

Assessment and Perception of Green and Open Spaces in Urban Regions in the Context of Climate Mitigation and Adaptation

Anna Growe¹, Christoph Mager³, Stefan Norra⁴, Jale Tosun², Nina Kiese³, Nicole Schmidt², Madeleine Wagner¹

Background

- Climate change is an advancing challenge for cities
- Strategies concerning climate change/adaptation have a direct impact on the spatial structures of cities and regions
- Leads to formation of conflicts in multi-level systems of political organisation due to differing ideas of the stakeholders

Research questions

- How do different stakeholders perceive open space qualities and land use conflicts related to urban climate change?

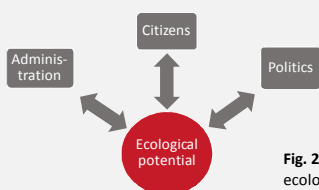


Fig. 2: Link between stakeholders and ecological potential of the research areas

- What kind of conflicts arise in the communication between the stakeholders related to planning processes?

Research area



Fig. 1: Research areas (red)

In a pilot study, all conflicts were empirically addressed for selected green and open spaces in Mannheim, Heidelberg and Weinheim by:

- Ecosystem Service (ES) Supply and Demand Analysis
- Household survey (n=394)
- Interviews (n=28)

Results

Household survey

„Assuming, there where the following actions planned on this area: Would you approve or reject them?“

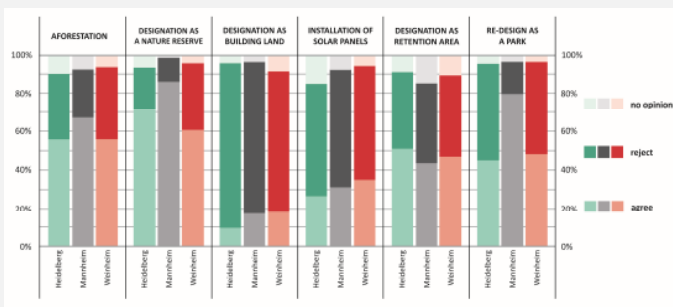


Fig. 3: Evaluation of different interventions on the study areas by the citizens

- Approval of conservation and near-natural arrangement
- Rejection of permanent, visible intervention

Interviews with stakeholders in administration

- Appraisal of lack of trust from political level
“There are always people you can do something with. These are your partners. And then you still have to take that political hurdle.” (Council Mannheim)
- Public participation often not satisfying for administration
“It’s a bit unfortunate that the same people keep coming over and over again. These are mostly the people who are a bit older, who have time for something like that.” (Council Mannheim)

Interviews with stakeholders in politics

- Cooperation and exchange with administration is evaluated positively
“What I’m witnessing is quite good. I never heard our group complain that it was not going well or anything. On the contrary.” (Politician Heidelberg)
- Public participation seen as important means to identify different perspectives
“I think it is extremely important to involve citizens in such discussions. The whole thing naturally comes up against a limit when citizen participation becomes a policy of prevention.” (Politician Heidelberg)

Ecosystem service (ES) supply and demand analysis

- ES supply is almost similar for all study areas
- Citizens show high demand for ES not being provided by the study areas
- Administration shows more realistic views on the existing ecological potentials of the areas

| Grade | Supply | Grade | Demand citizens | Grade | Demand administration |
|-------|------------------------------|-------|------------------------------|-------|------------------------------|
| 1 | Climate regulation | 1 | Conservation of biodiversity | 1 | Climate regulation |
| 2 | Aesthetic values | 2 | Leisure time and recreation | 2 | Leisure time and recreation |
| 3 | Food and forage plants | 3 | Climate regulation | 3 | Aesthetic values |
| 4 | Renewable energy source | 4 | Aesthetic values | 4 | Conservation of biodiversity |
| 5 | Leisure time and recreation | 5 | Food and forage plants | 5 | Food and forage plants |
| 6 | Conservation of biodiversity | 6 | Renewable energy source | 6 | Renewable energy source |

Fig. 4: Exemplary comparison of supply of ES and demand by citizens and administration for the Spinelli area, Mannheim. Grading from high (grade 1) to low (grade 6).

Conclusion

- ES analysis shows that it is appropriate to quantify ecological potential and demand and to measure the gravity of conflicts on the study site
- Citizen survey shows distinct Not-In-My-Backyard (NIMBY) syndrome
- Communication processes between responsible authorities should be improved to eliminate ambiguities with regards to content
- Trust in administration should be strengthened from the side of politics and the citizens