Motors of change?

A study on cities and climate change

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Master thesis
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Word count: 10.017

MAIS International Studies
Leiden University

Table of Contents

List of abbreviations

BRT	Bus Rapid Transit
CCC	Copenhagen Climate Communiqué
CoM	Compact of Mayors
COP	Conference of the Parties
EU	European Union
GaWC	Globalisation and World Cities (Research Centre)
GCBA	Gobierno de la Ciudad Buenos Aires (City government of Buenos Aires)
GHG	Greenhouse Gas
ICLEI	Local Governments for Sustainability
IPCC	Intergovernmental Panel for Climate Change
LA21	Local Agenda 21
LED	Light-Emitting Diode
NASA	National Aeronautics and Space Administration
NGO	Non-Governmental Organisation
PA	Paris Agreement
UCCI	Unión de Ciudades Capitales Iberoamericanas
UCLG	United Cities and Local Governments
UN	United Nations
UNFCCC	United Nations Framework Convention for Climate Change
UNGA	United Nations General Assembly
US	United States
WTO	World Trade Organisation

Introduction

The 1988 Time Magazine Person of the Year issue featured the “endangered” planet earth as “planet of the year” (Time, 1989). Earth was selected as person of the year following a tumultuous year in which “the earth spoke” to humanity that it was “in danger” (Sancton, 1989). The 1988 record drought in the United States (US), the resulting fires in Yellowstone National Park, the record heat wave, “killer hurricanes” (Sancton) in the Caribbean and floods in Bangladesh were just a few of the climate related disasters that dominated news headlines in 1988, raising public awareness on the state of the planet. In that same year NASA's most prominent climate scientist, James Hansen, testified in front of the US Congress that climate change was indeed happening and that it was “linked to human activity” (Klein, 2014: 73), putting climate change firmly on the political agenda.

This science on climate change was not new, however, as already by the end of the nineteenth-century the Swedish physicist Svante Arrhenius had discovered that the earth's atmosphere can only absorb a limited amount of carbonic acid before temperatures on the ground will rise (Arrhenius, 1896: 252). He concluded that the earth's atmosphere functioned similar to “the glass of a hothouse” (Arrhenius: 239). Moreover, in 1979, during the first world climate conference, scientists concluded that human activity caused the emission of “an increased amount of carbon dioxide in the atmosphere” that can “contribute to a gradual warming of the lower atmosphere” leading to climate change (Gupta, 2014: 41). They furthermore stated that “effects on a regional and global scale may be detectable before the end of the twentieth-century” (Gupta: 41) and that climate change is a serious threat human existence by concluding that “the long-term survival of mankind depends on achieving a harmony between society and nature” (Ibidem: 43).

In 1988, climate negotiations on a solution started after the United Nations (UN) General Assembly concluded that “climate change is a common concern of mankind and should be confronted within the global framework” (UNGA, 1988: 43/53 quoted in Gupta: 44) resulting in the establishment of the Intergovernmental Panel on Climate Change (IPCC) (Carlarne, 2010: 5). In 1992 during the Earth Summit in Rio de Janeiro the United Nations Framework Convention for Climate Change (UNFCCC) was adopted (Carlarne: 6), in order to “stabilize atmospheric concentrations of greenhouse gas (GHG) at a level that would prevent dangerous anthropogenic interference in the climate system” and entered into force in 1994 (Ibidem: 4).

Unfortunately, due to conflicting economic and strategic interests, and stark north-south divides on (the financing of) problem-solving, the right to development and the question who is to blame for climate change, climate negotiations have made very slow progress. Two significant low points in this slow progress were the United States' refusal to ratify the Kyoto protocol and the disastrous climate negotiations in Copenhagen in 2009, “a failure whose magnitude exceeded our

worst fears" according to Dimitrov (2010: 18). Copenhagen produced a non-legally binding agreement in which all previous agreements had been scrapped. Due to the slow progress reductions in GHG emissions, in order to keep the average rise of global temperatures under the commonly agreed safe rise of 1.5°C, have thus far fallen short of the required reduction, resulting in a substantial *emissions gap* (Gupta: 41-44; UNEP, 2015).

While the intergovernmental negotiations "have been locked in a tug-of-war" (Lee, 2013: 108), non-central governments and cities have become increasingly active in international relations on the issue of climate change and "have increasingly demonstrated leadership on global climate governance" (Lee: 108) Lee argues. Cities are mainly active through international transmunicipal networks like C40 Cities, United Cities and Local Governments (UCLG) and Local Governments for Sustainability (ICLEI). Through these networks world cities cooperate, exchange best practices, develop initiatives to combat climate change and have a voice on the international stage.

With more than half of the world's population residing in cities and over 70% of the world's GHG emissions originating from cities, cities are the main source of climate change, however, they are also the most likely victims of climate change. Since 90% of the world's cities are located in coastal areas, a further rise in sea-levels due to global warming could be disastrous for billions of people (Bloomberg, 2015: 118). Bloomberg argues that cities, "a decentralizing force", are simultaneously "the primary drivers" of climate change but "hold the antidote as well" (Bloomberg: 117-18), because of their enormous potential in reducing carbon emissions through local policies in polluting sectors like (public)transport and building efficiency, clean energy, waste management, and are less likely, in contrast to nation-states, to "be captured or neutralized by special interest groups" and ideology (Ibidem). This thesis will try to contribute a better understanding to what extent decentralised cooperation can contribute to better climate governance, to this end it asks the following research question, *to what extend can decentralised cooperation contribute to better climate governance?*

The increased international activity of cities has recently received great scholarly attention, albeit significant gaps in the literature remain. Little research has been conducted on the reasons why world cities get internationally engaged in international relations. One main argument is that the international activity of cities can be explained through "the globalization processes of recent decades", as Pluijm argues (2007: 7-8). However, this can hardly be called satisfactory, as Bulkeley (2010: 234) rightfully points out that "a growing sense of failure in international negotiations" is equally important. The thesis will try to add to the academic debate by attempting to provide an answer to the following research question, *what are the motivations for cities to get engaged in the issue of climate change?*

The aforementioned research questions will be approached from paradiplomacy, city

diplomacy, and translocal relations perspectives. A comparative analysis will be made on the motivations of the cities of Amsterdam, Buenos Aires and Nijmegen, three cities with differing levels of globalisation and climate activity, to engage in the global climate regime. To this end a series of interviews with policy officers of the before mentioned cities are conducted. Another comparative analysis will be made on the multilateral negotiations and climate action by nation-states and city climate action through a content analysis of climate agreements, declarations, official statements, policy documents and the interview results.

The structure of the thesis is as follows; first an overview of the academic debate and a theoretical framework is given. Second, the multilateral climate negotiations are analysed. Third, a comparative analysis on the motivations for the three before mentioned cities follows. Fourth, the advantages and disadvantages of decentralised cooperation on climate change is analysed and finally, the thesis is concluded by a conclusion.

Academic debate and theoretical framework

The international activity of regional, non-central or subnational governments has initially been theorised as *paradiplomacy* by Ivo Duchacek and Panayotis Soldatos. Paradiplomacy can be understood as "the direct and indirect entries of non-central governments in the field of international relations" (Duchacek, 1990: 16). In a more recent account on paradiplomacy, Noé Cornago (2010: 13) describes paradiplomacy as the involvement of sub-state governments in international relations, "through the establishment of formal and informal contacts, with foreign public or private entities, with the aim to promote socio-economic, cultural or political issues, as well as any other foreign dimension of their own constitutional competences."

Theorists of paradiplomacy argue that globalisation and regionalisation "are key driving forces of the modern world" (Kuznetsov, 2015: 1) and significantly shape the global political and cultural reality. The "mutual interconnection" of both of these global processes have created a situation in which regional, subnational governments have become less "dependent on national-state regulations" to make decisions in political, economic and cultural spheres (Kuznetsov: 1). Milani and Ribeiro argue that globalisation has major consequences "for the internationalization of politics through the increasing development of transnational actors, networks and institutions" and subnational entities, "such as provinces, federate states and municipalities … benefit from various political opportunity structures that have emerged from globalization processes" (Milani & Ribeiro, 2011: 23).

Activities of paradiplomacy are seen as diplomatic efforts "parallel to, often co-ordinated with, complementary to, and sometimes in conflict with centre-to-centre diplomacy" (Duchacek: 32). In other words; subnational governments and national governments are seen to inhabit two

different spheres of politics. According to Brian Hocking this implies "some second-order level of activity" with the "parent concept – diplomacy – being the rightful preserve of national governments" (Hocking, 1995: 39). Hocking rejects this state-centred approach and prefers the term *multilayered diplomacy* over paradiplomacy. He argues that subnational governments, national governments and non-state actors are part of a "densely textured web in which non-central governments are capable of performing a variety of goals at different points in the negotiating process", through which they can "become opponents" or become "allies and agents" to national governments (Hocking, 1993: 3 Quoted in Kuznetsov).

Pluijm agrees with Hocking and argues, in his notion of *city diplomacy,* that "state and city actors are part of a complex diplomatic environment, which does not recognize the exclusive territories of the domestic and international" (9). He conceptualises city diplomacy as "the institutions and processes by which cities engage in relations with actors on an international political stage, with the aim of representing themselves and their interests to one another" (Ibidem: 11). Just as in paradiplomacy, Pluijm states that the activity of cities and other subnational actors can be explained through "the globalization processes of recent decades" (Ibidem: 7-8), since globalisation "has nowadays come to signify almost every major event that happens … there is no longer a clear distinction between the national and the international political sphere" (Ibidem: 8). This has opened up "new opportunities for transnational cooperation" (Bontenbal, 2009a: 181), which is illustrated by an enormous increase in city networks through which cities and local governments can become "prominent players in the international development cooperation area" (Bontenbal, 2009b: 131).

For Lee the international activity of local governments can be best explained through a theory of *translocal relations*. He states that international relations is overly concerned with the relations between states and therefore overlooks the important role of local governments in global politics (Lee, 2010: 17-18). Lee defines his notion of translocal relations as: "formal and informal interactions between sub-national governments and other international actors", including nation-states, "within and across the national boundaries" (Lee: 18). For translocal relations "the level of local government's integration into globalization" (Ibidem) is central to the international activity of local governments.

Considering city-to-city cooperation in global climate governance, he states that through transnational city or municipal networks cities have become "significant actors" in the global climate regime by "setting GHG emission reduction targets, implementing comprehensive climate change policies, and monitoring and disclosing their performance" (Lee, 2013: 108). Lee argues that globalisation processes made cities, "that have no binding treaty obligations to reduce GHGs" (Lee: 108), active in global climate governance. As argued before, Lee states that the level of

globalisation in a city is “a driving factor of cities' participation in networks of international interdependence that encourages collective action on climate change” (Ibidem: 124). According to Lee, well-connected “global cities” with access to a good international transport system, like an international airport, that provides a flow of ideas, goods and people, and “numerous international meetings” are “proactive on global climate change issues” (Ibidem).

For matters of clarity a quick elaboration on the concept globalisation will be given. Globalisation can be defined as multidimensional processes taking place simultaneously within the spheres of the (global) economy, politics, (communication) technologies, culture and environmental change, leading to increased global connectivity and consciousness through which the world increasingly becomes a single place. For matters concerned in this thesis a differentiation will be made between three types of globalisations through which “cities are influenced” (Ibidem: 112), economic, political and cultural globalisation.

Economic globalisation can be defined as the increased interdependence of national economies “through international trade of markets in goods and services” (Frankel, 2006) organised in the dominant global “capitalist system” (Tomlinson, 2007: 353). Political globalisation is understood as “the multidimensional accelerated and interconnected organization of space and time across national borders” (Delanty & Rumford, 2007: 414) with “the expansion of a global political system, and its institutions, in which inter-regional transactions (including, but certainly not restricted to, trade) are managed” (Thompson, 2008: 59) as a result. Through political globalisation, economic globalisation can be intensified and managed by, for example, political unions and free trade agreements. Political globalisation furthermore serves as an end to foster dialogues between political entities in order to avoid conflict and improve (global) cooperation. The European Union (EU) and UN can be seen as examples of political globalisation.

The final dimension considered here is cultural globalisation. Culture can be seen as a “dimension in which globalization both has its effects and *simultaneously* is generated and shaped” (Tomlinson: 355). Globalisation has its effects, or shapes cultural experiences, through for example “global market processes” that facilitate the “distribution of iconic consumer goods” (Ibidem: 353), and the distribution of fashion, food, music, cinema and television (Ibidem: 352). Globalisation is generated and shaped by culture through consumer activity. Individual “cultural” decisions to buy, or not to buy, certain products is “constitutive of the whole complex network of global market connectivity, having consequences not only for the employment of workers in distant parts of the world but, in respect of the natural resources and the industrial process entailed in their production, for the ecological fate of the planet” (Ibidem: 354). In this research reference will be made to all three of the globalisation processes, however, the emphasis will predominantly lay on economic and political globalisation.

The processes of globalisation as the sole explanation for a city's international activity can hardly be called satisfactory, since a lesser globalised city like Nijmegen also engage in climate change issues, which is demonstrated by its proactive participation in the ICLEI and European Green Capital city networks.[1] Bulkeley, therefore, argues that the international activity of cities is the result of "a growing dissatisfaction with the multilateral processes put in place to address climate change" (234). She states that city activity on climate change has "gathered pace significantly since the early 2000s because of a growing sense of failure in international negotiations" (Bulkeley: 234).

Decentralised cooperation and climate governance

In order to be able to do an analysis on whether or not decentralised cooperation can lead to better climate governance, a quick elaboration on possible advantages and disadvantages of decentralised cooperation will be given. Bloomberg argues that cities are by definition "a decentralizing force" that can counterbalance the weaknesses of centralised nation-states (Bloomberg: 117). According to Manor decentralisation tends to "strongly enhance government responsiveness" (2011: 3), since local governments are "empowered to make decisions and act swiftly, without waiting for approval from higher authority" (Manor: 3). Lee similarly argues that the strength of cities lies in their ability to make swift decisions and furthermore argues that local authorities are "the governance structure closest to individuals" and therefore could have "a direct and prevailing impact on individual behavior" (Lee, 2010: 14).

Bloomberg and Lee both argue that another strength of cities is that they have direct jurisdiction over polluting sectors in which they can implement environmental policies "which can affect GHG emissions" (Lee: 13) like recycling, electricity generation, (public)transport and building efficiency and waste management (Ibidem: 13; Bloomberg: 118). Another great strength of decentralised cooperation is the ability of regional policies to be scaled up to "upper levels in the hierarchy" of government (Lee: 14). In other words, cities can be seen as "policy laboratories" through which climate initiatives can potentially be scaled up toward national and supranational levels (Ibidem: 14). Through urban climate action cities have the potential of contributing to a reduction of at least 6% of the global GHG emissions in 2030, and of at least 11% in 2050, according to a study by the Stockholm Environment Institute (Erickson & Tempest, 2014: 3). Though this might seem like a small contribution, it corresponds to a 10% and 15% closure of the emissions gap (Erickson & Tempest: 12).

The most important disadvantage for city-to-city cooperation is the hierarchal nature of the

1 www.iclei.org, http://ec.europa.eu/environment/europeangreencapital/.

international system, national states can effectively restrict international activities of cities through "legally binding limitations" argues Lee (15). Furthermore, the relatively small scale of world cities can be a great disadvantage. Nation states have a far greater scale of financial, territorial and human resources at their disposal in order to combat climate change. Furthermore, the global scale of climate might cause city officials to frame climate change as a global problem and thus hinder local climate actions. Adding to this, local authorities may be weak "because of organizational and cognitive insufficiencies" (Erickson & tempest: 15).

As has been mentioned in the introduction, multilateral climate negotiations have been a slow process, frustrated by irreconcilable differences between national interests of nation-states. In order to be able to make a comparative analysis, a good understanding on why multilateral negotiations tend to fail is needed. In the following section the paralysis of multilateral negotiations will be analysed and will be followed by an analysis on the international activity of cities on climate change.

Multilateral climate negotiations

When climate negotiations began in earnest at the Toronto conference in 1988, 300 scientists and policy makers of 46 countries agreed that climate change was due to human actions and a great threat to human existence, "second only to global nuclear war" (WMO, 1988: 292). They called upon industrialised nations to drastically reduce their carbon dioxide emissions to 20 per cent below 1988 levels by 2005 (Gupta, 41-44; Bulkeley & Betsil, 2003: 33).

Expectations in these early years were high since the international community had recently addressed a similar problem, the depletion of the ozone layer, in a quick and decisive way (Carlarne: 9). However, due to the complexity of the issue and the economic implications of climate action, climate change quickly became heavily politicised. So far, years of negotiations have not produced a legally-binding treaty that has been ratified by all major emitters, and real climate action is yet to be taken; GHG emissions in 2013 were 61% higher than they were in 1990 (Klein: 11)

In the period between 1988 and 2015, the multilateral negotiations produced two major outcomes; the Kyoto Protocol of 1997, a legally-binding treaty on carbon emissions reductions and climate action, and the Copenhagen Accord of 2009. As mentioned in the introduction, both are associated with two major low points in the climate negotiations. The Kyoto Protocol has been associated with failure due to the United States' refusal to ratify the Protocol leaving the "international community holding a potentially lifeless treaty" (Carlarne: 9), as without the commitment of the world's largest economic force, and polluter, the treaty was virtually meaningless. The Copenhagen Accord was the outcome of the 15th Conference of the Parties (COP 15) and is a non-binding political accord composed by the US, India, Brazil, China and South

Africa after the negotiations had stalled in the second week. It can be considered a failure because the accord was never formally adopted when, after opposition to the accord by "Tuvalu, Nicaragua, Bolivia, Cuba, Venezuela, Sudan, and later Pakistan" (Dimitrov: 20), the meeting was suspended and negotiations had to start over virtually from scratch.

Only recently, at the 21st Conference of the Parties (COP 21, 2015) in Paris, have nation-states agreed upon a climate treaty that formulates the wish to keep global average temperature increase well under 2,0°C and make efforts to keep temperatures under 1,5°C but, again, there are critics on the real implications of the agreement (Morgan, 2016; Clémençon, 2016).

North-South divide

At the heart of the apparent paralysis lies that multilateral climate negotiations have been characterised by a stark North-South divide and conflicting economic interests, both of which are interrelated. Climate change has been an issue that Southern countries have traditionally perceived as a Northern issue, because the North "created the problem" (Paterson & Grubb, 1992: 297) and the issue has predominantly been framed through concerns of Northern science, institutions and countries. Developing countries were unconvinced that Northern countries were "committed to tackling climate change" (Paterson & Grubb: 297) and saw no necessity to act unless a clear commitment was shown by Northern countries. Moreover, the developing world saw climate change as an attempt by Northern countries to hold back Southern "economic growth by limiting their energy use" (Ibidem) through carbon cuts. They emphasised the "North's wasteful use of planetary resources" (Mejía, 2010: 13) because of its consumption patterns (Paterson & Grubb: 297). Northern countries on the other hand were unwilling to discuss their consumption patterns and pointed to the enormous growth potential of Southern countries, particularly regarding population, and stressed the "futility of their own efforts in the absence of developing country action" which was, in turn, seen as "a neo-colonial attempt to interfere with their development" by developing nations (Ibidem: 298).

In the 1989 Brasilia declaration Latin American and Caribbean countries emphasised the historical responsibility of the industrialised North for climate change because of GHG emissions in the past. Furthermore, they stressed their highly indebted position and their right for development (Gupta: 45). They, moreover, declared that developed nations should assist the developing world in establishing their capability to conduct scientific environmental research, manage "their natural systems, strengthen national processes or environmentally sound decision-making", and "improve their monitoring systems and enhance their capability to enforce the international standards for environment protection" (Brasilia, 1989). Other developing countries supported this argument

stating that they feared that climate action could “translate in a cap on growth” (Gupta: 74) and argued that the developed nations “should bear the primary responsibility for rectifying” environmental damage and “should compensate for environmental damage suffered by other countries” (Ibidem: 70).

The North-South divide stems from a “persistent mistrust between the global North and the global South” (Atapattu & Gonzales, 2015: 5) derived from the history of European colonialism, and the subsequent Northern economic and political domination over the global South. The current underdevelopment of the global South, or the developing world, is for a large part the result of this history, that started with the European conquests of the Americas, Africa, Asia and Oceania. The conquests brought a system of colonialism to the South through which Europe transformed “self-sufficient economies into economic satellites of Europe, promoting slavery and indentured servitude” (Atapattu & Gonzales: 5). The colonial territories produced agricultural products, minerals and other commodities for their European motherlands that were used for European industrial development. In the process European countries “came to specialize in capital-intensive goods and to enjoy high standards of living” (Ibidem: 6). The colonies did not develop into modern diverse economies and remained largely dependent on the Northern demand for Southern commodities and suffered greatly of the global capitalist system that came to dominate global economic relations after the Second World War, which benefitted above all the global North (Galeano, 1971).

This capitalist system facilitated the continued Northern dominance over the South through the legal framework for modern economic globalisation of the World Bank, International Monetary Fund and the General Agreement on Tariffs and Trade. These institutions were designed through the logic of economic liberalism, the dominant Northern economic ideology, to “erode state sovereignty in order to facilitate the free flow of goods, services, and capital across national borders” (Atapattu & Gonzales: 6) enabling the economic expansion of the global North through the “continued exploitation of the South's natural resources” (Ibidem), widening even further the global economic gap. From the 1980s a highly deregulated form of economic liberalism, *neoliberalism*, came to global dominance and wreaked havoc in the developing world, illustrated by the years of economic stagnation and debt crises in the global South during the “lost decades” (Easterley, 2001) that came to a close with the public default of Argentina in 2001 (Stiglitz, 2003).

Early climate negotiations reflected this North-South dimension and Southern concerns were incorporated in the Berlin Mandate of 1995 in the negotiations leading up to the Kyoto Protocol (Carlarne: 7). The Berlin Mandate declared that “developed countries must take the lead in combating climate change” and that “no new commitments would be imposed on developing nations” (Agrawala & Andersen, 2001: 122). However, the US decision to opt-out of the Kyoto Protocol was partly motivated by the omission of commitments for developing countries. This is

clearly shown by the adoption of the Byrd-Hagel resolution by the US Senate in 1997, stating explicitly that the US would not "accept binding quantitative targets unless key developing countries also participate meaningfully in the negotiations" (Gupta: 79).

In the run-up to the Copenhagen COP 15, the North-South divide had significantly deepened due to globally "similar experiences" (Goeminne & Paredis, 2008: 5) by Southern peoples of exploitation, ecological destruction and impoverishment by Northern multinational corporations and finance that were no longer regulated. It became increasingly clear that the world's poorest would be most affected by the effects of climate change and developing nations started to argue they were owed an *ecological debt* by the Northern countries. Ecological debt is the "accumulated, historical and current debt, which industrialised Northern countries, their institutions and corporations owe to the peoples and countries of the South for having plundered and used their natural resources, exploited and impoverished their peoples, and systematically destroyed, devastated and contaminated their natural heritage and sources of sustenance" (Goeminne & Paredis: 4). The opposition of Tuvalu, Nicaragua, Bolivia, Cuba, Venezuela, Sudan and Pakistan can be seen in the light of this deepened North-South gap, as they argued that the accord was "undemocratically created, and too weak to save the world" (Dimitrov: 20).

Global economy and climate change

The US' refusal to ratify the Kyoto Protocol was only partly motivated by the North-South divide. Another significant factor was the great influence of the powerful fossil fuel lobby on US climate policy. In the US, the Global Climate Coalition[2] ran a successful anti-Kyoto campaign on the US Senate that influenced the decision to not ratify the Kyoto Protocol (Mejía: 22). On a multilateral level the US had grouped in the JUSSCANNZ[3], a veto coalition consisting out of Northern countries that were heavily influenced by fossil fuel lobbies and therefore opposed strict emission cuts and legally-binding measures (Ibidem).

This shows that there is another factor contributing to the indecisive multilateral negotiations. Namely, that there are great economic implications involved with climate action. The majority of the carbon emissions today are generated by effects of modern economic globalisation and the global liberal capitalist economy. Today's world economy is largely powered, and accordingly dependent on, fossil fuels and secondly, characterised by free trade, a strong belief in market rationality, deregulation of the corporate sectors, of domestic, financial markets and foreign investment, and limited to no government interference in the economy.

2 The Global Climate Coalition (1989-2001) was a powerful international lobbying group of businesses that opposed reducing greenhouse gas emissions, since it would imply a drastic reduction in profits.

3 An acronym for the veto coalition consisting out of Japan, United States, Switzerland, Canada, Australia, Norway and New Zealand.

As mentioned above, this form of economic liberalism became known as neoliberalism. The neoliberal economic model greatly contributed to present day's economic globalisation since it stimulated foreign investment and provided corporations with the freedom to sell their products and produce their products "with as few regulations possible" (Klein: 19). The deregulation of the corporate sector, capital, trade and foreign investment led to the off-shoring of many production processes from Northern countries to countries with lower wages, production costs and more flexible environmental laws.

This has had great implications for the environment. Products that before were produced locally are now increasingly produced in foreign countries where production costs are lower. This led to an enormous increase in export and import values around the globe since products have to be shipped from producer to consumer over vast distances, resulting in an enormous increase in carbon emissions (Klein: 20).This trade is largely regulated by the WTO under the banner of free trade, in order to guarantee the lowest price for producers and consumers by removing trade barriers and banning government subsidies. Considering this, one could argue that the consumer patterns, which are partly stimulated by low prices that have resulted from lower production costs, not only influence economic globalisation and workers in distant countries but also have a profound impact on the environment and climate change. It is seen here how cultural globalisation shapes economic globalisation through consumer activity, as argued by Tomlinson (352-54).

From the beginning of climate negotiations this free trade model has been protected against trade restrictive climate policies. In 1992, with the signature of the UNFCCC, the parties agreed that they "should cooperate to promote a supportive and open international economic system" and that "measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade" (UNFCCC, 1992: 5). Furthermore, in the Kyoto Protocol the parties agree to "minimise adverse effects…on international trade" (UNFCCC, 1997: 3). This language shows that economic interests are more important than combatting climate change, even when economic activities contribute heavily to the problem of climate change.

In order to cut carbon emissions, governments need to be able to regulate energy use, change consumer behaviour, penalise fossil fuel companies, interfere in production processes and transportation methods. The problem is, however, that according to the rationale of the dominant market-based economic ideology, governments should not intervene in the economy, the market will resolve itself. This explains why nations-states have preferred market creating and conforming solutions to environmental problems instead of "intervene early to prohibit activity, directly compel alternatives, and provide the basic infrastructure for those alternatives" (Morgan: 6).

One of the most prominent market-based solutions was the principle of emissions trading,

which was included in the Kyoto Protocol[4]. Developed nations created "synthetic markets to make emissions tradable" (Morgan: 6) after it was promoted by the US that "only market mechanisms could achieve emissions reductions in an efficient and cost-effective way" (Koch, 2014: 6). Market-based solutions are based on the dominant neoliberal presumption "that the market will sufficiently discipline polluters", while simultaneously "boosting the profit margins of those whose business practices engage environmental issues" (Parr, 2013: 24). Which implies that markets will solve the problem after environmental harm becomes economically quantifiable, this means waiting until it becomes "cost effective" to address the problems "science identified years before as existent and accumulating" (Morgan: 6).

In the years leading up to the Copenhagen Climate Summit economic globalisation spread further over the globe incorporating new, big emerging economies in the free market. The inclusion of China in the WTO and its rise among the other BRICS[5] countries led to an enormous increase in economic and trade activity by those countries, and GHG "emissions accordingly grew" (Gupta: 100). Their new status as economic powers and their inclusion in the free market meant for the BRICS that they now had little incentive to stick to their legally-binding commitments without a commitment by the US.

Paris Agreement

In December 2015 at the COP21 in Paris nation-states agreed on a highly ambitious climate deal that formulated the ambition to keep the global increase in temperatures well under 2°C and "pursuing efforts to limit the temperature increase to 1.5°C" (Clémençon: 8) above pre-industrial levels. Have the nation-states resolved the difficulties that were characteristic for the negotiations thus far?

One of the things that stands out is the ambition to keep the average global temperature under 1.5°C and its legally-binding character. However, the caps on emissions are not strict enough and will likely allow for an increase in temperatures between 2.7°C and 3°C. Furthermore, not all of the agreement is legally-binding. As Morgan argues, the Paris Agreement "is not an agreement of what will be done" (Morgan: 2) but an agreement that something needs to be done. It does not represent a fundamental change in the way we approach climate change. There is no mention of the link that the world economy has to climate change, no reference to "which countries are the primary sources of emissions", no recognition of "the role of corporations or of the link between wealth, consumption, waste, and emissions" (Morgan: 4) and no remarks on the problem of growth, but only to chances for growth. This shows that economic interests are still more important than

4 Emission trading schemes have been installed in the EU (EU-ETS), New Zealand (NZ-ETS), Australia and the US.
5 Acronym for Brazil, Russia, India, China and South Africa.

combatting climate change.

This part has shown that climate negotiations have been frustrated by a strong North-South divide, which is fuelled by Northern economic domination of the South. This domination is channelled through the framework of modern economic globalisation, which is created by the logic of neoliberalism. This economic ideology, in turn, prevents national governments of intervening in the economy and taking climate action. This is a clear example of what Bloomberg argues that nation-states are more likely to be captured by special interest groups an ideology (Bloomberg: 118). The following section will look at the reasons for cities to get engaged in climate change, the contributions of decentralised cooperation to global climate governance and whether or not cities can overcome the problems indicated above and can be true motors of change, by analysing the aforementioned case-studies.

Cities and climate change

Cities have been active in climate governance since the early days of the climate negotiations, Toronto and Melbourne were one of the first cities to be engaged in climate change, and already in 1990 the ICLEI Local Governments for Sustainability network, presently the largest transmunicipal network, had been founded (Gupta: 53). The Rio Conference of 1992 recognised the significance of local climate action with the development of the Local Agenda 21 (LA21). The LA21 argued that local governments, "with their potential influence over people's day-to-day lives, may be more effective than nation-states in bringing about the necessary changes to control greenhouse gas emissions" (Bulkeley & Betsill: 49). By 1993 the ICLEI network created the Cities for Climate Protection (CCP; ICLEI) Campaign and by 1997 there was "a growing movement of sub-national governments and local communities working to put climate change on the local agenda" (Betsill & Bulkeley, 2007: 447). In the new millennium, city participation on climate change took a great leap forward with the foundation of the UCLG (2004) and C40 (2005) city networks and numerous other environmental and sustainability networks in the first decades of the 2000s (Betsill & Bulkeley: 447-8).

All of the cities used as case-studies recognise the severity of the problem of climate change and are determined to act to the problem in their capacity. The three cities that have been studied differ vastly in terms of size, population and legal capabilities in terms of policy-making and international activity. The city of Buenos Aires is an autonomous city in the federal state of Argentina, granting it far-reaching competences in terms of policy-making and taxing (GCBA). In the Dutch legal system cities have a very limited tax scope (only about one-tenth of their budget is generated by direct taxing, for the rest of their budget they are dependent on subsidies by the national government (Tiemens, 2016). This dependence on the national state has great implications

on the policy-making of Dutch cities, such as Amsterdam and Nijmegen. However, interesting correlations can be drawn on the reasons for the cities to get engaged in climate change.

Why do cities get involved?

Idealism and creating pressure for further climate action

All three cities stress the lack of urgency by national states on climate change as an important motivation to engage in climate change. This is best illustrated by the words of alderman Tiemens, of sustainability, climate, water and mobility of the city of Nijmegen, who states that "there is this feeling that cities need to do the work, since the national government apparently does not feel the urgency to begin with creating a more sustainable country, let alone cities" (Tiemens, 2016). Furthermore, the city of Amsterdam sees a "movement of cities becoming more active since national states cannot solve the problem" according to André Struker of Amsterdam (Struker, 2016). The city of Buenos Aires states that their position on climate change has changed due to the "international environmental problems" and that their international activity has increased due to a favourable concurrence of the "internal politics of the city, the local priorities, with international politics", this has raised the priority of sustainability from "about number ten" to "fundamental" (Pace & Miguens Campos).

By getting engaged in climate change and city networks the cities are hoping to create pressure for further climate action on higher levels of government (Osofsky, 2012: 182). This is clearly illustrated by the *Copenhagen Climate Communiqué* (CCC), a joint statement of world cities during the Copenhagen Climate Conference, and the *Compact of Mayors* (CoM), an agreement by the city networks of C40, ICLEI and UCLG, in which they sent a "united message to national governments" to "agree on ambitious targets and start reducing now" (CCC, 2009) and pledged "to fight climate change in a consistent and complimentary manner to national efforts" (CoM, 2015: 3). This shows the claim of paradiplomacy that subnational activities can be "complementary to…centre-to-centre diplomacy" (Duchacek: 32) proves to be valid.

Buenos Aires is one of the cities that has signed the CoM and according Nerio Pace, coordinator of International Relations at the city of Buenos Aires, the CoM was a way to concretise the plans of the city networks and present them to the United Nations during the COP 21 Paris climate conference (Pace & Miguens Campos, 2015). This motivation is also clearly stressed in the statements of the Compact of Mayors; "the compact represents the greatest opportunity to bring attention to, and quantify, city action, both in the lead-up to Paris and beyond" (CoM: 3).

Globalisation as a stimulus for international activity

For all three of the cities the processes of globalisation have provided opportunities to get engaged

internationally in climate change, as argued by city and paradiplomacy. Amsterdam got motivated to get more actively engaged in climate change through their participation in the European Capital of Innovation Award, which they won for 2016 (Het Parool, 2016; Struker). By means of this prize the EU looks to stimulate its cities to innovate in "creating more jobs, building a greener society and improving our quality of life" (EU, 2015). For the city of Amsterdam participation in this award was a way "to get engaged with climate change" (Struker). This is a clear example how the EU, an example of political globalisation that fosters dialogues and improves cooperation, provides opportunities for cities to get engaged in climate change. Furthermore, Amsterdam can be considered to be a "well connected Global City" as argued by Lee (2013: 124) with access to its own international airport, Schiphol, and a major European congress and convention centre, Amsterdam RAI, that annually hosts numerous events on innovation and sustainability (figure 1).

Although Nijmegen is not considered to be a Global City and lacks (direct) access to international transport hubs, globalisation also provides the city with opportunities. This is clearly shown by the important role of the EU for the international ambitions of Nijmegen. The city cherishes the ambition to win the European Green Capital award, another sustainability prize awarded by the EU to local governments. Nijmegen participated in 2014 for the first time in the Green Capital award and became a Green Capital finalist (Tiemens). The Green Capital Award is "partly linked to the ICLEI network" (Ibidem), this provided further impetus for climate action according to Tiemens. By participating in the award the city got interested in joining the ICLEI network which it joined in 2015 (Tiemens; ICLEI; Nijmegen, 2015).

In the case of Nijmegen the EU provides another stimulus to get internationally engaged in climate change, considering there is a lack of urgency for climate change within the national government of the Netherlands and Nijmegen depends for a great deal of their budget on national subsidies, it is difficult for Nijmegen to finance a great deal of their ambitions. Therefore, states alderman Tiemens, they "look towards Europe, there are further possibilities to sustainablise your city and to use the European funds available" (Tiemens). It can be clearly seen here that national governments and city governments do not inhabit two different spheres of politics. As the Dutch government is frustrating the efforts of the city of Nijmegen, the city can take its own initiative by establishing contacts across national boundaries to pursue its goal. This is a great example of how the translocal and city diplomacy perspectives can explain the international activity of cities and how the state centric nature of paradiplomacy tends to overlook this aspect.

Buenos Aires has been the stage for two UNFCCC COPs, in 1998 and 2004, has access to its own international airport, Ezeiza, and is classified as an Alpha Global City by GaWC in 2012 and is on the 20th place in the Global City Index ranking by A.T. Kearny (GaWC 2012; Figure 1). Its position as a main Southern metropolis and its membership of the *Unión de Ciudades Capitales*

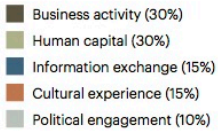
Iberoamericanas (UCCI), an initiative by the city of Madrid that links Spanish and Portuguese speaking capital cities worldwide in one network, has provided the city with a great international network which it has used to get engaged in climate change. This is best illustrated through the interactions with the cities of Curitiba and Bogotá during the implementation of their Bus Rapid Transit (BRT) system which, in turn, has led to their membership of the C40 Cities network (Pace & Miguens Campos; C40). Now, Buenos Aires is one of the most active cities in this network winning various prizes for its innovative plans and bold climate action (C40; Pace & Miguens Campos). Considering what has been elaborated upon above, one could conclude that processes of political globalisation have opened up opportunities for the cities to get engaged in climate change. The interactions of Buenos Aires with other cities beyond its national boundaries can be seen as another example of how a translocal relations perspective sees the international activity of cities.

Figure 1

The top 25 cities on the Index and the Outlook

Global Cities Index, rank and score

2016 rank	2015 rank	City	Scoring breakdown
1	2	**London**	62.7
2	1	**New York**	62.5
3	3	**Paris**	54.5
4	4	**Tokyo**	46.7
5	5	Hong Kong	44.2
6	6	**Los Angeles**	38.2
7	7	**Chicago**	38.0
8	8	**Singapore**	37.9
9	9	Beijing	36.0
10	10	Washington, D.C.	34.7
11	11	Seoul	33.6
12	12	**Brussels**	33.1
13	16	Madrid	33.0
14	15	**Sydney**	32.7
15	19	**Melbourne**	32.4
16	17	**Berlin**	31.7
17	13	**Toronto**	31.7
18	14	Moscow	31.7
19	18	Vienna	31.0
20	21	Shanghai	30.4
21	20	Buenos Aires	29.1
22	25	**Amsterdam**	29.0
23	22	**San Francisco**	28.9
24	23	**Boston**	28.8
25	29	Istanbul	28.3



Global Cities Outlook, rank and score

2016 rank	2015 rank	City	Scoring breakdown
1	1	**San Francisco**	70.6
2	4	**New York**	70.4
3	3	**Boston**	67.8
4	2	**London**	67.1
5	6	Houston	61.0
6	16	Atlanta	61.0
7	8	Stockholm	60.6
8	9	**Amsterdam**	60.4
9	7	Munich	60.1
10	5	Zurich	59.4
11	17	**Chicago**	57.2
12	11	**Sydney**	57.2
13	19	**Paris**	57.1
14	13	**Berlin**	56.4
15	15	**Melbourne**	55.7
16	12	Geneva	55.5
17	14	**Singapore**	55.0
18	20	**Toronto**	54.8
19	18	**Tokyo**	54.8
20	29	Dallas	54.7
21	21	**Los Angeles**	54.4
22	24	**Brussels**	53.3
23	28	Taipei	53.3
24	23	Copenhagen	53.2
25	27	Vancouver	52.9

Note: **Bold** city names indicate top 25 in both Index and Outlook.

Source: A.T. Kearney Global Cities 2016

Economic motivations and improvement of the city

In the city network of *Metropolis* the city of Buenos Aires is leading the green economy centre initiative, in this "ambitious project" the city tries to "advance toward a sustainable economy within a framework of public-private collaboration that fosters the generation and formation of green jobs" (Metropolis, 2015; Pace & Miguens Campos), this illustrates the importance of economic gains of climate action for the city.

A similar motivation and project can be found in the city of Amsterdam through their initiatives of a "circular economy" and "economically sustainable city" (Struker). According to André Struker, a city should not try to tackle climate change by only focusing on mitigation but should opt for a comprehensive strategy with a focus on adaptation and involvement of the private sector as well (Ibidem). Amsterdam looks to cooperate with "local businesses" to create a circular economy to "strongly reduce" the city's resource use and GHG emissions, and to "simultaneously realise economic growth and create new jobs" (Amsterdam, 2015: 4). Examples of this circular economy are "the production of biofuel out of sewer sludge" and "recycling of cellulose fibres to biocomposite" as construction material (Struker). Through this circular economy Amsterdam wishes to profile the city as an "attractive city" with an "attractive working and living climate" (Ibidem).

In the case of the city of Nijmegen there is always need for a "delicate balance" between climate action and economic and public health motivations (Tiemens). According to alderman Tiemens, climate policy and the city's international activity needs to be relevant and economically profitable for the city. She illustrates this delicate balance by two examples: first, the international delegation of the city was not allowed to travel to an international ICLEI congress in Bilbao, because the city council deemed that attending the congress was of no importance for the city since it was a "general conference" where Nijmegen did not "fulfil a specific role of importance" and where the international delegation would not have "met a lot of (economic) relations" (Ibidem). Second, in their quest to complete the ambition to be an energy neutral city by 2045 (Nijmegen, 2011), Nijmegen planned to build one hundred thousand solar panels on the city's office buildings. However, after a study showed that this plan was not economically profitable it was aborted because a profitable business model could not be achieved (Tiemens).

Cities and global climate governance

The example of Nijmegen's solar panels gets to the heart of the difficulties of climate action, and is similar, if not identical, to some of the troubles multilateral climate action is facing; bold climate action is not economically profitable, in the short-term, in the present economic system. This,

however, is not the only difficulty cities are facing in climate governance, there are also problems with the hierarchical and legal nature of the international system. However, local climate action and decentralised cooperation holds a great potential, promises and advantages. In the remainder of this chapter the difficulties and limitations of local climate action will be considered and the chapter will be concluded with an elaboration on the potential and advantages of local climate action.

Difficulties: economy

As the example of Nijmegen's solar panels illustrates local climate action can be frustrated by economic interests in similar fashion to the multilateral level. Alderman Tiemens declares that the national government is the city's "greatest opponent" on the matter of "energy transition" (Tiemens). This is because of "energy taxes…and gas revenues", she furthermore states that "although people blame the ministry of infrastructure and environment, the real problem is with minister Dijsselbloem" (Ibidem); the Dutch minister of finance. The real problem is money. In Amsterdam they experience similar problems, according to André Struker "there were other priorities" than climate action during the financial crisis of 2008 and therefore some initiatives "did not go as quick as initially planned" (Struker). This clearly shows that climate action is subordinate to the economy, even on the local level. Furthermore, the focus of all the cities on linking climate action to economic factors shows the importance of the need for economic profitability of climate action.

Hierarchy and legal system

Climate negotiations are predominantly being conducted through the UNFCCC framework, which consists principally out of national states. Other entities, like cities and other subnational actors but also non-governmental organisations (NGOs) and other non-state actors, have been structurally excluded from a place at the negotiations table (Osofsky: 180). This stems from the state-centric nature of international law, in which national states are the primary international legal personalities, since they have the "capacity to make claims, treaties and agreements valid on the international plane, and the enjoyment of privileges and immunities from national jurisdictions" (Brownlie, 2008: 57). Other international actors like international organisations possess some of these capacities although in a limited form, cities and subnational actors have none however and are therefore not recognised as international legal personalities (Brownlie: 57). This implies that cities cannot make legally-binding agreements and that treaties and pledges made by cities are therefore of a voluntary nature. To tackle these difficulties Osofsky calls for a more "inclusive" system of international law, that recognises cities as being international legal personalities, considering the treaties "have great potential significance for UNFCCC nations-state parties achieving the goals laid out in that

convention" (188).

In an attempt to overcome the abovementioned difficulties, cities have grouped together in transmunicipal networks in order to have a voice in climate negotiations because, as they note in Buenos Aires, a city cannot join the negotiations and say "hello, we as the city of Buenos Aires have this opinion, because nobody will listen to you" (Pace & Miguens Campos). Cities and other local governments have, through transmunicipal networks, been actively lobbying the UNFCCC to recognise the importance of local climate action in order to meet climate ambitions. In 2007, the ICLEI network launched the Local Government Climate Roadmap at the COP13 in Bali, "an advocacy campaign designed to ensure local and subnational governments were recognised, engaged and empowered in a new global climate regime" (ICLEI, 2016: 4). During the COP15 cities published the before mentioned CCC and the *Copenhagen World Catalogue of Local Climate Commitments*, "which identified more than 3,500 voluntary greenhouse gas reduction commitments of local governments" (Mexico City Pact, 2010) in developed and developing nations through which cities could help national states complement their carbon emission reduction ambitions.

The following year, in 2010, just before the COP16 in Cancún, mayors of global cities signed the *Mexico City Pact* a voluntary initiative through which they pledged to "Reduce local greenhouse gas emissions, promote city-to-city cooperation, advocate and seek partnerships with multilateral institutions and national governments" (Mexico City Pact). Most important, however, was the creation of the *Carbonn Cities Climate Registry*, an instrument through which cities register their climate measures in "a measurable reportable and verifiable manner" (Ibidem). Through this instrument cities could now present their figures of carbon emission reductions and present them to the UNFCCC. The international activities of the cities and local governments started to get noticed by the UNFCCC as the following quote Christina Figueres, the UNFCCC executive secretary, illustrates: "the Mexico City Pact sends a key signal to the negotiations that it can indeed be done, and that millions, if not billions, of people around the world are ready to begin implementing climate change action" (Figueres, 2010).

This recognition was further accelerated during the Leaders Climate Summit organised by the UN Secretary General Ban Ki-moon in 2014. The Climate Summit was a summit outside of the UNFCCC framework that included "heads of state and government, business, finance, civil society and local leaders" aimed at catalysing action by the invited parties "for new commitments and substantial, scalable and replicable contributions…that will help the world shift toward a low-carbon economy" (UN, 2014a). This climate summit saw "the evolution in the concept of partnership among all stakeholders" (ICLEI, 2016: 5). Ahead of the Leaders Climate Summit Ban Ki-moon had appointed Michael Bloomberg, at that time President of the Board of the C40 Cities network, as his Special Envoy for Cities and Climate Change, a clear sign that the UNFCCC was

moving away from its multilateral focus and including a variety of stakeholders (UN, 2014b).

The enormous efforts by cities and local governments to get their important role recognised by the UNFCCC is reflected in the Paris Climate Agreement (PA) of 2015. The agreement explicitly mentions "to uphold and promote regional and international cooperation in order to mobilise stronger and more ambitious climate action by all Parties and *non-Party stakeholders*, including civil society, the private sector, financial institutions, *cities and other subnational authorities"* (PA, 2015. Emphasis added) in its preamble. The agreement furthermore states that it will foster "global, regional, national and subnational cooperation" (PA: 10) and it "welcomes the efforts of all non-Party stakeholders to address and respond to climate change including those of…cities and other subnational authorities" and invites the non-Party stakeholders to "scale up their efforts to reduce emissions" (Ibidem: 19).

Upscaling

The example of the Amsterdam circular economy is what Taedong Lee argues with "cities as policy laboratories" through which local policies can be scaled up to "upper levels in the hierarchy" of government (Lee: 14). The same can be said about Nijmegen, where the city faces a great problem with the air quality in the city due to the emissions of scooters. Alderman Tiemens declares that "there are hardly any standards" on the emission levels of scooters and that the EU decides on these standards (Tiemens). Through the Dutch ministry of foreign affairs and the city network of Polis they call for attention for this problem in the EU. Again, this is an example of how local experiences can lead to policy change at the higher levels of government.

The influence of the cities that have signed the Compact of Mayors is perhaps the best example of how local climate action can influence the top levels of government, because in the final draft of the Paris agreement the importance of local climate action has been recognised. In the Compact of Mayors the signature cities commit to great GHG emission reductions. Buenos Aires is one of the most active cities in the Compact of Mayors it has earned the Compact Compliant seal and won two prizes for their climate action, the sustainable transport award for the implementation of their BRT system and bike sharing program in 2013 (C40, 2013) and a prize for their solid urban waste system (C40, 2014; Pace & Miguens Campos).

The part above clearly shows that city and local government participation in climate change has created pressure on the multilateral negotiations to take further climate action and how local climate action can be scaled up to higher levels of political authority. It show that it has been done by establishing formal contacts of cities with other cities "and other international actors", as has been argued from the translocal perspective (Lee, 2010: 18). It furthermore shows that the claims by

multilayered and city diplomacy, that "state and city actors are part of a complex diplomatic environment" proves to be valid (Pluijm: 9). The question now remains how local policies can contribute to closing the emissions gap, the concluding part of this chapter will look into some of the policies implemented by the cities studied in the case-studies.

Potentials: direct jurisdiction over polluting sectors

One of the greatest strengths of cities is that they have direct jurisdiction over polluting sectors and are "empowered to make decisions and act swiftly, without waiting for approval from higher authority" (Manor: 3). According to Nerio Pace of Buenos Aires "cities have the capacity to come up with solutions a lot quicker than national governments" but recognises that national governments and cities will need to work together, because they control larger grids like the "national energy grid" (Pace & Miguens Campos). However, despite their smaller scale the direct jurisdiction of cities has a great potential of closing the emissions gap. This is well illustrated by the initiative of Buenos Aires to replace the regular lightning bulbs of the city public lightning with LED lights (Ibidem). This drastically "reduces the energy consumption and with it the greenhouse gas emissions" (Ibidem) of the city of Buenos Aires. The estimated amount of energy that will be saved is "higher than 40%" and can reach up to 80% (GCBA, 2014).

Another great example of the strength of direct jurisdiction over polluting sectors is the circular economy approach by the city of Amsterdam. As mentioned earlier, Amsterdam looks to create a circular economy to reduce its use of resources and GHG emissions. In this circular economy there will be "no waste, all products will be used in an endless technical and biological cycle" and the circular economy will be driven by "energy from renewable sources" (Amsterdam, 2015: 9). As mentioned, examples of this are "the production of biofuel out of sewer sludge" and "recycling of cellulose fibres to biocomposite" as construction material (Struker). This circular economy has great potential in reducing GHG emissions, and when successful it can be replicated on greater scale. This is where, according to André Struker, lies the great strength of local climate action. "You could consider Amsterdam as a living-lab or laboratory…the scale of a city is interesting because you will have volume" (Ibidem) states Struker. In this way you can show what problems cities encounter and this experience can be used when implementing policy on higher levels of government.

Conclusion

This research has shown that Cities have a great deal to contribute to global climate governance, they possess a great potential in reducing carbon emissions and thereby reducing a huge share of the emissions gap. This is best illustrated by the LED public lightning in Buenos Aires, which can save up to 80% in energy, and how Amsterdam can generate energy from renewable sources in their circular economy initiative. Considering this one can conclude that nation-states and cities should cooperate fighting climate change, since the multilateral approach by nation-states has not produced the desired results. Furthermore, the cities have shown that they can come up with pragmatic solutions to climate problems and that local climate action can be efficient through direct jurisdiction over polluting sectors.

The thesis has furthermore shown that the international activity of cities has created pressure for further climate action in the higher levels of politics. This is clearly demonstrated by the influence city lobbying, through their transmunicipal networks, has had on the UNFCCC and the content of the Paris Agreement. It shows that cities have become “prominent players in the international development cooperation area”, as argued by Bontenbal (2009b: 131).

The research has shown that cities get engaged in climate change for a plurality of reasons. Bulkeley's argument that processes of globalisation are not the sole explanation for city activity proves to be valid. However, it is shown that processes of globalisation play a very important role, the effects of economic globalisation through the liberal global market economy on the environment have made all mankind, including cities, aware of the issue of climate change, this has been the case in all three case studies.

The theory of city diplomacy proves to be a good perspective to explain the international activity of cities. This research has shown that the notion of two different spheres of politics by paradiplomacy is too state centric, as cities are very active in a field where nation-states tend to fail. However, the perspective of translocal relations has the best explanatory value on international activity of cities. It shows that cities establish formal contacts with other cities and other international actors to cooperate on the issue of climate change. This is best illustrated by the examples of the interactions of Buenos Aires with Curitiba and Bogotá for their BRT network, the turn to the EU by Nijmegen in order to finance their climate ambitions and its activity in the Green Capital network. Moreover it shows that in the cases of Amsterdam and Buenos Aires, Lee's hypothesis that well-connected Global Cities tend to be proactive on climate change also proves to be valid. Furthermore, it shows that cities can be seen as policy laboratories and local policies can be scaled up to higher levels in the political hierarchy.

However, as this research has shown the greatest obstacle for climate action is not the international legal system, but the international political economy. National states have been unable

to fight climate change effectively since negotiations have been paralysed by corporate and fossil fuel lobbies. Moreover, the dominant economic ideology of liberalism is a great obstacle for climate action because it does not allow national governments to intervene in the economy. Solutions to climate change by national states tend to be market conforming or market creating solutions. In this way, nation-states are looking to do as little harm to the national and global economy as possible. This is problematic because the economic activities of the present global economy are causing climate change.

The same tension is visible in local climate action as was illustrated by Nijmegen's solar panels scheme. However, promising steps are being taken by local governments as can be seen with the circular economy initiative by the city of Amsterdam. Cities have shown that they can create pressure for further climate action and upscale climate policies in higher levels of government as the Paris Agreement has shown. Cooperation with national governments is necessary however, since national governments have greater financial capabilities and jurisdiction over larger grids, like the national energy grids. Considering that climate change is caused by effects of modern economic globalisation, focusing solely on reducing GHG emission would not be enough. A true solution to climate change should include a drastic re-think on the global economic system will be necessary in order to change the wasteful use of the earth's resources and consumer patterns that contribute to the high GHG emissions.

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