# Klimawandelanpassung – Was bedeutet das für wen?

Lohner Herbert – BUND Berlin e.V.

# Vorbemerkungen

Grün in der Stadt

TEEB Stadtnatur

Urbane Grüne Infrastruktur

Charta Stadtgrün (+ ImmerGrün der Verbände)

etc.

Landnutzung und Flächenbewirtschaftung in der Stadt?

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# Ansatzpunkte




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# Praxisbeispiele/Hindernisse

- http://klimagarten.berlin

- STEP Klima konkret
- ww.stadtentwicklung.berlin.de/planen/stadtentwicklungsplanung/de/**klima**

- AFOK Berlin: Klimawandelanpassungskonzept

https://www.berlin.de/senuvk/klimaschutz/klimawandel/de/anpassungskonzept_berlin/index.shtml

- SPSG

https://www.spsg.de/forschung-sammlungen/forschung/klimawandel

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# Hindernisse

# Lösungsansätze?

- Umweltgerechtigkeit

https://www.**berlin**.de/senuvk/umwelt/**umweltgerechtigkeit**

- KLUG (Deutsche Allianz Klimawandel und Gesundheit)

https://www.klima-allianz.de/

- Informelle Akteursnetzwerke

- TEEB-Ansatz Ökosystemleistungen

Schutzgut Mensch

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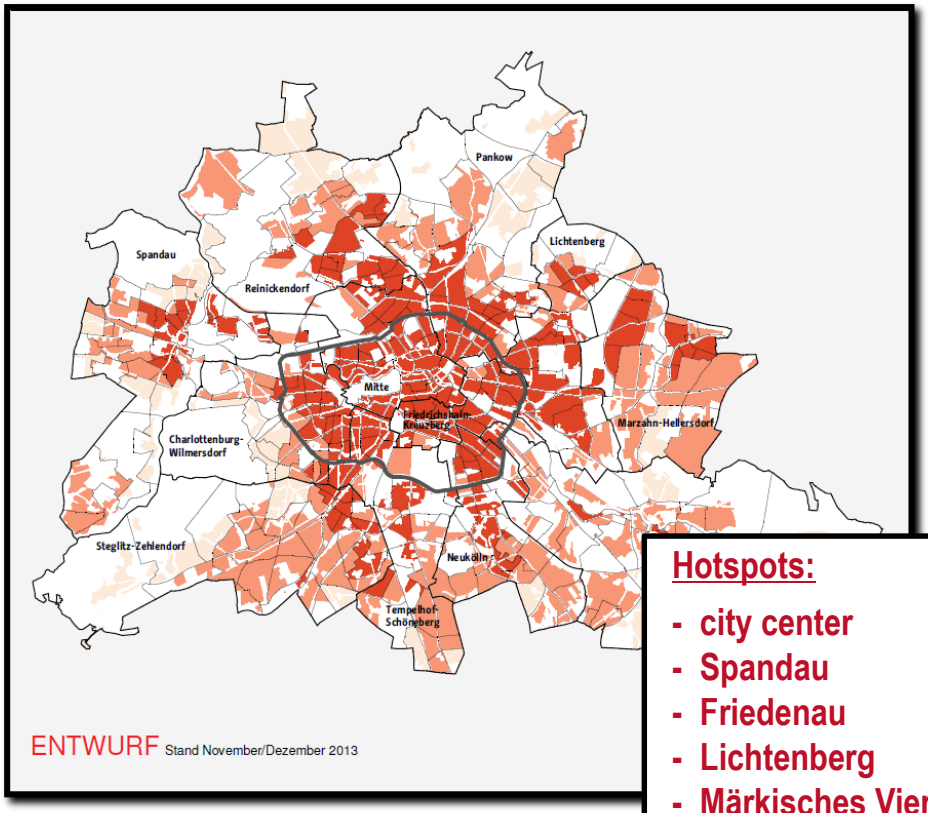
# Core indicator 4: Bio-climate / thermal load (4th professional level)




Planning area related impact classes

Human bio-climate

Sum of all climate factors that affect humans and influence well-being/health, in particular:

- Heat,
- Cold,
- Humidity,
- Wind

**Hotspots:**

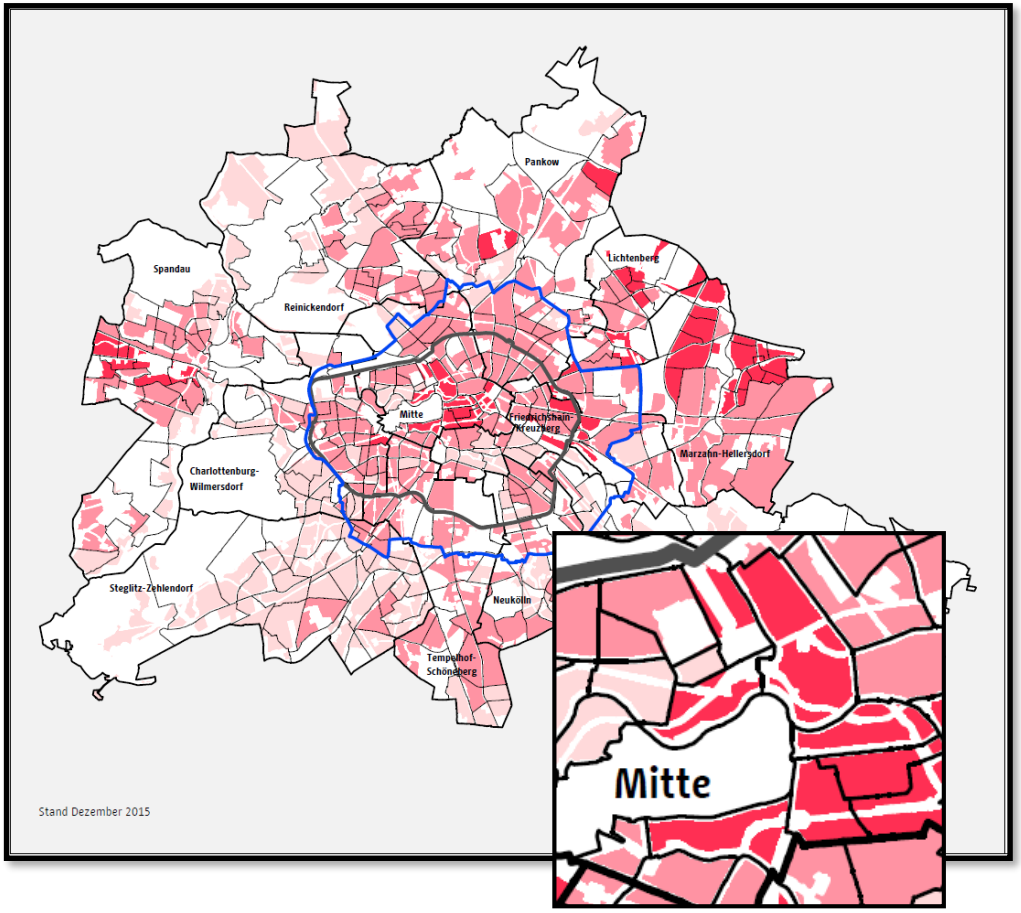
- **city center**
- **Spandau**
- **Friedenau**
- **Lichtenberg**
- **Märkisches Viertel (Großsiedlung)**
- **Marzahn-Hellersdorf (Großsiedlung)**

Load classes:

- High load
- Medium load
- Low load

- High bio-climatic loads can be found also beyond the “environmental zone”
- Marked concentration of impacted areas in the inner city
- Comfort zones/planning areas with low bio-climatic load exclusively in the outskirts

# Complementary indicator 9: Thermal stress, time period 2046 – 2055




Increase in days with thermal load in the time period 2011 – 2040 and 2041 – 2070

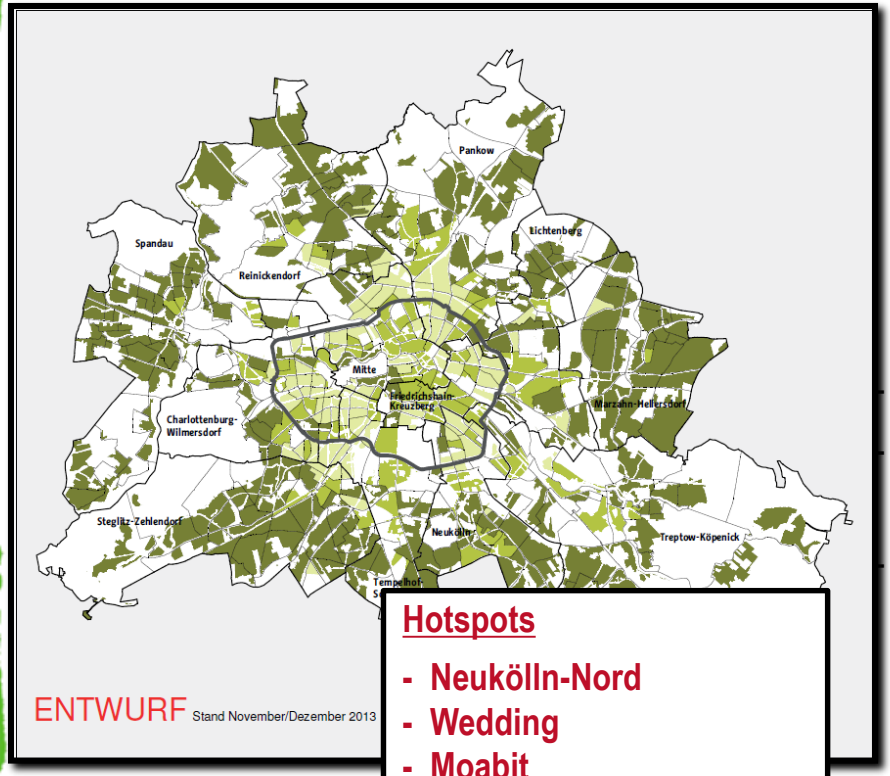
- high ( > 11 days up to 23.5 – 25)
- medium (11 days up to 22.5 – 23.5)
- low (< 11 days up to 18.5 – 22.5)

Effects: e.g. strong rain events:
increase up to 2050 by 25 %,
up to 2100 by 50 %
Streets become local heat bands
Heat island (growing and compact city)

2016: approx. 10 hot days (daily maximum temperature > 30°C)
2050: approx. 16 – 20 days
2100: approx. 26 – 36 days

**Calculations: model ensemble with 12 scenarios**

# Core indicator 5: Availability of green spaces (5th professional level)




**Hotspots**

- **Neukölln-Nord**
- **Wedding**
- **Moabit**
- **Prenzlauer Berg / Pankow**
- **Schöneberg**
- **Charlottenburg**

PLA availability public / private green space

- Availability good / very good: 248 PLAs ( %)
- Availability medium: 98 PLAs (22 %)
- Availability bad, very bad: 100 PLAs (22 %)

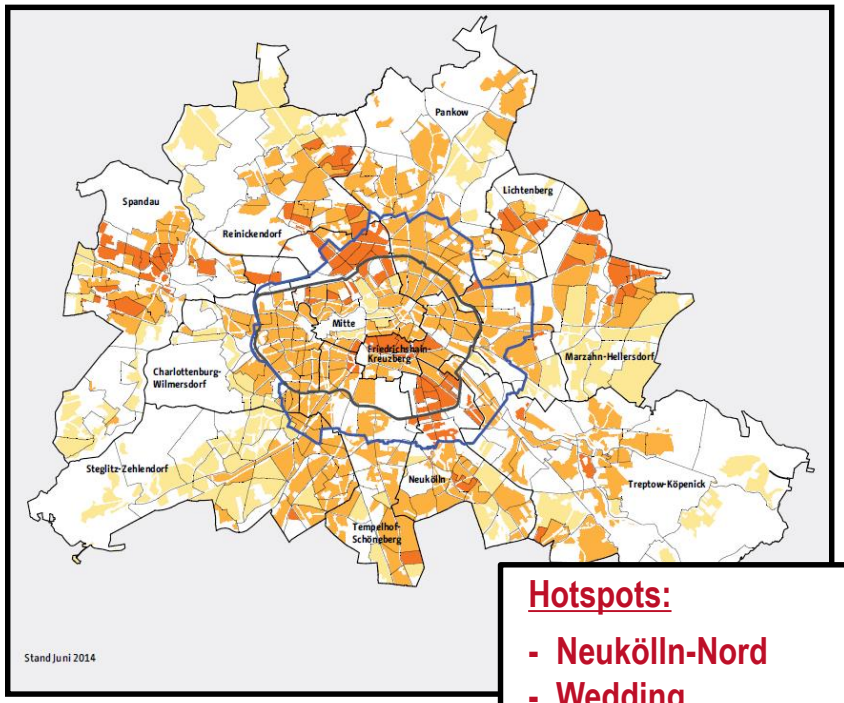
Availability analysis green and open spaces 2011

- Availability near-residential approx. 500m (5 – 10 min.)
- Guideline: 6 m² / inh. (availability of semi-public or private green and open spaces)
- Basic requirements: Size, accessibility etc.

Green space availability within the "S-Bahn ring" (circle line): 18 "good / very good", 45 "medium", 52 "poor"

Outside of the "S-Bahn ring" (circle line): 230 "good / very good", 53 "medium", 48 "poor"

# Core indicator 1: Social structure / social problems (1st professional level)




**Hotspots:**

- **Neukölln-Nord**
- **Wedding**
- **Moabit**
- **Reinickendorf-Süd**
- **Marzahn-Hellersdorf**

Monitoring social urban development
(447 planning areas – PLAs)

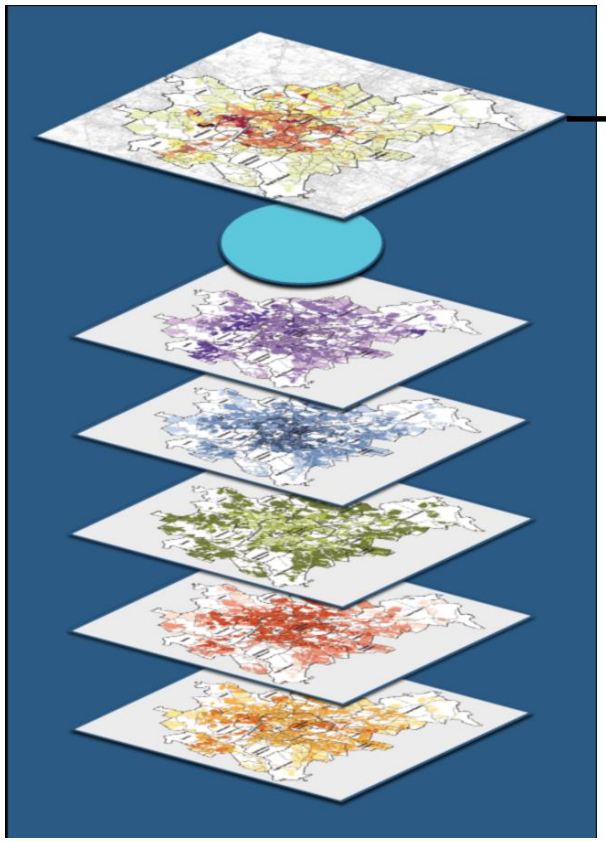
- Social structure (social problems) -
  Results from 12 indicators among others:
  - Unemployment rate
  - Receipt of social benefits
  - Immigrant background
  - Mobility (selective internal migration)

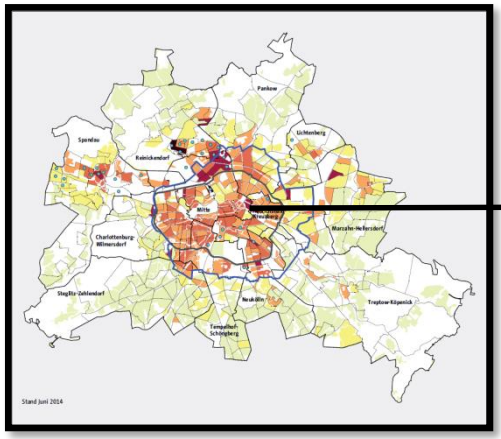
- Social structure (social problems)
  Statistical aggregation in one status index

- high / very high density of social problems
- medium density of social problems
- low / very low density of social problems

**The status index reflects the social situation (social problems) in the territory (planning area).**

# Method: Combining the 5 core indicators into an environmental analysis



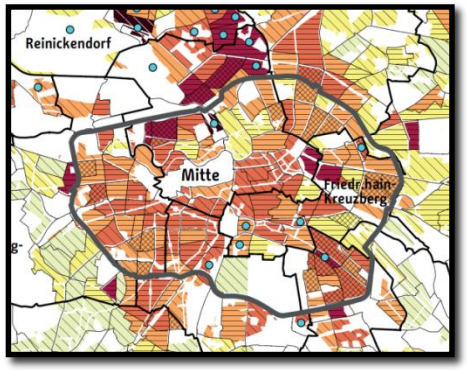


Berlin total:

Berlin area (total):

In total 447 planning areas:

- 3 5-fold load
- 18 4-fold load
- 74 3-fold load
- 100 2-fold load
- 104 1-fold load
- 148 no load

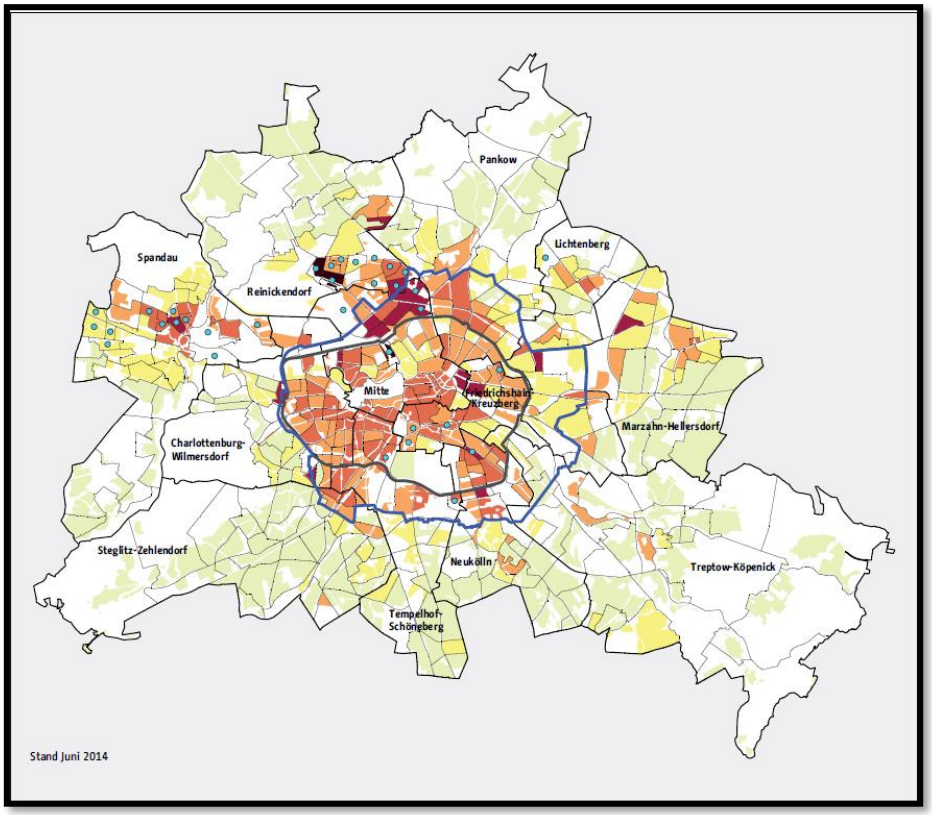



Extended inner city

Combination of core indicators: social structure (1), noise (2), air quality (3), bio-climate (4) + green spaces (

Additional indicators: more than 66 % inhabitants in “simple residential areas” + very high pollution loads

# Environmental analysis: Planning areas (PLAs) with multiple loads




Multiple loads at the planning-area level (426 PLAs)

Fivefold load
(incl. social structure)

- 5-fold load
- 4-fold load
- 3-fold load
- 2-fold load
- 1-fold load
- no load
- no settlement area
- high proportion of “low standard housing” + very high pollution load

Planning areas with multiple loads: high concentration in the inner city

high multiple load/low social status: Friedrichshain-Kreuzberg (Nord), Wedding, Reinickendorf (Süd), Neukölln (Nord)

Herbert Lohner
phone: 030 -7879 0024
lohner@bund-berlin.de

Danke schön