TeMA

Journal of
Land Use, Mobility and Environment

There are a number of different future-city visions being developed around the world at the moment: one of them is Smart Cities: ICT and big data availability may contribute to better understand and plan the city, improving efficiency, equity and quality of life. But these visions of utopia need an urgent reality check: this is one of the future challenges that Smart Cities have to face.

Tema is the Journal of Land use, Mobility and Environment and offers papers with a unified approach to planning and mobility. TeMA Journal has also received the Sparc Europe Seal of Open Access Journals released by Scholarly Publishing and Academic Resources Coalition (SPARC Europe) and the Directory of Open Access Journals (DOAJ).

CITIES, ENERGY AND CLIMATE CHANGE

Vol.8 n.1 April 2015

print ISSN 1970-9889 e-ISSN 1970-9870
University of Naples Federico II

TeMA

Journal of
Land Use, Mobility and Environment

CITIES, ENERGY AND CLIMATE CHANGE

1 (2015)

Published by
Laboratory of Land Use Mobility and Environment
DICEA - Department of Civil, Architectural and Environmental Engineering
University of Naples "Federico II"

TeMA is realised by CAB - Center for Libraries at “Federico II” University of Naples using Open Journal System

Editor-in-chief: Rocco Papa
print ISSN 1970-9889 | on line ISSN 1970-9870
Licence: Cancelleria del Tribunale di Napoli, n° 6 of 29/01/2008

Editorial correspondence
Laboratory of Land Use Mobility and Environment
DICEA - Department of Civil, Architectural and Environmental Engineering
University of Naples "Federico II"
Piazzale Tecchio, 80
80125 Naples
web: www.tema.unina.it
e-mail: redazione.tema@unina.it

Cover image: digital processing Raffaella Niglio, image Paolo De Stefano

TeMA. Journal of Land Use, Mobility and Environment offers researches, applications and contributions with a unified approach to planning and mobility and publishes original inter-disciplinary papers on the interaction of transport, land use and environment. Domains include: engineering, planning, modeling, behavior, economics, geography, regional science, sociology, architecture and design, network science and complex systems.

The Italian *National Agency for the Evaluation of Universities and Research Institutes* (ANVUR) classified TeMA as scientific journal in the Area 08. TeMA has also received the *Sparc Europe Seal* for Open Access Journals released by *Scholarly Publishing and Academic Resources Coalition* (SPARC Europe) and the *Directory of Open Access Journals* (DOAJ). TeMA is published under a Creative Commons Attribution 3.0 License and is blind peer reviewed at least by two referees selected among high-profile scientists. TeMA has been published since 2007 and is indexed in the main bibliographical databases and it is present in the catalogues of hundreds of academic and research libraries worldwide.

TeMA Journal of Land Use, Mobility and Environment

CITIES, ENERGY AND CLIMATE CHANGE 1 (2015)

Contents

TeMA Journal of Land Use, Mobility and Environment

TeMA 1 (2015) 51-68
print ISSN 1970-9889, e- ISSN 1970-9870
DOI: 10.6092/1970-9870/2918

review paper received 29 January 2015, accepted 24 April 2015

www.tema.unina.it

How to cite item in APA format:
Hartmann, T. & Spit, T. (2015). Implementing European climate adaptation policy. How local policymakers react to European policy. *Tema. Journal of Land Use, Mobility and Environment*, 8 (1), 51-68. doi: http://dx.doi.org/10.6092/1970-9870/2918

IMPLEMENTING EUROPEAN CLIMATE ADAPTATION POLICY

HOW LOCAL POLICYMAKERS REACT TO EUROPEAN POLICY

THOMAS HARTMANN[a], TEJO SPIT[b]

[a,b] Urban and Regional Research Centre, Utrecht University,
e-mail: [a]t.hartmann@uu.nl, [b]t.j.m.spit@uu.nl
URL:[a]www.uu.nl/staff/THartmann, [b]www.uu.nl/staff/TJMSpit

ABSTRACT

EU policy and projects have an increasing influence on policymaking for climate adaptation. This is especially evident in the development of new climate adaptation policies in transnational city networks. Until now, climate adaptation literature has paid little attention to the influence that these EU networks have on the adaptive capacity in cities. This paper uses two Dutch cities as an empirical base to evaluate the influence of two EU climate adaptation projects on both the experience of local public officials and the adaptive capacity in the respective cities.

The main conclusion is that EU climate adaptation projects do not automatically lead to an increased adaptive capacity in the cities involved. This is due to the political opportunistic use of EU funding, which hampers the implementation of climate adaptation policies. Furthermore, these EU projects draw attention away from local network building focused on the development and implementation of climate adaptation policies. These factors have a negative cumulative impact on the performance of these transnational policy networks at the adaptive capacity level in the cities involved.

Therefore, in order to strengthen the adaptive capacity in today's European cities, a context-specific, integrative approach in urban planning is needed at all spatial levels. Hence, policy entrepreneurs should aim to create linkage between the issues in the transnational city network and the concerns in local politics and local networks.

KEYWORDS:
climate adaptation, EU, transnational city networks, Netherlands, adaptive capacity

TeMA
有关土地使用、交通和环境的杂志

TeMA 1 (2015) 51-68
print ISSN 1970-9889, e- ISSN 1970-9870
DOI: 10.6092/1970-9870/2918

review paper received 29 January 2015, accepted 24 April 2015

www.tema.unina.it

How to cite item in APA format:
Hartmann, T. & Spit, T. (2015). Implementing European climate adaptation policy. How local policymakers react to European policy. *Tema. Journal of Land Use, Mobility and Environment*, 8 (1), 51-68. doi: http://dx.doi.org/10.6092/1970-9870/2918

实施欧洲气候适应性政策

地方政策制定者如何响应欧洲政策

THOMAS HARTMANN[a], TEJO SPIT[b]

[a,b] Urban and Regional Research Centre, Utrecht University,
e-mail: [a]t.hartmann@uu.nl, [b]t.j.m.spit@uu.nl
URL:[a]www.uu.nl/staff/THartmann, [b]www.uu.nl/staff/TJMSpit

摘要

欧盟政策与项目对于气候适应性决策的影响越来越大。这在跨国城市网络气候适应新政策的制定过程中最为明显。截至目前，关于这些欧盟网络对于城市适应能力的影响，气候适应性文献仍关注甚少。本文将荷兰的两座城市作为实证基础，评估两个欧盟气候适应性项目对于两个城市当地政府官员的经验和适应能力分别产生的影响。
主要结论是：欧盟气候适应性项目并不能自动提高有关城市的适应能力。这是由于在政治上投机使用欧盟所提供的经费，阻碍了气候适应性政策的实施。此外，这些欧盟项目使人们把注意力从当地专注于气候适应性政策制定与实施的网络建设上转移开来。这些因素对于有关城市跨国政策网络的适应能力水平造成负面的累积影响。
因此，为了增强今天欧洲城市的适应能力，各级空间都需要在城市规划中采用情景特定的综合方法。因此，政策制定者应努力创建关联，联结起跨国城市网络中的事项与当地政治及网络中的关注点。

关键词
气候适应，欧盟，跨国城市网络，
荷兰，适应能力

1 INTRODUCTION

Climate adaptation in cities is a new and major urban challenge for the 21st century (Hunt & Watkiss, 2007; Kamal-Chaoui & Robert, 2007). The Netherlands are particularly vulnerable to climate change because they are located in a delta area. Rising sea levels and changing precipitation patterns, as expected by the IPCC (2014), threaten Dutch cities (PBL, 2011). Like many other European countries (Biesbroek et al., 2009), the Netherlands adopted a National Adaptation Strategy, entitled 'Maak ruimte voor klimaat!' (Make space for climate!) (VROM, 2007), as well as a Delta-programme (2008).

However, when compared with other European countries, the involvement of the Dutch central government in climate adaptation is relatively low (Biesbroek et al., 2011). The Netherlands are a decentralised unitary state in which local authorities are responsible for implementing national adaptation policies in their cities.

But, in most Dutch cities, climate adaptation in urban planning is (still) not evident. Usually, only fragmented projects are realized, such as funding green roofs or disconnecting rainwater from the sewer system (VROM, 2010). Policy entrepreneurs (Huitema and Meijerink, 2010) in urban planning have a key role in initiating and facilitating the adaptive capacity for cities (Adger et al., 2007; Blanco et al., 2009; De Bruin et al., 2009) because they have a more long-term policy perspective, which is necessary for responding to long-term climate change. However, lack of awareness and diverging perceptions about the risks of climate change limit the adaptive capacity (Adger et al., 2009; Hartmann & Spit, 2014).

The European Union has recognised the importance of climate adaptation for its Member States (CEC, 2007, 2009). A Green Paper on climate change adaptation (CEC, 2007) outlined the main impacts of climate change in Europe and formulated an adaptation strategy.

It included adaptation in all the EU's activities as well the development of an adaptation research programme at the EU level and the involvement of other stakeholders.

The related White Paper (CEC, 2009) stressed the coordinating role of European institutions in (trans-border) national climate adaptation (Dumollard & Leseur, 2011). The latest framework focused on the following key areas:

- Building a stronger knowledge base;
- Taking climate change impacts into consideration in key EU policies;
- Financing climate change policy measures;
- Supporting wider international efforts toward adaptation.

In addition to this framework, the European Commission has launched several EU projects to promote climate adaptation. Two examples of recently completed projects with Dutch case studies are GRaBS (Green and Blue Space adaptation for urban areas and eco-towns) and the INTERREG IVB project, or 'FUTURE CITIES'.

The objectives of these two projects are comparable; both are city networks for climate adaptation. GRaBS (www.grabs-eu.org) focused on building transnational policy networks through knowledge exchange and the transfer of best practices in order to achieve policy change by integrating climate change adaptation in regional and urban planning, notably green and blue infrastructures (Holstein & Schwaberger, 2011).

FUTURE CITIES aimed to build urban networks between city regions in northwest Europe that are facing climate change. It focused on the strategic components of green structures, water systems and energy efficiency in order to achieve synergic outcomes in existing urban structures (www.future-cities.eu).

Academic literature has paid little attention to the influence of such transnational projects on local climate adaptation policies. The debate on responses to climate change focused for a long time on mitigation (Galderisi, 2014). The recent scholarly debate on resilience brings attention to climate adaption (Colucci 2012). Adaptation encompasses measures that adjust natural or human systems in response to expected climate change induced effects (Galderisi et al. 2012).

Besides, the implementation of such climate adaptation has often been studied in terms of the performance of *national* (spatial) policies on a regional and local scale (Papa, 2012; De Lange et al., 1997; Mastop, 1997).

This paper focuses instead on the performance of *EU* climate adaptation *projects* at a local level. It has been ascertained in previous research that the local level is crucial for climate adaptation (i.e. resilience) (Pinto, 2014). So, it discusses the tension between the micro and macro level of climate adaptation.

We investigate if the cooperation in EU transnational city networks may create new opportunities for policy entrepreneurs in cities to promote climate change policy through knowledge exchange and access to EU funding. In other words, do European projects work as a strategy to implement climate adaptation on a local level? Thereby, the assumption if transnational city networks are indeed necessary for implementing climate adaptation is not questioned.

There are good arguments for such city networks for climate adaptation. First of all, climate adaptation is a topic that requires mutual learning, because it is a relatively new topic for local policymakers. Also, such networks can provide a basis for disseminating experiences and ideas across them.

This is important for the implementation of a transnational policy that requires implementation on the local level. However, this paper does not focus on the analysis of the content of the policy, but rather the process: how are the European objectives pursued in the projects.

So this is about the implementation of transnational objectives on the local level. The EU FUTURE CITIES and GRaBS projects have been in progress for several years.

Therefore, if the EU projects have had a significant effect on enhancing the adaptive capacity of the (Dutch) cities involved, it should be recognizable by now. However, our analysis suggests that EU climate adaptation projects do not, in fact, automatically lead to an increased adaptive capacity in the project areas.

These transnational policy networks have intrinsic limitations; additionally, there are interfering factors that affect the performance of these networks.

We expect these project examples to be similar to policy developments elsewhere in Europe. Researching the performance and effects of such projects on the local adaptive capacity can provide deeper insight into the transnational governance processes.

For the purpose of this paper, the case study areas are as follows: the Amsterdam Nieuw-West Borough was selected for its involvement in the EU GRaBS network; and the municipality of Nijmegen was selected for its collaboration together with the cities of Arnhem and Tiel in the FUTURE CITIES network. The central questions of this paper are:

- To what extent can EU climate adaptation projects increase the adaptive capacity of (Dutch) cities?
- What other interfering factors affect the results?
- What lessons can be learned for other European cities?

We used a reflexive approach to evaluate the performance of these EU projects at the adaptive capacity level of the cities involved. This implies that we not only evaluate whether the formal policy goals have been achieved, but also include interfering factors and the claims, concerns, and issues identified by local policymakers (Huitema et al., 2011).

From 2011 to 2012 we conducted in-depth interviews with seven Dutch local public officials to elicit their perceptions of the effectiveness of the EU climate adaptation projects.

On average, the interviews lasted one and a half hours. They were later recorded and transcribed in full. These interviews were treated as general findings because they reflect the overall sentiment in similar municipal contexts. In the first section of this paper, in order to place the two case studies in context, we first outline climate adaptation governance theory and policy theory as our theoretical framework. This section identifies the critical factors that would increase the adaptive capacity in cities.

These factors provide a backdrop for the next two sections: our empirical analysis of and evidence for the EU GRaBS project in the Amsterdam Nieuw-West Borough and the EU FUTURE CITIES project in the city of Nijmegen. We discuss the results and conclusions in the final section and indicate how they will contribute to the broader international debate on transnational policy networks.

2 CLIMATE ADAPTATION GOVERNANCE, POLICY NETWORKS AND POLICY CHANGE

2.1 THE GOVERNANCE OF CLIMATE ADAPTATION

Climate adaptation encompasses all measures that reduce vulnerability to the impact of climate change (Adger et al., 2007). Such measures include altering the exposure of the urban elements to the effects of climate change or increasing the resilience of social and ecological systems in cities. The adaptive capacity is the ability of individuals, groups or organisations to implement such adaptation measures (Adger et al., 2005, p. 78). To achieve climate adaptation, a broad range of actors (heterogeneity of actors) needs to collaborate, ranging from local government, to housing associations, property developers and residents (Carter, 2011; Füssel, 2007). In addition to local government, many other stakeholders control crucial resources, such as land, money, real estate and local knowledge and they need to be coordinated (integrative policies). Local government must therefore negotiate with these stakeholders and engage them in climate adaptation processes (Runhaar et al., 2009). Successful adaptation depends on the distribution of the adaptive capacity across all stakeholders (Adger et al., 2005; Adger, 2010).

The stakeholders' action toward climate adaptation requires integrated adjustments in behaviour as well as in resources and technologies (Adger et al., 2007). For this reason, isolated or sectoral solutions are not sufficient for successful climate adaptation. Integrative policies are needed to precipitate adaptation (Adger et al., 2005; Biesbroek et al., 2011; Füssel, 2007). Isolated or sectoral solutions can be most efficient in itself (Witte & Spit 2014). Furthermore, climate adaptation needs to be tailored to the specifics of every local situation (location specific measures and context specific processes) (see Adger et al., 2005; Nelson et al., 2007). Urban planning is most well-suited for the job, as it combines a long-term perspective with the ambition to integrate all types of policy with spatial effects.

The implementation of climate adaptation on a local level is a complex process. It seeks to combine many different stakeholders and policy networks and to align a large diversity of normative views (March & Olsen, 1976; van Buuren et al., 2007). Mees and Driessen (2011) used case studies in various countries (London, Rotterdam and Toronto) to illustrate that institutional fragmentation and compartmentalisation are barriers to the implementation of climate adaptation (policy fragmentation). Furthermore, awareness (Uittenbroek 2014) and coherence of the possible impacts of current extreme weather events and long-term climate change (temporal scaling) play a crucial role in implementation processes, because it leads to a sense of urgency (sens of urgency) (Hartmann & Spit 2014). Differences between climate developments and policy processes (climate change is long-term, many policy issues are short-term) are another important barrier to climate adaptation (conflicting timescales). The consequence is a lack of political priorities, ultimately leading to a low priority designation for climate adaptation (political will) (Biesbroek et al., 2011; Lorenzoni et al., 2007).

To summarise, the critical success factors for climate adaptation governance are the heterogeneity of the actors involved, integrative policies, and context- and location-specific processes and adaptation measures. The critical fail factors are policy fragmentation, a lack of sense of urgency, conflicting time scales and political will in decision-making. All these factors can interfere with the performance of the EU projects at the adaptive capacity level in the cities involved. This leads to a key question: Can climate adaptation be achieved via transnational city networks aimed at enhancing the cities' adaptive capacity?

2.2. POLICY NETWORKS AND POLICY CHANGE

Disasters and other shock events are the most important triggers to policy change (Birkland, 1998; Hartmann & Needham, 2012). However, most policy changes occur slowly because, according to Lindblom's incrementalism (1959), policies emerge as (political) compromises. Making small steps but keeping a clear vision of the ultimate goal may prove to be a better strategy for policymakers than dramatic policy change

without societal or political acceptance (Mintrom & Norman, 2009). This incremental approach is a common strategy in spatial planning (Hartmann, 2012; Hartmann & Spit, 2012).

Thus, most public policy is characterised by continuity or incremental change, as is demonstrated in an advocacy coalition framework (Sabatier & Jenkins-Smith, 1993). These coalitions or policy networks (Koppenjan & Klijn, 2004) share policy core beliefs, norms and values. Consequently, the policy of the network is more resistant to change. Klijn and Koppenjan (2000: 19) define policy networks as 'a (more or less) stable pattern of social relations between interdependent actors, which take shape around policy problems and/or policy programmes.' Policy networks, which are very closed, are largely insensitive to the multiple contexts around them and are not open to policy change, whereas adaptive policy networks are sensitive and adaptive to their environment and can generate policy change (Teisman et al., 2009).

Policy changes can be triggered by policy entrepreneurs (Huitema & Meierink, 2010). Policy entrepreneurs are individuals or small groups inside or outside a governmental organisation who enable policy change. Generally, they possess four broad competences: maintaining social sensitivity; defining problems by highlighting the shortcomings of current policies; drawing greater support by building teams and making use of their broad professional networks; and working with coalitions to promote policy change. If they are involved in pilot projects, they can influence risk perceptions leading to policy change and build momentum for that change. Such change can be most successful when policymakers operate as 'boundary spanners' in policy networks and across separate policy domains (Mintrom & Norman, 2009; Teisman et al., 2009).

We might expect in our case studies that policymakers will operate as policy entrepreneurs, achieving policy change through effective use of the networks. Because cities suffer increasingly from limited financial means, and because climate adaptation has a relatively low political priority, a strategy to search for links with existing or planned initiatives could strengthen the adaptive capacity in cities (Carter, 2011). In other words, fostering goal intertwinement between various policy networks might bind actors together, creating opportunities to share costs so that new solutions can emerge (Koppenjan & Klijn, 2004).

The EU has promoted transnational policy networks. These networks are characterised by a high dependence on the policy sector, depoliticised policymaking, the dependence of supranational agencies on other agencies to deliver a service, and the pursuit of aggregating interests (CEC, 2007; 2009). However, transnational policy networks may also affect the cities' room to manoeuvre (Rhodes, 2000). This can be a hindrance to context- and location-specific climate adaptation. In addition, depoliticised policymaking can restrict local political support (Biesbroek et al., 2011). European cities are increasingly involved in transnational policy networks (Heinelt & Niederhafner, 2008; Kokx & Van Kempen, 2010). They cooperate transnationally in order to develop common policies and gain access to EU project funding. In such networks, cities act autonomously and voluntarily. The networks are a form of polycentric, horizontal, and non-hierarchical self-governance; decisions within the network are directly implemented by its members. Members of the networks can be local governments, scientific institutions, businesses, NGOs and individuals (Keiner & Kim, 2007). In the case of the EU, transnational city networks enhance its governing capacity to implement its policies without requiring it to engage with the nation states. Policy entrepreneurs that mediate between the transnational city network and local policy networks have the potential to achieve the most successful policy change and political support.

However, transnational city networks are increasingly focused on only one policy field (Kern & Bulkeley, 2009). This can be a hindrance to an integrative approach to climate adaptation because it promotes the maintenance of entrenched sectoral policy communities (Keiner & Kim, 2007), whereas effective climate adaptation requires both integrated solutions and heterogeneity of governance networks (Adger, 2010; Adger et al., 2005; Biesbroek et al., 2010; Füssel, 2007). To summarise, the success factors of these transnational policy or city networks are the learning and linking of these networks with heterogeneous local networks and local politics. The fail factors are depoliticised policymaking, a lack of discretion, a sectoral focus, and the neglect of the local context. Together, these success and fail factors provide a backdrop for our analysis of the performance of EU climate adaptation projects at the adaptive capacity level of the selected Dutch cities.

3. THE PROJECT GRABS

Municipalities, provinces, universities and non-profit organisations from eight different countries collaborated in the EU project GRaBS (2008–2011). This project aimed at exchanging knowledge and experiences to provide decision makers, politicians, communities and planners across Europe better information on urban adaptation challenges and appropriate measures to accommodate climate change impacts (Holstein and Schwaberger, 2011). We will discuss the case study of Amsterdam's Nieuw-West Borough. The neighbourhood, numbering about 138,000 inhabitants (2011), is characterized by its many ethnic minorities, its below-average personal income levels, and its own elected council and Executive Board.

The four main objectives of GRaBS were:

- To raise awareness and increase the expertise of professionals in spatial planning to adapt to projected climate scenarios;
- To develop adaptation action plans to coordinate the delivery of urban greening and adaptation strategies;
- To develop a risk and vulnerability assessment tool to help strategic planners with climate change adaptation responses;
- To improve stakeholders and community understanding and involvement in planning, based on positive community involvement techniques.

3.1. MOTIVATION TO PARTICIPATE IN GRABS

Engagement in transnational policy networks reflects a political sense of urgency to achieve climate adaptation (Biesbroek et al., 2011). According to the GRaBS local public manager in Amsterdam, the most important reason for partners to participate in GRaBS was that it provided the best opportunity to become collectively involved again. However, climate adaptation appeared to not be an important political issue at the local level (Biesbroek et al., 2011), as a senior environmental civil servant in Amsterdam illustrated: 'Of course, the borough has environmental and sustainability priorities, but when we decided to start the project, climate adaptation policy was definitely not a spearhead within these policies.' (Local Public Manager, Amsterdam).

Moreover, public officials in Amsterdam saw it merely as an opportunity to create a link with protecting green spaces. Consequently, climate adaptation was not the driving force behind participation in the project, but it was used as a means to link to other networks and to local public officials' own strategies. This illustrates an opportunistic motivation to get involved in these transnational city networks.

3.2 INCREASED AWARENESS OF PROFESSIONALS

According to public officials involved in the Amsterdam case, GRaBS led to an increased internal awareness for urban planners and green design professionals because a direct link had been made between climate adaptation and the preservation of the green spaces. 'It could also have been another relation, but coincidentally this sentiment is very strong here and very many people, especially urban and green designers, are keen on it' (public official, Amsterdam).

Another public official (Amsterdam) stressed that climate adaption had offered new challenges to professionals in urban planning: 'It isn't that the task is radically different now, but it offers them new perspectives for doing things in spatial policies that they have done in the past' (public official, Amsterdam).

This illustrates the incremental change of climate adaptation policies (Lindblom, 1959) wherein knowledge from the transnational policy network can be an inspiration for other local policy makers (Dolowitz & Marsh, 2000).

3.3 CLIMATE ADAPTATION ACTION PLAN

During the second and third year of the project, the local focus was primarily on the development of the climate action plan. According to the public officials, urgent climate-related problems were not a trigger for developing this plan. Rather, it was a requirement of the GRaBS partnership, and therefore the initial focus was on pilot projects to implement existing knowledge: 'That was also our goal at the start of GRaBS: We must have some pilot projects. We are not developing new knowledge, but are applying existing knowledge. At a certain point in the process, the partners were all obliged to organise their projects and procedures in exactly the same way" (GRaBS manager, Amsterdam).

This quote illustrates the coercive character of the transnational city network (Dolowitz & Marsh, 2000; Rhodes, 2000) by virtue of the fact that it required similar procedures and deliverables (Kern and Bulkely, 2009) in order to aggregate interests (Rhodes, 2000). This case also reveals that different cities can have very different perceptions (March & Olsen, 1976) about the most effective way to increase their adaptive capacity. Therefore, cities in this transnational city network are less autonomous than one may expect (Keiner & Kim, 2007).

Furthermore, the aim of GRaBS was that the climate adaption plan would serve as one of the leading concepts in future urban planning in order to achieve policy change. Every spatial plan must now include a paragraph on climate and address climate adaptation policy. This promotes only a sectoral focus on climate adaptation, whereas real policy integration might offer more opportunities to increase the adaptive capacity (Adger et al., 2005; Biesbroek et al., 2011; Füssel, 2007). Additionally, according to the same official in Amsterdam, the climate adaptation plan offers no guarantee of effective climate adaptation in the future, as the adaptation plan, due to lack of real political will, may only be used as 'window dressing' (Biesbroek et al., 2011).

According to the manager of the urban design department (Amsterdam), the spatial project managers, in particular, are not very enthusiastic about climate-proof neighbourhoods because they immediately suspect that costs will run up. In general, policy makers involved in the transnational policy network achieve little or no professional support for climate adaptation in other policy domains. (Mintrom & Norman, 2009; Kern & Bulkeley, 2009). There is also the risk that a lack of urgency will lead to diminishing interest in climate adaptation in the future, as the GRaBS manager (Amsterdam) pointed out: 'I think this is a major risk. The project is coming to an end and there is a real risk that the momentum behind the project will diminish once it's finished. There is always the risk that interest will disappear completely, due to a lack of a sense of urgency in the borough' (GRaBS manager, Amsterdam).

So we see that the urgency of climate change was not the main trigger behind the development of the climate action plan, rather, it was drawn up to meet a formal requirement of the GRaBS project (Kern & Bulkeley, 2009; Keiner & Kim, 2007; Dolowitz & March, 2000; Rhodes, 2000). The public officials' initial aim to start with pilot projects, in order to build momentum for policy change (Mintrom & Norman, 2009; Huiteman & Meierink, 2010), vanished, and the climate adaptation plan did not guarantee that adaptation would take place in the future. This was due to a lack of intrinsic political motivation, which hampered real policy change towards climate adaptation (Briesbroek et al., 2011). However, the outcome could have been different if local policy entrepreneurs from the transnational policy network had operated as real boundary spanners between separate policy domains and local politics (Mintrom & Norman, 2009; Kern & Bulkeley, 2009). Unfortunately, the focus on the timely completion of (sectoral) requirements within the EU project limited this opportunity.

3.4 ASSESSMENT TOOL

One of the requirements of the GRaBS project was implementing a local risk and vulnerability assessment tool. The tool was based on a Geographical Information System (GIS). The main aim was to assess current vulnerability, with an additional assessment of relative spatial patterns of risk, in order to develop appropriate policies and guidelines to include in the local adaptation action plans. However, the public officials from Amsterdam who were involved described difficulties in using the tool. These difficulties arose from obtaining

the correct input data from the various fragmented departments in the city authority. As a result, the usefulness of the assessment tool was questionable: 'GRaBS has made a toolbox. But, here and there I have my doubts about it. How useful is it? I don't think it has enough information to help us, especially us designers. I can't use it as a design tool' (manager of the urban design department from Amsterdam).

In the end, local public officials from Amsterdam used another existing tool, which was originally designed for environmental and water policies. Overall, the GRaBS project has not led to increased knowledge on climate effects: 'As far as the supposedly enormous increase in knowledge on climate effects at a borough level over the three years of the GRaBS project is concerned, to be honest, I don't believe this to be the case. However, if you want to be specific, then you have to address the issue of causality. It is therefore hard to assess the effectiveness of climate adaptation policy' (GRaBS manager, Amsterdam).

An accurate, context-specific (Adger et al., 2005; Nelson et al., 2007) assessment tool at a borough level is difficult to develop even in practice. Thus, the transnational policy network is seriously limited in developing context-specific knowledge (Dolowitz & Marsh, 2000). This hard evidence would be necessary to raise climate adaptation on the political agenda. In consequence, the effectiveness of the tool for increasing local adaptive capacity is restricted. When compared to the use of similar tools planning and policy making, they meet similar critics (Vonk et al. 2007). Van Stigt (et al. 2015) recommend to use a user perspective in order to overcome context specificity and create a demand for such knowledge.

3.5 STAKEHOLDER AND COMMUNITY INVOLVEMENT

One of the aims of the GRaBS project was to enhance adaptive capacity through network building (Adger et al., 2005; Füssel, 2007; Runhaar et al., 2009; Carter, 2011). According to the GRaBS manager from Amsterdam, this was their most important objective, namely, to develop a network of residents and stakeholders. During the first year of the project, greater attention was paid to the knowledge exchange between international partners on community participation. Therefore, resident participation was limited and not focused on increasing residents' adaptive capacity (Adger er al., 2007). Later in the project, residents were not involved at all: 'We took the decision internally not to organise a separate participation project for the climate adaptation plan, but we have included principles to structure residents' participation' (GRaBS manager, Amsterdam)

Furthermore, no coalition building process was organized involving other residents or other stakeholders, such as housing associations. According to the public officials from Amsterdam, the housing associations would not have been interested in becoming involved because of their fear of potential cost increases: 'Currently, a housing association is not really responsible for any investments with respect to climate adaptation. And this is the point: They get a little bit sick of all these extra quality requirements, because they translate them into an additional cost. In Amsterdam, we have a system of a basic quality and in the case of anything above this, they say: Okay, we'll do it, but any more, and you will have to pay for it' (public official, Amsterdam)

Although the public officials' initial aim was the involvement of residents and other stakeholders, the focus changed during the course of the project to knowledge exchange within the closed GRaBS transnational city network. As a result, no local networks were developed to achieve policy change (Mintrom & Norman, 2009; Kern & Bulkeley, 2009). This implies that the potential adaptive capacity, through the heterogeneity of the stakeholders involved and opportunities to search for goal intertwinement, was not used effectively.

3.6 POLITICAL ATTENTION

One of the agreements between the partners in the GRaBS project was that the local authorities approve the climate adaptation plan. However, public officials from Amsterdam thought that the GRaBS project did not lead to greater political support for climate adaptation, even though the Climate Adaptation Action Plan was formally approved by the Borough Executive Board.

Ultimately, the policy makers in the transnational network did not pay much attention to increasing political support. Because formal political decisions about climate adaptation have not led to serious political action (Adger et al., 2005), the overall performance of the project was rather limited. Reasons for the lack of political interest included higher policy priorities for local politicians, such as tackling social deprivation, and the current lack of urgent climate problems. According to one official from Amsterdam, politicians are afraid that any investment in climate adaptation would give the wrong signal to other priorities in the borough (which they perceive to be urgent). Furthermore, local politicians often do not link low-income residents with vulnerability to climate change (Adger et al., 2007). Politicians' fear of additional financial claims also contributes to the lack of policy innovation in climate adaptation. One policy official from Amsterdam thought that climate adaptation should not even be that dependent on political support:

'I don't think you should rely on politics for this. It needs to get internalised in the regular organisation. This is why our approach is not to position it as a separate item on the agenda and to take action accordingly, but to integrate it in existing projects (…) Perhaps it's more effective not to talk about it all the time, but to simply get on with it' (policy official, Amsterdam).

In the past, the lack of financial resources has triggered public officials and politicians to opt for EU funding. However, this project has illustrated that EU funding is no guarantee that politicians will put climate adaptation higher on their agendas.

To summarise, the findings in this case study reveal that this transnational policy network did not enhance the local adaptive capacity. Fail factors were the sectoral approach, the lack of discretion reflected in common procedures and deliverables, the intrinsic limitations of developing context-specific knowledge, depoliticised policymaking, and the lack of attention to building up broad local professional networks and local coalitions to share resources and achieve policy change.

4 THE PROJECT FUTURE CITIES

In the 'FUTURE CITIES' project (2008–2012), twelve European partners from local authorities, water boards, planning companies, and project developers collaborated on green structures, water systems and energy efficiency. The city of Nijmegen in the Netherlands was one of the partners that contributed a case study. The project had four main objectives:

- Development of common evaluation methods for climate-adapted towns and cities – leading to an assessment check for climate-proof cities;
- Establishment of action plans for current structures so that the participating regions can adapt their strategies in a concrete manner;
- Implementation of combined construction solutions in pilot projects;
- Raising awareness among decision-makers and other influential groups about pro-active ways of tackling adaptation to climate change impacts (www.future-cities.eu).

4.1 MOTIVATION BEHIND PARTICIPATION IN FUTURE CITIES

The Nijmegen local authority stated that its reason for participating in FUTURE CITIES was to obtain additional financial resources: 'We only participate in those European projects for the money, just as everyone else does' (senior public environmental official, Nijmegen).

In addition, public officials from Nijmegen saw the FUTURE CITIES project as a chance to implement the city's water management policy along with a greening plan for the inner-city (Groene Allure Binnenstad), which already had political commitment: 'FUTURE CITIES didn't generate the greening programme. There was already commitment for it, and that's how we were able to introduce it in FUTURE CITIES (…) What is clear in a European project, is that everyone needs to support it. The Executive Committee and Management need

to support it in some way, because it will also cost the city a lot of money. Half of the budget has to be co-financed, but actually you should do much more' (public official, Nijmegen).
Hence, rather than the improvement of climate adaptation policies, it was the access to additional financial resources for their own programmes that motivated Nijmegen officials to get involved in the new EU project.

4.2 ASSESSMENT TOOL

One of the requirements of the FUTURE CITIES project was that partners should create a climate adaptation model or tool ('klimaatadaptatiecompas') for developing appropriate measures. The tool would demonstrate the effects of climate change on the city, the risks associated with those effects, opportunities, vulnerability and green and blue climate adaptation measures. However, just as in Amsterdam, the partners discovered: 'the difficulty is often that these measures can be linked to a street or a small project, but less easily to a larger entity, such as the district or neighbourhood level, because here things are so hard to bring together' (public official, Nijmegen).
Ultimately, it would be unrealistic to try to develop a common climate model, because the local context demands very specific information (Adger et al., 2005; Nelson et al., 2007). Add to that the scepticism of the involved parties and the usefulness of the model became very limited:
'We participate in the model for FUTURE CITIES, but I don't have much faith in it. In the end, most of the information comes from us (…) Actually, you have to do this at your own level. A tool is useful to guide you a little bit, but nothing more' (public official, Nijmegen).
In other words, although Nijmegen cooperated in the development of an assessment tool, stakeholders questioned its effectiveness. Just as in the GRaBS project, this illustrates the serious limitations in developing context-specific knowledge for transnational policy networks (Dolowitz & Marsh, 2000).

4.3 IMPLEMENTATION OF COMBINED MEASURES

Nijmegen public officials pointed out that their inner-city greening programme was used as a pilot project in the FUTURE CITIES programme. This was combined with their programme to disconnect roofs and paved surfaces from the sewer system. Both programmes started several years earlier than the FUTURE CITIES project. Therefore, no new policies were developed. Instead, public officials linked climate adaptation with the existing greening and water management policies on a project-by-project basis (VROM, 2010). This implies that participating in the transnational city network did not lead to new policy development for climate adaptation at the local level.

4.4 RAISING THE AWARENESS OF DECISION-MAKERS AND STAKEHOLDERS

Climate adaptation is not yet an important issue on the political agenda, due to former climate policy priorities, such as climate mitigation:
'The political agenda sets its own priorities. Despite the fact that they formally participate in EU projects, there are no aspects that the Executive Committee is immediately positive about. They consider sustainability as being of paramount importance. It is even part of the Coalition Agreement (…) But, all the years the local alderman has been in office, he has focused specifically on a related subject, namely climate mitigation' (senior policy officer, Nijmegen).
This implies that local climate policies are difficult to move in a new direction (Lindblom, 1959; Sabatier & Jenkins-Smith, 1993). Furthermore, according to the public officials from Nijmegen, substantial local budget cutbacks (50% of the previous budget) for implementing the greening the inner-city programme will make it difficult to implement green measures. Under these conditions, local politicians often prevent officials from developing new policies. This has led to climate adaptation policy being used merely as window dressing, only referring to existing policies (the greening and the disconnection programme) without taking it any further on

the policy agenda. This illustrates the politicians' opportunistic use of EU funding to implement regular policies, rather than using it to develop new climate adaptation policies.

In addition, public officials from Nijmegen perceive compartmentalisation within the municipal organisation an important barrier for the implementation of climate-proof elements in urban planning (Mees & Driessen, 2011): 'Our project leaders (in the urban planning department) work alone during the initiation phase. And this is the phase when it's decided if a project is going to be profitable or not. Then, plan economists are put to work. They only calculate initial costs, namely land development costs. They do not look at maintenance, nor at any initial or potential opportunities. These are not in the picture (…) Then, we suddenly sit down together and all think about it, but in the meantime some things have already been decided, which we are not allowed to change anymore' (public officer, Nijmegen).

This indicates that climate adaptation is not really integrated in urban planning, despite the fact that many authors stress the importance of this to facilitate the adaptive capacity (Adger et al., 2007; Blanco et al., 2009; De Bruin et al., 2009). For instance, goal intertwinement, which fosters synergic effects and shared costs, needs some sort of integration into urban planning processes (Koppenjan & Klijn, 2004). In addition, according to the public officials, the housing associations' commitment to climate adaptation differs depending on their willingness to be innovative and to invest. Housing associations and real estate developers perceive a green environment in particular as a sales tool in which, more particularly, the local authority invests and developers profit. As a public official observed: 'It sells well, and those real estate developers run off with the profits' (public officer, Nijmegen).

Finally, the transnational policy network FUTURES CITIES has not substantially enhanced the local adaptive capacity. Factors that contributed to this disappointing result were the limitations of this EU project to develop context-specific knowledge and the local focus on implementing only existing policies within the transnational policy network framework. Furthermore, policy entrepreneurs in this EU project invested little effort in involving other professional networks and stakeholders (Mintrom & Norman, 2009; Koppenjan & Klijn, 2004). Such involvement would have enhanced the adaptive capacity by sharing resources and could have overcome policy fragmentation. Other detracting factors were the dominance of climate mitigation policies and the political ban on making new policies.

5 SYNOPSIS

Our main question studied to what extent the EU climate adaptation projects could contribute to increasing the adaptive capacity of the participating cities with transnational policy networks. To answer this question, we applied a reflexive approach (Huitema et al., 2011) to evaluate the performance of two EU projects, namely the GRaBS project in the Amsterdam Nieuw-West Borough and the FUTURE CITIES project in the city of Nijmegen. The findings and synopses of the two case studies lead to three conclusions.

First, our main conclusion is that EU climate adaptation projects do not necessarily lead to an increased adaptive capacity on the local level. Evidence of this can be found in the way politicians use these types of projects to finance their regular policymaking. This attitude severely damages the effectiveness of the projects' empirical goals. Our findings reveal the way EU projects are filtered down in regular policymaking in Dutch municipalities and how the actual goal of improving climate adaptation gets watered down. This opportunistic political behaviour is a key detracting factor leading to the rather disappointing results of these EU projects in enhancing the local adaptive capacity.

Second, the EU project requirements for delivering common policy instruments can function as a straitjacket (Rhodes, 2000). They hinder the development of context- and location-specific climate adaptation measures and processes (Adger et al., 2005; Nelson et al., 2007). The common instruments can even be counterproductive. Their usefulness at the local or neighbourhood level is highly doubtful (see also Dolowitz & Marsh, 2000).

Third, the internal focus on timely deliverables draws attention away from local network building. Therefore, it is doubtful if the internal sectoral focus of the closed transnational policy networks will be effective in the longer term, due to a lack of attention to building up long-term stable local coalitions between politicians, the private sector and civil society (Mintrom & Norman, 2009; Kern & Bulkeley, 2009; Keiner & Kim, 2007; Koppenjan & Klijn, 2004). It is clear that all these factors are interrelated and have a negative cumulative impact on the performance of these transnational policy networks at the adaptive capacity level in the cities involved.

Table 1 gives an overview of the findings in the two case studies.

Main characteristics	**GRaBS**	**FUTURE CITIES**
Time-span of the EU project	3 years (2008-2011)	4 years (2008-2012)
Network members	Local and provincial governments, universities, non-profit planning and development companies	Local governments, water boards, for profit companies in planning and real-estate
Scope	Green and blue infrastructure in existing and new mixed-use urban development	Green structures, water systems, energy efficiency in existing urban structures
Motivation to participate	Nieuw-West Borough, Amsterdam: Continuity of cooperation with former partners Strategy to link climate adaptation with protecting the green structure	Local authority of Nijmegen: Continuity of EU funding Strategy to implement own existing policy programmes
EU projects' aims	Results	Results
Raising awareness/increasing expertise of professionals and decision makers	+ Urban and green designers – Spatial project managers – Politicians: lack of sense of urgency; other policy priorities; lack of budget Result: Policy fragmentation Lack of political support	– Spatial project managers – Politicians: lack of sense of urgency; window dressing; other policy priorities; ban on making new policies; lack of budget Result: Policy fragmentation Lack of political support
Developing a climate adaptation tool	– Not useful as design tool at the city district level – No increased knowledge about local climate effects Result: Inadequate context-specific climate adaptation tool	– Not useful as climate adaptation tool at the district or neighbourhood level Result: Inadequate context-specific climate adaptation tool
Development of climate adaptation action plans	Requirement of EU project – No guarantee for actual climate adaptation action Result: Instrument for window dressing	-

Implementation of combined measures	-	Linking climate adaptation with existing greening and water management policies Result: No policy innovation
Stakeholder and community involvement	+ Most important own aim during the start of the project – In practice, no broad local network developed owing to the focus on common deliverables and knowledge exchange within the project Result: No heterogeneity of local adaptive capacity	– No sharing of investment or profit Result: No heterogeneity of local adaptive capacity
Overall performance on the local adaptive capacity	Limited	Limited

Three-point scale for the contribution of the EU project to the local adaptive capacity: – (minus) negative contribution; +/–: neutral (no negative or positive contribution); + (plus) positive contribution.

Tab.1 Comparison of climate adaptation projects

6 CONCLUSIONS

Where does this leave European environmental policy? This paper addresses a dilemma of European policymaking: issues such as climate adaptation, as well as flood risk management (Hartmann, 2011), territorial cohesion (Hartmann & Hengstermann, 2014) and European corridors (Witte, 2014) require a common European approach, but the measures need to be implemented on the local level. There is a need for European frameworks for these issues, however, their location-specific contexts require a greater scope for discretion in their implementation on the local level (Reinhardt, 2008). Unfortunately, this scope for discretion and freedom at the local level allows opportunistic behaviour for stakeholders.

The above analysis reveals the constraints and limitations of implementation at the local level for EU funded projects. An important lesson learned is that in order to strengthen the adaptive capacity in today's European cities, a context-specific, integrative approach in urban planning is needed at all spatial levels. In this way, policy entrepreneurs can make a linkage between the issues in the transnational city network and the concerns in local politics and local networks. Therefore, realising a genuine, joint working capacity within and between institutions and the community involved in integrative urban planning strategies on all spatial levels is an urgent challenge that must be addressed in order to foster effective climate adaptation policies and to share costs (Hartmann & Spit 2014). This also implies that in urban governance research and practice (EU, national, local), much more attention should be paid to important process conditions and contextual factors for long-term capacity building in order to enhance adaptive capacity in cities. The opportunistic behaviour or local policymakers hinders the effective and efficient implementation of European policies. However, this claims not necessarily for more strict central policymaking (Wegener, 2012) or more rigorous reporting. Effectiveness and efficiency are not the only criteria for policymaking in Europe – the democratic legitimacy or fairness are other criteria (Hartmann & Spit 2015). This also means that in the future, transnational policy network projects are an option for pursuing climate adaptation, but the steps in policy change that they achieve might be very confined, due to the above stated reasons. This paper does not suggest changes in the approach of the European Union to implement policies via projects like GRaBS or FUTURE CITIES. It rather provides insights in its implementation and sets an agenda for further research: namely further research is needed on the

matching and mismatching between intrinsic motivations of local policymakers and transnational policy objectives. In particular with a long-term issue such as climate adaptation, it is essential that future European projects respond to those motivations (in place of suppressing them). We must also accept that policy change for climate adaptation in cities still implies incremental change, due to the very specific local circumstances and conditions.

ACKNOWLEDGEMENT

This paper is based on the empirical work of Dr. Anita Kokx (in 2012) who died suddenly on December 29th 2012. The authors owe her much gratitude for the meticulous documentation of the empirical work.

REFERENCES

Adger, W.N., Arnell, N. & Tompkins, E. (2005). Successful adaptation to climate change across scales. *Global Environmental Change,* 15(2). 77-86.

Adger, W.N. (2010). Climate change, human well-being and insecurity. *New Political Economy*, 15(2). 275–292.

Adger, W.N., Agrawala, S., Mirza, MNQ, Conde, C., O'Brien, C.K., Pulhin, J., et al. (2007). Assessment of adaptation practices, options, constraints and capacity. In: Parry, M.L., Canziani, O.F., Palutikof, J.P., Van der Linden, P.J. & Hanson, C.E. (eds) *Climate Change 2007: Impacts, Adaptation and Vulnerability*. Cambridge: University Press. 717-743.

Adger, W.N., Dessai, S., Goulden, M., Hume, M., Lorenzoni, I., Nelson, D., et al. (2009). Are there social limits to adaptation to climate change? *Climate Change,* 93(3). 335-354.

Biesbroek, G.R., Swart, R.J., Carter, T.R., Cowan, C., Henrichs, T., Mela, H., et al. (2010). Europe adapts to climate change: comparing national adaptation strategies. *Global Environmental Change,* 20(3). 440–450.

Biesbroek, R., Klostermann, J., Termeer, C. & Kabat, P. (2011). Barriers to climate change adaptation in the Netherlands. *Climate Law,* 2(2). 181-199.

Birkland, T. (1998). Focusing events, mobilization, and agenda setting. *Journal of Public Policy,* 18(1). 53-74.

Blanco, H., Alberti, M., Forsyth, A., Krizek, K., Rodrígues, D., Talen, E., et al. (2009). Hot, congested, crowded and diverse: Emerging research agendas in planning. *Progress in Planning,* 71(4).153-205.

Carter, J. (2011). Climate change adaptation in European cities. *Environmental Sustainability,* 3(3). 193–198.

CEC (2009). *Adapting to Climate Change: Towards a European framework for Action*. Brussels: Commission of the European Communities.

CEC (2007). *Adapting to Climate Change in Europe – options for EU Action*. Brussels: Commission of the European Communities.

Colucci, A. (2012). Towards resilient cities: Comparing approaches/strategies. *Tema. Journal Of Land Use, Mobility And Environment*, 2012(2). 101–116.

De Boer, J. (2010). *On the Relationship between Risk Perception and Climate Proofing.* Amsterdam: Vrije Universiteit.

De Bruin, K., Dellink, R., Ruijs, A., Bolwidt, L., Van Buuren, A., Graveland, J., et al. (2009). Adapting to climate change in the Netherlands: an inventory of climate adaptation options and ranking of alternatives. *Climate Change,* 95(1/2). 23-45.

De Lange, M., Mastop, H. & Spit, T. (1997). Performance of national policies. *Environment and Planning B,* 24(6). 845-858.

Deltacommissie (2008). *Samen Werken met Water*. The Hague: Deltacommissie.

Dolowitz, D., & Marsh, D. (2000). Learning from abroad: The role of policy transfer in contemporary policy-making. *Governance,* 13(1). 5-24.

Dumollard, G., & Leseur, A. (2011). *Drawing up a National Adaptation Policy: Feedback on Five European Case Studies*. Paris: CDC Climate Research.

Füssel, H.M. (2007). Adaptation planning for climate change. *Sustainability Science,* 2. 265-275.

Galderisi, A., & Ferrara, F.F. (2012). Enhancing urban resilience in face of climate change. *Tema. Journal Of Land Use, Mobility And Environment*, 2012(2). 69–87.

Galderisi, A. (2014). Climate change adapation: Challenges and opportunities for smart urban growth. *Tema. Journal Of Land Use, Mobility And Environment*, 2014(1). 43–67.

Hartmann, T. (2011). *Clumsy floodplains: Responsive land policy for extreme floods*. Farnham, Surrey: Ashgate.

Hartmann, T. (2012). Wicked problems and clumsy solutions: Planning as expectation management. *Planning Theory,* 11(3). 242–256.

Hartmann, T., & Hengstermann, A. (2014). Territorial cohesion through spatial policies. *Central European Journal of Public Policy*, 8(1). 30–49.

Hartmann, T., & Needham, B. (eds) (2012). *Planning by law and property rights reconsidered*. Farnham: Ashgate.

Hartmann, T. & Spit, T.J.M. (2012). Managing riverside property: Spatial water management in Germany from a Dutch perspective. In T. Hartmann & B. Needham (Eds.), Planning by law and property rights reconsidered. Farnham, Surrey: Ashgate. 97-116.

Hartmann, T., & Spit, T. (2014). Capacity Building for Integrating Climate Adaptation into Urban Planning Processes: the Dutch Experience. *American Journal of Climate Change*, 3(3). 245-252.

Hartmann, T., & Spit, T. (2015). Dilemmas of involvement in land management – Comparing an active (Dutch) and a passive (German) approach. *Land Use Policy*, 42. 729–737.

Heinelt, H., & Niederhafner, S. (2008). Cities and organised interest intermediation in the EU multi-level system. *European Urban and Regional Studies,* 15(2). 173–87.

Holstein, A.N., & Schwaberger, C. (2011). How the INTERREG IVC project "GRaBS" can change European Cities. *REALCORP 2011 Proceedings.* Essen: Germany.

Huitema, D, & Meijerink, S (2010). Realizing water transitions. *Ecology and Society,* 15(2). 26.

Huitema, D., Jordan, D., Massey, E. Rayner, T., Van Asselt, H., Haug, C., et al. (2011). The evaluation of climate policy. *Policy Sciences,* 44(2). 179-198.

Hunt, A., & Watkiss, P. (2007). *Literature Review on Climate Change Impacts on Urban City Centres*. Paris: OECD.

IPCC (2014) Climate Change 2014: *Impacts, Adaptation, and Vulnerability: IPCC WGII AR5 Chapter 23*. Retrieved: www.ipcc.ch

Kamal-Chaoui, L., & Robert, A. (2009). *Competitive Cities and Climate Change*. Paris: OECD.

Keiner, M., & Kim, A. (2007). Transnational city networks for sustainability. *European Planning Studies,* 5(10). 1369-1395.

Kern, K., & Bulkeley, H. (2009). Cities, Europeanization and multi-level governance: governing climate change through transnational municipal networks. *Journal of Common Market Studies,* 47(2). 309–332.

Klijn, E.H., & Koppenjan, J. (2000). Public management and policy networks, foundations of a network approach to governance. *Public Management* 2(2). 135-158.

Kokx, A., & Van Kempen, R. (2010). Dutch urban governance? *European Urban and Regional Studies,* 17(4). 355-369.

Koppenjan, J., & Klijn, E.H. (2004). *Managing Uncertainties in Networks*. London: Routledge.

Lindblom, C.E. (1959). The science of "muddling through". *Public Administration Review,* 19(2): 79–88.

Lorenzoni, I., Nicholson-Cole, S., & Whitmarsh, L. (2007). Barriers to engaging with climate change among the UK public and their policy implications. *Global Environmental Change,* 17(3/4). 445-459.

March, J., & Olsen, J.P. (1976). *Ambiguity and Choice in Organisations*. Bergen: Universitetsforlaget.

Mastop, H. (1997). Performance in Dutch spatial planning: an introduction. *Environment and Planning B,* 24(6). 807-813.

Mees, H. and Driessen, P. (2011). Adaptation to climate change in urban areas. *Climate Law 2011,* (2). 251-280.

Mintrom, M., & Norman, P. (2009). Policy entrepreneurship and policy change. *Policy Studies Journal,* 37(4): 649-667.

Nelson, D., Adger, W., & Brown, K. (2007). Adaptation to environmental change: contributions of a resilience framework. *Annual Review of Environment and Resources,* (32). 395-419.

Papa, R. (2012). Editorial preface: Resilient cities. *Tema. Journal Of Land Use, Mobility And Environment*, 2012(2). 5–6.

PBL (Netherlands Environmental Assessment Agency) (2011). *Een delta in beweging*. The Hague: PBL.

Pinto, F. (2014). Urban planning and climate change: Adaptation and mitigation strategies. *Tema. Journal Of Land Use, Mobility And Environment*, 2014(Special Issue). 830–840.

Reinhardt, M. (2008) Identität und Zukunft des Wasserrechts als Bestandteil eines Umweltgesetzbuchs. *ZUR*, (7-8). 352–357.

Rhodes, R. (2000). Governance and public administration. In: Pierre J (ed) *Debating Governance.* Oxford: University Press. 54-90.

Runhaar, H., Driessen, P., & Snoer, L. (2009). Sustainable urban development and the challenge of policy integration. *Environment and Planning B* 36(3): 417-431.

Sabatier, P., & Jenkins-Smith, H. (1993). *Policy Change and Learning.* Boulder: Westview.

Stigt, R. van, Driessen, P., & Spit, T. (2015) A user perspective on the gap between science and decision-making. Local administrators' views on expert knowledge in urban planning. *Environmental Science and Policy, 47*. 167-176.

Teisman, G., Van Buuren, A., & Gerrits, L. (2009). *Managing Complex Governance Systems, Dynamics, Self-organisation and Coevolutions in Public Investments*. London: Routledge.

Uittenbroek, C.J. (2014). *How mainstream is mainstreaming? The integration of climate adaptation into urban policy*. Utrecht: Utrecht University.

Van Buuren, A., Edelenbos, J., Eshuis, J, Klijn, E.H., Nooteboom. S., & Teisman, G. (2007). Feasibility of adaptation options. In: Van Ierland, E.C., De Bruin, K., Dellink, R.B. & Ruijs, A. (eds) *Routeplanner naar een Klimaatbestendig Nederland, Adaptatiestrategieën*. Wageningen: WUR. 68-73.

Vonk, G., Geertman, S., & Schot, P. (2005) Bottlenecks blocking widespread usage of planning support systems. *Environment and Planning A,* (37). 909-924.

VROM (Ministry of Housing, Spatial Planning and the Environment) (2007). *Maak Ruimte voor Klimaat! Nationale Adaptatie Strategie.* The Hague: VROM, et al..

VROM (Ministry of Housing, Spatial Planning and the Environment) (2010). Doorwerking van Klimaatadaptatie in Ruimtelijke Plannen. VROM-Inspectie. The Hague: VROM.

Wegener, M. (2012). Government or governance? The challenge of planning for sustainability in the Ruhr. In: Hartmann, T., & Needham, B. (eds.) *Planning by law and property rights reconsidered*. Farnham: Ashgate. 157–168.

Witte, P. (2014). *The Corridor Chronicles. Integrated perspectives on European transport corridor development*. Delft: Eburon.

Witte, P., & Spit, T. (2014). Sectoral drawbacks in transport: Towards a new analytical framework on European transport corridors. In: Isabella, M.L. (ed) *Analytical Decision-Making Methods for Evaluating Sustainable Transport in European Corridors*. Berlin: Springer. 47-62.

IMAGE SOURCES

Cover image: Martin H. Hartmann, www.pressemartin.com

AUTHORS' PROFILES

Thomas Hartmann

Dr. Thomas Hartmann is assistant professor at the Dept. Human Geography and Spatial Planning at Utrecht University. He researches on the relationship between land and water, with a focus on river floods and retention. Thereby, he looks from three perspectives to the topic: planning theory, law & property rights, and water governance.

Tejo Spit

Prof. Dr. Tejo Spit is full professor in Urban and Regional Planning. He is specialized in land policy, planning methodology, infrastructure planning, and administrative aspects of spatial planning. He has been working both in the academic world (University of Nijmegen and Utrecht University) and in the more problem-oriented world of municipalities. In that way, he has developed wide knowledge of spatial planning in (local) practice.