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Disproportionate Realities: The Climate Justice Implications of Mitigation Policies Across Scales

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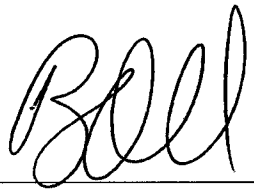

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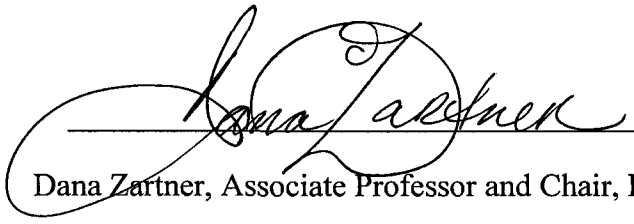

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ABSTRACT

Global climate change will have disproportionate effects on low-income and minority communities around the world producing important justice challenges. As national governments increasingly rely on local governments, civil society, and private transnational actors to establish and implement climate actions policies, it is important to assess whether and how these newly emergent actors can address these justice challenges. First this thesis examines concepts of justice in relation to climate change across different scales in order to develop a comprehensive conceptual framework of climate justice. This conceptual framework expands the scale of the international climate justice movement address local concerns. Further, the framework is used as an analytical tool for examining the justice implications of urban climate change initiatives in a database of 627 experiments within 100 global cities. The results reveal that the vast majority of climate experiments at the local-level are predominantly led by local governments. However, experiments led by community based organizations, NGOs, and private actors were much more likely to include climate justice concerns. As cities and local governments become leaders in implementing climate actions, concerns for climate justice should be included within the creation of climate policy.

KEYWORDS

Climate Change, Climate Justice, Climate Governance, Authority, Mitigation, Local

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LIST OF ACRONYMS:

C40 Group	Cities Climate Leadership Group
CCP	Cities for Climate Protection
COP	Conference of the Parties
EPA	Environmental Protection Agency (United States)
GHG	Greenhouse Gas
ICLEI	International Council for Local Environmental Incentives
INDC	Intended National Determined Contributions
IPCC	Intergovernmental Panel on Climate Change
LA21	Local Agenda 21
NAZCA	Non-State Action Zone for Climate Action
NGOs	Non-Governmental Organizations
SIDS	Small Island Developing States
UEC	Urban Environmental Conference
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
UN	United Nations
WMO	World Meteorological Organization

INTRODUCTION

The disproportionate realities of climate change are most clearly illustrated by the heightened number and increased severity of natural disasters and toxic environmental degradations which are experienced on the global scale. Stories continue to emerge of vulnerable and often helpless people and communities which are facing increasingly dire and unprecedented conditions from the destabilization of the earth's climate system. Communities around the world are confronted with severe impacts of climate change, such as, droughts, floods, wildfires, and other natural disasters on a daily basis (Tokar, 2013). Though these impacts are felt globally, they disproportionately affect the Global South which is considered underdeveloped, as well as low-income and minority communities across the globe living in vulnerable ecosystems. These vulnerabilities within these ecosystems are exacerbated since these communities have limited financial and technical resources to protect themselves

Although numerous initiatives from public and private actors have emerged, which aim to mitigate global anthropogenic climate change, environmental degradation continues to reach new and alarming levels each year. Scientists have produced compelling evidence that shows that the entire earth system is now operating outside of boundaries that are considered to be safe, meaning the future impacts of climate change are becoming increasingly unpredictable. Further, the scientific evidence available shows that the human quality of life will suffer substantially, leading to further degradation by the year 2050, if we continue on our current path (Hickmann, 2016). Further, these disproportionate impacts are not a new phenomenon, the Intergovernmental Panel on Climate Change (IPCC) report in 2007 stated that climate change could cause increases in malnutrition and consequent disorders; increased deaths, disease and injury due to heatwaves, floods, storms, fires and droughts; the increased burden of diarrheal disease; the increased frequency of cardiorespiratory diseases due to higher concentrations of ground level ozone; and, the altered spatial distribution of some infectious disease vectors (IPCC, 2007).

The global challenge has been whether we can develop an effective and equitable climate governance regime to provide a solution to the rapidly advancing issue of global climate change. The multidimensional issue of climate change demands cooperative political action across scales. Since the emergence of climate change as a global political issue, the climate governance regime has been unable to create a legal framework that will stabilize the climate system. However, after more than two decades of negotiations the global climate governance regime developed a new

legal framework which includes obligations for nearly all countries to take actions against climate change. The 2015 Paris Climate Agreement marks an important new phase of climate negotiations and a transition of authority to new actors across scales. Moving forward, national governments face the task of finalizing some of the critical details of the agreement including capacity building and transparency, technology transfer, and discussions of financial support between countries, before the agreement goes into effect in 2020. Principally, national governments need to strengthen their individual greenhouse gas (GHG) emission reduction contributions in the coming years in order for the collective mitigation contributions to meet the goal of "well below 2 C above preindustrial levels and pursuing efforts to limit the temperature increase to 1.5 C" (UNFCCC, 2015).

Given the difficulties of cooperation and implementation of climate agreements within the global climate governance regime between national governments, particularity between the Global North and South dimensions, a variety of transnational climate actors have emerged over the past decade. Specifically, a number of subnational governments have begun implement climate projects to evaluate the best practices for addressing climate change at the local and regional levels. Further, other actors such as, civil societies, non-governmental organizations (NGOs), and various private actors are either acting independently or helping to support the climate initiatives orchestrated by local governments. Over the past decade these transnational actors have become increasingly relevant in implementing climate actions. Due to the increasing urgency of mitigation actions and the new procedural framework set forth through the Paris Agreement, these transnational actors have become key players for establishing new mitigations goals and providing support for implementing those put forth by national governments.

However, what is missing from the discussion is how to address the disproportionate impacts of climate change on communities who are already socioeconomically vulnerable and politically marginalized. Addressing these questions of injustice within the global and local climate governance regimes should be fundamental within the establishment of new action and policy frameworks moving forward. Especially as transnational actors take on new authoritative roles, integrating climate justice principles into the construction and implementation of mitigation policies across scales is essential in order to equitably address climate change.

LITERATURE REVIEW

Since the United Nations Conference on the Human Environment in 1972, policy makers have primarily focused on constructing a strong global climate governance regime in order to prevent and cope with the global climate crisis. Over the past forty years the international climate regime has created over nine hundred multilateral environmental treaties, most of which have been aimed at addressing and preventing specific environmental degradations. The global climate governance framework has advanced significantly since its inception, though because of the complex nature of climate change and difficulties for international cooperation and consensus, further advancement has been difficult to achieve. For many years, scholars and policymakers have considered multilateral treaties to be the only method for dealing with climate change. However, over the past decade multilateral treaty making as the only means to tackle the problem of climate change has come under intense scrutiny (Hickmann, 2016). The recent emergence of new transnational climate mitigation and adaptation initiatives has sparked a rich literature involving the authority of these actors within the global climate regime.

There is a diverse body of literature that covers the global governance of climate change. Though the literature covers a variety of concepts, this literature review will focus on how the global climate governance regime has evolved over time. Specifically, this section will first review how the emergence of transnational actors contributed to the socio-political complexities of the climate governance regime. Further, demonstrating how the shift in the scale of authority from a multilateral approach to the inclusion of transnational actors has led to a reliance on transnational actors to establish and implement climate change mitigation actions. Second, this review will examine if and how the literature discusses climate justice implications of the transition in authority to transnational actors. In addition, it will consider the gaps in the literature's discussion and connection of justice within the newfound reliance on transnational actors.

Conceptualizing authority and global governance

The concept of 'global governance' has conflicting definitions within international political literature; generally scholars distinguish the term between an analytical and a normative understanding. Scholars within the normative perspective associate global governance pertaining to relations between states within the United Nations, in which the global community utilizes the international political framework to enhance coordination and cooperation between national

governments in order manage global political challenges (Hickman, 2016). In contrast, James Rosenau (1995) is largely responsible for building the analytical perspective. According to his expanded definition "global governance is conceived to include systems of rule at all levels of human activity – from the family to the international organization – in which the pursuit of goals through the exercise of control has transnational repercussions." Further, in 2000, Rosenau made the distinction between *governmen*t, which creates a framework of jurisdictional relations with states, and *governance*, which "occurs on a global scale through both the co-ordination of states and the activities of a vast array of rule systems that exercise authority in the pursuit of goals and that function outside normal national jurisdictions." Notably, within his analytical definition, authority within global governance regime is not limited to national governments, instead it creates new dimensions of authority across scales.

Additionally, Rosenau (1995), notes that there is no single organizing principle upon which global governance rely, rather it is the sum of a complex compilation of control mechanisms driven from an array of actors, historical events, and structural processes. For this reason, he argues that it is difficult to attribute a meaningful hierarchical structure of authority. The lack of hierarchical authority or the anarchical nature of global governance creates a disaggregation of authority, which allows for much greater flexibility, innovation, and experimentation in the developments of new authoritative actors. Generally, actors within global governance acquire legitimacy by enduring successful mechanisms of governance, which are more likely to evolve out of bottom-up rather than top-down process. Though broad, this concept of governance is foundational for understanding the precedent for the reconfiguration of authority within global climate governance. As this conceptualization is tacit within much of the literature regarding transnational actor's jurisdictional authority over climate action.

Shift in authority within the global climate governance regime

Traditionally scholars have examined global climate governance exclusively under the authority of international multilateral agreements negotiated by national governments through the United Nations Framework Convention on Climate Change (UNFCCC), with national governments as enforcers and secondary influencers. However, over the past few decades the global climate governance regime has experienced a significant horizontal transformation taking on a variety of forms beyond the multilateral framework. This transition is largely due to the

recent emergence of various transboundary climate governance initiatives created by subgroups of national governments, private sectors of various types, non-governmental organizations (NGOs), multinational and national corporations, and sub-national actors such as cities and regions. These actors are commonly referred to as transnational, private, non-state or sub-state governance (Betsill et al., 2015). For the purpose of this paper this collection of actors shall henceforth be referred to as transnational actors.

Within the politics of the UNFCCC the emergence of transnational actors has generally been ignored in favor of the traditional multilateralist approach. As Betsill et al. (2015) explained, 'multilateralists' have continued to focus on the design of intergovernmental agreements, and hold the assumption that a properly designed climate regime at the international level combined with national government implementation is all that is necessary in order to meet the challenge of climate change. In juxtaposition, 'transnationalists' are discouraged by the multilateral process, and sometimes ignore the process of the UNFCCC altogether, instead tending to pursue alternative multi-level forms of climate governance. The alternative pursuit of transnational actors for alternative climate governance seemingly may collectively produce a system of bottom-up climate governance. With the increasing complexity of climate change, many transnationalists believe that multilateral agreements are no longer sufficient to address the impacts of climate change within the current time frame and our current emissions trajectory.

The transnationalist approach emerged organically as a result of new transnational actors acting across international borders, who have been working in conjunction with the UNFCCC regime throughout the early 1990s. Over the past decade, there has been an emergence of scholars who have shifted their focus to the transition of authority over climate governance from the traditional multilateralist approach to the horizontal development of a transnational climate actors (Betsill et al., 2015; Bäckstrand, 2008; Hale and Rodger, 2014; Chan et al., 2015; Green, 2014; Hoffman, 2011; Andonova et al, 2009; Pattberg and Stipple, 2008; Abbott, 2012). The emergence of transnational actors within global climate governance is in part a response to the deadlock of multilateral climate negotiations, because of the difficulty for national governments to come to substantial and legally binding multilateral agreements. Further, some scholars attribute the emergence to a lack engagement from influential states, such as the United States' rejection of the Kyoto Protocol and multilateral treaties in general. From this perspective, the multilateral climate governance system lacks necessary collective leadership from influential

States with high historical contributions of GHG emissions, which is needed in order to advance the collective climate mitigation action on a multilateral level. Without such leadership, the results produced by multilateral negotiations, that are central to global climate policy-making, have been insufficient (Abbott, 2012; Bäckstrand, 2008).

Additionally, when states are able to agree to multilateral climate agreements they are usually non-binding, leaving national governments with little ability or incentives to effectively adopt and implement climate related mitigation policies. Which in turn creates a regulatory and implementation deficit of climate mitigation goals within national governments. These deficiencies are further exacerbated by a lack of economic and political resources at national and domestic levels (Hickmann, 2017). Ultimately, the multilateral climate agreements can only be as strong and vibrant as the domestic enforcement by national governments. The ability for multilateral agreements to be effective in preventing further environmental degradation is entirely dependent upon domestic monitoring, regulatory, and oversight capacities. Meaning that our current multilateral agreements are merely a framework for States to instruct their domestic actors to implement and enforce the multilateral agreements. There is an implicit global responsibility for national governments whose sub-nationals or corporations are inclined to act as leaders and engage in initiatives that bring the goals of the multilateral climate agreements to fruition (Bederman, 2010).

With the increasing complexity of transboundary environmental issues and global climate governance regime, the development of transnational actors has triggered a theoretical debate around the concept of authority within global climate governance. Some academics argue that transnational actors now operate with a number of new authoritative functions in global climate policy making, which were formerly reserved for national governments and international institutions (Betsill and Bulkeley, 2004, Bulkeley et al., 2012; Green, 2014). Although other scholars go further to argue that the multitude of global transnational initiatives have caused a relocation of authority from national governments to transnational actors. Further, arguing that transnational actors may be better suited to deal with the issue and impacts of climate change (Hoffmann, 2011). In contrast, Hickmann (2016) concludes that the addition of transnational actors does not weaken the power of negotiations and decisions made on the intergovernmental level, but rather strengthens the authority of the global climate regime. Suggesting that transnational actors are dependent on the regulatory climate frameworks created by the

UNFCCC. The majority of transnationalists agree on the importance of building a synergistic relationship between the transnational actors and the UNFCCC framework.

Importantly, the addition of transnational climate actors has created a vertical authoritative shift by integrating some of the complexities of social and economic issues that are interlaced with climate change such as, human rights, health, ecological diversity, economic inequality, and global trade; through the engagement of public and private actors (Bäckstrand, 2008; Hickmann, 2017; Abbott, 2012; Betsill et al., 2015). Moreover, Biermann et al. (2008) claims that the emergence of transnational actors in the global climate governance regime has led to a further *fragmentation* with the global climate governance architecture,[1] in which there is a weak linkage of communication and cooperation between the transnational and multilateral climate regimes. As opposed to a *universal* architecture, in which all authoritative entities are "subject to the same regulatory framework, participate in the same decision making procedures (or at least formally represented in such procedures), and agree on a core set of commitments." Further, the global climate regime is unlikely to reach a *universal* architecture within a reasonable time, ultimately concluding that there are advantages and disadvantages of the *fragmentation.* Further, it is important that the UNFCCC minimize the harms of such fragmentation in order to reduce inequalities in global decision making. Bulkeley et al. (2012) further notes the disconnect within global climate politics between local, national, and international actors who are operating on a parallel field. Further, mentioning the importance of recognizing the complex vertical linkage between state institutions and transnational actors within the new political spaces.

Other scholars recognize that building a linkage between multilateral and transnational systems could maximize the benefits and efficiency of both approaches (Betsill et al., 2015; Hickman, 2016, 2017; Hoffmann, 2011; Abbott, 2014; Green, 2014, Chan et al., 2015). Strategically, linking the two spheres could combine the strengths of both of each: the flexibility, innovation, and diversity of transnational action with the legitimacy and global scope of the UN climate regime. In addition, it could also help to counteract some of the major weaknesses of each that make it difficult to enact meaningful policy changes, such as, the lack of central direction of transnational actions and the slow pace and rigidity of the UN process (Chan et al.,

[1] Biermann et al. (2008) defines the global governance architecture as the "overarching system of public and private institutions, principles, norms, regulations, decisions making procedures, and organizations that are valid or active in a given issue area of world politics."

2015). Recently, the UNFCCC process along with the wider UN systems have been increasingly engaging transnational actors in an attempt to steer their initiatives toward public goals and assisting the multilateral agreements with the complex problems of mitigation and adaptation. During the 2014 UN Climate Conference in Lima, Peru, the UNFCCC launched the Non-state Actor Zone for Climate Action (NAZCA), which created an online data aggregator of climate actions on all levels, which aimed to acknowledge the initiatives of transnational actors. Additionally, the UNFCCC has developed other initiatives which have aimed to highlight specific transnational initiatives that are addressing mitigation and adaptation efforts, including the Momentum for Change and the Lima-Paris Action Agenda in the wake of COP21 (Chan et al., 2015).

Over the past twenty years the multilateral climate regime has used a procedural 'global deal model,' in which countries negotiate emission reductions targets together. This method of negotiations has been unable to create any effective or equitable agreements to prevents with the climate crisis. Importantly, the global political conditions have significantly changed with the 2015 Paris Agreements, the new procedural model relies on 'pledge and review,' in which countries are responsible for determining their own national emissions goals, known as Intended Nationally Determined Contributions (INDC). With this transition, many national governments have begun to shift their views of transnational actors from being alternatives or substitutes for national or intergovernmental climate commitments, now many national governments rely upon transnational actors as a means of implementing national pledges (Chan et al., 2015). In other words, the political transition has added a new dimension of authority by making transnational actors increasingly critical in order to implement the INDC emission reduction pledges.

While the majority of national governments have generally been supportive of the shift to a 'pledge and review' model and the inclusion of transnational actors within the new international climate regime, originally there were some concerns about whether the inclusion of transnational actors would result in additional burdens for developing countries. A survey done by the UNFCCC, in which national governments submit their formal negotiating positions, showed that there was broad support for transnational climate initiatives (Galvanizing, 2015). Though there is an abundance of transnational actors engaging on many spheres of climate action, imbalances in communication and coordination between them remains. Notably, the majority of transnational actors engaging in global and local climate initiatives are located in the

Global North (see Figure 1). In this regard, Chan et al. (2015) stresses the political opportunity of the new procedural commitment platform does not get lost by simply acting as a new platform. But rather acts as a catalyst for establishing a comprehensive framework for communication between transnational actors and national government actions. Building this into the platform is essential in order to address the twin goals of low carbon and climate-resilient development over the long term, while helping to address some of the questions of equity within the global climate regime.

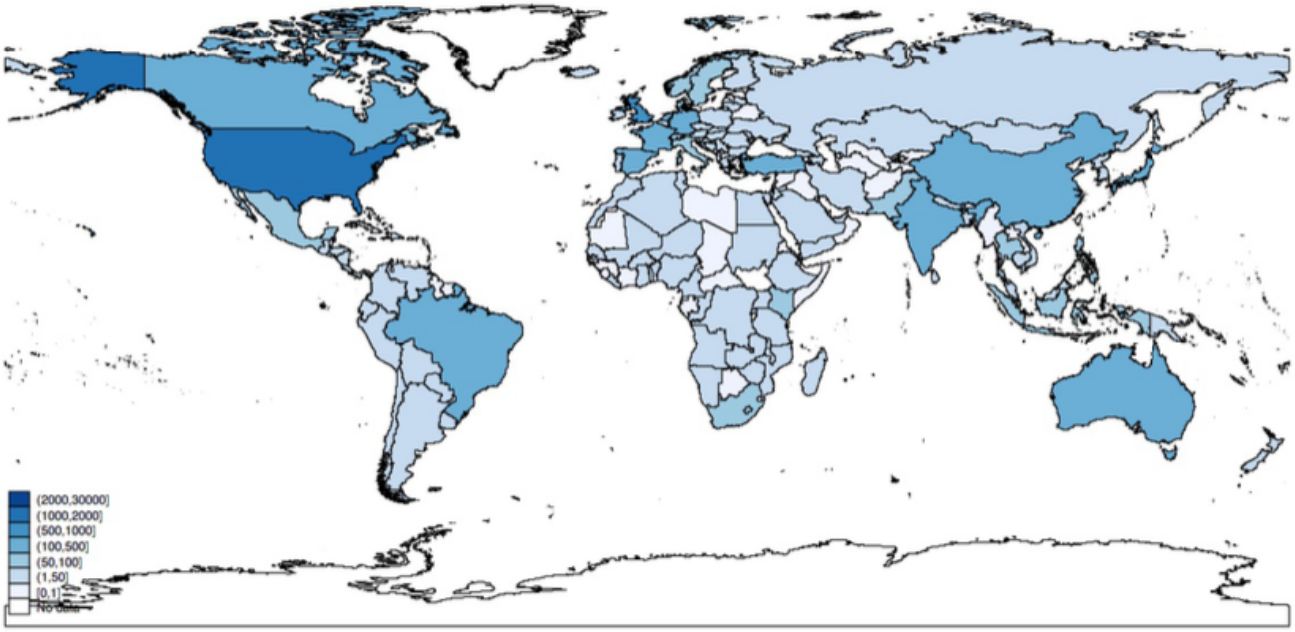

Figure 1. Total sub-state and non-state climate initiatives by country 1990-2012 (Roger et al. 2015).

There are two prominent themes of the literature the involve the presence and authority of transnational actors in the global climate regime. First, touches upon the importance of the emergence of transnational actors because of their unique ability to address the complex array of issues that encompass climate change. Second, is the need to construct comprehensive frameworks for advanced communication and coordination for transnational and multilateral actors. However the literature largely ignores issues of justice. With regard to the unequal involvement and influence of transnational actors, it becomes increasingly important to further study the potential climate justice implications of these global transitions in authority. Though some scholars within this field have touched upon the impacts of climate justice, overall the

justice implications of the shift of authority toward transnational actors have not been overtly addressed and should be developed further within the study of transnational actors.

Scales of transnational climate actors: local and beyond

One of the distinguishing characteristics of transnational governance is that it involves a diverse collection of non-state and state actors that possess a variety of different capacities of authority. Andonova et al. (2009) formulated topological networks in which transnational actors can be split into and identified as either a public or private transnational actor. Public transnational actors include sub-units of government, city or local governments, legislators, judges, or units of intergovernmental organizations acting quasi-independently of national decisions. Generally, public transnational networks are created through voluntary or informal processes compared to the rigid legal formalities within the multilateral system. On the other hand, private transnational governance networks are only composed of non-state actors, civil societies, and NGOs. Typically, these networks are formed through shared common goals as a method of establishing a collective means for reaching said goals.

Public transnational climate governance networks

Interestingly, public transnational actors tend to include actors across scales from global to local. Many of the prominent emerging public transnational actors within global climate governance consist of cities and local regions, as they have begun to develop stronger climate mitigation and adaptation initiatives. Following the 1992 Rio Earth Summit, the sustainable development movement which called for a transition to a "think globally, act locally" mentality, which was developed by Local Agenda 21 (LA21), drove the rapid development of transnational networks of subnational governments. Cities attempted to reframe climate change as an issue within other significant local agendas such as health, energy, and security to better incorporate climate change concerns into politics (Betsill et al, 2015). In 2010, the World Bank (2010) declared climate change to be an 'urgent agenda' for the world's cities. In particular, cities which have significant historical contributions of global GHG emissions due to the continuation of urban development coupled with their potential vulnerability to the impacts of climate change. A move which has brought cities into the forefront of global climate discussions. Further, it has provoked a sense of urgency and authority on the urban scale in order to address the challenge of

climate change action. By the early 2000s, climate change policy became an integral pursuit within the majority of progressive urban political agendas (Bulkeley and Betsill, 2013). Cities became critical players in implementing national and international policy initiatives to reduce GHG emissions. Nevertheless, some cities were able to develop a strong capacity and political will to overcome the challenges on their institutional capacity, but many others have faced a growing gap between the rhetoric of an urgent response and the realities of creating climate policy (Bulkeley et al., 2015).

Throughout the 1990s and early 2000s, a number of cities began to form cooperative transnational networks aimed at mitigating GHG emissions independently from national government decisions. These networks and pioneering cities have predominantly focused on providing resources, such as, information and technology sharing, access to best learned practices (Pattberg and Stripple, 2008), and have aimed to advance political will in order to develop climate policy and planning strategies that integrate evidence-based approaches, which are in coordination with the broader climate goals. These networks largely rely on municipal voluntarism to undertake the challenge of climate change, however, there has been a variety methods with the public network (Bulkeley and Betsill, 2013).

Notably, the Cities for Climate Protection (CCP) campaign developed by the International Council for Local Environmental Initiatives (ICLEI) Local Governments for Sustainability, which was formulated by cities across the globe through a bottom-up approach. As of 2009, there were over 1000 cities worldwide that have integrated climate change mitigation policies under the guidelines of the CCP decision making process (ICLEI, 2017). The CCP is based on the assumption that while the mitigation actions of a single local government may be relatively insignificant, with collective action local governments will be able to make significant contributions (Betsill and Bulkeley, 2004). The CCP network was the first to illustrate that these transnational networks are capable of transcending the boundaries of the formal intergovernmental, and are able to engage in authoritative mechanisms steering mitigation policy across scales (Andonova et al., 2009).

Many subnational governmental actors have developed transnational climate governance networks globally, which range on their authoritative abilities. These networks include the regional U.S. Mayors Climate Protection Agreement to the C40 Cities Climate Leadership Group (C40 Group), of which membership is reserved for the largest cities and is based on innovation.

Similar to the current multilateral agreements, these city networks rely on voluntary GHG emission reduction commitments from cities, with the main goal of enhancing the capabilities of local governments ability to address climate change (Kern and Alber, 2009).

Though there is a great deal of literature on the importance of the emergence of transnational actors within the global climate governance regime regarding authority, much of the literature does not deeply examine a connection to the climate justice implications. Further, the literature does not go into depth on the justice and injustice implications of the increased engagement and global reliance on transnational actors. Rather most of the literature on transnational actors first, focus on their existence as actors on a global level and the newfound authoritative functions across scales that come with the jurisdiction. Secondly, the importance of creating procedural frameworks which would enhance communication and coordination between multinational and transnational regimes. In order to promote practicality and efficiency of mitigating actions through more efficient implementation techniques and incentives across global scales. The research in this paper aims to examine the climate justice implications of the global shift in authority - which has led to a jurisdictional reliance upon local transnational actors within global climate governance regime.

METHODS AND ANALYSIS

This thesis first develops a conceptual framework of climate justice on both international and local-level concerns. This framework builds a comprehensive understanding of how scholars have traditionally defined climate justice across scales and how the movement developed from other social movements. The framework examines how the climate justice movement developed and evolved over time in the global climate regimes and what factors have influenced the movement and how is it utilized today. It also considers how climate justice is perceived and how it is utilized across, local, national, and international scales. It specifically establishes how climate justice perspectives vary across scales and whether the concept has been influential and integrated into climate change mitigation efforts.

This comprehensive conceptual framework on climate justice is used as an analytical tool to understand the potential outcomes of the turn toward local-level action as the primary mechanisms for climate action. First, by examining the justice implications in a database of 627

urban climate change initiatives within a sample of 100 global cities,[2] a sample which aims to represent a diverse collection across the Global North and South, in order to explore whether the concept of climate justice been integrated into local-government and other local and non-state mitigation initiatives. Further, the conceptual framework will be used to look how are the concepts of climate justice being implemented into local-level led mitigation actions. In order to properly analyze the climate justice implications of the new reliance on local and transnational actors, this paper will explore and compare different structures in place on the local-level government scale with a further consideration of who are the influential political actors. Particularly, who are the actors involved in the decision making process, do those interests generally concern the wellbeing of vulnerable communities or do they ignored climate justice.

This paper primarily consists of research from international and local environmental journal articles and books predominantly written by academics who have been educated in North America and Europe. It is important to note that there is a lack of academic sources that come directly from those who are implicated by the injustices of climate change. These articles have been found through extensive online keyword searches by means of numerous library databases. The majority of the articles come from International Studies or Policy publications; most of which have an overall focus on climate change. Each study has been read thoroughly and then analyzed in comparison to how other scholars have viewed the same or similar concepts. Further, close attention has been paid to whom the authors are in conversation with and/or citing in their bibliography, which provides a source for locating original or related information.

[2] Addis, Ethiopia. Ankara, Turkey. Athens, Greece, Atlanta, United States. Baghdad, Iraq. Bangalore, India. Bangkok, Thailand. Barcelona, Spain. Beijing, China. Belo Horizonte, Brazil. Berlin, Germany. Birmingham, UK. Bogotá, Colombia. Boston, United States. Budapest, Hungary. Buenos Aires, Argentina. Cairo, Egypt. Cape Town, South Africa. Caracas, Venezuela. Chennai, India. Chicago, United States. Dallas/Fort Worth, United States. Delhi, India. Denver, United States. Detroit, United States. Dhaka, Bangladesh. Fukuoka, Japan. Guadalajara, México. Hamburg, Germany. Hanoi, Vietnam. Ho Chi Minh City, Vietnam. Hong Kong, China. Houston, United States. Hyderabad, India. Istanbul, Turkey. Jakarta, Indonesia. Jeddah, Saudi Arabia. Johannesburg/East Rand, South Africa. Karachi, Pakistan. Khartoum, Sudan. Kinshasa, Congo. Kolkata, India. Kuala Lumpur, Malaysia. Lagos, Nigeria. Lahore, Pakistan. Lima, Peru. Lisbon, Portugal. London, UK. Los Angeles, United States. Madrid, Spain. Manchester, UK. Manila, Philippines. Melbourne, Australia. Mexico City, Mexico. Miami, United States. Milan, Italy. Minneapolis/St. Paul, United States. Monterrey, Mexico. Montreal, Canada. Moscow, Russia. Mumbai, India. Munich, Germany. Nagoya, Japan. Naples, Italy. New York, United States. Osaka/Kobe/Kyoto, Japan. Paris, France. Philadelphia, United States. Phoenix/Mesa, United States. Porto Alegre, Brazil. Quito, Ecuador. Recife, Brazil. Rio de Janeiro, Brazil. Riyadh, Saudi Arabia. Rome, Italy. Rotterdam, Netherlands. San Diego, United States. San Francisco/Oakland, United States. Santiago, Chile. Sao Paulo, Brazil. Seattle, United States. Seoul/Incheon South Korea. Shanghai, China. Shenyang, China. Shenzhen, China. Singapore, Singapore. St. Petersburg, Russia. Sydney Australia. Taipei, Taiwan. Tampa/ St. Petersburg, United States. Tehran, Iran. Tel Aviv, Israel. Tianjin, China. Tokyo/Yokohama, Japan. Toronto, Canada. Vancouver, Canada. Vienna, Austria. Warsaw, Poland. Washington, DC, United States (Castán Broto and Bulkeley, 2013).

The methods of analysis used in this paper are limited by the fact the topic of climate change is constantly in flux due to the ever-changing and complex developing nature of the issue. Additionally, there is limited research aimed at connecting climate justice to transnational mitigation actions, which follows through to address the true implications (in)justices. Further, the concept of climate justice is relatively new, and sometimes seen as synonymous with the concept of environmental justice on the local-levels scale. The research of this paper is limited to drawing connections between theories of climate justice in relation to the reliance of local-level jurisdiction, as this paper relies on secondary sources.

CONCEPTUAL FRAMEWORK OF CLIMATE JUSTICE

Concepts of justice and equity have consistently been critical components underlying the development of the international climate regime and have been key within the climate policy discussion across scales. Simultaneously, as climate change developed into one of the largest global political issues often at the forefront of climate policy discussions, many questions have arisen pertaining to justice. For example, at an international level, there is a noticeable distinction between rich, industrialized countries and poor, developing countries. Understanding the inherent differences between communities in connection with climate change is crucial for establishing and implementing just climate mitigation actions. Since the emergence of the global climate governance regime, demands for international climate justice through North-South equity and exemplary leadership from industrialized countries have been present (Okereke and Coventry, 2016). Though the concept of justice has been ingrained within climate policy negotiations, it is difficult to ascertain a clear conceptualization on the scope of climate justice beyond an international perspective. This conceptual framework seeks to build a comprehensive conceptual framework in order to broaden the scope of climate justice to be applicable to local scales alongside international. Further, it will demonstrate how it can be used as a tool in order to develop a method for analyzing the justice implications of climate mitigation policies on across scales.

In 1988, the IPCC was created by the United Nations Environment Program (UNEP) and the World Meteorological Organization (WMO), which established the first link between science and intergovernmental politics and demonstrated the widespread need for environmental equity between the Global North and South (Okereke and Coventry, 2016). The first report the IPCC,

released in 1990, was a crucial first step in creating a central platform for justice concerns to remain at the forefront of global climate negotiations through the language of data and science alongside social movements. First, it established that industrialized countries held specific responsibilities, discerning that domestic measures were required because "a major part of emissions affecting the atmosphere at present originates in industrialized countries where the scope for change is greatest." Secondly, the report emphasized that "emissions from developing countries are growing and may need to grow in order to meet their development requirements," and declaring that industrialized countries should cooperate with developing countries without preventing their ability to industrialize (Okereke and Coventry, 2016). The IPCC reports that follow have continued to emphasize and build upon these concepts.

Importantly, the IPCC's first report highlighted the challenges of reducing global emissions while allowing developing nations to continue to industrialize. The key challenge in global policy negotiations has consistently been how to build a platform that promotes equitable relations between Global North-South dimensions to address climate action and responsibility. This predicament of how to allow developing countries to industrialize under the confines of mitigating GHG emissions continues to be a central challenge between industrialized and industrializing countries at the multilateral level. Secondly, the report emphasizes the reliance upon domestic entities within industrialized countries to enact and implement global GHG emission reduction goals. This further establishes the importance of the recent shift in authority to transnational actors for integrating climate actions.

Following the development of the IPCC, concerns for justice became integral to constructing nearly every multilateral climate agreement. For example, this is reflected in the objectives of the UNFCCC (1992), which is the most widely ratified international environmental treaty. Though legally unbinding, it was able to construct a framework for creating future international treaties that address climate change in a manner that would take into account the differing needs and responsibilities within future climate policy. Notably, the UNFCCC developed the notion of "common but differentiated responsibilities and respective capabilities," which acknowledges that all states share a common goal to protect and preserve the climate system for present and future generations on the basis of equity. Additionally, the UNFCCC promotes cooperation and communication between all countries with the ultimate goal of implementing mitigation and adaptation methods for coping with climate change. Further, it

established some of the important terms of equity that have become fundamental within the climate governance regime, these include: "common concern for mankind," "per capita emissions," and the notion of "historical responsibility," (United Nations, 1992).

Early discussions of climate justice within the global climate regime mainly focused distribution and procedural justice within mitigation efforts on a global scale (Schlosberg, 2013). Generally, the concept of justice in terms of climate change comes from political philosophy, in terms of establishing a fair basis for the division of responsibilities for addressing climate change as well as obligations for future generations. Though such principles discuss how decisions should be reached, it mainly focuses on the consequences of (in)actions. On the other side, concerns have been raised on accountability and transparency of climate policies, opening a debate on how policy decision making can be made more equitable and legitimate through more democratic inclusion of those affected. These approaches to justice have been centered in the assumption that the international scale is the best way to address climate change, as it is a global problem (Bulkeley et al., 2013). The concept of climate justice has been framed in terms of either *distributional* or *procedural* justice. These characteristics are important for creating a frame of analysis to understand how justice can be integrated into policies and actions to combat climate change.

First, the concept of *distributional justice* in terms of climate justice can be understood in the terms of rights and responsibilities, generally to referring to mitigation. On one side, who has the *rights* to emit GHG emission and on the other who should take the *responsibility* for the repairing and preventing the dangers of climate change (Bulkeley et al., 2013). Ultimately, the concept is concerned with both the distribution of liability for mitigating climate change and the distribution of the adverse impacts (Maguire and Lewis, 2012). Generally, the debate has been divided in terms of Global North-South dimensions, in which the North should take responsibility for their industrialization and should bear the burden of their historical emissions. However, the debate becomes more complicated as countries in the Global South, such as China and India, are rapidly industrializing (Bulkeley et al., 2013). The way in which *distributional justice* is framed on a global scale does not address implications of how injustices are affecting countries and the communities within, it is more concerned with formulating an equitable approach within negotiating climate agreements.

Though the majority of debates on climate justice are centered around *distributional* justice*,* considerations of *procedural* justice have been lingering in the background. *Procedural* justice provides a platform for which those who will be most impacted by the impacts of climate change have the opportunity to be consulted and have their voices represented within negotiations and policy response measures (Maguire and Lewis, 2012). The establishment of rights for all to participate in decision making is a crucial component of climate justice. A just response to climate change requires putting those most impacted by climate change at the forefront of climate discussion and decision-making process (Bulkeley et al., 2013). This is necessary in order to provide a method of inclusion as well as a deeper understanding of the impacts and needs of those vulnerable countries from their own individual experience. Both these forms of climate justice have been focused on justice implications within the decision-making process. Meaning that the scope of climate justice on the global scale focuses on the interests of nation states and has not transcended into a means of action to counteract and prevent injustice that are felt by individuals and communities.

In contrast, the local-level micro impacts of climate change typically fall under the scope of other social justice movements, namely the environmental justice movement. Though the two movements are deeply interconnected on the root concerns for justice, they typically operate within different spheres and scales of influence. The climate justice movement was born organically from the growing concerns for the expected future impacts and consequences of climate change and the apparent associated inequalities. Climate justice developed from and expanded upon many of the principles of environmental justice and other general concepts of social justice, however, the movement has been confined to addressing issues on a global scale. Academics have begun to argue that proper climate justice needs to transcend the scale of global multilateral negotiations, through an expansion of the definition.

In order to fully conceptualize climate justice, it is important to understand the interconnectivity within a variety of social movements, particularity the long history of social movements that led to the environmental justice movement in the United States. This is important as the environmental justice movement creates a direct link to the battles of poor and minority communities, due to their experiences of inequitable environmental devastation and exclusions from decision-making (Schlosberg, 2013). Ultimately, it focuses on the disproportionate injustice of environmental degradation faced by low-income and minority

communities. More often, the environmental justice framework is used to discuss climate injustices on local scales, though the environmental justice framework is expansive it does not reach the scope of which the climate justice framework is capable.

Historical implications of the environmental justice movement

Historically, in the United States the environmental movement has held deep connections to the racialized interests of separation and power. From the onset, the environmental conservation movement arose from a Euro-American concern for protecting the purity of wild places in the natural world. Through the late 19th century, the majority of national parks and wild places were being cleansed of Native Americans in order to be purified for the benefit of white tourists. Famously, John Muir envisioned national parks to be a pristine space of wilderness, without domesticated animals nor Native Americans. In 1868, he began to write unfavorably about Native Americans, describing them as irregular and comparing them to dirty animals who did not belong in the wilderness and ruined its inherent purity. At one point, he wrote “a strangely dirty and irregular life these dark-eyed dark-haired, half-happy savages lead in this clean wilderness." Muir continually contrasted Native Americans with wilderness, writing of them as polar opposites in relation to the pristine lands in which they lived (Merchant, 2003). Muir’s popular convictions about nature constructed an ideological view of a fundamental separation between humans and nature. Ultimately, painting the environment as an object of human enjoyment, particularly intended for white people. As a result, in the United States the underlying concept of nature has been exclusionary and privileged.

In the turn of the nineteenth century, the environmental conservation movement emerged in conjunction with the racial separatist movement that was becoming more popular within cities. Jeffrey Romm (2002), an environmental policy advocate, believed that the two movements were in separate socio-political spheres, but were interwoven in a way in which created lasting negative consequences for people of color in relation to the environment. Further, Romm claimed that there is a coincidental order to the environmental injustices evident through the solidification of institutional racism, most notably the 1896 Plessy v. Ferguson decision of ‘separate but equal,’ which legitimized racial segregation in the United States. Meanwhile the conservation of nature effectively privatized common land by reducing the access and reserving ownership for white people. There is a deep racial and colonial history embedded within the

environmental movement emanating from the United States, both through the commodification of natural resources and privatization of land for the exclusive use and enjoyment of white people.

The environmental justice movement was organically built through the compilation of hundreds of local-level social and environmental incidents of injustice. Many observers note particular social movements, through the 1960s and 1970s that linked civil rights and environmental concerns, as fundamental to the formation of the environmental justice movement. A few civil rights groups, churches, and environmental leaders strived to call attention to the environmental injustices that were disproportionately affecting local low-income communities of color. An example of this is when Reverend Martin Luther King Jr. travelled to Memphis in 1968 to support sanitation workers who were on strike for higher wages and better work conditions, during which time he was assassinated. The sociologist Robert Bullard points to the African American student protests following the drowning death of an eight-year old girl in a landfill in a residential neighborhood in Houston, Texas in 1967. Additionally, in the 1960s, the beginning of the United Farm Workers battle against poisoning from pesticides in the workplace that affected predominantly Latin American communities - a battle that is still being fought today. In 1971, the Urban Environmental Conference (UEC) tried to expand the way the public defined environmental issues to focus on the specific environmental issues that plagued urban minority groups (Cole, 2001). These are some of the first successful movements that created links between the environment and social justice concerns. In spite of the early attempts through the 1960s and 1970s to link together common concern for environmental and social issues, they largely failed to prevent environmental inequality faced by low-income and minority communities.

Most scholars and activists point to the 1982 protests by African Americans against the disposal of PCB-tainted soil in a new landfill in Warren County, North Carolina, as the beginning of the movement. The incident began in the summer of 1978, when a waste hauling company drove tanker trucks along state roads in rural North Carolina, began illegally dumping PCB-contaminated liquid into the soil along the shoulder of the road. This method of disposal was ordered as a cost saving measure for the company and they only dumped the toxic substance at night as to avoid detection since they knew it violated the Toxic Substance Control Act. Within two weeks, they managed to contaminate 240 miles of soil along the rural road. Since the

toxic waste contaminated state land, it became the responsibility of the state to remediate the issue. The state of North Carolina quickly devised a plan to construct a landfill in rural Warren County. The announcement of the disposal triggered strong resistance from the county residents for concern over contamination of their groundwater and potential threat for future economic development. The residents along with the Environmental Protection Agency (EPA) unsuccessfully fought for three years to try to prevent the construction of the landfill (McGurty, 2009).

In the summer of 1982, the state began construction on the landfill. The residents decided to carry out collective action by holding demonstrations and protests at the landfill site; they felt politically and economically disenfranchised and felt that sitting in protest was their last option. The rationale for their opposition to the landfill shifted, as the protesters began to argue that the county was selected because the community was predominantly African American and of low-income. The protests drew a lot of attention from a number of civil rights leaders with authority and power at the national level. Ultimately, these protests only delayed the development but did not prevent the landfill from being constructed. However, the protests gained a lot of media coverage which resonated deeply with many other poor communities of color facing similar environmental injustices. In 1993, the state of North Carolina acknowledged an emerging crisis in Warren County because one million gallons of groundwater had become contaminated underneath the landfill, which had the potential to spread to the larger system. The power of the environmental justice movement allowed citizen participation within the decision-making process on how to handle the crisis (McGurty, 2009). Finally, in 2003, twenty years after the initial incident, the negotiations between citizens and the state lead to a decision in which the contaminated material would be removed and processed in an environmentally friendly manner. Though there were many times in which citizens challenged the inequity of environmental decisions and built a connection between environmental and social oppression, the events of Warren County were important as they helped solidify the influence of the environmental justice movement (McGurty, 2009).

Many academics consider the aftermath of Warren County to be the tipping point when the civil rights and environmentalist movements merged to create the environmental justice movement. Further, the incident brought up many questions within the United States concerning equitable distribution of environmental risks and procedural inequalities associated with those

risks. A number of scientific studies interested in the distribution of environmental risks and climate-related vulnerability began to study how minority and low-income communities are affected (Schlosberg, 2014).

In 1994, in response to the growth of the environmental justice movement, President Bill Clinton established Executive Order 12898, which aimed to address environmental justice in minority and low-income populations. The order directed all federal agencies to "make achieving environmental justice part of its mission by identifying and addressing, where appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States," (Clinton, 1994). By this point the environmental justice movement had significantly influenced environmentalism through many socio-political spheres including, governmental agencies in charge of environmental legislation, environmental organizations, and groups within the United States. The traditional founding narrative of environmentalism shifted from the original exclusionary ideology of nature to a more inclusionary connection between humans and nature (McGurty, 2009).The environmental justice movement eventually evolved into more than just a merger between civil rights and environmentalism, it now encompasses an expansive array of concerns within social and economic justice movements including: labor rights, occupational health and safety, gender equality, indigenous rights, and general public health (Agyeman et al., 2012).

Conceptualizing scales of the climate justice movement

Over the past two decades climate justice has become a key concept in the discussion of climate change, particularly as concerns have shifted from mitigating GHG emissions to adaptation methods needed to cope with the inevitable impacts of climate change. Much of the climate justice discourse evolved from the principles of the environmental justice movement, but the new climate justice framework has vastly expanded upon original principles of justice (Schlosberg, 2013). Though principles of equity have been key to the development of the global climate governance regime, the justice implications of climate change have not been formally recognized. This has led to an emergence of climate justice networks, that aim to reframe climate change as an issue through the lens of justice rather than the language of *vulnerabilities* and *disproportionate burdens.* Both of terms frame the disproportionate impacts of climate change

through scientific measures rather than social. Using the scientific language of *vulnerability* to addresses how the climate system and communities will react to the impacts does not provide a just method for handling the impacts. The fundamental concept of justice aims to "ensure fairness for all, through the operation of mechanisms designed to remedy injustice," (Maguire and Lewis, 2012).

The climate justice movement developed through grassroots bottom up approach, as a number of environmental and other social justice groups began to apply the principles to the disproportionate impacts of climate change felt by low income and minority communities. The first concept of climate justice was introduced by San Francisco Corporate Watch group (Corpwatch) in the 1999 report *Greenhouse Gangsters vs. Climate Justice*. The report examined the disproportionate political influence of the petroleum industries, and provided the first definition of climate justice (Tokar, 2013). The members of Corpwatch were active leaders within the environmental justice movement, and a leader within a coalition of international movement organizations[3] who banded together to form the International Climate Justice Network (ICJN). In 2002, the ICJN developed the Bali Principles of Climate Justice, a comprehensive global framework on the parameters of climate justice. It consists of 27 core principles, that aimed to "begin to build an international movement of all peoples for Climate Justice," (Bali, 2002; see Appendix A and Table 1).

These principles of climate justice were developed through a bottom-up approach, further the Bali Principles are the first accepted declaration that globally redefined climate change from the perspective of justice for humans and the environment (Schlosberg, 2013). As a blueprint, the Bali Principles used the Environmental Justice Principles, developed at the 1991 People of Color Environmental Justice Leadership Summit in Washington, DC. The preamble of the Bali Principles points to industrialized countries and transnational corporations as the primary actors responsible for climate change. Further, acknowledging that the impacts of climate change are disproportionately affecting the health, sovereignty, and security of Small Island Developing States (SIDS), women, youth, coastal people, local communities, indigenous peoples, fisherfolk, poor people, and the elderly (Bali, 2002). However, these principles give an idealist perspective

[3]CorpWatch, US, Friends of the Earth International, Global Resistance, Greenpeace International, groundwork, South Africa, Indigenous Environmental Network, North America Indigenous Information Network, Kenya, National Alliance of People's Movements, India National Fishworkers Forum, India, OilWatch, Africa, OilWatch International, Southwest Network for Environmental and Economic Justice, US Third World Network, Malaysia World Rainforest Movement, Uruguay (Bali, 2002).

of what climate justice should look like in an ideal world. The realities and complexities of the global political system mean that there is often a disconnect between the rhetoric and the process of implementing the principles of climate justice into decision making and climate action.

The popularity of climate justice continued to expand in during the United Nations 2007 annual climate conference in Bali. Members of the ICJN and a large number of international groups gathered and unified to represent the interests of those communities that were disproportionately affected by the inaction within the global climate governance regime. From this event, a more formal climate justice network emerged with the slogan "Climate Justice Now!" By 2010, the network included more than 750 international organizations, including a number of movements from the Global South. Over the past few years climate justice has come to include a vast number of justice concerns, which include protecting the rights of minority and indigenous groups, calling on the prevention of the development of unsustainable polluting industries, and fight basic human rights for those most vulnerable to the impacts of climate change (Tokar 2013; see Table 1).

The concept of climate justice should be considered in multifaceted terms as it encompasses and expands upon a number of social justice movements, namely, environmental justice, distributive and procedural justices, remedial justice, economic justice, health justice, energy justice, social justice, and a variety of other social movements. The justice implications of climate change are inexplicable complex in nature. Thus, a consideration of a large range of justice concerns is needed, as no one theory is capable of responding to the multifaceted justice concerns that arise from climate change. Further, collectively these justice movements will be able to address the causes and impacts of climate change through a more expansive framework (Maguire and Lewis, 2012). A fair response to response to climate change should be guided by three major principles, avoiding harm, taking responsibility for future changes, and putting the interests of the least vulnerable in order to ensure a just redistribution of benefits in line with theories of social justice (Bulkeley et al., 2013).

Movements	Core Principles of Climate Justice
Greenhouse Gangsters vs. Climate	- Address the root cause of climate change by holding corporations accountable. - Supporting communities impacted by the effects of pollution and impacts of climate change.

Justice (1999)	- Support just transition from fossil fuels through environmental justice principles - Challenged corporate interests
Bali Principles of Climate Justice (2002)	- Principle 5: demands that communities, particularly affected communities play a leading role in national and international processes to address climate change. - Principle 7: recognition of a principle of ecological debt that industrialized governments and transnational corporations owe the rest of the world as a result of their appropriation of the planet's capacity to absorb greenhouse gases. - Principle 9: protects the rights of victims of climate change and associated injustices to receive full compensation, restoration, and reparation for loss of land, livelihood and other damages. - Principle 12: affirms the right of all people, including the poor, women, rural and indigenous peoples, to have access to affordable and sustainable energy. - Principle 16: committed to preventing the extinction of cultures and biodiversity due to climate change and its associated impacts.
Climate Action Now! (2007)	- Reduce consumption in Global North. - Responsibility of Global North to financially support Global South based on historical responsibility principle. - Leaving fossil fuel in the ground and supporting renewable energy and energy efficiency. - Rights based resource conservation, enforcing Indigenous land rights, and sovereignty over natural resources. - Promoting of sustainable farming and food sovereignty.

Table 1. Development of the core principles of climate justice summarized (Tokar, 2013; Bali 2002).

Though the principles of climate justice have vast potential to unite a wide variety of social movements around the world, many groups engaged in local struggles against new energy developments still identify rather loosely with the climate justice movement. Though the climate justice movement has gained a momentum over the past decade, the concerns remain centered on justice concerns on the global level and have not explicitly transitioned into the local-level climate action area. In moving forward, "we should remind ourselves of the most important features of a future climate justice politics: in thinking locally, nationally and globally, and also acting in each sphere with the appropriate analysis, strategies, tactics and alliances," (Tokar, 2013). It is imperative that the scale of climate justice expands from global concerns to begin to infiltrate local-level politics in order to address climate injustices felt by individuals and communities.

FINDINGS

Potential for strong local-level climate governance mitigation action

With the new reliance on transnational actors within global climate governance, cities have begun to shape the trajectory of climate actions and policies. Local governments, especially those in urban areas, are in a unique position for addressing the complexities of climate change. A large portion of GHG emissions are produced with urban areas, particularly in high income cities residing predominantly within the Global North. Additionally, cities in the Global South are particularly vulnerable to the impacts of climate change (Sippel and Jenssen, 2009). Due to climate change, cities will increasingly experience extensive damages from superstorms, earthquakes, tsunamis, and tornados. Worldwide, coastal cities are vulnerable to flooding from sea-level rise due glacial melting. Even the lowest estimates of sea level rise would flood large portions of major cities, forcing millions of people to permanently resettle and present large global economic impacts. Further, cities have a major risk of potable water shortage, as many rely on seasonal accumulation of snowpack or glacial melt to source their water. Additionally, climate change presents a number of health concerns from toxic pollutants from waste to smog and particulate matter in the atmosphere (Barnosky et al., 2013). These climate impacts are currently disproportionately affecting low-income and minority communities across the globe who are already disenfranchised politically and economically. Urgent policy attention needs to develop in order to help address these disproportionate climate injustice concerns.

Addressing climate change requires an exceptional amount of cooperation between countries, arguable cooperation and communication between different levels of government and other transitional actors is even more important. With the transition of authority within the global climate regime, cities are now regarded as a crucial part of the response to climate change. Moreover, local governments are in a unique position for addressing the emerging issues of climate change. Though local policy is constrained and sometimes dictated by higher levels of government, local governments are exceptionally qualified to address the specific climate and social realities of life at the local level (Sippel and Jenssen, 2009). For this reason, local governments have a strong potential to address the plethora of injustices created by the impacts of climate change that may not be addressed by more broad levels of governmental policies.

Developing a strong climate governance regime that integrates climate justice concerns on a local-level scale is important for developing a future equitable and sustainable climate

mitigation action. Further, cities have the potential to be critical actors in creating norms for incorporating climate justice principles into climate actions, especially as cities are becoming more important authoritative players within the global climate governance regime. First, local authorities hold a number of responsibilities for regulating entities such as public transportation, land use planning, and other domestic industries which are essential for implement mitigation actions. Second, local governments are at the closest policy level to the people, thus providing them with the capability to mobilize support for sustainable types of economic and social transformations necessary to promote just emission reduction goals and inclusive adaptation measures. Third, the establishment and implementation of localized climate policies allows the approach to be tailored and specific, based on local needs and expertise. Finally, climate actions in cities can act as a testing ground for creative and experimental climate policies (Sippel and Jenssen, 2009), which if successful could help provide key information for the development of effective and just climate mitigation policies.

Additionally, though local mitigation effort may only lead to small emission reductions, globally significant benefits will only be achieved through collective mitigation action from cities and national governments around the globe. Within cities there are specific things which motivate them to create and implements climate actions. Sippel and Jenssen (2009) found that economics, livability, political and cultural factors, and perceived vulnerability are typically what motivates local governments to implement climate change related policies. Virtually all local led climate protection actions, center around creating the most cost effective and economically beneficial policies. Often this focuses on the short-terms economic concerns and generally overshadow the long-term climate justice implications. Particularity as the impacts of climate change are still perceived as a problem for the future. However, when cities experience first-hand the impacts of climate change they are more likely to put mitigation and adaptation measure as part of their urgent policy agenda.

Justice implications in a database of local urban climate experiments

In looking at transnational climate mitigation actions it is difficult to ascertain the (in)effectiveness of the initiative. As it is not often possible to directly observe the true effects of transnational initiatives, as there is no universal standard for measuring the effectiveness of climate actions (Michaelowa and Michaelowa, 2017). Further, the majority of transnational

climate actions that have been analyzed are mostly in the Global North and primarily focus on the effectiveness of climate actions within specific case studies. There have been very few studies on the justice implications of climate mitigation actions by transnational actors. The majority of studies involving concerns for justice are in relations to adaptation actions as in nature they create a direct link to concerns for justice.

In order to address if climate justice is being integrated into local-level climate governance and transnational actions, this section will look at how often justice is articulated in climate actions and projects from a database of global cities created by Castán Broto and Bulkeley (2013). The initial data was gathered between June 2009 and June 2010, through a review of policy literature, academic sources, websites, which focused on identifying 'climate change experiments' or purposive climate projects that seek to develop a trial or learning method in relation to preventing climate change in those cities. The data was collected in five languages (Spanish, French, German, Portuguese, and English), each city was investigated with roughly the same amount of time as a means of providing equal coverage. The sampling included climate actions both from the public sectors of local governments and the private actions of non-state actors residing within the city. In each city, both adaptation and mitigation experiments were recorded in the database. Importantly, the study also recorded whether each initiative made *explicit* consideration to social or environmental justice concerns. To be considered as explicit concern for justice, the initiatives needed to be framed explicitly in relation to concerns for justice or fairness, which included measures to address any perceived social, economic, or environmental inequality.

The study included 627 urban climate change experiments within a sample of 100 global cities, a sample which aims to represent a diverse collection of cities across the Global North and South. The concept of climate change experiments is based on the notion of emulating a laboratory experiment, in which the climate interventions try new ideas and methods to establish potential best practices. In order to be considered a climate experiment, the action must be purposive and strategic with a goal of capturing new information and have the purpose of mitigating GHG emission or implementing adaptation measure to cope with the impacts of climate change. The database was divided into six sections, one for each of the five sectors of

climate mitigations (urban infrastructure,[4] built environment,[5] urban form,[6] transportation,[7] and carbon sequestration[8]) and one for the adaptation experiments (Castán Broto and Bulkeley, 2013). Within the sample, 551 (about 88 percent) of the experiments involved mitigation efforts, whereas only 79 (about 12 percent) involved adaptation initiatives (Bulkeley et al., 2013).

Additionally, the study shows 495 experiments (about 79 percent) began after 2005, when the Kyoto Protocol entered into force, whereas only 5 percent of the experiments began prior to the adoption in 1997 (Castán Broto and Bulkeley, 2013). This suggests that either progressive efforts on the global climate governance scale either promote an increased interest in climate actions within cities or that the actions from cities are integral to implementing the climate goals of multilateral climate agreements. Further, the study observed that climate change experiments are not confined to specific regions in the Global North (see Figure 2). The study looked at the distribution of urban climate experiments between 'more developed,' 'less developed,' and least developed' nations. The results were similar to the distribution of cities within regions, showing that 8 experiments (about 2 percent) were in cities in the least developed regions, 297 experiments (about 46 percent) were in less developed regions, and 328 (about 52 percent) were in more developed regions – the results show statistical correlation that these urban climate experiments are not confined to any specific region (Castán Broto and Bulkeley, 2013).

[4] Alternative energy projects, landfill gas capture, alternative water supply, collection of waste for recycling or reuse, energy and water conservation, and network demand reduction measures (Castán Broto and Bulkeley, 2013).
[5] Use of energy-efficient materials, energy efficient design, building-integrated alternative energy and water supplies, New-built energy and water-efficient technologies, retrofitting energy and water-efficient technologies, energy and water-efficient appliances, and building-integrated demand reduction measures (Castán Broto and Bulkeley, 2013).
[6] Urban expansion and suburban development, new urban development, reuse of brownfield land, neighborhood and small scale urban renewal (Castán Broto and Bulkeley, 2013).
[7] New low-carbon transport infrastructures, low-carbon infrastructure renewal, fleet replacement, fuel replacement, fuel switching, enhancing energy efficiency, mobility demand reduction measures (reducing travel), mobility demand enhancement measures (alternative means of travel), (Castán Broto and Bulkeley, 2013).
[8] Urban capture and storage, urban tree planting programs, restoration, preservation, and conservation of carbon sinks, carbon offset schemes (Castán Broto and Bulkeley, 2013).

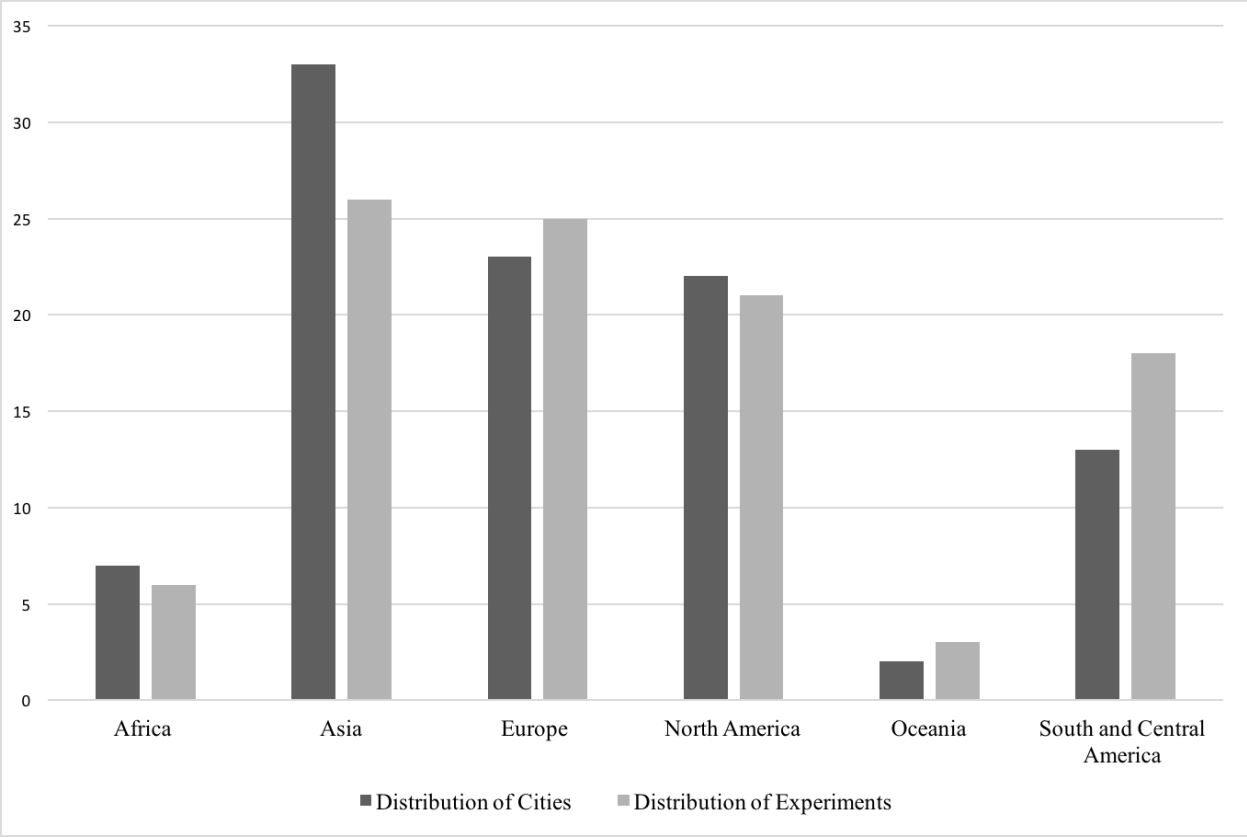

Figure 2. Comparison of the frequency distribution of cities and experiments in different world regions (Castán Broto and Bulkeley, 2013).

Importantly, the results show that local governments play a key role in leading the initiation of climate experiments – about 66 percent. However, other actors such as private and civil societies be playing an increasingly important role within the climate experiments (see Figure 3). In the database, 296 of the experiments (about 47 percent) involved some form of formally recognized partnership between actors at different governance levels, either between local, regional, and national governments or between governments, civil societies, and private actors (Castán Broto and Bulkeley, 2013). These partnerships are important for local governments and other transnational actors because they help to promote actions through the facilitations and integration of multiple actors. Further, these networks create essential platforms for sharing information and distributing responsibilities to the actors most capable of establishing and implementing the necessary actions. However, the result show that local governments are

more likely to operate outside of partnerships – at 239 experiments (about 38 percent; Castán Broto and Bulkeley, 2013).

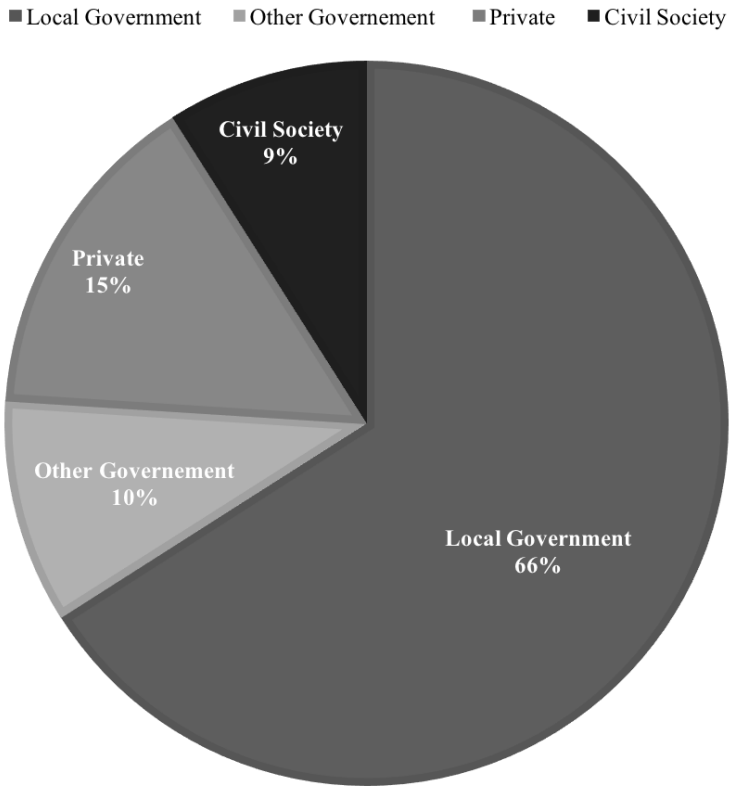

Figure 3. Distribution of frequency of different types of actors leading urban climate change experiments (Castán Broto and Bulkeley, 2013).

Notably, when concepts of justice were analyzed within the experiments, very few of them considered justice in explicit terms. Within the total mitigation experiments in the database, only 131 experiments (about 24 percent) explicitly mention justice issues. The results showed that justice concerns were most frequently mentioned in North America, which is unsurprising considering the history of the environmental justice movement in the United States. Further, experiments led by community based organizations, NGOs, and private actors (56 percent, 35 percent, and 31 percent respectively) were most likely in explicitly include aspects of justice – while local governments made less frequently made explicit mentions of justice issues (Castán Broto and Bulkeley, 2013). It is important to note that these findings establish whether justice is

explicitly mentioned with the climate experiment, it does not establish the climate justice implications of the policies in practice.

The results from this database show that though justice may be explicitly mentioned within some of the climate experiments, the majority of the experiments do not address issues of climate injustice. Further, it should be acknowledged that the majority of the climate experiments are being led by local governments, but they are currently the least likely to integrate explicit justice concerns into climate actions independently. Justice concerns are more typically addressed by civil societies, NGOs, and other private actors, which often provide supplementary climate actions alongside local governments. Unfortunately, immediate economic and political concerns are generally considered before or instead of consideration for the justice implications of said actions.

CONCLUSION

Though climate justice concerns have become a key on the global level within the global climate governance regime, specifically in negotiations between national government over equitable climate actions, the principles have yet to transcend to address local-level issues of injustice. Instead, local-level concerns for climate injustice are more often framed through the principles of specific social movements, namely the environmental justice movement. However, due to the complexity of climate change and the vast scope of social justice concerns which climate justice encompasses, reframing local concerns for injustice through the concepts and principles of climate justice could be beneficial for addressing the inevitable impacts of climate change through more just means. Further, moving forward with climate politics, it is essential that the communication and coordination between local, regional, national, and international actors continue to develop in order to achieve a more effective and just means of establishing and implementing climate actions.

Particularity, as authority in the global climate governance regime continues to transition toward local-level transactional actors, it has become increasingly important that local-level climate actions broaden concerns to explicitly include principles climate justice. Specifically, in regard to local-level mitigation actions, as they could exacerbate the disproportionate impacts already faced by low-income and minority communities. Additionally, due to the unique abilities of local governments to address climate change through implementing climate actions which are

targeted at the specific concerns faced by their local community and the transition of authority to transnational actors, local governments will be important players in advancing the politics of climate change. Thus, integrating principles of climate justice into the development and implementation of climate policies will be key moving into the future.

Finally, the justice implications of local-level climate actions need to be analyzed in further detail through the concepts of climate justice. There are very little studies that overtly address the justice implications of mitigation policies or other climate actions led by transnational actors. Further research should look at the climate justice implications of transnational climate actions in practice to address how low income and minority communities are being affected by such action. This field of study will become increasingly important as local governments continue to lead the fight against climate change.

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APPENDIX A.

Bali Principles of Climate Justice

We, representatives of people's movements together with activist organizations working for social and environmental justice resolve to begin to build an international movement of all peoples for Climate Justice based on the following core principles:

1. Affirming the sacredness of Mother Earth, ecological unity and the interdependence of all species, Climate Justice insists that communities have the right to be free from climate change, its related impacts and other forms of ecological destruction.
2. Climate Justice affirms the need to reduce with an aim to eliminate the production of greenhouse gases and associated local pollutants.
3. Climate Justice affirms the rights of indigenous peoples and affected communities to represent and speak for themselves.
4. Climate Justice affirms that governments are responsible for addressing climate change in a manner that is both democratically accountable to their people and in accordance with the principle of common but differentiated responsibilities.
5. Climate Justice demands that communities, particularly affected communities play a leading role in national and international processes to address climate change.
6. Climate Justice opposes the role of transnational corporations in shaping unsustainable production and consumption patterns and lifestyles, as well as their role in unduly influencing national and international decision-making.
7. Climate Justice calls for the recognition of a principle of ecological debt that industrialized governments and transnational corporations owe the rest of the world as a result of their appropriation of the planet's capacity to absorb greenhouse gases.
8. Affirming the principle of ecological debt, Climate Justice demands that fossil fuel and extractive industries be held strictly liable for all past and current life-cycle impacts relating to the production of greenhouse gases and associated local pollutants.
9. Affirming the principle of Ecological debt, Climate Justice protects the rights of victims of climate change and associated injustices to receive full compensation, restoration, and reparation for loss of land, livelihood and other damages.
10. Climate Justice calls for a moratorium on all new fossil fuel exploration and exploitation; a moratorium on the construction of new nuclear power plants; the phase out of the use of nuclear power worldwide; and a moratorium on the construction of large hydro schemes
11. Climate Justice calls for clean, renewable, locally controlled and low-impact energy resources in the interest of a sustainable planet for all living things.
12. Climate Justice affirms the right of all people, including the poor, women, rural and indigenous peoples, to have access to affordable and sustainable energy.
13. Climate Justice affirms that any market-based or technological solution to climate change, such as carbon-trading and carbon sequestration, should be subject to principles of democratic accountability, ecological sustainability and social justice.
14. Climate Justice affirms the right of all workers employed in extractive, fossil fuel and other greenhouse-gas producing industries to a safe and healthy work environment without being forced to choose between an unsafe livelihood based on unsustainable production and unemployment.
15. Climate Justice affirms the need for solutions to climate change that do not externalize costs to the environment and communities, and are in line with the principles of a just transition.
16. Climate Justice is committed to preventing the extinction of cultures and biodiversity due to climate change and its associated impacts.
17. Climate Justice affirms the need for socio-economic models that safeguard the fundamental rights to clean air, land, water, food and healthy ecosystems.
18. Climate Justice affirms the rights of communities dependent on natural resources for their livelihood and cultures to own and manage the same in a sustainable manner, and is opposed to the commodification of nature and its resources.
19. Climate Justice demands that public policy be based on mutual respect and justice for all peoples, free from any form of discrimination or bias.
20. Climate Justice recognizes the right to self-determination of Indigenous Peoples, and their right to control their lands, including sub-surface land, territories and resources and the right to the protection against any action or conduct that may result in the destruction or degradation of their territories and cultural way of life.
21. Climate Justice affirms the right of indigenous peoples and local communities to participate effectively at every level of decision-making, including needs assessment, planning, implementation, enforcement and evaluation, the strict enforcement of principles of prior informed consent, and the right to say "No."
22. Climate Justice affirms the need for solutions that address women's rights.

23. Climate Justice affirms the right of youth as equal partners in the movement to address climate change and its associated impacts.
24. Climate Justice opposes military action, occupation, repression and exploitation of lands, water, oceans, peoples and cultures, and other life forms, especially as it relates to the fossil fuel industry's role in this respect.
25. Climate Justice calls for the education of present and future generations, emphasizes climate, energy, social and environmental issues, while basing itself on real- life experiences and an appreciation of diverse cultural perspectives
26. Climate Justice requires that we, as individuals and communities, make personal and consumer choices to consume as little of Mother Earth's resources, conserve our need for energy; and make the conscious decision to challenge and reprioritize our lifestyles, re-thinking our ethics with relation to the environment and the Mother Earth; while utilizing clean, renewable, low- impact energy; and ensuring the health of the natural world for present and future generations.
27. Climate Justice affirms the rights of unborn generations to natural resources, a stable climate and a healthy plan