Urban Regions under Change:
towards social-ecological resilience

International Conference

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FONA Social-Ecological Research BMBF
Urban Regions under Change: towards social-ecological resilience

URC 2014

26-27 May 2014, Handwerkskammer Hamburg
Holstenwall 12, 20355 Hamburg, Germany

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The research group „plan Baltic“ is fully funded by the German Federal Ministry of Education and Research under its Social-Ecological Research Programme within the Framework Programme „FONA - Research for Sustainable Development“ from 2009 until 2014 (FKZ 01UU0909).
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Programme

26 May 2014

18:00 Get together, with dinner and drinks (at own expenses)
Venue: Kartoffelkeller, Deichstrasse 21, 20459 Hamburg

27 May 2014

9:00-10:00 Registration

10:00 - 12:30 Plenary session, Room 303 „Kleiner Saal“

10:00 Welcome and short introduction - Sonja Deppisch (HafenCity University, Head of plan Baltic)

10:05 Welcoming speech - Gesa Ziemer (HafenCity University, Vice-President for Research)

10:15 Keynote speech Hans von Storch (Helmholtz-Zentrum Geesthacht Centre for Materials and Coastal Research) - Urban climate change – the story of several drivers

11:00 Keynote speech Sirkku Juhola (Centre for Urban and Regional Studies, University of Helsinki) - Urban transformation in the face of climate change challenges

11:45 Keynote speech Sonja Deppisch (HafenCity University Hamburg) - Urban and regional resilience: barriers and pathways – inter- and transdisciplinary results

12:30-13:15 Lunch

13:15-13:45 Poster session, Room 303 „Kleiner Saal“

13:45-15:30 2 Parallel chaired sessions with oral presentations (each 15 minutes and 5 minutes discussion)
Programme

Track 1  Room 302 “Gesellenzimmer”

Urban climate change related effects on extreme heat events – Michael Richter

Application and comparison of methods to assess heat exposure of city quarters – Mady Olonscheck, Carsten Walther, Claudia Bach, Bin Zhou, Maike Vollmer, Jörn Birkmann, Jürgen P. Kropp

Monitoring spatio-temporal change as a means of achieving resilience in the suburban landscape: the case of the eastern area of Thessaloniki, Northern Greece – Eleni A. Athanasiadou, Maria Tratsela, Ioannis A. Tsalkidis, Vasileios Charistos

Evaluating the spatial effects of urban regeneration programs for sustainable planning in a highly vulnerable urban context - Luca Barbarossa, Daniele La Rosa, Riccardo Privitera

Track 2  Room 303 “Kleiner Saal”

A resilience lens on food production in the metropolitan landscape – Stephan Barthel

Knowledge, social space and climate change resilience: cultural differences in handling climate change in European coastal areas – Thorsten Heimann

Developing resilient urban waterfronts; a framework for synchronising adaptation with urban development and management – Peter C. van Veelen

Overcoming mismatches in the multi-level governance of urban climate change adaptation – Bart Jan Davidse

Climate change adaptation from a planning theoretical perspective – ambiguous legitimacy in Helsinki – Johannes Klein, Raine Mäntysalo, Sirkku Juhola

15:30-16:00  Coffee break

16:00-17:30  2 Parallel chaired sessions with oral presentations (continued)
Programme

**Track 1** Room 302 “Gesellenzimmer”

- Shifts in urban identity in the English north western industrial town – Amber Roberts
- A spatial-hormetic approach to urban resilience – Claudiu Forgaci, Arjan van Timmeren
- Urban land teleconnections and urbanity - two new approaches to explore current global urbanisation and its impact on sustainability – Dagmar Haase
- The social-ecological vulnerability of an urban region – Simone Beichler

**Track 2** Room 303 “Kleiner Saal”

- Thank God, the city is complex – Rob Roggema
- Bridging the transformation gap with “living labs” – Ernst Schäfer, Ulrich Scheele
- Venice port-city: an integrated cross-scale strategy – Maria Cerreta, Daniele Cannatella, Giuliano Poli, Sabrina Sposito
- From linear to circular - challenges for changing urban metabolism?! An analysis of local transition processes – Katharina Klindworth, Aleksandra Djurasovic, Jörg Knieling

17:30 - 18:30 Plenary session, Room 303 „Kleiner Saal“
17:30 Thematic insight - Achim Daschke (German Federal Environment Agency)
18:15 Closing remarks - Sonja Deppisch
18:30 End of conference
The URC 2014 conference brings together international experts and researchers from a broad range of disciplines such as physical- and social geography, planning, landscape ecology, governance, sociology etc. to discuss the topic of dealing with change in the context of urban and regional development in European urban regions. Recent years have shown an increase in the number of inter- and transdisciplinary research projects, especially on the topic of dealing with the effects of climate change. Other change-related issues, such as demographic change and globalisation, show similarities in the way these issues can be dealt with in the context of urban and regional development, making it attractive to approach such questions in an integrative manner. During the conference, the latest research results and experiences from practice will be presented and discussed. To bridge gaps between the different disciplines, the presentations share a social-ecological systems perspective on urban regions. An important question throughout the conference will be how inter- and transdisciplinary research can foster the transfer of research results and recommendations into practice.
The conference will be held at the Handwerkskammer Hamburg. The venue is located in walking distance from the city centre and can be easily reached by Bus 112 (towards Neumühlen/Övelgönne) or subway line U2 (towards Niendorf Nord) from the Central Station. Bus 112 leaves in front of the western entrance of the Central Station, please get off at “Handwerkskammer Hamburg”. If you take the subway U2, please get off at the station “Messehalle”, take the exit “Wallanlagen” and walk to the venue. More information on the venue can be found on treffpunkt.hwk-hamburg.de (in German).

Further information on the public transport in Hamburg can be found on hvv.de

The ‘Get together’ on the 26th of May will take place at the Kartoffelkeller Hamburg, Deichstrasse 21, 20459 Hamburg. The Kartoffelkeller is in walking distance from the subway station “Rödingsmarkt” (line U3). More information can be found on kartoffelkeller-hamburg.de (in German). Please note that you will have to pay for the get together yourself. You will be able to pay at the restaurant either in cash (in Euro) or by credit card. (Visa, MasterCard).
Plan Baltic is a transdisciplinary research group with expertise in climate change and spatial development at HafenCity University in Hamburg. Our researchers have backgrounds in social and natural science as well as in urban planning and spatial development. We are in the closing stages of an inter- and transdisciplinary research process on climate change adaptation in coastal urban regions of the Baltic Sea region, which involved not only the merging of research disciplines, but also the inclusion of stakeholder groups throughout the research process.

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Topics

The presentations during the conference will be divided into two tracks, each addressing issues of dealing with change in the context of urban and regional development with a social ecological perspective on cities and urban regions. The first track addresses the challenges cities and urban regions are facing when confronted with change, whereas the second track focuses on the development of solutions to deal with change and the challenges for decision making. Both tracks however have a practice oriented approach, concentrating on the question what the results and experiences mean for the practice of urban and regional development towards resilient cities.

Track 1: Challenges to urban development

The papers that are presented in this track deal with the question how change manifests itself in an urban context and provide possible answers on how to deal with these challenges in the context of urban and regional development. Typical questions that will be dealt with in this track are related to how long term processes of change, such as climate change and demographic change, influence the structure and functioning of urban social-ecological systems. As such, the papers provide answers to the question which consequences these long term processes can have, but also which solutions can be found to deal with these consequences, to alter processes of urban and regional development towards social-ecological resilience.

Track 2: Challenges in decision making under change

The papers that are presented in this track provide insights into the challenges of dealing with change in the context of governance and urban planning and development. The presentations on the one hand provide answers to the question how current practices in decision making processes about dealing with change are organized and which experiences can be derived from these on-going practices. On the other hand, they deal with the question how structures of governance, urban planning and development should be altered, changed or transformed to deal with change and to increase social-ecological resilience.
Keynote speeches

Prof. Dr. Hans von Storch
Director of the division Systems Analysis and Modelling at Helmholtz Centre for Materials and Coastal Research, Geesthacht

Professor at the Meteorological Institute of Hamburg University

Urban climate change – the story of several drivers

When designing policies for dealing with climate change, knowledge is needed whether the change is not just an expression of natural variability, but may be related to global change, which is expected to continue into the foreseeable future at a possibly accelerated pace, and/or to local change, which in some case may have led in the recent past to a new stationary (stochastic) state or which may evolve over a more limited time in the future, conditional upon modifications in the urban area.

Methodically, this is the "detection and attribution" problem, which has evolved over the decades for first global and later regional problems; for local problems, this concept has hardly be developed and tested. The "detection", that a systematic change beyond the range of natural variations has taken place, may often be achieved with conventional data. However, the "attribution" of a mix of plausible causes for the systematic change needs space-time specific hypothesis of the local response to the different drivers. These are downscaling global change due to elevated greenhouse gases, downscaling regional change due to changing anthropogenic aerosol loads, and the local changes due to local aerosol emissions and land use changes (incl. urbanization). The former is less of a challenge, but for the latter two little scientific analysis is available.

Thus, tools need to be developed for assessing the character of ongoing and expected future change, for allowing the development of suitable response options. The issue must become part of regional climate servicing, and long-term simulations of changing local climates must become a standard piece in the tool box of climate modelers.

The situation is discussed with examples drawn from Hamburg and from the Baltic Sea region.
Keynote speeches

Dr. Sirkku Juhola

Assistant professor, Department of Environmental Sciences, University of Helsinki, Finland

Visiting scholar, Department of Real Estate, Planning and Geoinformatics, Aalto University, Finland

Urban transformation in the face of climate change challenges

Societies will face unprecedented challenges in the future in securing both liveable and sustainable environments for their citizens. Cities play a key part in these and this has led to increasing calls for transformations in the urban context, including fundamental changes in the ways in which cities themselves are organised. In particular, cities have a dual role in terms of climate change, both in causing these problems by emitting emissions, and also being faced with the consequences and having to adapt to the impacts. The ways in which planning decisions are made in cities is also facing pressures, signifying that there is a need to examine these processes in more detail.

This presentation draws on a five year Nordic Centre of Excellence on Strategic Adaptation Research, NORD-STAR, where in part, the focus has been placed on how Nordic cities have been able to tackle these challenges. Drawing on two empirical case studies of Copenhagen and Helsinki, this presentation reviews the ways in which the decision-making around mitigation and adaptation is organised, where conflicts and synergies between these have emerged and how successful the cities have been in striving towards a more sustainable future.
Urban and regional resilience: barriers and pathways – inter- and transdisciplinary results

This presentation tackles the topic of urban and regional resilience within the overarching topic of how urban regions and their planning administrations can deal with complex and uncertain future climate change impacts. Dealing with situations characterized by uncertainty and change cannot be considered as a new situation in spatial planning. But referred to climate change impacts, the new quality of uncertainty and complexity is increasingly pointed out due to the epistemological distance of climate change and its hybrid nature. This renders the already given challenges to spatial planning in dealing with uncertainty and potential nescience more explicit and might also evoke new challenges such as to (re-) define planning paradigms and normative backgrounds of how to deal with land as a collective resource.

Starting with a social-ecological resilience thinking lens, the challenges posed to urban and regional planning as well as potential ways of dealing with them are discussed and barriers as well as potential pathways towards urban and regional resilience are identified.

This discussion presents the outcomes of a four years interdisciplinary research endeavor of the research group plan Baltic. The findings are based on theoretical and conceptual studies and informed by case studies of the urban regions of Stockholm (Sweden), Rostock (Germany), Riga (Latvia) and the San Francisco Bay Area (USA). Also, results of a transdisciplinary scenario planning research process performed together with stakeholder and planning practitioners in the urban region of Rostock support the findings.
Scientific Committee

Prof. Marina Alberti, PhD
Professor of Urban and Environmental Planning, Department of Urban Design and Planning, University of Washington

Dr. Stephan Barthel
Theme leader of urban social-ecological systems, Stockholm Resilience Center, Stockholm University

Dr. Sonja Deppisch
Head research group plan Baltic, HafenCity University Hamburg

Dr. Adriana Galderisi
Assistant Professor, Dipartimento di Ingegneria Civile, Edile e Ambientale, Università degli Studi di Napoli „Federico II”

Prof. Dr. Stephan Pauleit
Head of chair for Strategic Landscape Planning and Management, Technische Universität München
Track 1

Michael Richter
HafenCity University Hamburg

Urban climate change related effects on extreme heat events

The urban heat island effect poses a challenge in several cities and can increase the morbidity and mortality rate. It was proven that there is recently a considerable effect in relative small urban conglomerations in mid-latitudes like the case study region of Rostock which arises especially in the warm season (Richter et al. 2013). Due to climatic changes, these effects are expected to change in intensity and/or frequency.

However, the consequences of climate change may be reduced by introducing appropriate adaptation measures to cities. Spatial planning is regarded to play an important role in adapting cities to climate change as it influences the spatial configuration, type and degree of development of buildings and land use, as well as landscapes and green spaces.

In order to investigate this, a model was used which focuses on the interactions between land use and surface temperatures and on the specific air conditions within cities. It allows to project urban surface temperature differences with regard to different assumptions of (future or planned) land use/land cover and its specific characteristics.

As example for extreme heat events 99th percentile summer days of the periods 1961-1990 and scenario runs from Regional Climate Models for 2041-2070 and 2071-2100 were used. Depending on IPCC-Scenario and model, the frequency of occurrence of extreme heat events similar to present events will occur up to 4 (2041-2070) respectively 6 (2071-2100) times more often. Furthermore, the average temperature for defined extreme heat days will rise by 1,6 – 3,4°C (2041-2070) respectively 2,2 – 4,4°C (2071-2100).

The surface temperature model calculated no significant effects for differences in maximum surface temperatures between land use classes, the largest difference exists between woodland and town center with about 14-15°C, independent of the selected scenario. Selected parts of land use change scenarios constructed during scenario workshops in Rostock were implemented into the surface temperature model with regard to climate change adaptation. Results showed diverse outcomes, from enlargement of vulnerable areas to nearly extinction of climate change related heat effects in several areas.
An increasing number of heat waves due to climate change will affect the urban population. We analyze the occurrence of heat wave days in the German city of Karlsruhe, which has been frequently subjected to heat waves in the past. To overcome the lack of small scale analyses, which is necessary for focused and efficient risk management and adaptation measures in the context of heat related impacts on people, information on the most exposed parts of a city is required.

We introduce and compare three different methods to assess the heat exposure on a city quarter level, namely (1) the interpolation of weather station data from the urban hinterland, (2) use of a city climate index and (3) application of remote sensing data and applied them to the German city of Karlsruhe.

As the three approaches provide comparable levels of heat exposure for most city quarters, even though they differ in the processing effort, the costs, and the required data, decision makers can choose the most appropriate method given their available resources.

Moreover, we can show that less sophisticated approaches, like those using weather station or remote sensing data, produce a quality of results similar to that of more complex and costly approaches based on detailed city climate studies.

In addition to the heat exposure values, we consider susceptibility and coping capacity indicators per city quarter. While some indicators, such as the share of elderly or infants are commonly used, others, such as the duration of living in the city as a proxy for the experience inhabitants have with heat waves as well as the ability to speak the official language which could indicate whether people can take preventive action and react to early warnings, are less widespread. Using these indicators, we can identify urban vulnerability hot spots on a comparatively small scale.

Our findings result in several implications for city planners. First, because population density and altitude cannot be changed, it is important to prevent further sealing of surfaces, and to create and preserve fresh air lanes and green spaces. These are useful measures to both lower the exposure of the population to heat and increase their ability to cope with extreme weather events. Second, information on how to behave during heat waves should be not only provided in the native language, but also in foreign languages that are spoken by the majority of the immigrant population. Third, in those months with the most heat wave days,
stakeholders should make cooling facilities, like air conditioned buildings, publicly accessible in the most heat exposed city quarters.

Although we feel that the presented approaches are a useful tool to support decision-making, we emphasize to test the methods in other cities with suitable data.

Eleni A. Athanasiadou, Maria Tratsela, Ioannis A. Tsalikidis, Vasileios Charisto
Aristotle University of Thessaloniki

Monitoring spatio-temporal change as a means of achieving resilience in the suburban landscape: the case of the eastern area of Thessaloniki, Northern Greece.

Landscapes are complex entities which are created, shaped and changed by natural and human forces, decisions and interactions. Similar to organisms, landscapes exhibit three fundamental characteristics: structure, function and change, whose methodological approach is studied by landscape ecologists.

Within the concept of landscape and polars such as human-natural, pragmatic-cognitive, objective-subjective etc., lies the capacity of simultaneity. The suburban landscape is the space where this simultaneity best demonstrates itself.

Furthermore, since ‘resilience’ is defined as ‘the ability of a system to respond or adapt to change, by taking a new form based on a previous state of its evolution’, it shares common ground with landscape ecology. Its study of pattern change in a temporal manner manifests a way of detecting, understanding and interpreting resilience and the challenges it possesses, in the context of the generalized term of urban and regional development.

The paper elaborates on the pattern of change of a suburban area of the city of Thessaloniki, Northern Greece during the years 1945 and 2007, using GIS systems and landscape ecology principles. It presents change in LULC patterns with the aid of classifying the landscape under thirteen (13) different land use/cover types for a 10,000 hectare suburban landscape. Furthermore, it attempts to define the socio-economic factors that influence this drastic change in structure and function. Results demonstrate the transformation of an arable agricultural landscape into a suburban landscape with mixed residential and agricultural uses but also, natural elements (e.g. forest).
Evaluation of the spatial effects of urban regeneration programs for sustainable planning in a highly vulnerable urban context

Luca Barbarossa, Daniele La Rosa, Riccardo Privitera
University of Catania

Topics of sustainable urban development and environmental sustainability are worldwide considered as fundamental for every strategy of urban transformation, renewal and regeneration. In particular, urban regenerations are urban re-development programs involving the rebirth or renewal of selected urban areas or district that have faced periods of decline due to compounding and intersecting pressures. The programs cover many aspects of the area to be re-generated such as physical, social and environmental contexts. Re-use of already built up areas and buildings, reduction of the demand for new soils to be developed, increasing of appealing of dense city areas, increasing of social and spatial resilience are among the positive consequences of these programs.

However, in the current debate about urban regeneration, few studies have evaluated the real environmental outcomes and effectiveness of regeneration programs in terms of physical variables such as new provided greenspaces, accessibility to public transportation, climate change or seismic risk reduction. This paper proposes a method to quantify the real outcomes and effectiveness of urban regeneration programs with reference to the above mentioned variables.

As a real experience of urban planning, the new Masterplan for the Municipality of Catania, a medium sized city in Southern Italy, is presented. The city is characterised by a high density urban fabric, a general lack of urban greenspaces and high levels of traffic congestion due to a massive use of private transportation. The urban fabric is also very vulnerable to seismic and climate change risks. Among the transformation tools, the new Masterplan proposes regeneration actions aimed at the complete regeneration of old and dilapidated areas, not classified as historical heritage and heavily vulnerable to seismic risk. These actions include the complete demolition and reconstruction of these areas within clearly defined boundaries, contributing to minimise soil consumption, maintaining as open public spaces the majority of existing non urbanised areas within the densely built-up settlement. The program of regeneration can dramatically contributes to the reduction of seismic and climate change risk and achieve a general requalification of the urban environment.

Starting from this planning experience, this paper focus on the evaluation of the regeneration programs included in the Masterplan. Regeneration areas have been identified by the municipality as characterized by high level of seismic vulnerability, urban degradation, lack of public services and urban environment quality. For the chosen areas, this study proposes the evaluation of the transformations potentially occurring in the urban context by the proposed regeneration program. The following aspects are evalu-
Amber Roberts
Manchester School of Architecture

Shifts in Urban Identity in the English North Western Industrial Town

The paper proposes to discuss an overview of a current PhD project based on the experience of change and its impact on urban identity in North West England’s industrial towns. The North West has experienced a fundamental change over the past century. Transition in the region was first identified by Patrick Geddes in his 1915 book ‘Cities in Evolution’. Since then the core cities of the region have successfully transformed their economies, demography, and identities and so the region has moved from a predominantly industrial basis to a more diverse economy. Yet Veltz (2000) describes the region as an ‘archipelago economy’ where successful core cities lie within seas of decline. The smaller urban areas of the region continue to struggle with the transition almost a century after the first publication of Geddes book. The focus on the North Western industrial town seeks to redress an omission of the mid-scale urban hierarchy from aca-
A Spatial-Hormetic Approach to Urban Resilience

Claudiu Forgaci, Arjan van Timmeren

Delft University of Technology

Urban Resilience

Urban Resilience

Most of our current spatial strategies include

ignoring or doing less. The goal is continu-

thing, doing more is always preferred to do-

ing nothing or doing less. The goal is contin-

considering the low ability of our social-

and economic. This strategy is unsustainable,

ous growth, maintenance, reproduction,

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- doing nothing or doing less. The goal is contin-

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- economic. This strategy is unsustainable,
Social processes need to find a way to embrace change and let ecological processes help in responding to it. Inspired by Nassim Taleb’s Antifragile (2013), this paper speculates on the possibility of using (1) strategies based on subtraction – less or no action – or, even more, (2) strategies of hormesis – a term in toxicology describing a biphasic dose response phenomenon “with a low dose stimulation or beneficial effect and a high dose inhibitory or toxic effect” (Mattson, 2008) –, that keep their subject (cities, neighbourhoods, communities, etc. in our case) under a small, controlled and continuous dosage of stress, with the purpose of strengthening it for the eventuality of a possible future large shock of the same kind.

The second strategy may be rooted in the first if subtraction causes deprivation, especially when, say, consciously inducing lower-than-usual levels in relative comfort of living. In this sense, the paper is testing the hypothesis that by applying such strategies in urban environments, we will improve social-ecological resilience. And this “requires understanding of ecosystems that incorporates the knowledge of local users” (Folke et. al., 2002), but also – as claimed in this paper – the understanding of how social processes can minimize their impact through calculated and targeted inaction or less action, with the ultimate goal of improving the capacity of our urban environments to face disruptive change.

Two cases will help us learn about how communities exposed to constant or regularly occurring stress manage to face potentially disruptive events better (hormesis): the inhabitants of Venice and their lifestyle adapted to regular seasonal floods; and the general risk perception and capacities of adaptation of Dutch inhabitants living in flood-prone areas. Of course (and indeed), these are situations where the interaction between social and ecological systems forced people to adapt, but it also increased their resilience. A third case – an abandoned 189ha large retention lake inside the city of Bucharest transformed into an ecological ‘oasis’ with the biodiversity of a delta – will show how inaction (subtraction) can lead to unexpectedly high ecological qualities and social opportunities. These three cases will be concluded with a discussion on how to formulate strategies that eliminate unnecessary action, on understanding to what extent urban systems can live with induced stress or deprivation without suffering from it, and, eventually, on how to make sure that a sufficient amount of disturbance is allowed to enter the system.
Dagmar Haase
Humboldt Universität zu Berlin and Helmholtz Centre for Environmental Research

Urban land teleconnections and urbanity – two new approaches to explore current global urbanization and its impact on sustainability

This paper discusses two new concepts to approach current processes, patterns and impacts of global urbanization that have been developed recently by two groups of researchers of the Global Land Project (GLP). Both concepts attempt to overcome existing limitations of urbanization theory and models by expanding the scale of and alternatively defining “the urban”: The first concept deals with urban land teleconnections as a conceptual framework that explicitly links urban land changes to underlying demographic and urbanization dynamics and thus uncovers the implicit assumptions about path dependency and sequential land changes that underlie current conceptualizations of urban land transitions. Urban land teleconnections are distal flows and connections of people, economic and ecosystem goods and services. The concept can illustrate how three key themes that are currently addressed separately in the urban sustainability and land change literatures can lead to incorrect conclusions and misleading results when they are not examined jointly: the traditional system of land classification that is based on discrete categories and reinforces the false idea of a rural–urban dichotomy; the spatial quantification of land change that is based on place-based relationships, ignoring the connections between distant places, especially between urban functions and rural land uses. The second concept, linked to urban land teleconnections, proposes a conceptualization of land that measures and analyzes urbanity, the urban-ness of places and the economic activity and population characteristics of the land. Urbanity is defined by how people support themselves through various livelihoods, the material culture and patterns of consumption representing different lifestyles, their spatial connectivity, and how they identify with the places they reside and rely upon. The magnitude and qualities of livelihoods, lifestyles, connectivity, and place create the degree of urban-ness of intertwined human experiences and land configurations define a continuum of urbanity across the globe, not defined by administrative boundaries of cities, but by the activities and functions that occur in places even far removed from what are traditionally understood as urban areas. Using urbanity, we will be more successful in assessing and visualizing the potential for structure and functioning as well as the sustainability of places such as socio-ecological urban and rural systems.
Simone Beichler  
HafenCity University Hamburg

The social-ecological vulnerability of an urban region

This paper aims at understanding social-ecological systems under climate change. Urban regions are of particular interest due to population density and cultural development, rural-urban land use gradients and land use change, diverse ecosystem services and resulting trade-offs. The concepts of vulnerability and the ecosystem services are combined on the basis of the Driver-Pressure-State-Impact-Response model and applied to the urban region of Rostock (Germany). We assume that climate change poses pressure on both sides of the ecosystem service cascade - the biophysical structures and processes as well as human well-being - leading to a changing supply and demand of ecosystem services.

The objective is to understand the system and its interrelations in terms of spatial distribution of ecosystem services, the link to population wellbeing and the overall climate change vulnerability. The data on cultural ecosystem services and the perceived vulnerability was acquired through a participatory mapping approach in order to integrate local knowledge. The spatial analysis of the empirical data included the spatial distribution of ecosystem services and population density as well as the correlation to specific land use types. In the first step the results serve as a basis to describe the social-ecological system of the urban region indicating the importance of distance to home, the relation to specific land use types and the coexistence of different ecosystem services. This forms the basis for the second step, where areas with potential climate change impact (here data on the perceived vulnerability) are excluded. By comparing the supply-demand deficit before and under climate change impacts we reveal the vulnerability of the social-ecological system. Taking this approach bears the possibility to take the functioning of the landscape as a basis for climate change adaptation. In order to develop sustainable adaptation strategies these system dynamics need to be taken into account to adapt the social and the ecological system in parallel.
A Resilience Lens on Food production in the Metropolitan landscape

Worldwide, around 700,000 km² of cultivated land—an area bigger than Afghanistan—have a high probability of being lost to urban expansion by 2030. While only 4.5% of global cultivated lands have a high probability of being lost, productivity loss is almost twice as much, at 8.3% of total global crop yield. (Reitsma, Barthel et al-Nature Geoscience-in review). This talk examines the role played by proximate urban gardens and agricultures during historical collapses in urban food supply lines and identifies the social processes required to protect two critical elements of urban food production during times of crisis—open green spaces of fertile soils and the collective memory of how to grow food. Advanced communication and transport technologies allow food sequestration from the farthest reaches of the planet, but have markedly increasing urban dependence on global food systems over the past 50 years. Simultaneously, such advances have eroded collective memory of food production among urban populations, while suitable spaces for urban production have been lost in the North and are currently being lost at a rapid pace in the global South. These factors combine to heighten the potential for food shortages when—as occurred in the 20th century—major economic, political or environmental crises sever supply lines to urban areas. Examples will be drawn from the ancient cities of Maya and Constantinople, from the British experience during WWI and WWII and from Havana, Cuba.

The talk elaborates on how to govern urban areas sustainably in order to ensure food security in times of crisis by: evincing the effectiveness of urban food production; showing how urban gardens and agricultures may serve as conduits for transmitting collective social-ecological memories of food production; and, discussing roles and strategies of environmental movements for protecting enough productive soils during rapid urban expansion over cultivated lands. Urban governance for resilience should be historically informed about major food crises and allow for seemingly redundant food production solutions as a response to uncertain futures.
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Knowledge, Social Space and Climate Change Resilience: Cultural Differences in handling Climate Change in European Coastal Areas

Ways of dealing with climate change risks to create adequate resilience strategies for cities and regions differ depending on socio-spatial and cultural backgrounds. Actors who want to implement solutions have to consider differences in the knowledge of agents involved. Even similar climate scenarios from the natural sciences are treated differently. Thus to identify suitable coping strategies for cities and regions, cultural characteristics need to be taken into account. Consequently we have to ask: Which role do differences in knowledge and culture play in handling with climate change?

To answer these questions I explore the shared knowledge of agents from spatial planning and coast protection from European coastal areas. In a quantitative survey agents assess possible risks and chances as well as adequate measures to cope with them. I investigate how their approvals are interconnected with culture defining variables like shared values, worldviews and socio-spatial identities. Furthermore, I consider how they inform and communicate about climate change related issues. More than 1,000 agents from European coastal municipalities in Germany, Denmark, the Netherlands and Poland gave their opinion. In my presentation I will discuss theoretical and empirical results.

The study is conducted at the Leibniz-Institute for Regional Development and Structural Planning and involves my doctoral thesis in Sociology at the Freie Universität Berlin. It is part of the Potsdam Research Cluster for Georisk Analysis, Environmental Change and Sustainability (PROGRESS) where scholars from the natural and social sciences are involved to investigate geohazards and try to find adequate strategies to cope with them. It is funded by the German Ministry of Education and Research.
Peter C. van Veelen  
Delft University of Technology

Developing Resilient Urban Waterfronts; a Framework for Synchronizing Adaptation with Urban Development and management

Key to socio-ecological resilience is the notion that adaptation to change is influenced by specific spatial and environmental conditions, but also shaped and influenced by social, political and economic aspects of society (Smit&Wandel, 2006). Understanding this interaction between spatial-technical adaptation and economic, social, institutional and cultural dimensions of adaptation is essential to the development of a resilient system (Scheffer, 2009).

Until now, in climate adaptation research much attention has been given to analyzing the potential impacts of climate change on urban areas, and the development of strategies that mitigate or adapt those effects. There is, however, still little attention for identification of institutional and financial obstacles for implementation adaptive strategies. Moreover, there is no attention to the relation between the rapidly changing conditions of urban development and the consequences of this change for a successful implementation of climate adaptation strategies at the local level.

Urban development and planning in developed countries are moving from a growth-dependence paradigm, based on short term market-led urban development, to an urban metabolism paradigm, based on long-term management of local resources, assets, and values (Rydin, 2013). New urban development models, that reflects this paradigm change, includes private sector-led redevelopment projects, by which public and private parties enter into a long-term agreement for (re)design, maintenance and resource management of a whole area (Rooy, 2008). At the same time, small-scale incremental transformation processes of the existing city take place, with new stakeholders involved and plan periods that in a way are becoming continues (van der Krabben, 2011). These changing urban development models also affect options to incorporating adaptation to climate change into the built environment. The question is what constraints and opportunities these new urban development models pose for implementing long-term adaptation planning? And what forms of partnerships and arrangements (legal, financial and organizational) needs to be developed to facilitate mainstreaming of climate adaptation into urban development?

This paper will present a framework for aligning climate adaptation strategies with urban dynamics, based on case-study research in the flood-prone waterfront areas in Rotterdam. In this research “adaptation opportunities” were identified, by mapping all planned spatial investments in brownfield development, urban renovation, and maintenance projects of public and private infrastructures and assets. These adaptation opportunities
are seen as momentum for enhancing resilience at relatively low costs. By synchronizing adaptation measures both spatially and temporally with adaptation opportunities it proved to be able to develop a strategic and integrated adaptation plan, which is in line with the urban development model and interests of key stakeholders.

We will start the paper by exploring changing conditions in urban development and providing an overview of new approaches in urban planning. Secondly, we will discuss the effects of these new models for implementing long-term adaptation planning and we will assess institutional and financial barriers that need to be overcome to mainstream adaptation to flood risk into these new development processes. Finally, based on the results of the Feijenoord case, conclusions will be drawn on the question what elements of an adaptation strategy are effective to increase social-ecological resilience of the Rotterdam waterfront area.

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Overcoming mismatches in the multi-level governance of urban climate change adaptation

Adaptation to climate change poses a large challenge on coastal urban regions in the Baltic Sea region. In the case study regions of Copenhagen and Stockholm, efforts are made to develop climate change adaptation strategies and implement adaptation measures. These efforts take place in a multi-level jurisdictional setting. This study uses an analytical governance perspective in an attempt to provide insights into climate change adaptation processes that are actually taking place, concentrating on the development of adaptation policies and its implementation in concrete cases of urban development. The theoretical framework is derived from a social-ecological resilience perspective and focuses on the role of multi-level governance in increasing adaptive capacity. It is argued that problems of fit between the structures and processes in the social system and the effects of climate change in the ecological systems occur. These problems of fit can have different intensities, ranging from mismatches to matches. It is argued that better matches have to be found to overcome problems in the implementation of efforts to adapt to climate change. The occurring problems of fit in the implementation of climate change adaptation efforts in the urban regions of Copenhagen and Stockholm have been explored in a series of expert interviews with key players in climate change adaptation processes and in urban and regional development. These interviews were complemented by a document analysis. In order to structure the findings, the experienced problems of fit were structured across administrative, institutional and management dimensions.
The results show that although the Danish (separate adaptation policy) and the Swedish (mainstreaming into existing policies) approaches are completely different, the interviewees express similar experiences with problems of fit in both implementation processes. First, the boundaries between different departments within administrations are a burden in dealing with the cross-sectoral characteristics of climate change, especially in the translation of strategic policy into concrete measures. Especially the example of Stockholm Royal Seaport shows how an experimental project can serve to overcome these barriers. Second, the existing institutional environment, especially existing legislation from the national level, hampers successful adaptation. Third, other management priorities on the short term conflict with the long term character of climate change, whereby efforts to implement adaptation measures on the short term are also hampered by the previously mentioned institutional environment. This is especially illustrated in the example of the development of the city district of Nordhavnen in Copenhagen.

It is questionable if these problems of fit can be fully eliminated, but to overcome the signalled mismatches it is important to continuously monitor, address and reflect on them. Furthermore, valuable lessons can be learnt from good practices, they show that it is possible to optimise implementation processes, whereas the result is at best ‘sub-optimal’ and highly context dependent.

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Climate change adaptation from a planning theoretical perspective – ambiguous legitimacy in Helsinki

The relevance of adaptation to climate change for the local level and more specific in an urban context has been recognized in research and policy making likewise. Local level adaptation, however, does not happen in void. Collins and Ison (2009) state: “Climate change adaptation only becomes ‘real’ in situations.” This suggests that the objectives of adaptation cannot be independent from goals that are defined “outside” adaptation nor are its practices separate from the institutional context. This further implies that the interpretation of generic criteria for successful climate change adaptation such as equity, effectiveness, efficiency and legitimacy depend on the given, in this case urban, context. Planning theory provides a frame with normative interpretations of legitimate actions and decisions, their effectiveness and efficiency (depending on problem framing and the definition of goals), and also which actions are considered equitable. This means, planning paradigms give rise to different understandings of successful adaptation in an urban context.
Urban planning and climate change adaptation deal for a good part with the same objects, such as land use, buildings, infrastructure or public services. Furthermore, coordination of interests, cooperation between actors, availability and use of information, and formal and informal power in practice are relational themes that are discussed in both planning literature and literature on adaptation. These themes depict relationships between people or organisations, which are central descriptors for theories and paradigms of planning. Therefore social network analysis (SNA) is a suitable approach for the analysis of urban planning procedures and adaptation. In SNA, relations can be mapped without being bound to specific concepts or codes of conduct that are associated with planning or adaptation. So we are not looking a priori for participation, top-down approaches, deliberation or incrementalism, but we observe, what kind of networks emerge in actual climate change adaptation. The properties of these networks and their involved actors let us place adaptation in the realm of planning paradigms. This paper takes planning theory as framework for adaptation practices in an urban environment. It addresses the question: what do adaptation networks reveal about legitimacy, efficiency, effectiveness and equity as criteria for successful adaptation from a specific planning paradigm’s view?

The approach is applied by mapping and analysing the network of organisations involved in climate change adaptation in Helsinki. Data were collected in interviews and questionnaires about the flow of information. The resulting networks provide information about the role and relations of organisations in providing and communicating information, framing adaptation, advocating interests, and negotiating adaptation measures. The legitimacy of these actions and the understanding of effective, efficient and equitable adaptation are scrutinised in the light of different planning paradigms.

The findings of the paper are twofold: (1) how planning theory can be employed to assess the success of urban climate change adaptation, (2) how SNA as a methodology can further our understanding of urban adaptation.
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Thank God, the City is Complex

The majority of the World’s population lives in cities, which are increasingly under pressure of all kinds of change. In general this is seen as an increase of risk: placing more people under influence of change makes them more vulnerable. In a linear world this may be true, but cities have a coincidental luck: they are complex systems and able to adjust when unexpected impacts occur. Despite the fact that a city is qualified as a complex system, we still do not treat her as one. Most of the literature only emphasises analysis and understanding of the city as a complex system: the city is explained. The main problem originates here: this analysis is still undertaken from a technical-rational planning perspective. When it comes to planning a city to become resilient for change, it involuntary brings solutions based in the engineering paradigm. And these create, for the larger part, more a resistant urban system than a responsive one. Alternatively, to create urban, socio-ecological systems with high resiliency, two elements need to be part of a fundamental different planning approach: first the desired outcome of the planning process must enhance realisation of agile, rhizomic cities and secondly the planning process itself must be organised differently in order to achieve these desired outcomes, for instance through bridging the interests and knowledge of scientists and policymakers.

1. Swarm planning is a recent addition to the toolkit of the urban designer, planner or futurist. It emphasises the complexity of both the spatial system as well as the impacts as a result of wicked problems. Instead of creating a fixed plan for the future Swarm Planning proposes to design strategic interventions and literally create space for change. The designs delivered as result of the Swarm Planning approach anticipate uncertainties of future change and take these as the starting point of spatial developments. When the spatial grades of freedom are subsequently increased the effects of spatial interventions lead to emergent landscapes. The impact of this new approach for practice is dual: the spatial future of a region is no longer unchangeable as it amplifies the potential to modify land-use or urban patterns and secondly, the planning process demands from policymakers and politicians the ability to ‘undecide’, amending former decisions according to new insights.

2. The ‘science-policy-interface’ is widely discussed, but in many occasions they continue to be separated worlds. One way of bridging the gap is to make scientists functional in the policymaking process, and simultaneously allow local experts to contribute their (non-academic) knowledge to scientific discussions and discourses. In concrete planning processes they even must be challenged to change their respective roles. The way this has been undertaken is by organising face-to-face creative discussion with a concrete objective: e.g. to create a spatial vision for a region under change, allowing participants
to contribute their skills, knowledge and experience to the design.

As result of these planning processes it is proposed to mandate a group of planners, consisting of a combination of policymakers and scientists, with the task to constantly ‘check and balance’ whether new design interventions are beneficial. This group of people must also constantly change to prevent people to become ‘attached to their seats’

Several examples of the above described approach will be illustrated in this paper: (1) Climate proofing the regional plan for Groningen province, the Netherlands, (2) Floodable Landscape, Eemsdelta, the Netherlands, (3) Bushfire Resilient Landscape of Bendigo, Victoria, Australia and (4) Dismantable City, consisting of three variants: the Multiple Layer City, Light Urbanism and the Empty City, all in the Netherlands

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**Bridging the transformation gap with “living labs”?**

In the face of climate change, infrastructure systems are confronted with three major challenges:

1) Uncertainties regarding the pace and the potential impacts of climate change and the regional vulnerability;

2) The dominant technology paths, socio-cultural conditions and standards, planning habits but also the inadequate awareness of climate change as a new challenge complicate necessary adjustments in the planning and the design of infrastructures;

3) The resilience of systems is depending on space and time and therefore the local conditions must be taken into account.

Dealing with climate change requires an integrative approach, which takes up these three challenges. Such an approach should support infrastructure planners in dealing with uncertainties and help them to take into account the regional vulnerability and specific requirements when developing adaptation measures. It helps to break old habits and to leave familiar technological paths by creating spaces for innovation and transformation (physical and financial, socio-cultural as well as with regard to planning, control and regulation). An integrative approach has to take into account local and regional resources and help to develop site-specific measures without neglecting the global perspective and changes in the global framework. Thus, top-down and bottom-up approaches will have to complement each other.

The so-called “living labs” offer an interesting approach since they combine a transdisciplinary procedure with real contexts. Living labs will bring together different actors from
science and practice as well as people with different professional backgrounds. Living labs facilitate the development of adaptation measures in a real context by creating niches for testing and implementation. They focus on the integration of the relevant civil society actors as well as the economic actors, so that long-term decisions have the necessary legitimacy.

The presentation looks at the main barriers and challenges, which influence the innovation process for climate resilient infrastructures and will present ways to bridge the technology gaps. From the „living lab’s“ perspective, the presentation deals with the following questions: how is a transdisciplinary process of innovation in the context of a „living lab“ to be structured? Where and in what form should the different actors be involved in the process? How to take into account the real environment conditions? Is there a necessity for an institutional backing of this new approach?

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Venice port-city: An integrated cross-scale strategy

The paper explores the consequences of resilience loss in certain social-ecological components within a complex urban system as Venice and suggests integrated sustainable strategies on increasing their stress response capability. Venice is a unique urban model characterized by interdependent dynamic flows among material and immaterial components within a wide lagoon surrounding. The urban model functioning depends on two influential factors: the natural balance between land and water, and the social-economic dependence between mainland and islands. Since phenomena leading to climate change and demographic change find their origins and solutions in multiple scales and different times, the authors adopt an all-encompassing view of the urban spaces and the water environment, considering Venice as a complex regional unit, highly dynamic and sensitive. The current situation in Venice shows the shortcomings of a development process directed at achieving the maximum economic expansion, attained by the industrial change and the non-sustainable tourism policy. In these circumstances, the adaptive balance historically reached by population and nature has been altered. The consequences of altering the traditional order have given rise to a number of critical pressures on Venice territory, a: the tourist carrying capacity overshooting, the historical centre depopulation and the related identity weakening, as well as the environmental damage due to sea-level rise, high-frequency currents, costs erosion, deterioration of buildings, air and noise pollution.

The cross scale perspective highlights that the ‘Marittima’ touristic port can be considered one of the main focus in the regional planning of Venice. The port is, indeed, a
strategic entrance from the city, and a complex transport hub.

The paper adopts a multi-dimensional approach, integrating the cognitive and evaluative dimensions with the technical and economic ones, in order to define possible strategies of action, based on the awareness that any action in the ‘Marittima’ affects the Venice region as a whole.

The ideal scenario to be restored should be giving back the sense of place to a city that seems to have lost due to touristic uses, the progressive destruction of the weak lagoon habitat, the museification and commercialization of the historic monuments, in the daily challenge against its carrying capacity. It is, therefore, reversing the point of view in order to recognize ‘Marittima’ as a port able to manage the different flows, contrasting the current vision of Venice as a “city with a port” with the historically consolidated vision of Venice as “port-city”.

It is possible to make explicit the relevant issues, analyse the emerging conflicts and evaluate the impacts on the territory of Venice, through the elaboration of a decision-making process, the processing of a sustainable strategy and related actions, the stakeholders identification and the selection of an indicators set. Through the implementation of a synergistic relation between the social, environmental, economic and political components, it is possible to verify how the project will modify the existing context.

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HafenCity Universität Hamburg

**From linear to circular – Challenges for changing urban metabolism?! An analysis of local transition processes**

Challenges like climate change and peak oil are calling for a greater transformational process of urban regions. The vision of a regenerative and energy-efficient city a high quality of life promotes an attractive future perception. The implementation requires changing urban metabolism from linear to circular. Instead of consumers and waste-producer, cities should be regenerative, for instance concerning energy, food and goods as well as human well-being (Girardet & Mendonca 2009, p.174). A successful implementation encompasses creating new governance structures and realizing comprehensive measures. Acting on a municipal level, participation of society is as crucial as the active involvement of local actors and pioneers of vision. Changes of societal, political and economic framework conditions are strongly linked to an increase of individual awareness, activation of available resources and social learning processes.

The paper outlines local transition processes of implementing this vision in four case study cities - Munich (Germany), Modena (Italy),
Odense (Denmark) and Dobrich (Bulgaria). The research focused on identifying local actors and governance structures as well as strategies for communication and participation in municipal authorities. Therefore, following questions were addressed: Which actors are involved into the local transition processes? What aspects and background motivated their action and involvement? What role does the local municipality is playing? What communication and dissemination strategies are used for promoting ideas and activities as well as involving the public?

The paper is based on three methodological approaches. A desk research of relevant documents on energy transition and sustainable development as well as an exchange with people from each local municipality allowed getting a first picture of the current situation in the cities. Secondly, representatives from each local municipality were asked to fill out an assessment grid, prepared beforehand. The assessment grid enquired further detailed information about state of the art of energy related strategies and measures as well as future targets for the transition process. Finally, guideline based expert interviews with local actors and stakeholders offered concluding findings about local pioneers of change, participation processes and the understanding of actor’s roles concerning sustainable urban development.

Against the theoretical background of Transition Management (Rotmans 2001; Loorbach 2007) each transition process was investigated. The theory provided the framework to capture and structure activities and assess experiences related to the local energy transition. Insights were used to evaluate proceeding transition processes in each city and to estimate where the city’s transition strategy is located in terms of a governed transition process. Trend-setting cuts in the on-going transition process can be pointed out, e.g. elaborations of a climate protection strategy or energy action plan.

The paper aims at deriving recommendations for each case study city with respect to the question of how to enhance their transition process. Against the background of Transition Management and the specific transition process in each city adequate guidelines can help to support local transition. Additionally due to diversity in local and regional conditions, a comparison of the cities offered a suitable frame for the deduction of possible barriers and opportunities as well as fundamental features for a successful transition. From a theoretical perspective the Transition Management framework got used in empirical evidence, which might contribute to the lack of practical implementation until now, due to the novelty of the framework. Advantages and disadvantage will be pointed out in using Transition Management as analytical concept for on-going transition processes for the local level.

The paper will present results and insights from a three-year inter- and transdisciplinary research project at the “Urban Regions under Change: towards social-ecological resilience” conference and contribute to the question of challenges in decision-making under change for a mutual discussion.
The case study concerns how urban agriculture can contribute to urban development, opening a social, economic and ecological renewal of the city with innovative perspectives. The area of concern is “Lachanokipoi” district, located in the western part of Thessaloniki, a city in northeastern Greece. The name derives from the 18th century, when the site was a cultivated land as part of the rural landscape close to the city (lachano=vegetables, kipos=garden). The industrialization transformed the area into the city’s core of secondary sector of production, being in parallel node of transport network (railway, highway). Today, because of the economic recession, the productive activities have stopped, mutating this part into a brownfield, without identity, left to decay, in need of regeneration. The spreading tendencies of the city due to immigration outline also the new framework.

The urban development demands the integration of agriculture and its transformation from a rural land use category into a multifunctional green infrastructure. This view not only preserves the existing character of semi-rural, semi-urban, but also functions in the current economical frame, introducing the primary sector in order to satisfy the need of existence for the increasing population of the cities today.

The profile of the area, of total extent 130 acres, is called back through the introduction of urban agriculture in the design process, establishing two perspectives: one bottom-up, another bottom-down. One part focuses on research and educational uses in the field of alternative agriculture and the practice of perma-culture and the other is given to autonomous cultivations oriented for three population groups: new permanent residents, temporal residents, residents/users in need of social rehabilitation. While the first part is organized as a public thematic part, the second part aims to restore the sense of community and products’ exchange. In both parts, the ecological aspect defines the design process through an interdisciplinary approach.

Finally, combining two parts, one given for the research and the other devoted to the production could operate as a generator for socio-economic transformation towards green economy. It proposes new life – styles and social environments, envisioning a new way of living the urban life (“red” and “green” as “community” and “infrastructure”) in a non-centralized economy. This hypothesis as a beginning provokes a new way of thinking and opens relevant dimensions for an urban post-growth-era in general.
Local climate adaptation policy research calls for target group specific measure catalogues to be able to formulate adequate local recommendations. All relevant actors should be included in the conceptualization and implementation process. But methods how to do so are rarely suggested.

Conflicts between different stakeholders can occur even if all relevant actors are brought together and can be a barrier for implementing sufficient resilience measures. Successful adaptation therefore needs methods of knowledge transfer between different fields. It also seems to be important to embed research results in the specific local and social context.

Therefore, we want to assess if a tool such as Constellation Analysis can be appropriate for knowledge transfers in climate adaptation decision-making in order to build resilient cities. Originally the Constellation Analysis was an instrument developed to facilitate interdisciplinary approaches to sustainability and innovation research. Different disciplinary perspectives on a problem are brought together to gain an integrated picture of a studied problem and develop good action strategies.

Referring to social-ecological system approaches constellations are characterized by social actors as well as natural and technical elements and signs/actions.

We combine the approach with theories on resilience and develop the Constellation Analysis as a governance tool for decision makers, stakeholders and scientists to negotiate field specific knowledge and generate climate adaptation knowledge for a specific local environment. Referring to results we gained from the case study of dealing with heat stress in Berlin we show possible benefits and limits of the Constellation Analysis approach in collaborative planning processes.

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**Shared knowledge- better planning. Constellation Analysis as a tool for local climate adaptation decision making**

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**District Future – Urban Lab: Sustainability transformation of an existing urban district**

Climate change, shortage of resources, demographic change, increasing burden of public debt, deterioration of the ecological sphere, social inequality and fragmentation:
all these as well as further challenges have resulted in the demand for a comprehensive sustainable development at a global and local scale. Cities play a major role in such an overall socio-ecological change towards a sustainable way of life. The proclamation of the Urban Age, increasing urban-hinterland-interdependencies and the responsibility of urban agglomerations as settings and drivers of the issues mentioned indicate this.

With the transdisciplinary urban research and development project District Future – Urban Lab („Quartier Zukunft – Labor Stadt“) an experimental space and laboratory is implemented in a defined district of Karlsruhe, Germany. Here, solutions for the sustainable urban life of the future will be tested and developed in an existing environment. The thematic spectrum ranges from mobility and housing to consumption, health, economy and social life. The urban laboratory offers space for new, progressive ideas, social and technological innovations and lifestyles to be developed in cooperation between the urban society and the Karlsruhe Institute of Technology to be tested in a comprehensive sustainable development process. Thus, research can be done on interdependencies, synergies as well as conceivable goal conflicts.

District Future – Urban Lab meets the challenge to actively engage urban society’s different interests and needs in a long-lasting way. It aims at the integration of the specific knowledge of stakeholders from science, industry, civil society as well as the city administration and urban policy in a broad alliance. The intention is to design, analyse and establish new forms of cooperation and participation in urban development.

The key objective is to initiate and understand the process of sustainability transformation of the defined district as well as to implement structures and networks in order to stabilise this development. Therefore, the design of an accessible and long-term process is required.

District Future – Urban Lab is based on the scientifically well defined “Integrative Concept of Sustainable Development” (cf. Koppfmüller et al. 2001; Schutz et al. 2008), which merges the aspects of otherwise separately discussed pillars of sustainability (ecological, social, economic, cultural sustainability) in a cross-cutting way. The District Future development intents to be of model character for sustainable urban development of other European cities and to deeply root a culture of sustainability in urban society.

This contribution presents the conception of the District Future project and the project development’s status quo (early implementation phase). Above, it discusses idea-crowdsourcing and urban laboratory as methodological framework. Moreover, this contribution considers the question of the meaning of neighbourhoods and districts as appropriate scale to deal with sustainability transformation.
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Water and City Resilience in Urban Regions planning
New strategies for new challenges

Water is an important, and arguably, the most crucial consideration in contemporary city design. Like water, urban planning for water is free form, with countless of avenues to explore. Each decision made is then subjected to regional observation and interpretation, affecting not only the physical presence of their accompanying structures, but also social dynamics, economic and in the long run, cultural practices of communities. In light of the impact, it is therefore imperative to ensure that urban planning for water takes from and transcend disciplines, administrations and any other boundaries. The challenge is to ensure a fine balance between two opposing factors during the planning process. On one hand, water has almost limitless function and is therefore, desired at all times. On the other hand, there are constant changes in rules, often, fragmented across various territories, making it difficult to prepare and plan at a larger, more influential scale. Current solution is long, arduous and requires careful consideration to ensuring that all regulations are followed while function is not impeded.

Furthermore, population growth, booming of cities, over extraction of soil compounds, pollution and the general depletion of resources, leading to climate change, have forced an urgency for swift change before they become irreversible. In light of this, there is a new form of urban planning that is taking form in which the city shapes itself over time. It lifts the usual debate that has been going on to a higher level, taking into account ecological concepts and principles.

To do that, it is important to understand the link between the city and its resources by means of diagrammatically representing regional geography and topography (G. Deleuze). This will introduce a general process and methodology to assess the phenomena, making problems and solutions more visible and easier to govern. This turns the table around. With this process and transparency of information, water and all of nature, is no longer subjected to change to suit the need of the city. In turn, cities are the one that is undergoing changes to become more fluid, adapting to the space it surrounds itself in.

The ongoing research into this area – urban water space – requires certain assumptions based on some of the best practice of industry pioneers (i.e. Detroit Strategic Framework Plan, ABC Waters Programme in Singapore, On the Water/Palisade Bay research, Water&Asphalt in the Venetian plain, Water Urbanism and Water sensitive urban design projects). In 2004, The Millennium Ecosystem Assessment made it known that it is urgent to adopt this cross-scale approach in resource management too, taking another step in the right direction. The emphasis on all these is on the role of man himself, being the structural part of the ecosystem that affects his surrounding in both positive, and
negative ways.

Everything is intertwined, from men, nature, and the surrounding space in cities and urban regions. If so, how can we expect spatial planning, city design, economic issues and social practices to be managed in a fragmented manner? They should become a multisectoral system, having a social-ecological oriented approach and a common vision for water health and city resilience.

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Objectives, risks and demographic change: integrative urban development concepts in Germany as a contribution to adaptive governance

As a part of global change the demographic change influences both the physic elements of space and the societal response to spatial development. To tackle these challenges, in East Germany the integrative urban development concept has been developed as a comprehensive and cooperative informal instrument.

Main objective of the paper is to discuss the planning culture of the involved actors using this instrument. This topic is a part of my doctoral thesis I have defended in October 2013. Following the research heuristic of the actor-centred institutionalism (Scharpf 1997) two different hypotheses can be derived. On the one hand, from the perspective of the situational context, responses rather follow a risk orientation as in urban districts the spatial consequences of demographic change are uncertain. In this sense, responses to demographic change contribute to an adaptive governance (Folke et al. 2005: 464) and hence to an improvement of urban resilience (Resilience Alliance 2010: 8). Because based on the vague content of the concept the society is able to implement the content in a flexible and thereby resilient way.

On the other hand, from the perspective of the institutional context, responses follow an objective orientation. As the integrative urban development concept is the base for applying for urban development funding, the municipal goals have to comply with the objectives of the funding body (Kilper 2009: 114). In spite of the uncertain future effects of demographic change on space the described institutional interrelation between the municipal and the federal state level lead to an objective orientation of local activities and not to a risk orientation.

Both hypotheses have been proved empirically by carrying out a content analysis of instruments in Saxon municipalities. As a result, the planning process to cope with demographic change in East Germany shows both orientations: The integrative urban development concepts include a vague
content. This is explainable by the risk orientation and the contribution to a social-ecological resilience facing demographic change. What counts more is an objective orientation as the content of the municipal concepts mirrors the funding principles of the federal and regional level.

To improve the current approach of coping with demographic change, I recommend that in future municipalities should develop a two part approach. At first they should prepare a vague overall strategy for the development of the whole city which follows a risk orientation. Derived from this strategy, action concepts for urban districts with the most negative impacts of demographic change should contain concrete measures and thus contribute to an objective oriented planning approach.