

# Monitoring adaptation measures and climate resilience in German cities

Resilient Cities 2018, Bonn

MONARES

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## Adaptation activities in German cities



- Adaptation plans and related strategies (43%)
- Participation in applied • research activities
- Measures against heat and heavy rain event



#### Adaptation plans in German cities

		$\bigcirc$	
	yes	in prep.	no
Large cities	11	2	2
Medium-sized cities	29	8	22
Small cities	2	0	21
Sum	42	10	45

Data and map from Thieken et al. 2017; analysis from June 2017; independent cities with more than 50,000 inhabitants





- Are German cities more resilient to impacts of climate change now than in 2008?
- Have cities adapted adequately to impacts of climate change?





- Overarching evaluation of activities: e.g. evaluation of the National German Adaptation strategy, EU scoreboard
- Little focus in municipal strategies on monitoring and evaluation
- Anecdotal evidence on evaluation of individual measures



# Challenges and benefitfs of assessing progress in adaptation



• Blind spot on impacts not unique to German municipalities

#### Challenges

Long time frames

Uncertainty and attribution

Diversity of key concepts and definitons

Data availability

# Challenges and benefitfs of assessing progress in adaptation



Blind spot on impacts not unique to German municipalities

Challenges	Benefits
Long time frames	Learning what works
Uncertainty and attribution	Increasing transparency
Diversity of key concepts and definitons	Increasing legitimacy
Data availability	Increasing motivation and support

Challenges adapted from EEA 2015

## The MONARES project



- Goals
  - Developing methods for monitoring urban climate resilience and for evaluating impacts of urban adaptation measures
  - Using these methods to support circa 15 applied resilience research projects in urban areas to approximate their impact
- Duration: 2017-2020
- Partners: adelphi, University of Stuttgart, University of Gießen, Dialogik
- Funding: German Federal Ministry of Education and Research (BMBF)
- Applied research projects are also funded by BMBF under the funding programme "Umsetzung der Leitinitiative Zukunftsstadt"

### **Cities involved**





### **Topics covered in the projects**



#### **Economy**

Impacts of climate change on maritime economy and logistics

**Adaptation in SMEs** 

### Infrastructure

Improving resilience of buildings

> Resilience of water, heat & energy infrastructure

#### **Green** spaces

**City trees and city climate** 

Value of urban ecosystems

**Competition for space: green** areas in growing cities

> **Spatial planning for** extreme weather events **City planning**

**Resilient city development plans** 

**Digital innovations for resilient city** planning

Energy

Adaptation to heat via green spaces and cooling of buildings

**Governance structures** for dealing with heavy rain events

**Resilience of** energy infrastructure

Governance

**Resilience and social equality** 

Vision-building for resilient ciites







- Framework needs to be flexible to cover different topics in differing depths
- Build on available data
- Establish links and synergies with other monitoring activities, e.g. processes related to the SDGs, Sendai Framework, ISO 37120/3
- Demonstrate value of monitoring and evaluation
- ...challenging task, collaboration beneficial, please get in touch: <u>kind@adelphi.de</u>



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Thieken, A., Walz, A., Lipp, T., Kern, K., Niederhafner, S., Hetz, K., Strate, L., Kern, J., Lippert, C., Rohrbacher, C., Göpfert, C., Meves, M. (2017): Urbane Resilienz gegenüber extremen Wetterereignissen – Typologien und Transfer von Anpassungsstrategien in kleinen Großstädten und Mittelstädten; Poster presented on 13/14 December 2017 at BMBF Conference "Vernetzungstreffen Zukunftsstadt" in Frankfurt am Main.

EEA (2015): National monitoring, reporting and evaluation of climate change adaptation in Europe. Technical report No 20/2015. EEA: Copenhagen