

2 State of Research and Key Debates

2.1 Urban Climate Governance

Research on urban climate governance began in the mid-1990s, parallel to the introduction of the UNFCCC Kyoto Protocol (Betsill and Bulkeley, 2007). Over the last two decades the scholarly debate on cities and climate change has centred on several key areas.

One strand of research has explored the policy areas of urban climate action and how the scope of urban climate activities has been enabled and constrained by the legal competencies of cities in climate-related policy fields. Betsill and Bulkeley (2004, 477) point out that “local governments will be critical players in any attempt to implement national and international policy imperatives to reduce emissions of greenhouse gases, and have a significant role to play in climate protection in their own right.” They highlight that energy and transport management and urban planning are areas in which most local authorities can make significant contributions to the reduction of GHG emissions (ibid.). Alber und Kern (2008) confirm that most local governments have sufficient legal responsibilities in the areas of energy, transport, urban planning and land-use to be able set up urban climate change programs. They find that although cities also usually control waste management, this is rarely included in local climate strategies.

The capacities and means of urban climate governance have also been comprehensively researched (amongst others by Alber and Kern, 2008; Bulkeley and Betsill, 2013; Bulkeley and Kern, 2006; Schroeder and Bulkeley, 2009). Referring to Bulkeley and Kern (2006), Alber and Kern (2008) distinguish between four modes of urban climate governance. First, ‘self-governing’; this encompasses all areas where local governments act as consumers, e.g. public procurement and the energy-efficient refurbishment of buildings owned by the municipality. Alber and Kern argue that climate protection measures in this area can be helpful for agenda setting and the demonstration of political leadership, but the actual impact on reductions in GHG emissions appears to be rather limited. Self-governance therefore needs to be complemented with activities in other governance modes (ibid.). Second, ‘governing through enabling’; this includes all activities through which municipalities promote and facilitate voluntary action by local citizens and businesses, e.g. by incentivising renewable energy installations and conducting

energy efficiency campaigns. Third, ‘governing by provision’; municipalities can also engage in climate protection activities in their role as a service provider of public energy, transport and waste management, e.g. by improving the fuel efficiency in the public transport fleet and by fostering the reuse and recycling of municipal waste. Fourth, ‘governing by authority’; many municipalities are also able to enforce local climate protection measures via their mandate as a regulator, e.g. by introducing energy-efficient building standards or local speed limits for vehicles. Alber and Kern however find that municipalities are often reluctant to apply such command-and-control measures as they fear local resistance from political opponents, citizens and businesses (ibid.). Bulkeley and Betsill (2013) argue that in addition to municipal voluntarism (under which the four modes of urban climate governance can be subsumed) cities are increasingly widening their focus and trying to influence and shape national and supranational climate change agendas. According to the authors, this movement of strategic networking and intervention started in 2005 with the United States (U.S.) Conference of Mayors Climate Protection Agreement¹⁰ which was replicated in Europe with the formation of the Covenant of Mayors in 2008 (see section 1.1.2). Moreover, Betsill and Bulkeley find that cities increasingly involve private actors in the design of climate-friendly and resilient urban infrastructure initiatives (ibid.).

A third, related research area has been the role of leadership in urban climate governance. Several studies highlight that leadership by engaged local individuals (who are often termed “policy entrepreneurs”) is a crucial condition for the successful setting up and implementation of local energy and climate strategies (Beer-mann, 2009; Campbell, 2012; Schreurs, 2008). The importance of leadership has also been discussed with regard to the role of cities as laboratories for experimentation within the multi-level governance of climate change (Acuto, 2013; Anguelovski and Carmin, 2011; Cástan Broto and Bulkeley, 2013; Hodson and Marvin, 2010; Jänicke, 2013; Schreurs, 2010). Anguelovski and Carmin (2011) argue that the multiplicity of urban climate experiments worldwide challenge the traditional perspective that local climate action is induced in a top-down manner by external actors (e.g. national governments, donors, non-governmental organisations or TMNs). They find that most local initiatives are in fact rather independent and motivated by internal goals. Jänicke (2013, 13) confirms that the local level has turned into “*the most dynamic level of technical change* towards a low-carbon energy system”¹¹. However, Jänicke questions whether local climate action can

10 The U.S. Conference of Mayors Climate Protection Agreement is a network of currently 1,060 U.S. cities that have committed to a local implementation of the Kyoto GHG emissions reduction targets in the absence of an ambitious national climate policy (see <http://www.usmayors.org/climateprotection/agreement.htm> (19-02-2016)).

11 Accentuation by the author in the original text.

really be driven independently of higher policy levels, pointing out that national governments and the European Union are still instrumental in leading and fostering low carbon innovation. Also the role of eco and low carbon model cities is a controversial discussion topic. Schreurs (2010, 97) highlights the potential of environmental model cities in Japan and China to serve as “test beds for new ideas for urban transformation toward low carbon societies” and “models for other cities to follow”. This view is contested by Hodson and Marvin (2010) who criticise the emerging concept of eco model cities, arguing that these are often designed in a socially excluding manner and should therefore not serve as models for replication.

A major shortcoming of urban climate governance research remains the narrow focus on individual case studies on large cities from industrialised countries. Comparative perspectives and studies about climate action in small and medium-sized cities and cities from the Global South are scarce. In particular the demand for more comparative research including cities from developing countries has been repeatedly voiced by leading urban climate governance authors (Alber and Kern, 2008; Betsill and Bulkeley, 2007; Castán Broto and Bulkeley, 2013; Rosenzweig et al., 2010). Betsill and Bulkeley (2007) consider the lack of research on cities from the Global South “somewhat surprising” (*ibid.*, 453), as cities from developing countries are becoming increasingly active in local climate responses. Referring to the few studies on urban climate action in Southern cities that were available at the time of their analysis (such as Dhakal, 2004, 2006; Holgate, 2007; Romero-Lankao, 2007), Betsill and Bulkeley identify that cities from the Global North and Global South face similar challenges resulting from climate change, such as the lack of human and financial capacity and political competition with other local issues. Acknowledging that these challenges are often more pressing in Southern cities, Betsill and Bulkeley argue that there is enough common ground for more international comparative research on urban climate governance (Betsill and Bulkeley, 2007). In their 2013 update of urban climate research Bulkeley and Betsill (2013) review additional research contributions on urban climate response in cities of the Global South since 2007 (such as Aylett 2011; Bulkeley et al. 2009; Hardoy and Romero Lankao 2011; Kithiia 2011). They conclude that these studies support the trend that the number of Southern cities engaged in the development of climate policy is continuing to grow, largely due to the revitalisation of transnational climate networks and the increasing focus on public-private partnerships in urban climate responses. However, most studies on urban climate responses still show a geographical bias towards cities from industrialised countries in North America, Australia and Europe, as Castán Broto and Bulkeley (2013) find in their survey of local climate experimentation in 100 cities around the world. Rosenzweig et al. (2010, 911) reach the similar conclusion specifying that

particularly smaller cities' climate activities have not received sufficient attention from the research community: "research networks need to be expanded to include more cities across both the developed and the developing worlds — especially small or medium-sized cities, in which limited resources need to be utilized as efficiently as possible."

A second limitation of urban climate governance research has been the lack of literature on urban climate action conducted by non-state actors. Castán Broto and Bulkeley (2013) address this research gap in one of the first major studies on the state of urban climate governance worldwide. Their survey reveals surprising results with regard to the importance of private actors in local climate experimentation indicating that globally non-state actors account for about one third (34%) of local climate action. The survey also uncovers a remarkable regional feature, namely that in Asia almost half (47%) of urban climate initiatives are driven by non-state actors. Castán Broto and Bulkeley therefore urge that the research focus on urban climate governance is to be widened to include non-state actors and climate governance outside formal policy channels, which according to their findings have become key players in climate action at the city level.

2.2 Urban Climate Governance in Germany and India

The following section introduces on-going developments, specific features and key differences in urban climate and low carbon governance in German and Indian cities, the focus of this study's analysis.

German and Indian cities' experiences in urban climate policy-making vary substantially. In Germany, frontrunner cities have been setting up local climate protection strategies for more than 25 years. Today most large and medium-sized cities have adopted climate policies and even many smaller towns and municipalities have introduced action plans to reduce their local carbon foot-prints. Many German cities are implementing comprehensive policies covering multiple climate change-related sectors such as renewable energy development, public transport, urban planning, land-use and others. Several German cities, for example Freiburg, Hannover and Münster, have established climate change departments within their city administrations (Deutsches Institut für Urbanistik, 2011). To improve their national and international reputation, a growing number of cities promote their strengths by branding themselves via labels such as "Wind Energy Capital" (Hamburg), "Solar City" (Gelsenkirchen), "Bicycle Capital" (Münster) or "Green City" (Freiburg).

Indian cities started experimenting with climate and low carbon policies much more recently. In 2007, Nagpur and Bhubaneswar were among the first Indian cities to introduce city-level low carbon policies, adopting renewable energy and energy efficiency policies (see section 5.4 of this study). In 2009 Delhi was the first Indian city to launch a comprehensive climate action plan, the Delhi Climate Change Agenda 2009-2012, covering 65 fields of action to be conducted by all departments of the Delhi government (Sharma and Tomar, 2010). Over the following years, several additional Indian cities, amongst others Kolkata (2010), Rajkot and Coimbatore (2011) introduced climate action programmes, many in co-operation with the transnational municipal network ICLEI (ICLEI South Asia, 2011). In comparison to the comprehensive climate policies of many German cities, Indian cities' climate and low carbon initiatives are often less integrated and built around a limited number of projects in a certain policy field (Sharma and Tomar, 2010).

Three reasons explain the later and less comprehensive introduction of low carbon policies in Indian cities. The first determining factor is the differing degrees of legal responsibilities in German and Indian cities with regard to climate and low carbon policy making. In Germany's federal political system, the constitution ("Grundgesetz") grants municipalities the right to self-government, including the fiscal responsibility, for all local matters (Grundgesetz Article 28(2)). Climate policy is a task that is carried out voluntarily by municipal self-government, which means that cities decide themselves whether and how they pursue climate strategies (Deutscher Städtetag, 2010). Thus, most cities design their climate policies largely independently of subordinate policy levels such as state and central governments (Deutsches Institut für Urbanistik, 2011; Hakelberg 2011). Hertle and Schächtele (2008, 4) confirm that German cities are not constrained by major legal restrictions to climate policy-making:

Many German communities support climate protection measures without being tied to a strict separation of tasks on national, regional and local level. Communities may introduce administrative regulations (i.e. energy standards), financial incentives and soft instruments to push local climate protection. (...) Local governments' possibilities to influence climate protection are manifold and resemble the policies in Germany.

Ohlhorst, Tews and Schreurs (2013) point out that Germany's federal political system generally facilitates social and institutional innovation at the sub-national level. They explain that due to the largely decentralised nature of renewable energy technologies, they are often promoted by the local level. In addition to renewable energy development many German cities' climate strategies focus on improving energy efficiency in the building sector, and fostering low-carbon mobility such as public transportation, cycling and walking. To set an example for local citizens and businesses city governments often target policy areas over which they

have direct influence, such as introducing emission-free municipal car fleets, refurbishing municipal buildings and promoting renewable energies in municipal public utilities. Moreover many local governments offer energy consulting for households, conduct awareness-raising projects and involve citizens in the development and implementation of climate strategies (Climate Alliance - Klima-Bündnis, 2008; Deutsches Institut für Urbanistik, 2011; Städtetag, 2010).

Whereas German cities set up climate strategies largely independently, Indian cities rely much more on central and state governments in their development of local climate action. Climate governance in India is generally designed in a top-down manner and the central government ministries and states are the dominant players in the development of India's climate policy. Municipal bodies help implement these policies, but they are bound by clear guidelines set by state and central governments (Sharma and Tomar, 2010). The scope for self-government is limited, as Indian cities lack decision-making competencies in key climate-related policy fields such as transport and energy production and distribution. In their study on climate change and urbanisation in India, Mukhopadhyay and Revi (2012) explain that according to the 74th Amendment to the Indian constitution of 1992, cities should be given greater autonomy over local policy matters such as town planning. However, the authors conclude that the amendment has been poorly implemented and most states have failed to effectively transfer town planning competencies to cities. Therefore, Indian cities have to cooperate closely with state and central governments if they wish to develop and implement comprehensive local climate and low carbon policies.

A second, related reason for the later introduction of urban low carbon and climate policies in India is the lack of financial means. The problem of limited funds for climate action is already pressing in most German cities, but it is even more severe in Indian cities.

Despite having more legal and fiscal competencies than Indian cities most German cities still strongly rely on financial support from higher policy levels. In fact, municipalities in Germany face the challenge of seeing their responsibilities increase while their financial means decrease because of the recent economic crisis and rising social expenditures (Meyer-Timpe, 2010). Thus, many German cities have to deal with budgetary deficits and have been forced to reduce the voluntary tasks associated with municipal self-government, such as for example climate policy. Programmes fostering investment in the energy-efficient refurbishment of buildings, energy consulting for citizens or the establishment of the post of a municipal climate protection officer are often withdrawn. Germany's central government and the European Union have reacted to municipalities' financial problems by setting up a number of funding programmes which support cities and towns

develop and implement climate protection strategies, e.g. the German government's National Climate Protection Initiative (NKI) or European programmes such as the Intelligent Energy-Europe (IEE), Life+, Smart Cities and Communities Initiative and European Energy Efficiency Fund (see Climate Alliance-Klima-Bündnis, 2012 for a detailed overview). Several cities facing severe budgetary crises have had to establish "emergency budgets" which reduce their scope of action to such an extent that they are not even able to apply for loans or support schemes from the German government or the European Union (Deutsches Institut für Urbanistik, 2011).

Compared to their Indian counterparts, German cities still have better access to funds for climate and low carbon projects. Bhagat (2005, 68) explains that Indian cities are relatively inexperienced when it comes to budgetary planning and responsibility as until the mid-2000s, state governments used a "gap-filling approach" to financially support cities. Bhagat points out that cities were only recently expected to generate their own funds, mainly through property and vehicle tax revenues, some non-tax revenues such as rents from municipal assets, plus external sources, such as grants (*ibid.*). Local governments in India however struggle to collect tax revenues efficiently, so that they often lack the financial resources to deliver even basic services in the most pressing policy areas such as energy, water and waste management (Sharma and Tomar, 2010). Climate mitigation and low carbon development are of only secondary or even no concern at all to many local decision makers and are usually only introduced when they offer clear financial co-benefits or when they are fully funded by external schemes (Bhagat, 2005; Mukhopadhyay and Revi, 2012).

A third reason why Indian cities' engagement in climate action lags behind their German counterparts is the widely-shared perception in India that the industrialised countries such as the United States, European countries and Japan caused global climate change and therefore should be held accountable for its repercussions (Agarwal and Narain, 1991; Dubash 2012a, 2012b). Fisher (2012, 109) finds that Indian climate politics is still "largely dominated by the state position in international negotiations" according to which responsibility for climate protection lies primarily with industrialised countries, whereas India as a developing country needs to prioritise poverty alleviation and economic development and therefore cannot accept any binding GHG emissions reduction targets. However, Fisher outlines that non-state and subnational actors increasingly shape "aspects of the debate" and calls for more research on local politics to enable "a more rooted understanding of Indian climate politics." (*ibid.*) Dubash (2012a) confirms that India's international focus is on equity and the responsibility of wealthy countries. At the same time he recognises growing concerns within India that climate change will

adversely affect India's economic development. The primary focus of Indian climate policy – both at the national and city level – is therefore on adaptation and disaster management (Mukhopadhyay and Revi, 2012; Nair, 2009; Revi, 2008). Mitigation without co-benefits remains a niche topic in India, despite the introduction of the National Action Plan on Climate Change (NAPCC) in 2008 and India's approval of the Paris Agreement in December 2015.

2.3 Urban North-South Cooperation

Urban exchange and learning between cities from the Global North and Global South has been gaining popularity as a research topic since the early 2000s. Existing studies distinguish between three forms of transnational urban cooperation, based on dominant actor structures: state actor-driven cooperation, private actor-driven cooperation and cooperation driven by transnational municipal networks.

2.3.1 State Actor-driven Transnational Urban Cooperation

State actor-driven urban North-South cooperation has been subsumed under the terms of “decentralised cooperation”, “city-to-city cooperation” and “municipal international cooperation”.

Hafteck (2003) explains that the concept of “decentralised cooperation” (DC) was developed in the 1980s by governmental institutions in Europe, North America and Japan to address the emergence of cities as new actors in development cooperation activities. He points out that national governments started to involve cities more closely in their development aid strategies as a response to the apparent challenges of urbanisation and the increasing relevance of the principle of subsidiary and social issues in development aid. Unlike NGOs, which at that time were under pressure to prove their efficiency in conducting development aid, local governments were seen as qualified partners for development projects, as institutions with in-house technical, financial and planning expertise and often already with established international relations, such as twinning partnerships. Many countries, for example Canada (1987), Italy (1987), Japan (1988), France (1992) and the UK (1993) formally institutionalised the concept of DC into laws and programs. Hafteck identifies three commonalities which the diverse interpretations of DC shared. Most definitions consider local governments as the lead actors of DC and emphasise the need for formal institutionalisation of DC in written agreements between the local governments of the cities involved. Furthermore, the majority of DC

definitions highlight sustainable local development as the major target of DC and exchange and support as its main activities (*ibid.*).

From around 2000 the concept of DC was gradually replaced by the concept of “city-to-city cooperation (C2C)”, in both public as well as academic discourse (*ibid.*). Bontenbal and van Lindert (2009) reveal that the term “city-to-city cooperation” was introduced by the United Nations Environment Program (UNEP) in 2000 and popularised UN-Habitat in 2002 when it was chosen as the theme for the World Habitat Day. Apart from a focus on local governments as major actors in urban cooperation, there is, however, no widely agreed upon definition of C2C, as Bontenbal and van Lindert point out (*ibid.*). Another term often used to describe state-led partnerships between cities from the Global North and Global South is “municipal international cooperation” which van Ewijk and Baud (2009) suggest is a more generic term compared to C2C which according to them is limited to North–South cooperation between smaller municipalities.

Despite the lack of a widely-recognised definition, existing studies still offer insight into recent developments in state actor-led urban cooperation. Van der Pluijm and Melissen (2007) identify a shift towards more professionalisation and pragmatism in city-to-city exchange. They highlight that cities have been setting up international relations and networks since ancient Greek times and that at the beginning of the 21st century cities are once again getting involved in international diplomacy, fostering international cooperation and influencing international organisations. Van der Pluijm and Melissen conclude that urban partnerships increasingly focus on concrete project development and economic growth rather than following idealistic motives (*ibid.*). In their analysis of relations between Dutch cities and cities from the Global South, van Ewijk and Baud (2009) confirm this trend towards more pragmatism and project-orientation in urban cooperation. They find that because of globalisation, local governments are impacted more and more by events happening outside of their city’s borders and therefore need to develop new governance approaches. Van Ewijk and Baud identify two simultaneous trends in urban cooperation in the Netherlands. Dutch cities increasingly pursue mutuality in urban partnerships, setting up relations with countries of outward migration to the Netherlands, such as Morocco, Surinam and Turkey with the aim of improving the integration of migrant communities and fostering their own economic development. At the same time, cities continue to focus on international solidarity and sustainable development in their North-South partnership work, supporting the targets of the United Nations Millennium Development Goals (*ibid.*). Campbell (2012) points out that most cities still do not do enough to utilise opportunities to exchange knowledge and experiences. He argues that many cities are

energetic, but disorganized; productive, but still not efficient; promising, but lacking channels to reach application more widely where they are needed. Above all, the barriers of institutions, distant policy and isolated practice can be cleared away by activating one of the most potent but underutilized resources available to address urban problems: knowledge already invented in or by other cities. (ibid., 204).

Only a few studies have looked more in-depth at the conditions for success and failure in local governments' transnational urban cooperation and exchange activities. Tjandradewi and Marcotullio (2009) address the research gap on how city-to-city cooperation "actually works" (ibid., 166), analysing Asian city managers' perspectives on success conditions for urban cooperation. Their survey confirms the relevance of four factors in particular; free flows of information, reciprocity, mutual understanding, and leadership. Tjandradewi and Marcotullio were surprised to find that city officials did not consider community participation as a highly relevant aspect for successful city partnerships (see also section on "Private Actor-driven Transnational Urban Cooperation" below).

Bontenbal and van Lindert (2009) point to persisting research gaps in the area of state-led urban cooperation. They highlight that research has not yet acknowledged the increasing importance of urban cooperation in global North-South relations: "Although the number of C2C arrangements, city networks and local authorities involved in international cooperation is substantial, C2C is a fairly recent theme in the academic debate on development cooperation." (ibid., 131). Bontenbal and van Lindert conclude that research on C2C is generally limited and fragmented, and that research gaps remain in the areas of "objectives and results, organisational structures, success factors and weaknesses" (ibid.).

2.3.2 Private Actor-driven Transnational Urban Cooperation

Research is also scarce regarding the role private actors play in driving and participating in transnational urban cooperation. Bontenbal and van Lindert (2008) find that C2C theoretically offers great potential to bridge local governments and civil society and thereby "touch upon the core of urban governance" (ibid., 479). But in practice urban North-South partnerships often struggle to involve and mediate between state and civil society actors. Bontenbal and van Lindert conclude that C2C tends to have a greater impact on improving municipal institutional performance than on civil society empowerment. They also identify a general problem associated with civil society-driven partnerships is that they often remain ad hoc and act in isolation to other governance processes within cities (ibid.).

Tjandradevi and Marcotullio (2009) confirm that a pertinent gap remains between requests for more civil society involvement and its practical implementation

in urban cooperation. They find that while the United Nations Development Programme (2000) lists community participation as one of five key success conditions for setting up C2C, city officials involved in urban partnerships rank civil society participation as the least important out of nine success factors offered in Tjandradevi and Marcotullio's survey.

2.3.3 Urban Cooperation in Transnational Municipal Networks

A third form of urban cooperation which has gained increasing attention from the research community is collaboration facilitated by TMNs. In particular ICLEI and its Cities for Climate Protection (CCP) campaign have been the focus of several studies. Betsill and Bulkeley (2006, 141) argue that the CCP exemplifies a new form of governance in global efforts to mitigate climate change, being "simultaneously global and local, state and non-state" and taking place "through processes and institutions operating at and between a variety of scales and involving a range of actors with different levels and forms of authority".

An assessment of the role and impact of TMNs is however mixed. Alber and Kern (2008) list cities' involvement in TMNs as one of four enabling factors for local climate policy development (in addition to the (perceived) climate change impact, cities' competencies and authority to regulate climate change and national government support schemes). Bulkeley and Newell (2010, 59) also highlight TMNs as "one of the first and most extensive examples of transnational governance". They explain that there have been two phases of TMN development, with the first peak in the early 1990s leading to the establishment of TMNs such as ICLEI/CCP, the Climate Alliance and Energy Cities in Europe and North America. Since the mid-2000s a second wave of TMN growth has been driven by globally-oriented TMNs such as C40 and the World Mayors Council on Climate Change. Bulkeley and Newell identify a "more avowedly political nature of this second wave", and point out that TMNs exert increasing influence on the international level (*ibid.*, 60). The European Covenant of Mayors, another more recently established TMN, has been praised for its ability to foster local renewable energy and climate action by addressing economic interests and facilitating progressive competition among local governments through benchmarking mechanisms (Jänicke, 2013).

While the growing membership and international visibility of TMNs is undisputed, their ability to foster knowledge exchange among its members has, however, been repeatedly questioned (Betsill and Bulkeley, 2004; Medearis and Dolowitz, 2013). Medearis and Dolowitz (2013) state that TMNs such as ICLEI, Metropolis and the C40 deserve merit for providing information about best practice

examples of urban sustainable innovations. But they criticise TMNs for not having sufficiently addressed the complexity of policy transfer processes and not having been able to facilitate “problem-focused, goal-oriented, resource-relevant, and geographically-specific exchanges of urban development policies” (ibid., 233). TMNs are also criticised for being “networks of pioneers for pioneers” and having too many passive members (Kern and Bulkeley, 2009, 311). Kern and Bulkeley conduct a comparative analysis of German and British cities’ participation in the three TMNs ICLEI, Climate Alliance and Energy-Cities. They find “fundamental differences between active and passive network members” (ibid.) and that TMNs “reinforce differing patterns of network participation between leaders and laggards” (ibid., 328-329).

As these studies demonstrate, most research on TMNs is from the perspective of the TMN itself. Research focusing on cities and their motivation to join TMNs, processes of city collaboration in TMNs and the cities’ (perceived) benefits and shortcomings of TMN membership is rare. An exception is Hakelberg (2011) who analyses two German cities’ (Hanover and Offenbach) engagement in TMNs and finds that “TMN membership is indeed the prime motivator for a city’s adoption of a local climate strategy, mainly because networks succeed in facilitating learning processes among their members.” (ibid., 3). A second exception is Nakamura (2010) who studies the endogenous and exogenous political factors in Indonesian cities that led to the adoption of new environmental policies via ICLEI’s CCP initiative. Nakamura identifies four success conditions for an effective participation of cities in the CCP: political leadership by the local mayor, the activation of local stakeholders within the local government and beyond, sufficient political and financial autonomy of local governments, and support from officials at higher policy levels.

2.4 Transnational Urban Cooperation in Germany and India

The following section presents an overview of existing knowledge and academic literature about the particularities of transnational urban relations in German and Indian cities, with a special focus on climate and low carbon related exchange activities.

2.4.1 *Transnational Urban Cooperation in Germany*

Many German municipalities have established transnational urban relations. A database by the Rat der Gemeinden und Regionen Europas (RGRE) shows that German municipalities have set up a total of 5434 formal “partnerships”, 610 project-oriented and temporary “friendships” and 1079 informal “contacts” with municipalities outside of Germany¹².

There are however few partnerships between German cities and cities from the Global South. Nitschke, Held and Wilhelmy (2009), in reference to Heinz and Leitermann (2004)) state that development cooperation only features in about 3% of all formal city partnerships of German cities. According to their analysis German municipalities are more active in fostering development cooperation through the promotion of fair trade, fair procurement and development education; but they are less active in establishing partnerships with cities from the Global South. Nitschke et al. (ibid., 135) believe that “the potential of German cities for cooperative development projects is not yet fully realised”. They outline several challenges facing German cities in establishing partnership projects with cities from the Global South, such as having lower levels of institutional and financial support for development activities than cities in other European countries (ibid.). Despite German cities having relatively strong decision-making powers in climate-related policy fields (see section 2.2 of this study) in the establishment of international partnerships their competencies are weaker. In Germany’s federal political system, the mandate for international relations lies primarily with the central government. Thus, German cities are under more pressure to demonstrate that their development cooperation activities are in line with the central government’s international development cooperation framework and to prove the quality and efficiency of their development cooperation activities. In the absence of adequate institutional and financial support many smaller and medium-sized city governments abstain from engaging in development cooperation (ibid.). In their analysis of municipal sustainability partnerships and networks Statz and Wohlfahrt (2010) confirm that it is primarily larger German cities that have the organisational and financial capacity to maintain active international relations with partner cities and multilateral networks. They highlight that the city states of Berlin, Hamburg and Bremen are able to utilise their broader legal mandates and more extensive financial resources to conduct urban development and economic cooperation. In most small and medium-sized German cities urban development partnerships are often driven and maintained by civil society actors such as partnership associations, often with rather limited budgets (ibid.; Nitschke et al., 2009).

12 <http://www.rgre.de/partnerschaften0.html> (database query from 06-03-2015).

Sustainable development and climate change are key areas of cooperation for German cities, especially in partnerships with cities from the global South (Statz et al., 2010). The city of Bremen, for example, has been working on environmental, social and low carbon projects with international partner cities since the 1970s, largely conducted by non-state individuals and organisations (see sections 5.1-5.3 of this study). Other municipalities in which environmental and climate change projects feature in their partnership activities include Lauingen (cooperation with Lagos Island, Nigeria), Ludwigshafen (exchange with Sumgait, Aserbaidzhan), Dresden (partnerships with Lwiw, Ukraine and Wroclaw, Poland) and Erfurt (cooperation with Vilnius, Lithuania and other cities) (Statz et al., 2010).

More recently there have also been efforts at the national governmental level in Germany to pursue urban North-South climate change cooperation. The “50 Municipal Climate Partnerships until 2015” program led by the German Federal Ministry for Economic Cooperation and Development (BMZ) has helped selected German cities collaborate with African and Latin American cities on matters related to climate change and low carbon development (ENGAGEMENT GLOBAL – Service for Development Initiatives, Service Agency Communities in One World, 2014).

During the last two decades, many German cities have also engaged in TMNs, particularly those pursuing sustainability and climate change policies. The TMN with the largest number of German member cities is the Climate Alliance (480 German member cities)¹³, followed by other popular TMNs, such as the European Covenant of Mayors (56)¹⁴, ICLEI (17)¹⁵, Energy Cities (8)¹⁶, METRIX – The Network of European Metropolitan Regions and Areas (8)¹⁷, the Carbons Climate Registry (3)¹⁸, C40 (2)¹⁹, Metropolis (1)²⁰ and the World Mayors Council on Climate Change (1)²¹

13 http://www.klimabuendnis.org/fileadmin/inhalte/dokumente/2015/Mitgliederliste_Deutschland_Februar_2015.pdf (19-03-2015)

14 http://www.eumayors.eu/covenant_signatories.pdf (19-03-2015)

15 <http://www.iclei.org/iclei-members/iclei-members.html?memberlistABC=I> (19-03-2015)

16 http://www.energy-cities.eu/cities/members_in_europe_en.php (19-03-2015)

17 <http://www.eurometrex.org/ENT1/EN/Members/members.php> (19-03-2015)

18 <http://carbons.org/data> (19-03-2015)

19 <http://www.c40.org/cities> (19-03-2015)

20 http://www.metropolis.org/map?field_cities_region_value=348 (19-03-2015)

21 <http://www.worldmayorscouncil.org/members/members-list.html> (19-03-2015)

2.4.2 Transnational Urban Cooperation in India

City partnerships focusing on sustainable and low carbon development are also driven increasingly by Indian cities. Several Indian cities have partnered with cities from the Global North to focus on issues other than traditional twinning activities such as cultural and individual citizen exchange. These partnerships are often facilitated and moderated by third parties. For example, Delhi's collaboration with Tokyo on the development of a new metro system for the Indian city is facilitated by the Japanese International Cooperation Agency (JICA). Ahmedabad's partnership with the Spanish city of Valladolid and the German city of Halle (Saale) to develop a comprehensive program of ecological heritage preservation is supported by the NGO EuroIndia Centre. While Guntur (India), Bologna (Italy) and Vaxjö (Sweden)'s cooperation in the introduction of ecoBUDGET, a city-level environmental management system, has been developed by the TMN ICLEI. Indian cities have also partnered with other cities in the South, such as Coimbatore's knowledge-exchanges with Ekurhuleni (South Africa) and Yogyakarta (Indonesia) on renewable energy and energy efficiency strategies as part of ICLEI's "Local Renewables Model Communities Network".

India's increasingly overburdened urban energy, water and transport infrastructure is an important driver for Indian cities to turn to international cooperation as a way of developing innovative and sustainable solutions to these challenges. As urbanisation and industrialisation have grown, so have energy and water consumption, solid waste and sewage streams and the demand for individual and public transport. A study by the McKinsey Global Institute (2010) estimates that in order to meet the demands of an increasing urban population India needs to build 2.5 billion square metres of roads and 7,400 kilometers of metro and subway lines in the transport sector alone by 2030, which is about 20 times the total capacity that was added between 2000 and 2010. Mukhopadhyay and Revi (2012) argue that in view of these challenges Indian cities are more open towards learning from other cities compared for example to their European counterparts. The cities' lack of access to documentation on their peers' experiences in sustainable and climate governance can however hinder learning (Sharma and Tomar, 2010).

Indian cities' reliance on funding and approval from national and state governments is another barrier to them being able to enter formal city partnerships or international partnership projects. Tjandradewi and Marcotullio (2009) point out that Indian cities share this challenge with cities in most other Asian countries, where support from higher political levels is a prerequisite for establishing city partnerships. Even if partnership actors have access to central and state government institutions and receive approval for joint projects, this process often leads

to considerable time delays which places strain on the projects' budgets (Beermann, 2014). According to Fisher (2012) the dominance of the Government of India has a greater influence on climate governance than any transnational linkages and the national government's decisions shape climate action at all policy levels including the local level. The scope of action for transnational climate governance networks is therefore limited and these networks often choose to follow the national government's policies rather than oppose them (*ibid.*).

Interestingly, despite these institutional barriers, India is still considered as a global frontrunner in fostering horizontal exchange at the city level. The Indian government in fact actively promotes learning among cities. In 2007, it introduced the Peer Experience and Reflected Learning (PEARL) program as part of the Jawaharlal Nehru National Urban Reform Mission (JnNURM) to foster city exchange in the areas of solid waste management, water supply and sanitation, urban transport and cultural heritage. 167 major Indian cities were divided into six groups (Mega Cities, Industrial Cities, Mixed Economy Cities, Cultural Cities, Cities of Environmental Importance and North East Cities), to facilitate partnerships between cities with similar socio-economic profiles and interests. Knowledge exchange takes place online via the PEARL website. So far, 37 good practise projects and initiatives have been uploaded by the National Institute of Urban Affairs (NIUA) that coordinates the program.²² Campbell (2012, 209) states in his study of urban learning worldwide that this program is rather unique: "Only a handful of nations have focused on horizontal exchange as a matter of policy. India is a bellwether."

Whereas the JnNURM's PEARL program focuses on fostering domestic city exchange the body has also provided financial support for local capacity building via international city cooperation. The JnNURM funds have, however, not been widely accessed by city managers, many of whom were apparently not aware that they could apply for them, as pointed out by Rakesh Ranjan, advisor at the Government of India's Planning Commission.²³

Like German cities, a large number of Indian cities are also engaged in sustainability and low-carbon related TMNs. Several TMNs operating globally have in fact more Indian than German member cities, for example ICLEI (46 Indian member cities)²⁴, the Carbons Climate Registry (19)²⁵, the World Mayors Council

22 <http://pearl.niua.org/> (19-03-2016)

23 Presentation by Rakesh Ranjan at the 6th EuroIndia Summit on "Greening Cities", 21-22 October, 2013 in Hyderabad.

24 <http://www.iclei.org/iclei-members/iclei-members.html?memberlistABC=I> (19-03-2015)

25 <http://carbons.org/data> (19-03-2015)

on Climate Change (6)²⁶, Metropolis (6)²⁷ and the C40 (3)²⁸. This is remarkable since compared to German cities, Indian cities have only started engaging with issues of sustainability and climate change more recently, even if of course India's total population and number of cities far exceeds that of Germany and TMN membership alone says little about actual activity (see above). In addition to membership of global TMNs, several Indian cities are also involved in TMNs with a regional focus on Asia. Examples are CITYNET (3 Indian member cities)²⁹, the Clean Air Initiative (3)³⁰ and the Kitakyushu Initiative for a Clean Environment (2)³¹.

2.4.3 Urban Cooperation between German and Indian Cities

Considering institutional barriers and city managers' lack of knowledge about financial support mechanisms for international collaboration, it is not surprising that the number of partnerships between German and Indian cities is still modest. The above mentioned RGRE database lists six initiatives involving German and Indian cities; three city "partnerships" (Bremen-Pune, Stuttgart-Mumbai, and Herrsching-Chatra), one temporary and project-oriented city "friendship" (Werne-Rourkela) and two informal "contacts" (Esslingen-Coimbatore and Langenhagen-Alan Kuppam).³² Four of the initiatives have a clear focus on sustainable and low carbon development (Bremen-Pune, Herrsching-Chatra, Werne-Rourkela and Esslingen-Coimbatore, with the latter cooperation still being in the preparatory stage of developing a partnership MoU). The partnership between Stuttgart and Mumbai primarily engages in cultural exchange activities while information available on the cooperation between Langenhagen and Alan Kuppam is very limited.

The RGRE database output should however be treated with caution as the database is not comprehensive and does not list several new forms of city cooperation that have emerged in recent years. In particular, several city partnerships facilitated by TMNs, development agencies or NGOs have so far not been included in the database. One example is the cooperation between Ahmedabad and Halle on ecological heritage conservation, facilitated by the NGO EuroIndia Centre. Two other examples are analysed in this study: the collaboration between Nashik and Hamburg, facilitated by the German government's development

26 <http://www.worldmayorscouncil.org/members/members-list.html> (19-03-2015)

27 http://www.metropolis.org/map?field_cities_region_value=348 (19-03-2015)

28 <http://www.c40.org/cities> (19-03-2015)

29 <http://citynet-ap.org/citynet-members/> (19-03-2015)

30 <http://cleanairinitiative.org/portal/countrynetworks/india?page=2> (19-03-2015)

31 <http://kitakyushu.iges.or.jp/cities/index.html> (19-03-2015)

32 <http://www.rgre.de/partnerschaften0.html> (database query from 06-03-2015).

agency, the GIZ, and the partnership between Nagpur and Freiburg which was initiated and moderated by the TMN ICLEI (see sections 5.4-5.7 of this study).

Aside from the projects mentioned above collaboration between German and Indian cities is rare. The supervisor of the GIZ-facilitated cooperation between Nashik and Hamburg's public water utility Hamburg Wasser, recalls two other GIZ initiatives involving Hamburg and Indian cities: an art project on river water management fostering exchange between artists from Hamburg and Delhi in 2011/2012 and a recent program in which students from Varanasi travelled to Hamburg to exchange experiences with young Germans taking part in the "Voluntary Ecological Year" program" (Interview with GIZ, 16-12-2012). As far as the author is aware these are the only Indian-German city cooperation projects being conducted in the areas of sustainable or low carbon development. According to representatives of ICLEI's regional offices in Europe and South Asia, the collaboration between Nagpur and Freiburg is the only Indian-German city partnership facilitated by ICLEI (Interviews with ICLEI, 08-08-2012 and 05-12-2013). The interviewee from the TMN Climate Alliance is not aware of any cooperation between Indian and German cities as part of Climate Alliance's activities (Interview with Climate Alliance, 19-01-2012). The Ahmedabad-Halle partnership is also the only German-Indian city cooperation to be initiated by the EuroIndia Centre. Secretary General, Michel Sabatier, however states that in the coming years the Centre's focus will be on the establishment of additional city partnerships between European and Indian cities in the area of low carbon development.³³

So far, research on Indian-German city partnerships is limited. Only the partnership between Pune and Bremen, which is also analysed in this study, has previously been the focus of comprehensive research. Sippel (2007) studied the Pune-Bremen cooperation as one of three cases in her doctoral thesis exploring the capacity of North-South city partnerships to foster projects under the UNFCCC Clean Development Mechanism (CDM). Sippel concludes that although city partnerships offer some potential for CDM project development, at the time of completion of her study (2007) no CDM projects had been set up in any of the partnerships she had analysed. To the author's knowledge no other comparative research on the conditions for success and failure of Indian-German urban partnerships currently exists.

33 Presentation by Michel Sabatier at the 6th EuroIndia Summit on "Greening Cities", 21-22 October, 2013 in Hyderabad.

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Beermann, J.

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