

European Climate Change Adaptation Conference (ECCA)
28.-31. Mai 2019 in Lissabon, Portugal

Talk: Dealing with heat stress at open air events: A multi-method approach on visitors' vulnerability, risk awareness and adaptive behaviour

Anna Heidenreich, Martin Buchner, Ariane Walz, Annegret Thieken
Universität Potsdam

Between spring and autumn in 2018, the German city of Würzburg, Bavaria, hosted the "Landesgartenschau", a regional horticultural show with around 700'000 visitors in total. This "Landesgartenschau" represents one of many similar events which require better individual and organisational adaptation to ensure safe and healthy visits with more frequently occurring heat due to climatic change. Based on this case study, we aim to explore whether and how visitors of open air events adapt to warm or hot summer temperatures during their stays.

During six consecutive weekends in July and August research was conducted including standardized interviews, behavioural observation and measurements of temperature, wind and humidity at different parts of the exhibition ground. In total, 306 visitors were interviewed on their weather perception, ways of weather information search, risk awareness, risk knowledge and heat adaptation behaviour via standardized questionnaires, and 2750 behavioural observations were made to identify behavioural adaptation. During the examination period temperatures recorded at the exhibition ground varied between 19°C and 35°C. For statistical evaluation, correlation analyses, ANOVA and multiple regression analyses were executed.

Differences in adaptation behaviour were observed between rather cold and rainy days (<25°C), warm summer days (25-30°C) and hot days (>30°C). Age and physical fitness had an impact on the perception of heat and the reported thermal stress. Self-reported adaptation behaviour could mostly be confirmed by the behavioural observations. An important finding is the widespread unawareness of official heat warnings: on three observation days with such a warning only 10% of the interviewees knew about it. Concerning adaptation measures against heat stress, most people saw a high individual responsibility for adaptation and held the organizers not strongly responsible. Most visitors rated the Landesgartenschau's adaptation measures on an average level.

Based on the studies' results, recommendations can be given to organizers of future open air events. The topic of heat stress has to play a central role in planning for visitors' safety and also in risk communication. The public awareness of heat stress should be fostered further, so private precaution and adaptation measures can be developed and internalized.

Konferenzbeiträge ExTrass

im Rahmen von

European Climate Change Adaptation Conference (ECCA)
28.-31. Mai 2019 in Lissabon, Portugal

Talk: Climate adaptation – information needs and gaps of urban administrations

Annegret Thieken
Universität Potsdam

Extreme weather events such as heavy precipitation, flooding and heat waves have caused high economic losses in urban areas in Germany and can also have adverse effects on the health of the urban population. To mitigate (future) impacts, urban planning has to better account for such extremes – a task that the project ExTrass (Urban resilience against extreme weather events – typologies and transfer of adaptation strategies of small and medium-sized towns) aims to facilitate and support by identifying entry points of climate adaptation in planning processes, by analyzing development pathways and by delivering data and information tailored to the needs of urban administrations and civil protection. The research approach of the Extrass project will be illustrated using small towns in Germany and heat waves as an example.

European Climate Change Adaptation Conference (ECCA)
28.-31. Mai 2019 in Lissabon, Portugal

Poster: Climate mitigation and adaptation strategies of metropolises and medium-sized cities in Germany

Annegret H. Thieken, Julia Dierck, Antje Otto
Universität Potsdam

Cities are responsible for up to 70% of global greenhouse gas emissions, but they can also be severely affected by impacts of climate change, such as extreme weather events. Hence, cities are important actors in climate policies and many of them have started to develop strategies or action plans that explicate how the city aims to mitigate and/or adapt to climate change.

Although climate mitigation and adaptation have been on the political agenda for many years in Germany, an overview of municipal strategies is missing. Therefore, this study provides a comprehensive synthesis of such strategies while distinguishing three city sizes: big metropolises with more than 500,000 inhabitants, small metropolises having 100,000 to 500,000 inhabitants, and medium-sized cities with more than 50,000 inhabitants that have the same statutory framework than metropolises.

Altogether, mitigation and adaptation plans of 99 German cities were searched and analysed by content analyses. The analysis reveals that mitigation plans are much more common than adaptation plans: 98 cities had a mitigation plan, while only 44 had an adaptation plan by July 2017. With regard to adaptation plans, there is a clear dependence on the city size: in only two (out of 23) medium-sized cities adaptation plans were found. This highlights that climate change adaptation is still a young policy domain: a national funding programme that supports cities to develop adaptation plans was launched in 2015, while a comparable programme for climate mitigation was already established in 2008.

With regard to the contents, measures to reduce greenhouse gas emissions in the transportation sector and in urban development are the most popular with regard to climate mitigation. With respect to adaptation, planned actions and measures are much more diverse and thus context-specific. It is, however, striking that fields of actions that were identified by national and European policies as being important, such as the health sector, are often neglected in the municipal plans. Hence, more cooperation and exchange is needed between different policy levels. This is further supported by the fact that city networks were identified as an important driver for the development of mitigation and adaptation plans.