Technische Universität Berlin

ffu

15.-16.10.2015 UCaHS

Nicole Mahlkow (FU)
Prepared for the future?
Urban development governance against heat risks in mid-latitude cities

School VI Planning Building Environment
Environmental Assessment and Planning Research Group

Department of Political and Social Sciences
The Environmental Policy Research Centre (FFU)

Heat- a disaster risk factor

Table ES1 Overview of the major events in Europe 1998–2009

Hazard type	Recorded events	Number of fatalities	Overall losses (EUR billion)
Storm	155	729	44.338
Extreme temperature events	101	77 551	9.962
Forest fires	35	191	6.917
Drought	8	0	4.940
Flood	213	1 126	52.173
Snow avalanche	8	130	0.742
Landslide	9	212	0.551
Earthquake	46	18 864	29.205
Volcano	1	0	0.004
Oil spills	9	n/a	No comprehensive data available (a)
Industrial accidents	339	169	No comprehensive data available (b)
Toxic spills	4	n/a	No comprehensive data available (c)
Total	**928**	**98 972**	**148.831**

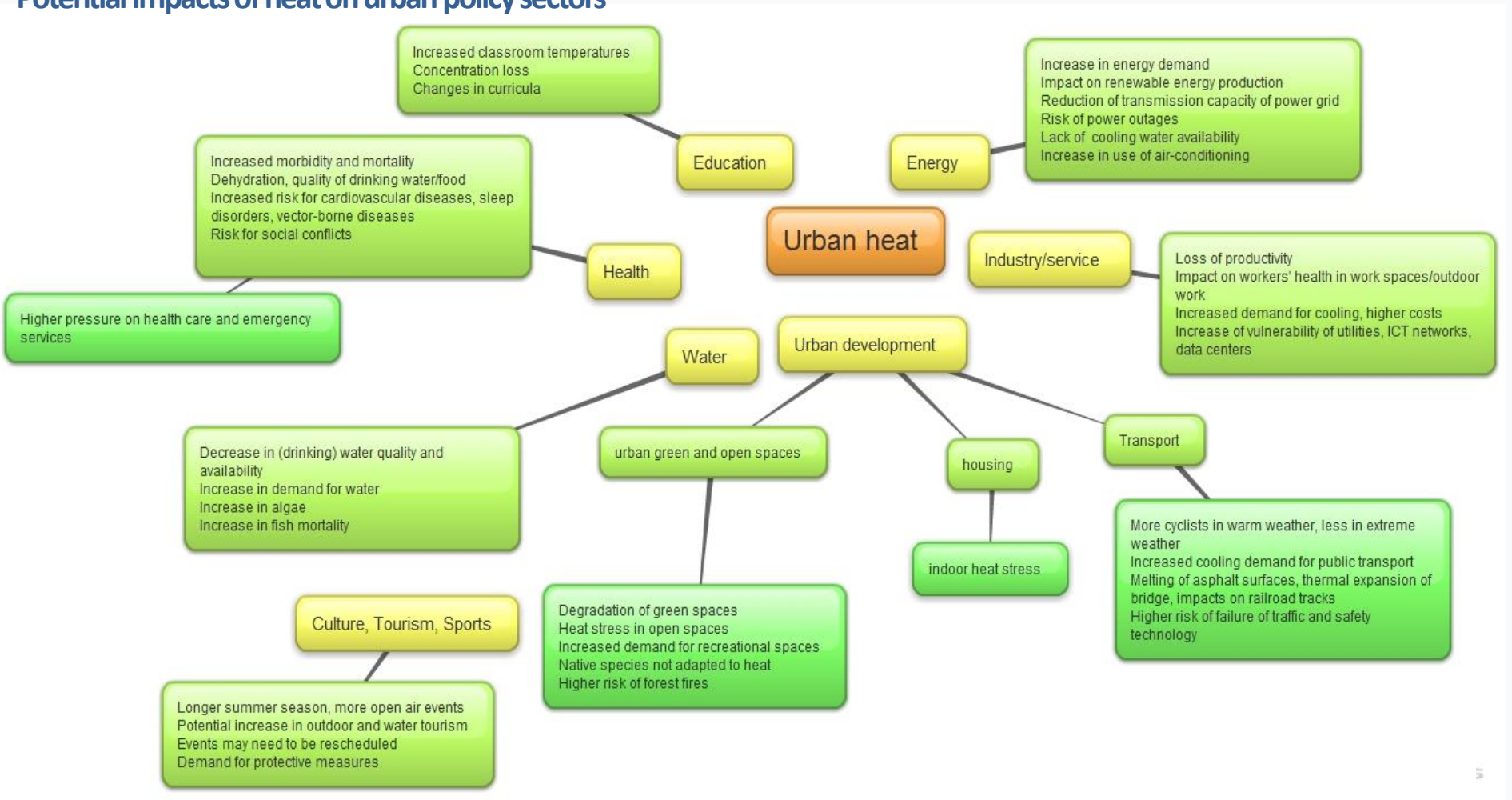
Note: (a) Estimation is between EUR 500 and EUR 500 000 per tonne of oil spilled.
(b) Costs for major events reported in Table 12.1 aggregately amount to more than EUR 3.7 billion.
(c) Costs for one particular toxic spill amount to EUR 377 million, see Chapter 13.

Source: EM-DAT, 2010; EMSA, 2010; MARS, 2010.

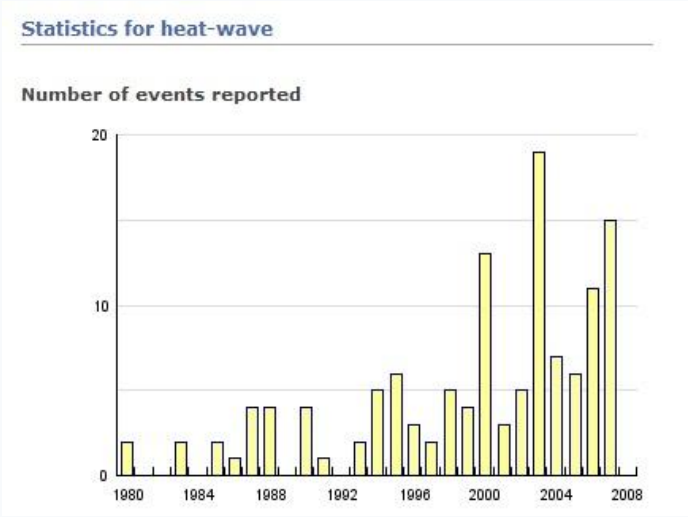
Foto: Patrick Pleul / DPA

Challenges for cities

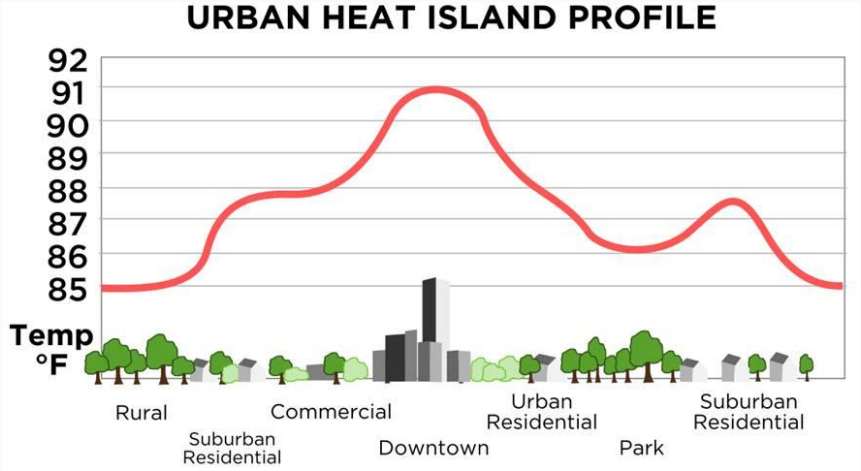
Potential impacts of heat on urban policy sectors



Challenges for cities

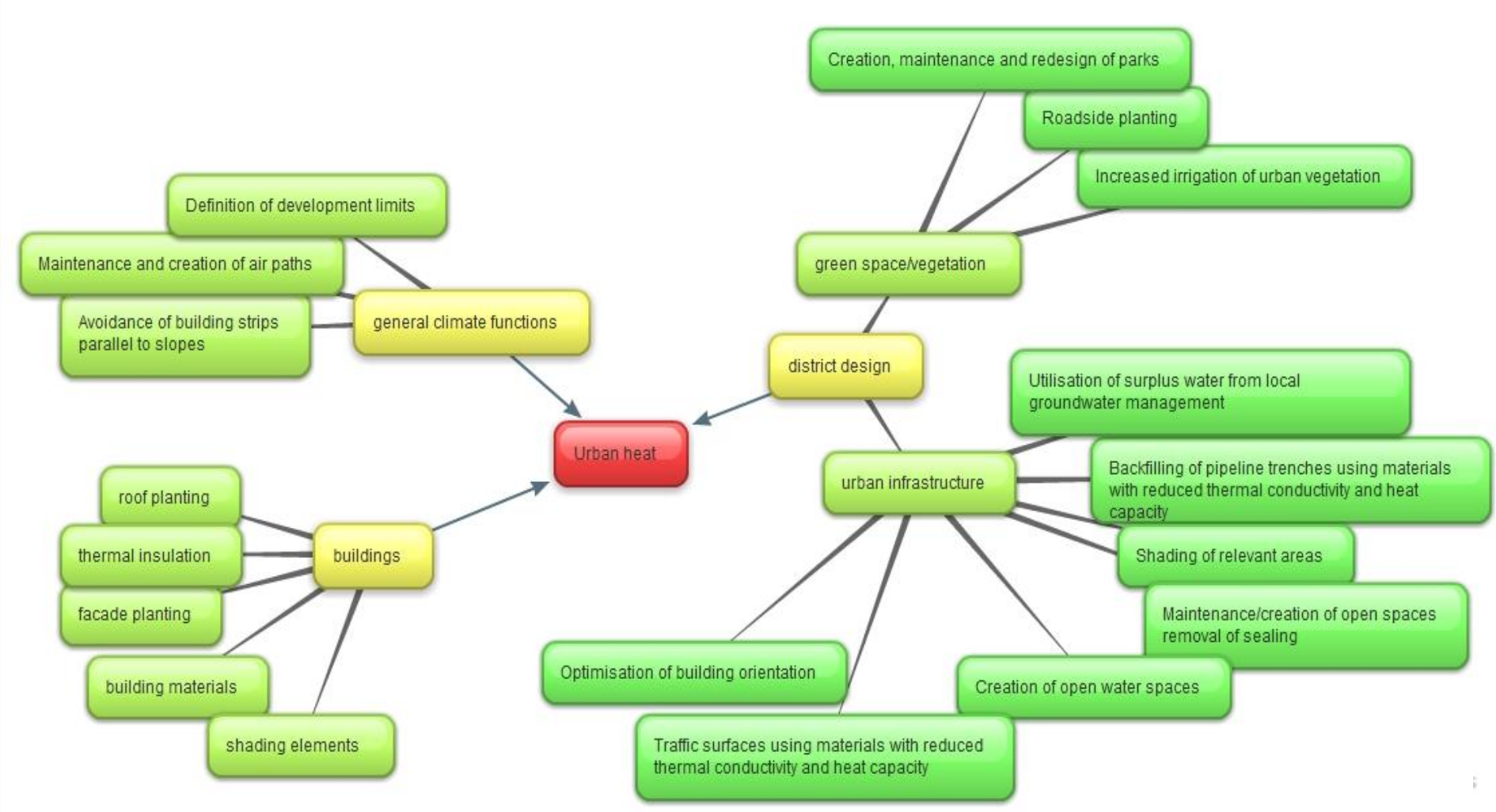


Source: UNISDR Prevention Web: Europe, heat wave events, 1980-2008



Source: US National Oceanic and Atmospheric Administration, Wikimedia Commons

Urban development measures for heat stress reduction



e.g. Dütemeyer et al. 2014

Research gaps

Creating the heat - proof city in mid-latitudes with moderate climate

- Urban planning perceptions, instruments and practices
- Coordination challenges and strategies

Research questions

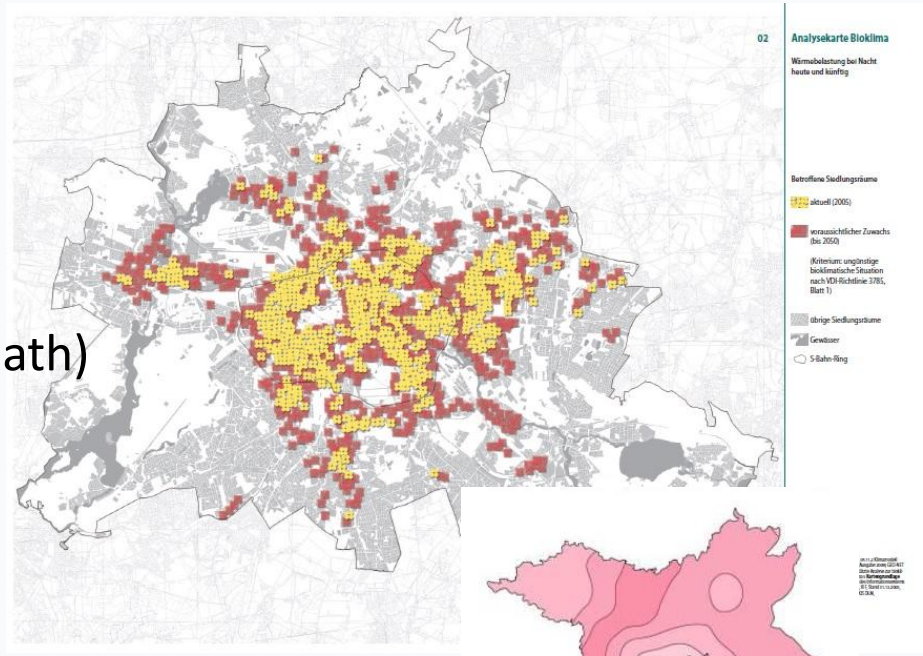
How are heat risk policies being integrated into urban planning processes in cities with moderate climate? What are challenges and opportunities?

Case study Berlin

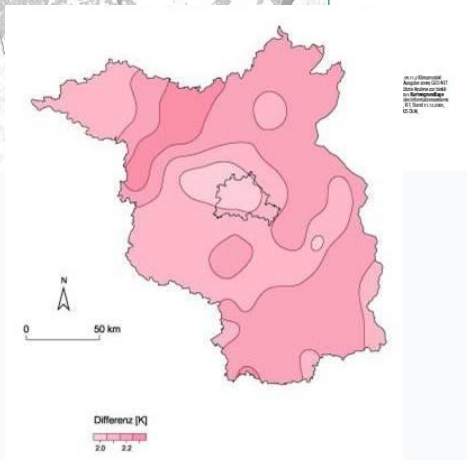
humid continental mid-latitude climate,
warm summers and cold winters

Curr. 1600 excess deaths (app. 5% annual death)
due to urban heat

Climate change projections
- 2.5°C rise by 2050
- more extreme weather events



Map bio climate- heat stress at night- today and in the future



Change of temperature 2046/2055 in comparison with 1951/2000

Analytical perspective

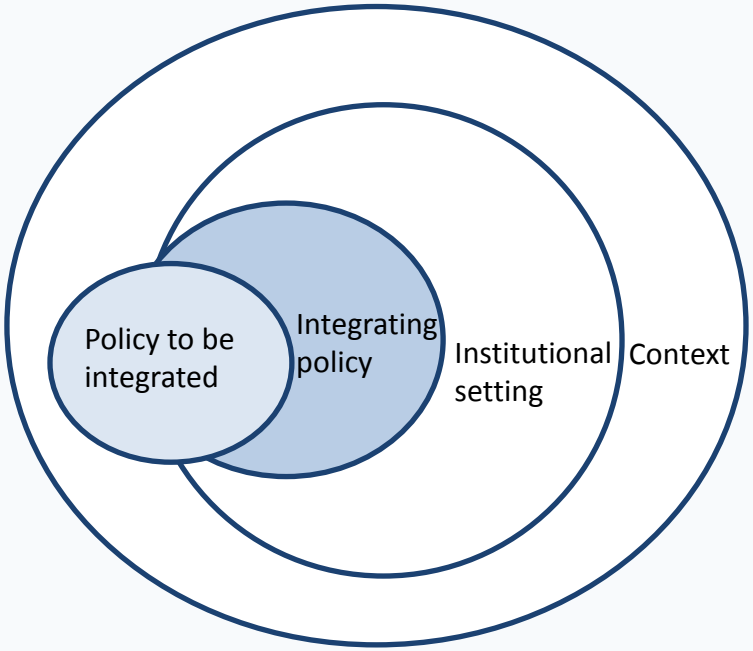
Policy integration

Forming relationships between single, potentially complex areas of political problem solving (integrated policy) with comprehensive, more or less coherent policy-arrangements (integrated policy).

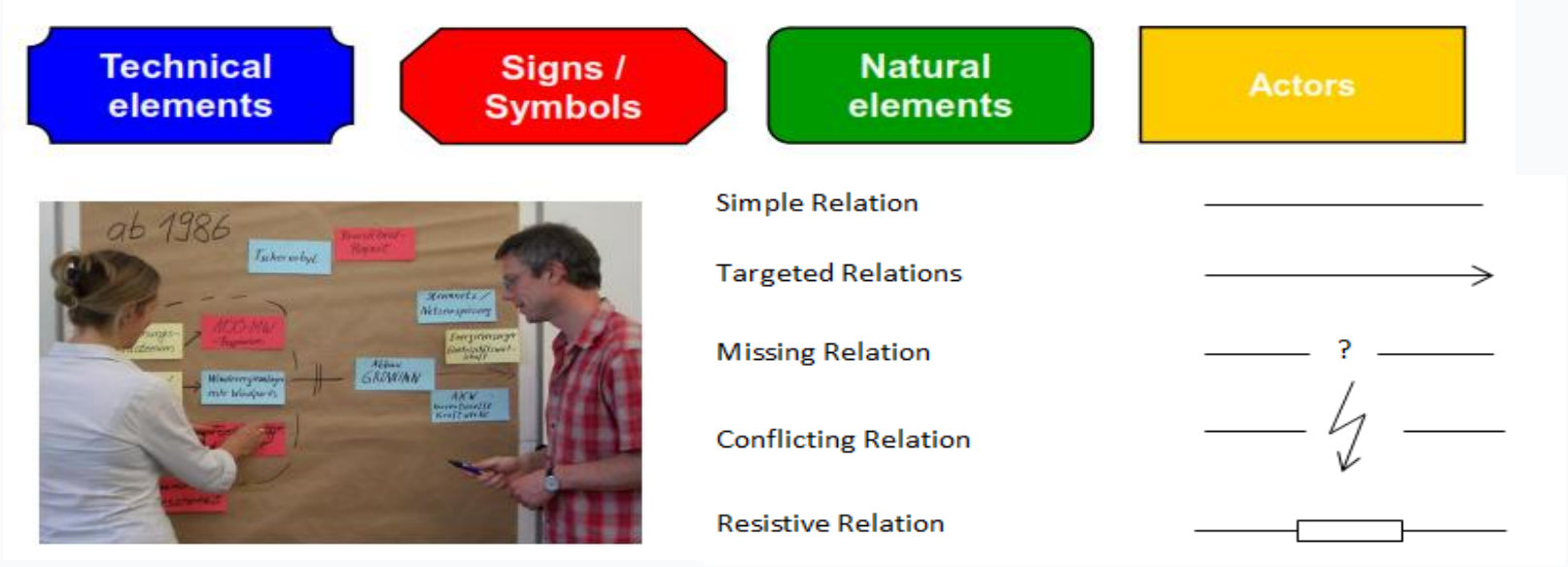
Bornemann (2013)

→ Empirical matters and modes of integration and non-integration

- Symbolic expressions: knowledge leading and impeding integration
- Material manifestations: practices of integration



Research methods

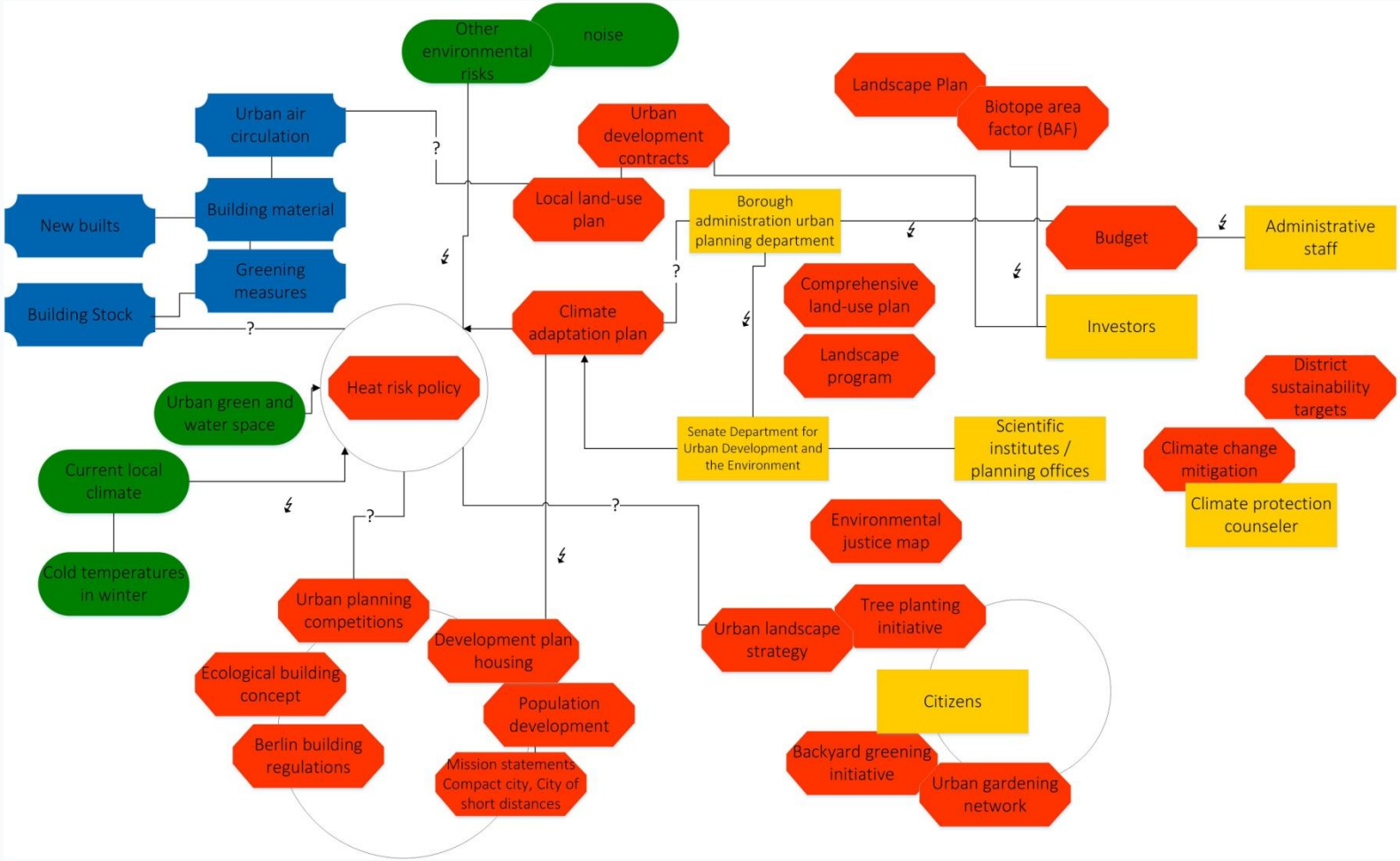


Methods

Interdisciplinary workshops with scientists
Expert interviews with administrative staff
Participating observation Berlin official government workshops
Document analysis (District and city-wide protocols of official meetings, official strategic documents)

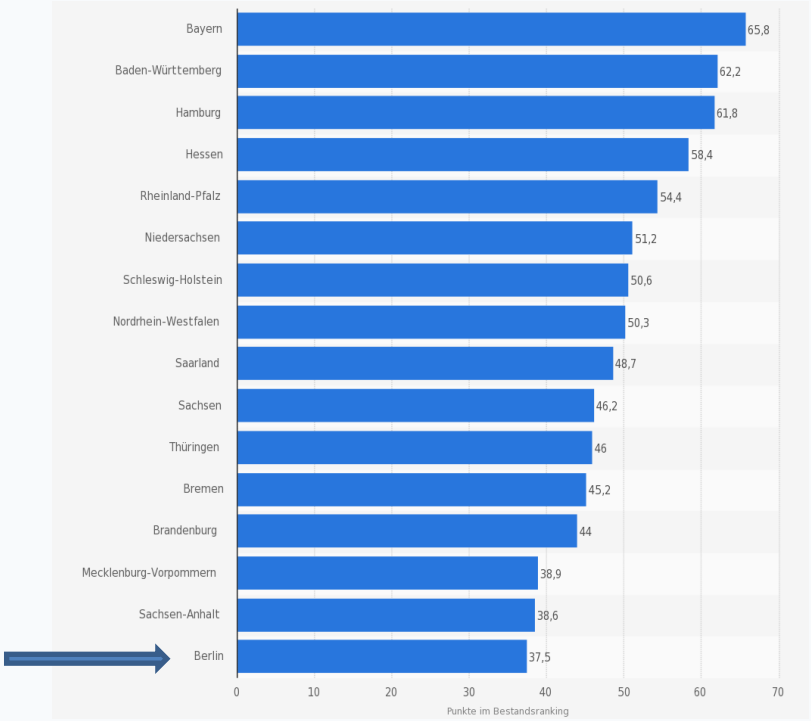
Constellation Analysis

Berlin urban development policy: heat risk policy integration

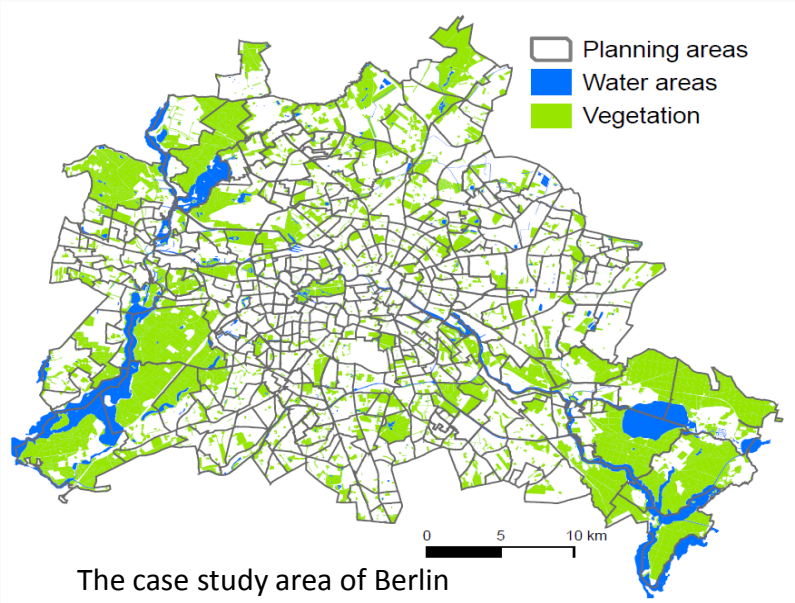


The challenge of translating heat risk measures into urban policy

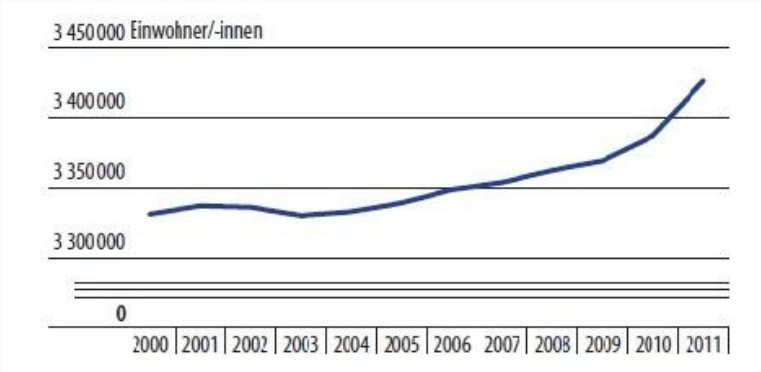
Contextual factors



Ranking of German federal states: economic power in 2012



The case study area of Berlin



Population Growth 2000-2011

The challenge of translating heat risk measures into urban policy

Policy to be integrated: 'what and how' of heat risk policy

- Time
  - complexity
  - thresholds
  - Interplay with other risks
- Space
  - complexity
  - Interplay with other risks

The challenge of translating heat risk measures into urban policy

Integrating policy : urban development policy

- Policy instruments capacity
- Risk analysis
- Sectoral logics
- Governance modes

The challenge of translating heat risk measures into urban policy

Responsivity of the institutional setting

- Exchange of resources over governance levels
  - Knowledge:
    - Attribution of responsibility
    - Local political culture
    - Integration of scientific knowledge
  - Resources
    - Staff
    - Budget

Source: TUBS

Conclusion

Overcoming barriers for translating heat risk reduction measures into policy action?

- Formulate thresholds concerning acceptable risks or goals
- Raise target specifity of formal policy and planning instruments
- Clear responsibilities between local tiers of governance
- Installing postions for mediation of knowledge between local government levels
- Linking competing local policies and political discourses
- Science-policy interface on *all* governance levels

Thank you!

Nicole Mahlkow
nicole.mahlkow@fu-berlin.de

http://www.ucahs.org/