://doi.org/10.1016/j.cliser.2022.100314>



Schematic: the REACHOUT project is developing a flexible toolkit to support risk and vulnerability analysis, ambition setting and action planning, that can build locally tailored services using existing information services.



ECCA 2023 Dublin, Ireland

Within the REACHOUT project we recognize the need for an extensive user-driven approach and adopted a dedicated co-creation process for developing and tailoring tools and services, through city hubs. Besides the evident need for a user driven process, we also see that clear climate service content requirements emerge from the challenges the cities are facing in building climate resilience. Our assessment is that with the current offer of tools and services these challenges can only be partially supported.

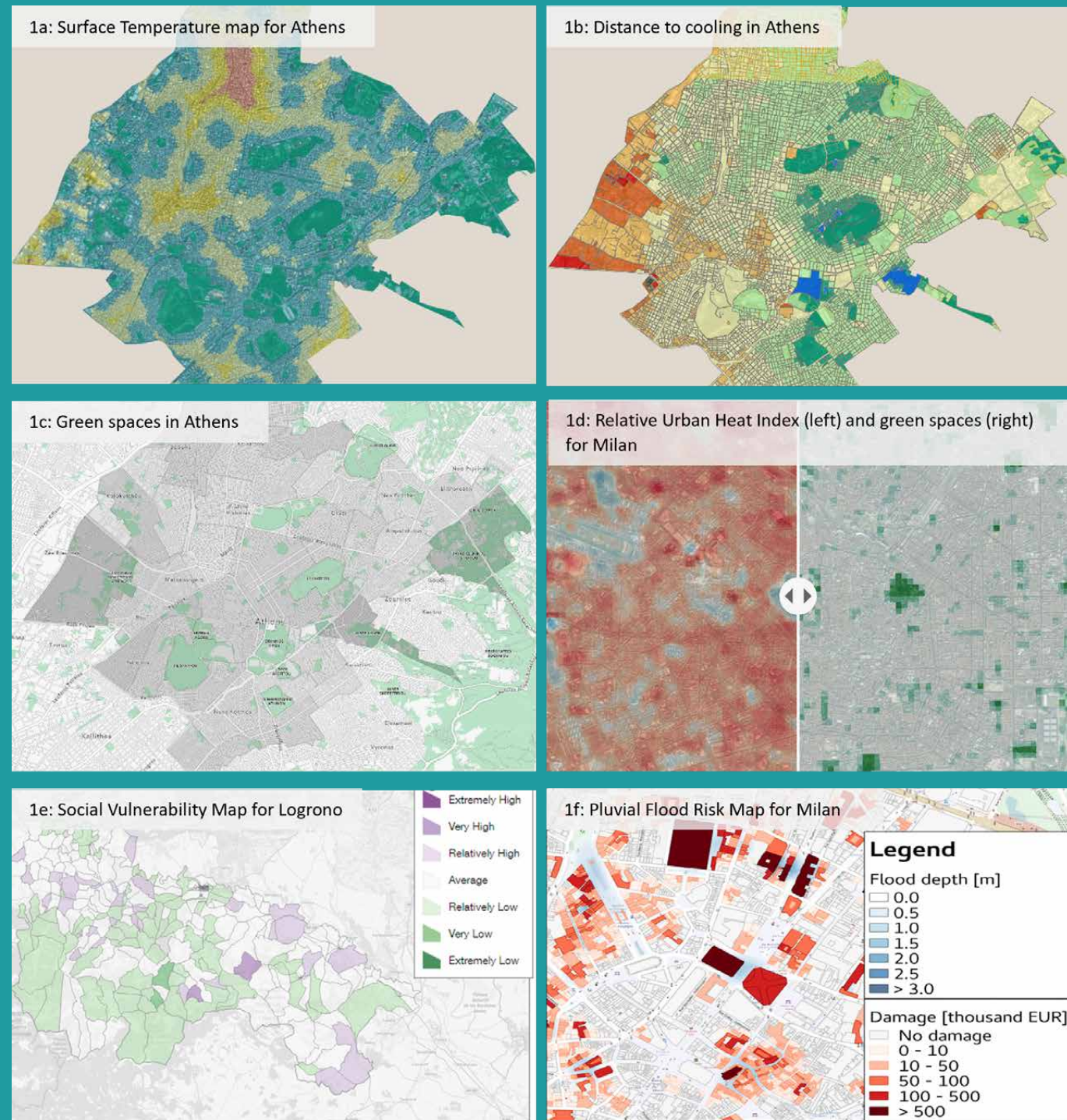
The need for transforming climate services and tools was also confirmed during a plenary session dedicated to climate resilience tools at the European Climate Change Adaptation conference 2023 (ECCA) organized by REACHOUT and partner projects. As part of the session the question was posed if present day challenges of adaptation, climate resilient development and transformation require a change in the offer of climate services and tools. **The consensus among most respondents in the**

audience was that we need a transformation of tools to facilitate transformational adaptation.

In the subsequent discussion main innovations needed for this would be to better address social vulnerability and equity, include design and visioning and wider system analysis to support the policy development. In addition, we need spaces for learning and exchange of experiences and best practices.

In its seven city hubs REACHOUT therefore explores with city partners what decision support can be delivered for developing more transformative adaptation actions, aiming to tackle the root causes of climate risk and promote sustainable development. We find that it requires a broadening of the scope of services, from strictly climate risk information to tools that support the development of ambitious visions and climate resilience actions from a more holistic perspective.

The figure below gives an overview of the diversity of types of maps that can be produced using some of the Triple-A Toolkit Analysis tools.



Traditionally, climate service tools commonly focus on quantitative analysis of climate change impacts and risk assessment. In REACHOUT we aim to broaden the suite of tools to also include ambition-setting and action planning in the context of climate resilient development, what we call a ‘Triple-A’ approach: Analysis; Ambition; and Action. REACHOUT promotes “new” narratives of climate resilient development, where climate change does not necessarily have to be seen solely as a threat to urban development. It can be viewed as an opportunity for transformational change that addresses multiple objectives. The latter requires the co-development of positive visions and new narratives for attractive, safe, and thriving future cities by citizens, local companies, urban planners, ecologists, and climate service providers.

Our hypothesis is that through taking an integrated approach for climate service co-creation towards climate resilient urban development, the uptake of climate services is accelerated, because the needs of the cities are better addressed.

The figures show preliminary output from novel tools that are currently under development. For instance, these tools can relate heat impacts to social vulnerability and green spaces. The tools developed as part of the REACHOUT project will be collected in a Toolkit. This Triple-A Toolkit is in progress and can be found here: [Triple-A Toolkit - Reachout \(reachout-cities.eu\)](https://reachout-cities.eu). In following policy briefs we will highlight concrete applications of the tools.

Opportunities and barriers for climate service co-creation

All city hubs are taken through the same journey to co-create climate services:

1. Perform a needs-assessment of climate services requirements.
2. Co-develop tools to support urban development and adaptation planning in the context of climate resilient development.
3. Apply the tools, following a three phase “Triple-A” approach: Analysis, Ambition and Action.
4. Address barriers for uptake and ensure sustainable implementation.

This co-creation journey is what could be called “front-end development with the cities” and is central to the project. It takes place in three development cycles, so all cities have the chance to address the 3 A’s. At the back-end of the project we start from existing tools and climate services offered by European platforms, that are being piloted in the city hubs. One of the more operational objectives of the co-development with cities is to bridge the gap between EU-level platform-based services and their practical uptake in cities. The collected learnings and tool improvement is used to develop a Triple- A Toolkit that can be used for upscaling in cities across Europe, beyond the 7 city hubs. A few early lessons from the project can be drawn, with respect to success factors and barriers for uptake.

Success factors

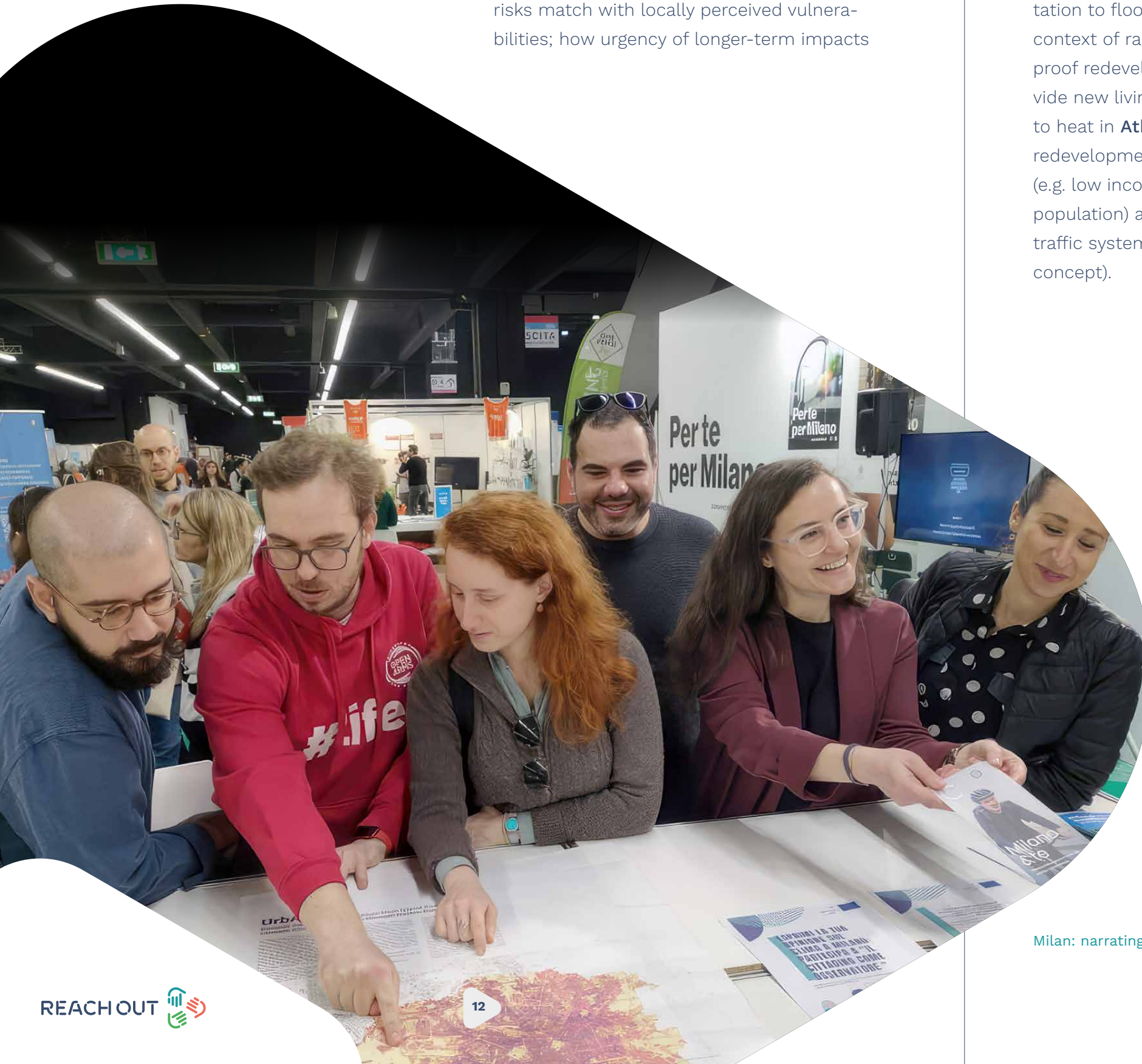
We have learned that the **contextualization** of adaptation challenges within climate resilient urban development is paving the

way to address multiple challenges simultaneously (adaptation, mitigation and development) and increases the relevance of climate services. This is demonstrated through how the outcomes of climate service tools fit into city climate stories; how projected risks match with locally perceived vulnerabilities; how urgency of longer-term impacts

competes with short term needs and forthcoming claims. Space is limited in urban areas, leading to competing interests among urban stakeholders. Therefore, it is important to frame adaptation as part of other development needs in the city. For example, adaptation to floods in **Cork** is placed within the context of rapid growth of the city and flood proof redevelopment of brown fields to provide new living areas. In addition, adaptation to heat in **Athens** is strongly connected to redevelopment of vulnerable neighborhoods (e.g. low income neighborhoods with aging population) and greening of the transport and traffic system (e.g. through the 15 minute city concept).

The cities we have worked with have been particularly enthusiastic about the development of targeted **climate stories** (see for example the **story of Milan** and <https://reachout-cities.eu/climate-stories/>). The stories contextualize risk information through a local and tailored narrative, contributing to greater awareness among the general public and understanding of climate risks in a specific city context.

The first round of tool development helped to shape the stakeholder discussions in the co-creation process. These discussions not only took place between developers and individual cities but also among the 7 cities. This cross-city hub exchange of experiences appeared to be key for **the co-creation process** as it inspired cities and helped to better define their needs. The co-creation process was also very much supported by two marketplaces where the tools were demonstrated to all cities and by a well-attended **learning program** (e.g. [5.3-Online-Training-Modules-II.pdf \(reachout-cities.eu\)](#)) that helped to bring all city hubs and their staff to similar level of understanding of urban resilience and climate services.



Milan: narrating climate change

Barriers to climate service adoption in the cities

In many of the city hubs we find that the **organizations are 'silo-ed'** where adaptation is divided over different municipal departments, some with weak decision positions, and low implementing power. Adaptation is seldomly organized in stand-alone departments. It therefore takes time and effort to organize the right network of colleagues to participate in the co-creation process and to build a collaborative responsibility for the collected information and ultimately for a sustainable use of the services. A common ambition and shared vision on urban resilience as promoted by the project can motivate this process.

Sometimes the **mandate** for particular adaptation action is organized at a higher governance level (e.g. riverine, coastal flood risk management at national level in Ireland). This makes a more holistic approach to adaptation potentially more complex. It requires the regional or national entity to get invested in the cities approach, and vice versa. This will more likely happen if there are clear benefits to be gained from a joint process, e.g. reduction of costs. Tools that systematically can illustrate the benefits of a great variety of adaptation actions at different scales can support this and are under development in the Triple-A Toolkit.

The city hubs are faced with a lack of **financial resources and limited capacity** to coordinate necessary adaptation actions. The smaller municipalities struggle to get staff time available for adaptation. Especially in large municipalities, municipal tasks and responsibilities can be distributed over many departments putting a burden on the busy schedules of adaptation specialists. There is a need for easy-to-communicate information on climate change, in order to create a sense of urgency among non-experts and among different municipal departments and stakeholders.

We have gained valuable insights into the diverse technical limitations faced by the city hubs when it comes to utilizing tools and services. Some cities possess greater **technical capacity** and have made significant progress in their adaptation efforts. These advanced cities tend to require more sophisticated, detailed, and locally specific datasets. As a result, they are less likely to rely on EU-level off-the-shelf products and datasets, given their more specific needs. Typically, well-resourced cities are able to conduct detailed and localized studies. In this regard, EU projects like REACHOUT can guide them with the right approaches and by offering more advanced tools. On the other hand, smaller cities with limited capacity and less progress in their adaptation efforts benefit from tools and services that are less demanding and sophisticated. However, these smaller municipalities often face challenges in terms of connectivity to the EU data infrastructure and knowledge landscape.

REACHOUT offers a mix of 'off the shelf' easy-to-use **tools as well as more deep-dive tools with higher requirements in terms of data and expertise to operate the tool.** The deep-dive tools require local data as input. Acquiring this local data has proven difficult causing some delays in targeted tool development for some of the cities REACHOUT is supporting.

Recommendations and next steps

Halfway through the project we find the co-creation of tools and services is proving to benefit the cities who have engaged in the project. Further diversification and broadening of the climate services landscape is needed in order to better support the broad array of needs from European cities. By combining a risk-oriented analysis phase with opportunity-oriented phases of setting ambitions and identifying actions, cities can chart a promising path forward.

The exchange of experiences among the hubs and the implementation of a learning program have proven highly advantageous for cities.

The city hubs have different needs, and work on adaptation in different ways. What is common to all hubs is the need to better communicate climate change to citizens and other municipal departments outside of the climate change and water domains.

We recognize there are still significant challenges to address in order to deliver a toolkit accessible and usable to all cities in Europe. This requires, among other aspects, a better verification of the hypothesis of the project and a closer look at the barriers for implementation. Therefore, REACHOUT will continue to work on providing guidance, capacity building and increased accessibility of the Triple-A Toolkit, feasible business models for its use, community building, and upscaling activities for the remainder of the project, which ends in 2024. In next Policy briefs we will keep you updated.

Presentation REACHOUT tools



Contact information

For more information about REACHOUT and/or to stay up to date on our developments, please follow us on social media or through our website.

<https://reachout-cities.eu/>



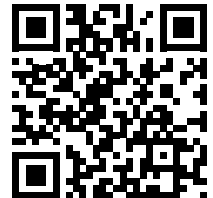
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