

Urban Climate Adaptation and Scientific Expertise

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Context

- Cities are taking action to initiate adaptation (Tollin et al. 2024)
- But: gap between scientific findings and what is being done (Reckien et al. 2023)
- Strategies developed by cities differ strongly from one city to another
 - With no clear pattern (Reckien et al. 2023; Pietrapertosa et al. 2023)



COP 30 local leaders forum (2025)



ICLEI World congress (2024)

Research question

Where and how do cities seek expertise when making their climate adaptation plans?

A focus on academia

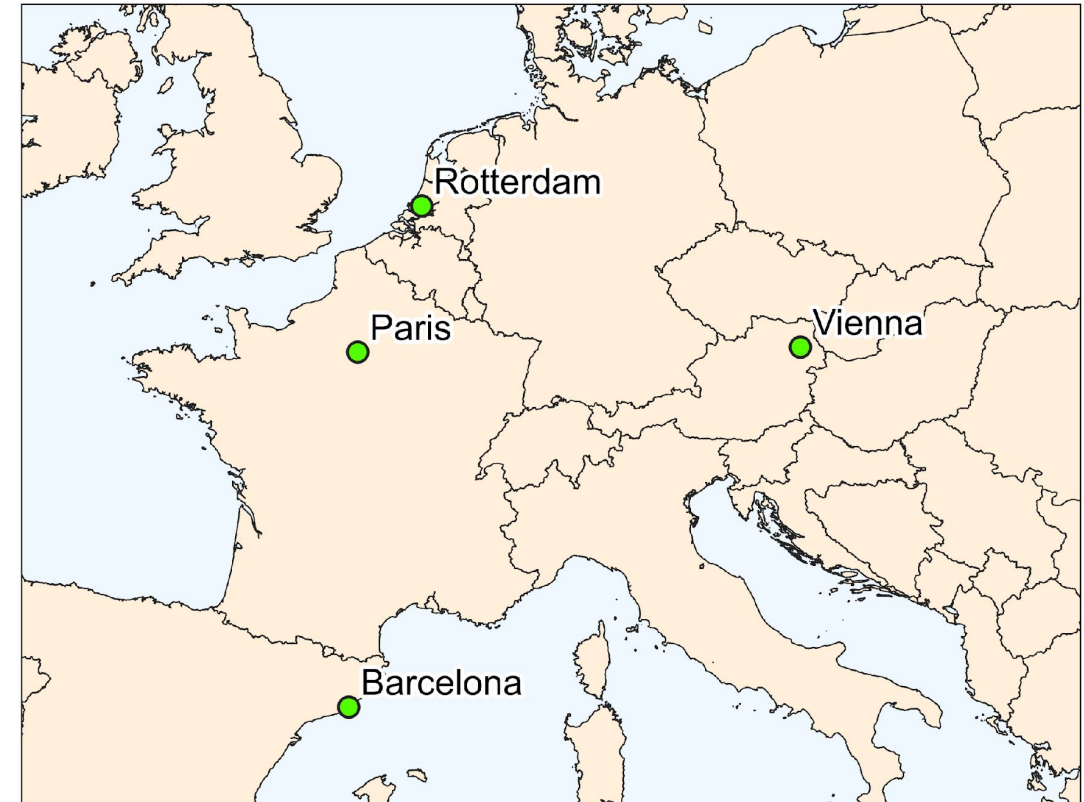
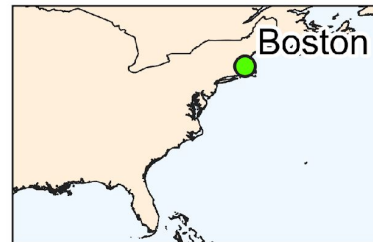
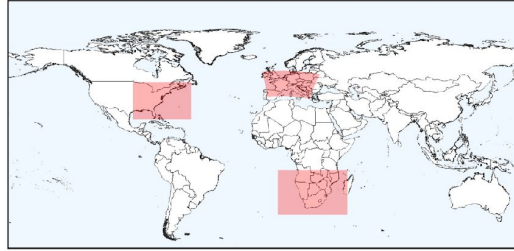
- Is there a specific internal process?
- Is it the same from city to city?
- Why do they interact with some actors over others for this knowledge?
- What role does academia play?

Brief literature review

- **Knowledge co-production in climate research** (Noström et al. 2020; ...)
- **The role of researchers in public decision making** (large literature since at least Weber, 1917)
 - Especially, Haynes et al, 2011 : categorization of researchers' role in public health policy
- **At the national scale: enabling criteria of science x policy interaction** (Bednarek et al, 2018; Craig et al; 2025)
- **At the local scale: changing need of the role of science in regards to authorities and climate adaptation** (Bosbœuf, 2021; Reliant, 2004; Wilby et Lu, 2022; Enault et al, 2015)

Methodology: 6 case studies

- 6 cities studied
- 15 semi-structured interviews (1hr)
 - with city officials + other related actors
- **Documentary research**
 - Discourse analysis of adaptation plans

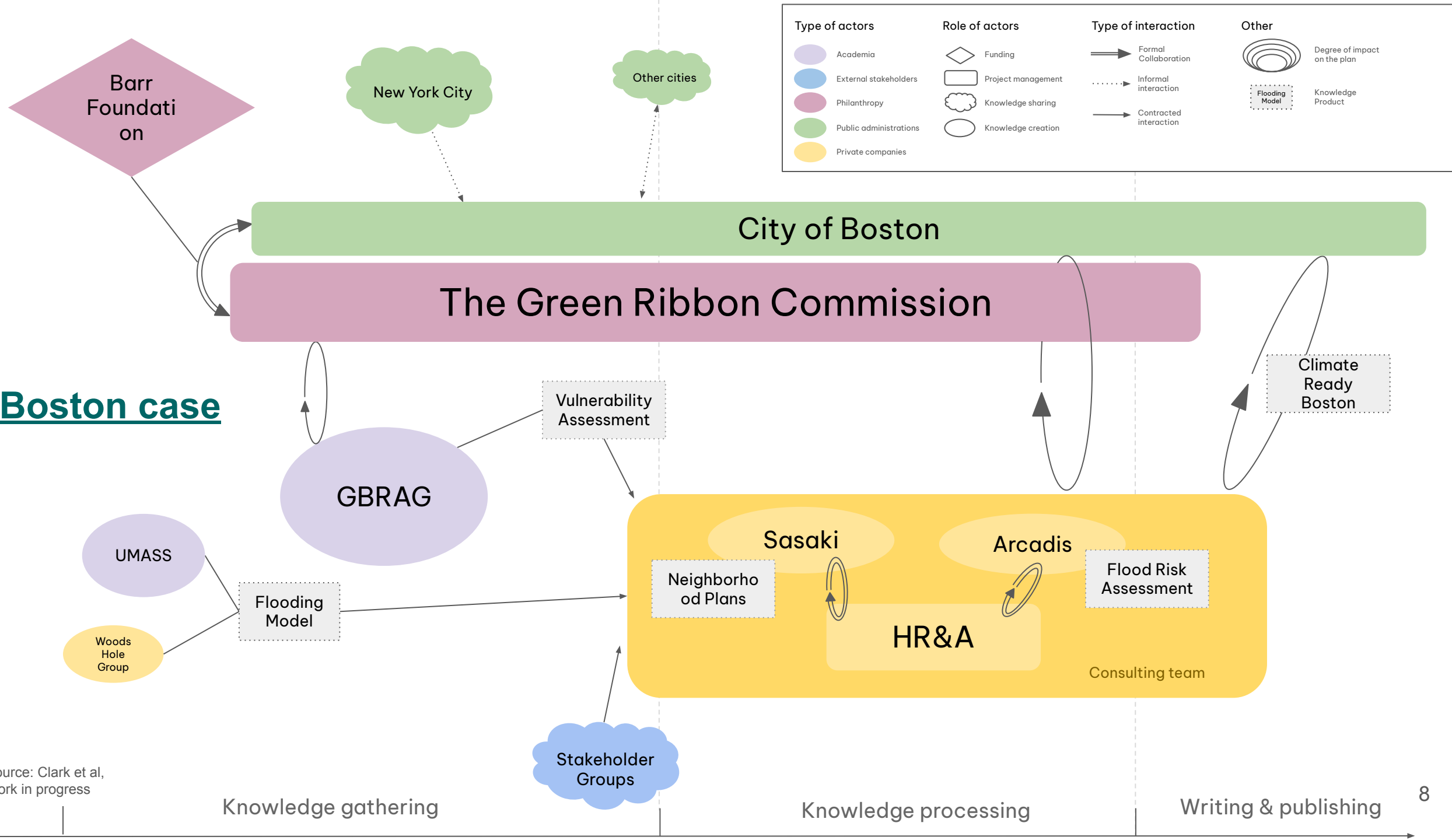


MAIN FINDINGS AND KEY MESSAGES

4 common actors in all case studies

- City administration
- Local research community
- Consultancy firms
- Public/non profit expertise institutions (meteorological services, NGOs...)

Boston case



source: Clark et al,
work in progress

Focus on academia

	Barcelona	Boston	Durban	Paris	Rotterdam	Vienna
Consultants	✓ Vulnerability Assessment (VA) done by public consultants	✓ Later versions done by private consultants	✓ VA & measures done by private consultants	✓ VA & measures done by private consultants	✓ VA & measures done by private consultants	✗
Research	✓ Recommendations on draft measures / indirect help with VA (indirect)	✓ 2016 Vulnerability Assessment / Recommendations on draft measures	✓ Specific studies / Guidance / also in implementation	✓ Data presentation / Guidance from individuals	✗ (only in implementation)	✓ Guidance on relevant research
Internal	✗ Literature review	✗	✗ Literature review	✗	✗	✓ Internal expertise and literature review
Other	✓ Meteorological Services	✓ US Army Corps of Engineers	✗	✓ Meteorological Services	✗	✗

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Research	✓ Recommendations on draft measures / indirect help with VA (indirect)	✓ 2016 Vulnerability Assessment / Recommendations on draft measures	✓ Specific studies / Guidance	✓ Data presentation / Guidance from individuals	✗	✓ Guidance on relevant research
Internal	Individual researchers, consortiums, research networks, local universities etc.					Internal literature review
Other						

Academia plays a particularly heterogeneous role because there is no legal framework (procurement process) that links research to the planning

Factors influencing interaction with academia

- **Political**
 - **Political dynamics**
 - **Time pressure** and **detail-level of the plan**
 - **Legal obligations** (tender process)
- **Culture of expertise**
 - **Background of policy-makers**
- **Local knowledge ecosystem**
 - **Strength of local research-actor networks**
 - **"Boundary organizations"** (Craig et al. 2025; Bosboeuf 2021; Bednarek et al. 2018)

Added value of research in *planning*

source: Clark et al,
work in progress

Legitimization*

Independent
status of research
legitimizes public
policy

Boston, Paris

Knowledge*

Holistic AND
technical up to
date knowledge
(and guidance) of
relevant research

*Barcelona,
Durban, Paris,
Vienna*

Ease of access

Inexpensive and
institutionalized
collaboration,
without
procurement
process

*Boston, Durban,
Paris, Vienna*

Methodology

Able to
manipulate large
amounts of data
and created
transversal
methods

Paris

Thank you for your attention

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Boundary actors and organizations = local knowledge systems (Craig et al, 2025; Bosboeuf, 2021; Bednarek et al, 2018)

- **Vienna**

- [Climate Change Center Austria \(CCCA\)](#): Nationwide entity that connects cities with unis and researchers
- [Director's office for Science, Research and Business Location](#): Links researchers with city administrators on different topics. Created a log of cc questions for unis created by administration
- [P.Minixhofer](#)'s background working at local university

- **Durban**

- [D.Roberts and S.O'donoghue](#)'s background in research at local universities
- [DRAP partnership](#): City-funded coordinator that links city administrators with relevant university researchers
- [EPIC network](#): Connects postgraduate students with the city to work on short term data collection and policy briefs for local Durban adaptation issues
- [KwaZulu Natal CC Compact](#): Network of local cities working with the EPIC network to transmit learnings
- [FRACTAL network](#): Embedded researcher works between uni, city and network coordinator

- **Paris**

- [GREC](#): Consortium of researchers working on local cc research and connecting with administration
- [M. Gantois](#): Integrated interaction with research in procurement process
- [A.Florentin](#)'s background in the private sector = lots of practitioner knowledge

- **Barcelona**

- [Expert Group for the Climate Emergency](#): Advised on proposed measures

KEY: [Institutionalized process](#); [informal relationships](#)