Polycentric Urban Climate Governance in South Africa and Brazil

1. Introduction

More than half of the world’s population lives in urban areas, and this number is expected to grow to 70 per cent by 2050 (UNDESA 2014). Cities are and will be increasingly vulnerable to climate change. While they are the source of most emissions, they are also ‘fast becoming the simultaneous epicentres of problems and of opportunities and solutions’ (Karuri-Sebina et al. 2016). City governments are thus important actors of environmental governance and have multiple relations with internal and external actors to organize action on climate change. Also, cities play an increasingly important role in international climate governance. They act as autonomous actors beyond the frontiers of nation states; learning from other cities experiences, pioneering in finding organizational solutions and contributing to a large extent to emission reduction efforts (Jörgensen et al. 2015). In the light of the growing fragmentation of the climate regime, it becomes clear that both top-down and bottom-up efforts are needed to reach the climate protection commitments that countries have made (Ostrom 2010).

However, and this holds especially true for emerging economies and developing countries, there is a huge backlog when it comes to implementing action on climate change at the local and urban level, even if emission reduction targets are defined at the local or national level of government. Cities in the Global South are still catching up with establishing the infrastructure for basic service provision such as electricity and water supply, roads, and public transport in informal or underdeveloped settlements covering large parts of their territoriality. Developmental aspects are therefore in most cases a far more eminent priority in urban planning processes than are environmental concerns, and the fact that the two can go hand in hand is often not fully exploited. Also, problems of scale arise. While central governments delegate functions to the local level, there is a lack in the transfer fund-raising capacity to finance climate action; as well as a supposed resistance from national level governments to decentralize authority in those sectors that vest important interests, mainly energy and transport. At the same time, the authority of subnational governments has grown over the past decades (Schakel et al. 2015)
Nonetheless, some cities have started to explore their own solutions and means to implement and finance climate action in these sectors, while others have not (Bulkeley 2010). Variations in the ways in which cities respond to climate change can also be found within one and the same country. An important question in analysing urban climate governance is therefore why some cities perform better in implementing action on climate change than others. The present paper will establish a conceptual framework to structure future research on this question and provide some first empirical insights from cities in South Africa and Brazil.

The important role that local governments and especially metros play in implementing action on climate change is being increasingly recognized in research. A growing number of publications have analysed environmental governance at the urban level. However, there are only a few empirical studies on climate change governance processes in public administrations of countries of the Global South.

Significantly, there is a lack of works studying urban governance processes from a comparative perspective between different cities and nation states. This paper intends to contribute to closing this research gap by undertaking in a first step a comparative analysis of different cities with varying degrees of ambitious climate governance within two countries of the Global South. In a second step, the results of these two country case analyses will be compared to gain insights on potentially recurring patterns of favourable conditions for urban environmental governance, both horizontally at the city level, and vertically in the multilevel system of their nation states.

2. A Theoretical Approach to Urban Climate Governance within a Polycentric System

Research has focused on urban climate governance for decades. However, in the study of urban responses to climate change, the focus has been set for a long time entirely on the local sphere and neglected to consider the interdependencies with other scales of government (Marvin and Guy 1997; Bulkeley 2005). Similarly, when studying global environmental governance, the global, the international, and the national\(^1\) have been analysed separately and literatures on environmental politics have examined 'levels of decision making (…) as if they were independent' (Adger et

\(^1\) including sub-national units of nation states
al. 2003:1101, cited after Betsill and Bulkeley 2005; Cole 2015). Consequently, when analyses take into view local, national or global environmental politics, they often do so by isolating their object of investigation, and do not challenge the traditional image of an environment that is governed by ‘nested and discrete scales of political authority’ (Bulkeley and Betsill 2005).

2.1. Multilevel governance
Taking into view the sector of urban planning, Betsill and Bulkeley examine how boundaries between levels of government are dissipating by ‘meshing the global and local in the presence of the nation-state (Bulkeley and Betsill 2005). By employing a multilevel governance perspective in the analysis of urban climate governance, they expect to overcome divisions and discover how urban environmental politics are shaped across spheres and scales governance. Analyses of implementation deficits of sustainable solutions at the local level most commonly state the level of capacity and experience of local level public officials as shaping factors and emphasize the need for best practices, to be disseminated through municipal networks. Furthermore, academic work has focused on leadership and innovation at the local level, a body of literature which can be exploited for analysing local conditions. However, in the logic of approaches to urban governance, the local is often conceptualized as a level that contains in itself all the institutional, social and physical relations needed to make a city more sustainable. According to Marvin and Guy the local, thus ‘becomes a ‘black box’, disconnected from the global, international and national contexts within which localities are framed’ (1997:312). As a result, what this approach ignores are the processes of economic, social, and political influence that cross different levels and systems of governance. A number of scholars (Hooghe and Marks 2003; Betsill and Bulkeley 2006) therefore claim the need to take into account these specific processes and acknowledge how they shape local capacity and political will for implementing climate action or not. They propose to apply the multi-level governance approach in order to take into account the processes across levels and spheres of society, economy and politics responsible for (non)-implementation of climate action.

The classical choice of conceptualizing these novel forms of governance is the distinction that Hooghe and Marks (2001) introduce with two types of multilevel governance. While Type I entails a hierarchical top down approach with shared
competencies across levels of government, Type II conceptualizes a polycentric model with different horizontal and vertical spheres of authority governing climate change that overlap and are interconnected (Hooghe and Marks 2001). It provides a useful framework for analysing how resources, competencies and power are distributed across the vertical spheres of government and horizontally with other spheres of authority, and how this ‘web of sociospatial relations’ in turn affects urban climate governance (Bulkeley and Betsill 2013). Research on the vertical distribution of authority points to importance of national, local and regional institutional contexts of climate governance, the analysis of horizontal involvement in networks shows how accessing resources, knowledge, and demonstrating leadership through them shapes the ability of cities to implement climate action ².

An increasing number of studies showcase significant differences between degree of leadership, the competencies and authority that municipalities have across and within countries and find a number of reasons for such variations, such as support for urban climate action at higher levels of government, connectedness to transnational networks, and the presence of so called ‘local champions’ (Campbell and Fuhr 2004; Holgate 2007; Bulkeley 2010; Taylor et al. 2014).

But the framework also has its weaknesses. As Betsill and Bulkeley (2013) point out, most research using the framework has put the urban level and the nation state in the centre of a vertical analysis, which sometimes makes it hard to conceptualize the growing importance of transnational initiatives and the horizontal relations evolving from cities’ involvement with them. As a result, the picture that one is able to draw by employing the multilevel framework seems too static for taking into account the growing involvement of cities in transnational initiatives (While et al. 2010; Bulkeley and Betsill 2013; Hickmann 2016).

### 2.2. Polycentric Governance

I argue that by employing the multilevel governance framework and by revisiting the references it makes to Ostrom’s concept of polycentricity, an analytical framework can be established that will be more suited to taking into account the involvement of cities in transnational networks (Hooghe and Marks 2003). The literature on polycentricity offers an explanation for variations in the ability to govern a common

² For an excellent overview, see (Bulkeley and Betsill 2013:143-145)
pool resource as the climate by suggesting that the more polycentric a governance system is, the better it can adapt to dilemmas of common pool resource management (McGinnis 1999; Ostrom 2010; McGinnis and Ostrom 2011).

Starting in the 1960s, a small group of American scholars around Vincent Ostrom with backgrounds in political science, public administration and political economy focused on questions of how to organize metropolitan governance (Ostrom et al. 1961). The concept of polycentricity has increasingly gained momentum, mainly through the work of Elinor Ostrom. In a nutshell, it postulates the existence of broader structures of governance as opposed to a more simplistic view of government. Secondly, it also suggests that governance systems, managed in a polycentric way, are better able to adapt to societal and environmental challenges as opposed to entirely hierarchical or decentralized modes of governing.

The concept of polycentricity has inspired the concepts of governance scholars such as Hooghe and Marks’ framework on Multilevel Governance (Hooghe and Marks 2003). The atmosphere, conceptualized as a common pool resource, affects all levels of government, but cannot be solved by a single entity of government alone (Andersson and Ostrom 2008). Instead, a coordinated and joint approach of a variety of levels and actors seems to be the only way to overcome the problems of inaction inherent to climate change.

Ostrom and Andersson therefore establish the assumption that ‘the more duties and capabilities are distributed across actors at various levels of government to offset perverse incentives and information problems at one level with positive incentives and information capabilities at another level, the better the governance outcomes will be compared to fully centralized or decentralized systems’ (Andersson and Ostrom 2008).

2.3. Towards a conceptual framework
In the light of these challenges, it seems necessary to accept that no single structure is necessarily superior to another and that bottom up and top down dichotomies do not offer sufficient explanatory power. Rather, the feasibility and design of governance structures also depend to a large extent on context specific factors, such as the nature of the specific resource, the way in which local actors are organized to manage the use, the regulation of the resource, and the degree to which actors
within local organizational arrangements interact and collaborate with other external actors (Andersson and Ostrom 2008).

Bulkeley (2012), Ziervogel and Parnell (2012), Patel (Patel) and others underline the necessity to take into consideration that nation states are influenced by global negotiations, but that at the same time, developments at the subnational level influence national positions and are furthermore channelled independently to the international negotiations through transnational networks. It will therefore be necessary to also take into account the various levels of governance and to analyse their influence on and relations with the local level, as it can no longer be considered in isolation.

The absence or presence of national legislation has an influence on how cities implement and demonstrate capacity to implement action on climate change. But this is not the only factor. This paper brings forward the expectation that other factors shape the ability of metropolitan governments to implement action on climate change. For urban climate governance, this thesis therefore seeks to test the assumption that

\textit{The more polycentricity the political-administrative system of a country allows to a city government, the more a city government is able to adapt to and mitigate climate change effects at the local level.}

3. Urban Governance in South Africa and Brazil

The paper compares the developments and configurations in South Africa and Brazil. First empirical evidence was collected in a mapping of relevant policies, institutions, and actors. Both countries are members of the BRICS macro region. Furthermore, both countries underwent regime changes between the late 1980s and mid-1990s, and have experienced strong colonial influences with high degrees of centralization in their previous political administrative systems.

In both countries, developmental aspects are politically prioritized before environmental aspects. They share a strong focus on strengthening the rights of their citizens after the end of authoritarian rule and strong civilian movements exist in both countries. But while civic engagement does not focus on environmental concerns in
South Africa\(^3\), the situation is different in Brazil, where a Green Party exists at national level and a large number of NGOs fight for environmental rights.

In both countries, we find cities which are promoting themselves as pioneers of action on climate change. Cities in both countries are active members in transnational city networks, and some of their cities are pushing for a stronger say of subnational governments, both in international and national climate policy making.

However, there is one important difference between the two countries with regard to the legal landscape on climate change. Even though South Africa has committed to reach quite advanced reduction targets at the COP 15 in Copenhagen in 2009, until now there has been no binding national policy on climate change and no national emission reduction targets have been established. The 2011 National White Paper on Climate Change acknowledges the role of local governments, but there is no constitutional mandate to implement action on climate change, and there is very little to no transfer of funds from national to local level in the environmental policy domain (Republic of South Africa 2011). In 2009, the government of Brazil adopted a national climate change policy (PNMC) in the aftermath of Copenhagen that sets ambitious emission reduction targets, but leaves legislative details, such as the role of local governments and provinces, quite unspecified (Federative Republic of Brazil 2009).

Furthermore, Brazil is a federal presidential republic with 27 federal states that break down into over 5,500 municipalities (De la Fontaine and Stehken 2016), while South Africa is a parliamentary republic with a multi-level government divided into a national, a provincial, and a local sphere, which are “distinctive, interdependent and interrelated” (Republic of South Africa 1996).

Additionally, there are variations in the degree of action on climate change between the cities in both countries. Some, such as Cape Town in South Africa, and Rio de Janeiro in Brazil, are well known for their pioneering activities in climate change mitigation, while other cities, such as Johannesburg and Sao Paulo, apparently lag behind (Compact of Mayors 2015).

\(^3\) Which is related to the exclusion from environment during apartheid times and a white supremacy on issues of environmental protection
4. An Illustration for applying the framework to cities in Brazil and South Africa

First results from a recent field research on urban governance in South Africa, which build on a forthcoming publication with Thomas Hickmann, serve as a first illustration of the interplay of multiple levels and actors across jurisdictions can be drawn. The image will be complemented with results for the case of Brazil. Empirical results are at this point in time not elaborate, but can draw some preliminary findings from a desk review and first talks with experts on Brazilian Climate Governance.

4.1. South Africa

In the vertical dimension, we can find factors shaping urban governance experiments at all three levels of government.

Firstly, an expected crucial factor is the absence of a binding national legislation, causing a policy vacuum. In consequence, we can examine that the lack of a formal mandate of cities to act on climate change poses a restriction on urban climate governance experiments. For example, some of the interviewed public officials stated that until a national policy would set directives, city officials resistant to change had an excuse for inaction. In addition, the absence of a transfer of national funds to the local level for climate change mitigation and adaptation makes it difficult for cities to finance larger interventions. But at the same time, we observe that this lack of a binding national legislation provides a leeway for cities to take different approaches and implement urban governance experiments in a way that is shaped by and responsive to their specific local context.

A second factor is the regional location of the cities. Even though the provincial level in South Africa does not possess strong powers and cannot generate own revenue, we find that different regional pathways affect urban climate governance experiments. The most advanced province in terms of strategy and institutional development is the Western Cape, where Cape Town is located. Strong institutional cooperation between the provincial and the city government officials, as well as the creation of a provincial green agency provide an enabling environment for urban governance experiments. In opposition, we find low to no strategic development and weak institutional capacity in KwaZulu Natal, the province Durban is located in, and in turn almost no cooperation between city and provincial officials.
Third, we identified a set of 5 factors at the city level that shape the specific urban
climate governance experiments. These are the political-economic context,
institutional continuity, ‘local champions’, the priority of climate change on the local
political agenda, and partnerships with external actors. Even though I cannot go into
the detail of our case studies here, I can nonetheless state that these factors in
varying degrees significantly shape how cities take up urban climate governance
experiments. Cape Town, for example, is the most advanced city when it comes to
strategic and institutional development but lags behind when it comes to
implementing larger infrastructural projects. Here, we find a strong institutional
continuity but barriers for implementing projects in the fact that Cape Town is run by
the national opposition party, the Democratic Alliance. We can find a combination of
the factors in the opposite extreme in Johannesburg, which is more advanced in
implementing large transformative projects, even though strategy and institutional
development are rather weak. And Durban is most advanced in developing and
implementing adaptation strategies, while it considerably lags behind in mitigation
activities, mostly due to extreme weather events in the past and a strong
developmental focus of the city government.

Taking into account the horizontal dimension, and by focusing on the involvement of
cities in transnational city networks, specifically in the C40 Cities Climate Leadership
Group, we come to the finding that the extent to which cities’ participate in these
transnational networks is one out of the factors stated above: Well-established, long-
term partnerships expose city officials to knowledge and funds. Second, the
diplomatic efforts the network and one of its main actors, New York’s former mayor
Bloomberg undertake bring mayors to endorse climate change and prioritize it on
their political agendas.

Finally, we find that the involvement of a city in a transnational city network can of
course not resolve larger domestic political-economic barriers which constrain local
action on climate change, such as the gridlock in South Africa’s energy sector caused
by the country’s dependency on coal-based electricity.

However, while conducting our research, we found that our focus on vertical and
horizontal dimensions of intergovernmental coordination might draw an image that
seems too static to fully grasp the effects of both the vertical and horizontal
cooperation and polycentric involvement of cities. Also, we found that it doesn’t take
into account what I want to show you in our next figure, namely the effects that cities themselves in turn have on the multi-level system.

What we see here is a rather flexible and complex picture which leaves space for interdependencies and feedback loops. Cities use transnational networks as amplifiers for their experiments. Through their involvement in networks, cities can ‘upgrade’ their experiments to best practices and obtain international recognition for their experiments through participating in initiatives such as the C40 award. In turn, this affects how the multi-level system recognises cities.

First of all, at the national level, we can see that cities experiments are increasingly recognized and up-scaled: Cities were for the first time invited to provide comments on South Africa’s intended national contribution to the Paris agreement in 2015. Also, we found evidence that local experiments are taken up by the national level and multiplied in nationwide campaigns. Secondly, The provincial level is apparently not only shaping the local context, but is itself being put under pressure by the actions of cities, seeking to rather appear as an enabler of city climate action than as a laggard.

Finally, we observe that cities are taking up other cities best case practices, but mostly after they have obtained international recognition and through the mediation of transnational networks. This has been the case between Johannesburg and Cape Town. Johannesburg obtained the c40 award in 2015 for a green bond issued with the Johannesburg stock exchange to finance municipal green action. In the aftermath, Cape Town contacted C40 and requested support for implementing a bond themselves, but never contacted city officials from Johannesburg for an exchange of experiences. Here, we can see that C40 serves as a mediator to overcome domestic tensions caused for example by different political parties governing the cities.

While conducting our research, we also found that our focus on vertical and horizontal dimensions of intergovernmental coordination might draw an image that seems too static to fully grasp the effects of both the vertical and horizontal cooperation and polycentric involvement of cities. Also, we found that it doesn’t take into account what I want to show you in our next figure, namely the effects that cities themselves in turn have on the multi-level system.
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4.2. Brazil

With a total urban population of 85 percent, cities are important players in Brazilian politics and entrusted with the development of their infrastructures and the response to environmental risks (Souza 2005; Fernandes 2007). The Constitution of 1988 provides the basis for municipal autonomy with a chapter on urban policy (National Constituent Assembly 1988). A public consultation process resulted in the inclusion of environmental, social, and participatory aspects. However, the urban reform process has subsequently been slowed down due to a lack of supporting national legislation (Fernandes 2007). Most major cities in Brazil have implemented plans to reduce GHG emissions, established councils for urban climate action, and are active members of transnational networks (Kahn and Brandão 2015). In this section, we focus on the two largest cities, São Paulo and Rio de Janeiro.

São Paulo was a founding member of C40 and has conducted various C40 projects (Johnson et al. 2015). In 2005, the city set up a Municipal Committee on Climate Change and Sustainable Economy encompassing representatives from civil society, academia, and local governmental bodies (Barbi and da Costa Ferreira 2013). The committee’s policy proposal of 2009 inspired state and national climate policies by setting a GHG emission reduction target of 30 percent compared to 2005 levels, following a cross-cutting, multi-sectoral approach (São Paulo 2009). (Romeiro and Parente 2011; Barbi and da Costa Ferreira 2013). Beyond that, a number of other climate-related actions have been undertaken in collaboration with C40, particularly targeting local transportation systems, energy efficiency, and waste management (C40 2016b).

Following the example of São Paulo, Rio de Janeiro has taken several steps to tackle climate change in the past few years. In 2009, the city established a Forum on Climate Change and adopted the Municipal Climate Change and Sustainable
Development Policy in 2011. This policy sets the target to reduce GHG emissions by 20 percent until 2020 compared to 2005 levels and creates a number of incentives for the growth of renewable energy use (Rio de Janeiro 2011). The plan was revised in 2013 and emphasis was placed on public transportation, waste management, and housing (de La Rocque and Shelton-Zumpano 2014). Rio de Janeiro became a C40 member in 2006 and since then has implemented several climate-related projects in key focus areas of the network. The city’s mayor is currently part of the C40’s steering committee (C40 2016a).

Most of the achievements in urban climate policy in Brazil can be traced back to progressive local governments that often faced strong opposition from the central governmental level. Brazil’s climate policy might hence be interpreted as a scaling-up process of policies that originated locally. The two biggest cities, São Paulo and Rio de Janeiro, are pioneers in the climate policy domain and have initiated a diffusion process of good practices throughout the country. In this process, C40 appears to function as a platform and catalyst for enhanced urban climate action.

5. CONCLUSION

Going ahead, a conceptual framework has to be established which defines types of actors and a set of potential independent variables which influence the extent of urban action on climate change, and more thought has to be invested in operationalizing these types and determinants. However, I would like to draw first preliminary conclusions at this point:

The individual climate measures taken by the metros in Brazil and South Africa are strongly shaped by the multi-level governance system of their nation states. The presence and absence of a national policy on climate change set the frame for urban action on climate change in both countries. However, this does not mean that South African cities are in a state of complete inertia, but experiments, strongly shaped by their specific local contexts and actor constellations, are taking place. Specific environments and development challenges of the respective cities also offer some explanations for the concrete pathways of urban climate responses in both countries. Finally, the varying degrees of participation in transnational city networks have substantially supported climate action in cities in South Africa and Brazil. Even though the participation in transnational networks cannot resolve domestic political-
economic barriers, such as the monopoly of state owned enterprises on energy and a subsequent lack in the autonomous decision and policy making on renewable energy solutions by city governments, urban climate governance experiments inspire and shape climate actions at other governmental levels and in other cities.

**Literature**


Taylor, Anna; Cartwright, Andrew; Sutherland, Catherine (2014). *Institutional Pathways for Local Climate Adaptation: A Comparison of Three South African Municipalities*. Agence Francaise de Development (AFD).
