



RESIN

SUPPORTING DECISION –
MAKING FOR RESILIENT CITIES

POLICY BRIEF

COLLABORATIVELY DEVELOPING TOOLS FOR CLIMATE CHANGE ADAPTATION – LESSONS FOR RESEARCH AND POLICY

INTRODUCTION

Climate change is causing extreme weather events to increase in frequency and intensity, putting cities, home to most of Europe's population, at rapidly increasing risk. Adaptation to the new climate reality is a pressing need. However, even those practitioners working at city level who recognise this reality often face obstacles to taking action. The European Commission-funded project RESIN – Climate Resilient Cities and Infrastructures – has seen practitioners from four European cities working closely with research partners to develop adaptation tools for use in practice. This approach has encountered two sets of challenges: 1) those faced by practitioners from the four RESIN cities (Paris, Bilbao, Bratislava and Greater Manchester) in adapting to climate change, and 2) those involved in undertaking collaborative research that bridges science and practice. The recommendations arising from this project are presented here in two groups, responding to both sets of challenges. They have been gathered from the project partners via a questionnaire circulated in 2017 and a subsequent co-writing process.

CITY-TO-RESEARCHER COLLABORATION IN RESIN

Within RESIN, testing the project tools with cities and obtaining feedback has involved regular, documented, in-person and online communication, and harmonisation between the research organisations. The RESIN experience found that fostering collaboration between city practitioners and researchers to produce applied tools and methods supporting climate change adaptation is effective for:

- ▶ Improving tools' usability;
- ▶ Better shaping research and development results to the needs of practitioners;
- ▶ Enabling practitioners to run parts of their climate change adaptation actions as case studies within research and development projects, thus leveraging additional resources that the research partners (and the funding agency) provide.

This approach has already spurred immediate adaptation action in the cities involved and will contribute to the project's impact beyond its completion.

CHALLENGES AND RECOMMENDATIONS

Outlined below are some of the main obstacles to effective climate change adaptation at city level (as identified by cities in the RESIN consortium), and the challenges of effective research-practice collaboration (identified by all partners), with corresponding recommendations. The recommendations and challenges are divided into two sets: 1) recommendations for city practitioners and decision-makers seeking to incorporate climate adaptation into policy and practice, and 2) those for researchers and others involved in policymaking and investment related to practice-based research, particularly in Europe. Where relevant, recommendations also indicate where the tools produced as part of RESIN can support a particular course of action.

1. Challenges adapting to climate change at city level: city-level policy recommendations

CHALLENGE 1:

Lack of resources to translate a centralised commitment to climate change adaptation into local action

A centralised political commitment to climate change adaptation is of limited value at local level without the associated resources to carry it out (see Box 1).

RECOMMENDATIONS:

Establish a comprehensive strategy for adaptation, and back it up with targets and mechanisms to achieve them

Adaptation needs a clear position in the city organisation and within other city policies. Cities should conduct adaptation-directed actions as dedicated projects with goals, responsibilities, budgets, resources, milestones, evaluation and reporting. Strategic documents (e.g. adaptation plans or strategies) at a city or metropolitan scale, as well as operational urban planning projects at a district scale, can be a starting point. The RESIN e-Guide comprehensively

supports the process of developing a strategic adaptation plan.

To effectively deliver an adaptation strategy, a useful example to follow could be the targets and strong political commitment already made for climate change mitigation. Emissions reduction targets have been set at national levels following the Paris Accord¹ in 2015, which have been disaggregated to sub-national and city levels. Applying this level of clarity and setting comparably specific targets for climate change adaptation could yield more action and close gaps.

Co-finance adaptation from sectors that can benefit from reduced risk

Establishing regulations and incentives for urban development can encourage or obligate co-financing from certain sectors (like transport, health, etc.) that benefit from reduced risk.

Box 1

At present in Greater Manchester (a city region made up of 10 municipalities), local adaptation action is backed up by a centralised political commitment, and wider relationships with other bodies involved in strategic planning city wide, but this has not yet translated into associated fiscal resources, and both technical skills and staff capacity remain an issue. This creates barriers to achieving maximum effective implementation of local adaptation measures. Bratislava faces a similar lack of finances and staff capacity at both the municipal and sub-municipal (borough) levels.

CHALLENGE 2:

Lack of integrated action across sectors and levels of government

Adaptation is a complex field and encompasses locally specific threats, impacts and responses in addition to those generated at wider spatial scales. Climate risks can also affect multiple sectors. Action is therefore needed at a range of governmental levels and by a range of parties, with a lack of commitment in one area creating an obstacle to efforts in another, especially at city level (see Box 2).

RECOMMENDATIONS:

Integrate climate change adaptation projects horizontally into wider city policy, and vertically into multiple levels of government

Climate adaptation projects should be recognised as beneficial for the whole city, and as such, it should be taken as imperative to integrate adaptation into ongoing plans and works across departments and teams. As such, adaptation projects should involve clearly assigned responsibilities in a number of different departments in cities' administrations; they should plan for cross-departmental meetings, and include communication with regional and national governance levels. Organisations from beyond the city administration will also need to be centrally involved in delivering adaptation approaches.

Bridge silos

In order to implement climate change adaptation, silos in institutional working must be opened up, cooperation between departments coordinated and a trans-disciplinary approach taken. Involving staff from multiple departments in ongoing research can play a role in initiating or advancing such cooperation (see Box 3).

Box 2

Greater Manchester has found that city-level commitments around CCA continue to lack the strength, clarity and transparency established for other policy commitments, e.g. climate mitigation. In Bratislava, on the other hand, many local level strategies for climate change remain voluntary only, in the context of a national policy framework that currently does not enforce their implementation. In both cases, the resulting fragmented and inconsistent approach creates a barrier to progress.

CHALLENGE 3:

Reconciling timescales of climate processes with political cycles

The timescale of our changing climate has no relation to political cycles, which often favour short-term gains over long-term investment. Committees and task forces in cities set up to tackle climate change are often not permanent and where they exist, their members change frequently.

¹ http://unfccc.int/paris_agreement/items/9485.php

RECOMMENDATION:

Communicate co-benefits to decision-makers

Adaptation and resilience measures often come with many co-benefits, but these are not necessarily widely understood and need to be communicated to political decision-makers. For example, trees and plants installed for biodiversity preservation objectives can also reduce pluvial runoff and combat the urban heat island effect. Communication of both immediate and longer term co-benefits should be incorporated into project proposals and briefings, to justify investment in climate adaptation action and gain political support.

Box 3

The IVAVIA methodology (Impact and Vulnerability Analysis of Vital Infrastructures and built-up Areas)

City partners and their stakeholders developed 'impact chains'² in stakeholder workshops. The resulting Impact Chain Diagrams have proven to be a useful engagement tool with real value for the cities, and for example have proven useful in progressing adaptation thinking in the transport sector in Greater Manchester.

CHALLENGE 4:

Difficulties accessing private and public sector data

Accessing relevant data for assessing city-level risk and vulnerability from private operators of critical infrastructure and from public authorities can be difficult and this can inhibit informed decision-making. Often public data, if available at all, is stored in databases belonging to different departments or even to higher levels of government (e.g. regional or national).

RECOMMENDATION:

Provide a single, centralised access point to relevant data within a municipality or combined authority.

Socio-economic, geographic, and infrastructure data is an essential pre-requisite to conducting an informed climate risk assessment and taking appropriate action. A centralised access point would save considerable time currently spent sourcing data from multiple locations.

² An impact chain describes the cause-and-effect relationships driving risk in a system. A set of impact chains in diagrammatic form is the result of using IVAVIA to conduct a qualitative assessment, structuring the components of risk for a preselected combination of hazard and exposed objects. IVAVIA also includes a subsequent (optional) quantitative assessment.

2. Challenges of collaboration between researchers and practitioners: research design and planning recommendations

CHALLENGE 5:

Communication barriers

Multi-lingual groups can face barriers to accessing new knowledge supporting climate adaptation action, especially where guidance is not available in the national language. Further, working across sectors presents another kind of language barrier. Researchers from different domains may not always use the same terms and methods, or may have a different understanding of key concepts.

RECOMMENDATIONS:

Improve communication by clarifying definitions early on, and translating outputs into national languages to expand understanding

Clearly defining terms can help overcome barriers to understanding. Allow sufficient time and resources for translating materials into national languages – whether training sessions or guidance documents – so that stakeholders outside of the immediate project team can access the results.

Use city case studies as research frameworks

Researcher-to-city collaboration can also improve significantly when taking place within a case study scheme. The direct application of trial methods and tools to a case study reveals their benefits and shortcomings and helps to pinpoint opportunities for improvement (see Box 4).

Box 4

The Adaptation Options Library

An initial design was proposed to cities and the user interface and online library elements re-designed following their feedback. Cities put forward various requests, e.g. for the tool to assist with budgeting, planning and calculation of the potential economic impacts arising from lack of action on climate change adaptation. In response, information on the efficiency and cost-effectiveness of measures was added to the library.

CHALLENGE 6:

Unrealistic expectations for resources, capacity and time planning can inhibit effective collaboration

It is apparent that both within the RESIN cities and also the consortium more generally, a huge number of good practices exist which could benefit adaptation processes, but time and resources to access and transfer this knowledge are lacking. There is also a tension between seeking collaboration from public authorities and, on the other hand, working with set milestones and delivery dates in line with researchers' progress.

RECOMMENDATIONS:

Consider flexible timelines

Policy processes relevant to participating cities should be taken into account in the direction of research and timing of the results so that both parties benefit. Flexibility is needed.

Start collaboration and clearly define users' needs early on

The possibility to collaborate effectively decreases with time

as a project progresses. The early stages are crucial for both cities and researchers. Take time at the beginning of a project to define not only the project's operational needs, but also what end-users need from the research.

CONCLUSION

Climate change adaptation must be urgently and strategically addressed at the city level through clear strategies and accompanying actions. The RESIN experience shows that fostering exchange between cities and researchers and basing collaboration on case study examples are beneficial to both city practitioners and research outputs. Although this collaborative work creates some additional challenges, notably in terms of working styles, language and time planning, RESIN consortium participants found that the added effort is worth the investment, as the ensuing results are higher-quality, better adapted to long-term exploitation, more flexible and more suited to the complex needs of cities.

ABOUT THE RESIN PROJECT

RESIN is an interdisciplinary research project investigating climate resilience in European cities, funded by the Horizon 2020 programme of the European Union. The consortium includes core cities (Greater Manchester, Bratislava, Bilbao and Paris) and research institutions (TNO, Fraunhofer IAIS, EIVP Paris, the University of Manchester, BC3, Comenius University of Bratislava and Tecalia, as well as ICLEI – Local Governments for Sustainability, Arcadis Nederland, ITTI Sp. z o.o. and Siemens). The research institutions are working closely with the cities to develop tools to support cities in designing and implementing climate adaptation strategies for their local contexts. This cooperation has taken place in a cycle of co-development, pilot trials and evaluation. Dutch standardisation organisation NEN is also a consortium member, leading the project's outputs towards possible formal standardisation.

Some main outcomes of the RESIN project upon completion will be a methodology for standardised vulnerability and risk analysis, a library of adaptation options with standardised effectiveness information, a climate risk typology for European cities and an online e-Guide providing decision support for climate adaptation planning.

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