Adapting to Climate Change in Dhaka: The Role of Social Capital

by

Samira Siddique
Class of 2015

A thesis submitted to the faculty of Wesleyan University in partial fulfillment of the requirements for the Degree of Bachelor of Arts with Departmental Honors from the College of Social Studies

Middletown, Connecticut April, 2015
# TABLE OF CONTENTS

Acknowledgements ........................................................................................................... 2  
Maps of Bangladesh ........................................................................................................ 3  
Preface ................................................................................................................................ 5

Chapter 1  
Introduction: Dhaka, The Megacity .................................................................................. 8

Chapter 2  
Foundations of Social Capital .......................................................................................... 17  
The Defining Qualities of Social Capital ......................................................................... 21  
Social Networks and Multi-level Relations ..................................................................... 25  
Social Capital, Corruption, and Public Policy ................................................................. 30  
Social Capital, Adaptive Capacity, and Vulnerability ....................................................... 36

Chapter 3  
Social Capital in the Megacity: A Multi-level Synergy Approach .................................... 40  
Government Priorities ..................................................................................................... 43  
The Bureaucrats and Industry Elites ................................................................................ 51  
Role of NGOs in Creating Social Capital ....................................................................... 55  
Local Government Accountability ................................................................................... 60  
Placing Social Capital: Geography and Property Rights .................................................. 62  
Macro Social Networks and Community Vulnerability .................................................... 66

Chapter 4  
Dhaka’s Micro Social Networks: Korail Case Study ......................................................... 68  
Local Governance Synergy with Civil Society ................................................................. 73  
Korail’s Case Compared to Other Communities .............................................................. 79  
Synergy of Micro and Macro Social Networks ............................................................... 83

Chapter 5  
Conclusion: Social Networks and Climate Vulnerable Cities ........................................... 86  

Bibliography ....................................................................................................................... 94
Acknowledgements

This project has been as much a personal journey for me as it has been an academic exercise. It would not have come to fruition without the help of many people, some of whom I would like to acknowledge here.

My deepest thanks go to:

My friends in the College of Social Studies for teaching me so much in the past few years. I’m incredibly lucky to have had your support and companionship inside of the classroom and out. I am a much better thinker because of all of you.

Professor Gary Yohe, my thesis adviser, who was very open-minded, encouraging, and supportive of this endeavor from the beginning.

Dr. Saleem Huq and the whole team at the International Centre for Climate Change and Development (ICCCAD). Dr. Huq generously took me on as a visiting researcher at ICCCAD and was supportive of my ideas in their early stages. ICCCAD’s brilliant network of researchers made all the initial research for this project possible.

The College of the Environment and the Davenport Committee, which provided me with generous funds to conduct my research in Dhaka.

An assortment of faculty: Professor Moon for instilling a “real life" appreciation of social capital and civic engagement in me early; Professor Haddad for teaching me how dynamic environmental politics is; Professor Siry for teaching great courses on architectural history, which in turn made me interested in urban development; and Professor Elphick for being generally supportive, teaching me to analyze multi-dimensionally, and giving essay prompts that I enjoyed writing responses to.

Brendan and Sammy for thoroughly annotating my drafts, asking hard questions of the argument, and generally making the writing much clearer.

My friends and family in Dhaka, who made my experiences last summer so much more than just “research.” I am grateful to have connected and reconnected with you all.

The extended Siddique family, and especially my grandparents, for believing in education.

Apu and Bhaya, for being great mentors and friends.

And most importantly, my parents, for raising me with stories about their home, our family, and our history in a very Bangladeshi home in Brooklyn. Without their resilience and support, none of this would be possible.
Maps of Bangladesh

Population Density within and outside of a 10m Low Elevation Coastal Zone, 2000

(National Research Council, 2010)
Likely Levels of Flood Damage in Dhaka Slums, 2006

(Stott and Nadiruzzaman, 2014)
In the summer of 2010, I volunteered for Distressed Children and Infants International (DCI), a Bangladesh-based nonprofit, at a new subsidized health clinic based in a large Dhaka slum called Kollanpur. My task one day was to walk around the slum and help spread the word about the health clinic’s opening date. Mostly I spoke to the spirited children who followed me through the muddied walkways between narrow tin shacks, past ubiquitous trash heaps and a heavily polluted pond. All of them were enrolled in school and expressed remarkable enthusiasm about their studies. Shoba, an 11-year-old girl I met, told me that Kollanpur was not so bad compared to other Dhaka slums. Her main concern was the local government’s threats to evict her family from the slum—a common concern among many of the children who had already moved multiple times from one slum to another.

At DCI, I gained vivid impressions of the immense gap between the needs of the urban poor and the ineffectual actions of the government. I thought about this gap after each day’s experiences, while having dinners at my cousin’s chic apartment in Gulshan, the upscale neighborhood full of designer boutiques and gated apartments with armed guards. There was an eerie disconnect between the utter chaos on the streets and the relative, sometimes absolutely luxurious, comfort of my relatives’ homes.
One of the dinner guests included a relative who owns a plastics manufacturing factory, heads a major television network, is CEO of a bank, and also owns a successful biscuits company. Another relative, CEO of Dhaka’s version of Time Warner Cable, was also often present. These two are members of the elite class running Dhaka’s business and industry, and their money yields a lot of power in a rapidly urbanizing city. I’d frequently hear their conversations about new properties bought and business deals reached with multinational companies. I recalled that even some of my family back home spoke of buying land rights for apartment buildings in Dhaka that hadn’t been built yet.

I understood that both sets of experiences—my relatives’ land acquisitions and the slum residents’ frequent evictions—were emblematic of Dhaka’s development. Yet I did not make a causal connection between the two until I started doing climate change research this past summer. In my interviews, which included a climate governance expert, a government engineer, a non-profit worker, an urban studies professor, and a community health researcher, a pattern emerged of slum dwellers living increasingly transient lives, constantly kicked off their land due to the elites’ private land development. Though there are laws in place to provide decent livelihoods for the poor, government officials often look the other way when there is profit to be made. This relationship between the government and elites creates a precarious cycle for the poor, many of whom are recent climate-induced migrants from the coastal areas of Bangladesh to a megacity that is unprepared to receive them. Policymakers are more concerned about increasing industry development than implementing climate change adaptation policies for these migrants.
It became clear that social capital is a powerful economic and political force in the city, not just a cultural one, evidenced by the demands of recurring social functions. The haphazard development that is ubiquitous in Dhaka happens because of the social connections between bureaucrats and industry elites. Corruption is rampant, and it is usually to the detriment of recent climate-induced migrants. While social capital is an abstract idea, it became a useful framework for me to think about why climate change adaptation policies were not being developed in a city that so desperately needed them. Additionally, if these policies were to be implemented, social capital was a useful way to see where the gaps were between urban climate governance sectors.

With generous funding from Wesleyan’s College of the Environment and the Davenport Committee, I conducted research in Dhaka in the summer of 2014 with an organization called the International Centre for Climate Change and Development. The data in this project are a compilation of original survey, interview, and experiential research conducted during this trip and previous trips to Bangladesh, as well as information from scholarly literature on climate change adaptation, social capital, and development in Bangladesh.
CHAPTER 1
INTRODUCTION: DHAKA, THE MEGACITY

On the way to work on a particularly rainy day in Dhaka, my car was stuck in traffic on a road that was flooded a foot deep. Amidst the haphazard honking and bell-ringing of partially submerged buses, trucks, baby taxis, motorbikes, and rickshaws, a line of men in suits and lungis on the adjacent sidewalk scurried toward the intersection. As if on cue, they took off their sandals and waded one after another through the sea of water as the automobiles stood still. While the pedestrians nonchalantly dealt with this routine flooding, I noticed the political banner that framed the intersection they were crossing. It displayed the stern faces of Bangladesh’s first prime minister and a current politician, with a motto underneath that read: “Let’s Make Dhaka Habitable Again.”
In this one observation, it is evident why the Economist Intelligence Unit’s Global Liveability Index frequently ranks Bangladesh’s capital as one of the world’s least livable cities. This year Dhaka is ranked second, just behind the war-torn city of Damascus.1 Dhaka scores low on infrastructure and health, and while it is relatively stable politically, there is a disconnect between policymakers and the needs of most people living in the city. Lack of oversight on private land development, with

---

virtually no property rights for the low-income population, has led to slums across the city. There is a growing economic divide and a scarcity of basic resources like water and electricity, both of which keep low-income Dhakaites from being recognized as fully participating citizens. A host of environmental and health issues like poor air quality, waterlogging, and mismanaged sanitation are pervasive. While there are official environmental and urban planning policies in place, the Dhaka city government’s bureaucratic complexities and its corrupt relationship with the city’s industry elite make such policies ineffective.

Climate change threatens to worsen living conditions in Dhaka in the years ahead, with far-reaching effects on the livelihoods and health of residents, particularly in the slums. With 15 million inhabitants at a density of 45,000 people/km², Dhaka is already one of the most densely populated cities in the world (compare to New York City’s population density of 27,779 people/km²). Today, as many as 1.5 million of the five million slum inhabitants in Dhaka are from coastal villages near the Bay of Bengal.² It is projected that 17% of Bangladesh’s land will be submerged by rising sea levels within the next 40 years, displacing 18 million coastal people.³ This is likely to cause a mass migration to overpopulated urban centers like Dhaka, Chittagong, and Sylhet, which will be detrimental to the already poor urban infrastructure, and limit access to basic resources and property for the low-income. This migration leads to an unsustainable situation, especially as climate change

exacerbates existing urban environmental health issues with more frequent flooding, higher temperatures, and greater risk of water and air-borne diseases.

With these statistics in mind, it is clear that climate change adaptation is necessary in Dhaka. But despite this pressing need, a clear pattern emerged in all of my expert interviews that pointed to rigid and corrupt social networks in Dhaka as a major cause of poor governance, which in turn led to weak infrastructure and inaction on clear problems like climate-induced migration. This situation shows how multi-faceted a dilemma climate change is, affecting the political, economic, social, and cultural framework of existing communities. A similarly multi-faceted approach is necessary to meet the challenge of climate change adaptation in Dhaka. In particular, social capital theory is a useful framework for understanding the vulnerabilities that communities face and can illuminate gaps in adaptation policy for policymakers, researchers, and other climate governance actors.

Social capital theory provides an explanation of how individuals use their relationships to other actors in society for their own benefit and for the collective good. Thus, social capital captures the nature of human relations and explains societal outcomes. Synergy social capital is the most effective form of social capital for analyzing the vulnerabilities and adaptive capacities of different communities. A synergy social capital analysis examines where partnerships exist between state and society that allow adaptations on the local level. It also explores the particular social norms that make these partnerships less possible in other places.

Social networks determine the sustainability and feasibility of the three types of climate change adaptation broadly defined by the Intergovernmental Panel on
Climate Change (IPCC). They are structural, social, and institutional adaptations that commonly overlap with each other. Structural adaptations are engineering projects, such as building sea walls or drainage systems. Social adaptations are implemented with the needs of vulnerable communities in mind, such as construction of a community latrine with the participation of locals, community leaders, and non-governmental organizations (NGOs). Institutional adaptations are more top-down and policy oriented, such as mandating subsidized housing and property rights for low-income citizens.

Certain climate adaptations are not implemented in parts of Dhaka due to low adaptive capacity, or an area’s ability to cope with new sources of stress. If a community has low adaptive capacity, it is ill-prepared to adapt to climate change events. Social capital greatly affects adaptive capacity. Corrupt social ties negatively impact the distribution of resources across a population and the structure of critical institutions in a given area. While locally generated factors make people more vulnerable to climate risks, these local vulnerabilities are partly determined by higher-level social networks.

Analyses of vulnerability through social capital networks may help policymakers implement more comprehensive adaptation policies. Different urban actors, like policymakers, business leaders, and civil society representatives, can develop a unified understanding of climate and infrastructural challenges through a multi-stakeholder analysis and planning process. This analysis introduces new

---


5 Ibid.
perspectives and information and promotes collaboration across different sectors, departments, and scales, serving as a bridge between actors that do not normally work together.

In Dhaka, as in many other cities in the developing world, the city government lacks the capacity to make far-reaching infrastructural changes on its own. Decisions about land use and economic development in the urban periphery are made by industry elites. Corrupt ties to bureaucrats let these elites maintain their vested interests, which often include building garment and brickmaking factories and more high-priced residences for expatriates. The absence of governance in these areas allows private interest to overtake public interest. There is little investment in climate change adaptation policy in the urban periphery, even though that is where many climate-induced migrants settle. In this case, the elite social networks of the city are detrimental to the livelihood of climate-induced migrants on the urban periphery. This example is just one of many that shows the importance of a synergy social capital analysis on adaptation dynamics in a city.

This thesis will provide an abstract framework for determining how synergy social capital can ease the transition of different societies faced with significant environmental change and extreme weather. This lens takes a multi-sectorial approach and can be used in specific vulnerable communities, even though societies are inherently heterogeneous and will have variable experiences in coping with climate-induced stress. A synergy social capital analysis of Dhaka provides a present-day snapshot of the social, political, and environmental problems that exist in different areas of the city. This analysis leads to a series of policy suggestions and
ideas for knowledge-sharing and comparisons across cities.

Chapter 2 closely defines the term “social capital,” the different theories about it, and how it manifests among different levels of society. That definition will indicate the complexity of the role of social capital: its ability not only to bolster infrastructure, collective action, and policy decisions, but also to create corruption within society. Social capital’s complexity can create social, political, and economic divisions that make collective action problems difficult to solve. This, in turn, affects the adaptive capacity and environmental vulnerability of communities. Synergy social capital is the most effective form of social capital because it eases partnerships between state and society and helps urban governance actors work toward collective development goals. An analysis of social networks at the macro (city and state) and micro (community and neighborhood) levels that looks for partnerships between state and society, or lack thereof, can more clearly identify the vulnerabilities that exist among communities and make changes to rectify them.

Chapter 3 explores the synergy social capital approach with a macro analysis of Dhaka. It looks at both the city and national levels of government, civil society, and industry, and analyzes the relationship among all three sectors. Based on this analysis, it is clear that synergy social capital is difficult to achieve in Dhaka, since much of the social capital that exists is based on kinship ties. Corruption pervades the state and elite levels of society, making it difficult for community-level development to be sustainable. The corruption leads to many unenforced environmental policies, resulting in environmental hazards and poor livelihoods for the city’s low-income and climate-induced migrant populations. A macro social
capital analysis shows that the success of adaptation and development on the local level is closely connected to the nature of higher-up social networks.

Chapter 4 builds on the social capital theory from previous chapters with a case study of the social networks and climate adaptation in Dhaka’s largest slum, Korail. The synergistic relationship between its local government, NGOs, and research organizations allows the slum to scale up its development and acquire resources from the city government. It is clear that Korail’s institutional structures benefit from Dhaka’s macro-institutional structure because of the social linkages between the slum community and urban governance actors. In contrast to Korail, other slums in Dhaka do not benefit from climate adaptation policies because they lack synergy social capital with higher institutional powers. This chapter proves that adaptive capacity and environmental vulnerability vary by community depending on the linkages between macro and micro social networks.

A synergy social capital analysis of Dhaka’s climate change adaptation is a useful tool for other climate-vulnerable cities. This kind of analysis necessitates a close look at the particular political, economic, and social contexts of communities and how they relate to broader institutional structures. Through this analysis, particular city and even national, governments can consider the social norms that create fissions within society and that prevent climate adaptations from taking place. Climate adaptation researchers, policymakers, and NGO workers may find it easier to make policy recommendations and share knowledge among climate resilience networks.
Certain policy prescriptions, such as the adoption of property rights for climate induced migrants, may increase the livelihoods of climate-vulnerable communities. However, it is likelier that broad urban infrastructural change that accounts for disparate social networks and differences in social resources between smaller communities will lead to more far-reaching climate change adaptation. The synergy social capital analysis will be useful as more and more coastal people migrate to cities due to extreme weather and rising sea levels. No matter the existing quality of infrastructure of the city, that city government and its residents will have to adapt, and account for the place of climate-induced migrants in complex social networks. Dhaka, which is presently facing these issues and has a complex infrastructure and social climate, can be an example of this kind of adaptation.
CHAPTER 2
FOUNDATIONS OF SOCIAL CAPITAL

Social capital can explain many social and political outcomes, such as why people in power act the way they do and why certain laws are not enforced. In this thesis, social capital is studied through a multi-level lens that looks at the relationships between different tiers of society: the political institutions, the private sector, and civil society. This view of social capital is a useful qualitative tool to study community development and environmental policy, as people increasingly must decide how to co-manage and divide limited resources.

Social capital refers to the norms and works that enable people to act collectively. This simple definition focuses on the origins of social capital rather than the effects of it, avoiding the circular definition given by some social capital theorists. Communitarian social capital theorists, for example, claim that social capital leads to better governance and more effective policies, and its existence is

---

simultaneously inferred from the same outcomes. In contrast, a focus on the origins of social capital allows a multi-faceted look at social networks and recognizes that trust and reciprocity are developed gradually. Moreover, it recognizes that communities vary in their level of social capital.

Many social capital theorists paint social capital as a wholly positive phenomenon. However, social capital is complex, and sometimes allows groups to act collectively to the detriment of others. It cannot be equitable unless it connects groups that do not typically interact outside of opportunistic relationships. Social capital theory provides an explanation for how individuals use their relationships to other actors in society for their own good and for the collective good. Thus, social capital captures the nature of human relations and explains outcomes in society. In particular, climate-vulnerable communities do not benefit from corrupt forms of social capital at higher levels of society. This corruption makes community-based climate change adaptation less likely.

The definition of social capital used here recognizes that individuals and households can appropriate social capital and that the way communities themselves are structured affects their relationship with the state. Additionally, it calls attention to the fact that institutions themselves affect the ability of communities to organize for collective action problems. A weak, hostile government that does not uphold the rule of law or civil liberties will have a profoundly different effect on community life.

---

than governments that uphold the law and resist corruption. A government that
does not uphold civil liberties, for example, may prevent communities from
organizing at the local level because there are too many day-to-day obstacles for
residents.

An analysis of the complex social networks that exist within densely
populated cities like Dhaka can inform climate change adaptation and
environmentally just development. The way social capital manifests among different
levels of power influences a community’s ability to reach a development goal. If
social capital is complementary among different levels of society, it is easier to make
collective action decisions. In turn, this increases a community’s ability to cope with
new sources of stress, also known as adaptive capacity. The adaptive capacity of
communities in socio-economic thresholds depends on path dependent, site-specific
circumstances. Factors such as the definition of property rights, the structure of
critical institutions, and the stock of human capital, including education and personal
security, all contribute to a community’s adaptive capacity. Social capital greatly
affects adaptive capacity because it is present throughout all levels of society and
influences policy decisions and critical society-state relations.

Social networks at the macro level, such as the relationship between city-level
bureaucrats and industry elites, affect social networks at the micro level. Therefore,
analyses of both macro and micro level social networks can identify vulnerabilities
across communities and suggest sustainable climate adaptation policy. Individuals,
groups within society, organizations, and governments on behalf of society, make

\footnotesize
\begin{itemize}
\item \textsuperscript{10} Ibid. 227
\end{itemize}
decisions on climate change adaptation and development. The effectiveness of adaptations depends on their social acceptability, the institutional constraints of the adaptation, and the place of the adaptation in the wider economic development and social evolution landscapes. Moreover, comparisons between different case studies of social capital networks can inform policymakers of the nuances of climate change adaptation and the appropriate adaptations for a specific place.

A social capital analysis is the key to understanding the overall social institutions of a city and underlying social networks at the community level. For policymakers to make the most environmentally just development policy, it is important to understand social capital, especially when determining why certain communities are more vulnerable than others. Moreover, the foundations of social capital allow policymakers, researchers, and activists to aid local communities in collective action decisions in ways that are tailored to their specific living situations and resources.

This chapter will closely define the term social capital and how it manifests among different levels of society. That definition will indicate the complexity of the role of social capital: its ability not only to bolster infrastructure, collective action, and policy decisions, but also to create corruption within society. Complexity also makes it difficult to measure social capital. This complexity affects the adaptive capacity and vulnerability of communities when it comes to equitable, environmentally just development. By understanding social capital and how it underlies important societal structures in particular cities and communities, it is

---

possible to more clearly identify the vulnerabilities that exist and make changes to rectify them. A multi-level social capital analysis would allow for more sustainable climate adaptations in the long run.

**The Defining Qualities of Social Capital**

Many theorists across different disciplines criticize social capital because it does not share the tangible properties of other forms of human-made capital, such as physical and human capital.\(^{13}\) These forms of capital are often equated only with money, which is the means by which certain forms of physical, human, and social capital can be obtained. Many types of capital can be created without money, based instead on time and energy spent by individuals in building tools and facilities, learning skills, and establishing regularized patterns of relationships with others.\(^{14}\) Social capital’s ability to bolster these other forms of capital makes it essential to developing infrastructure.

Physical capital refers to human-made material resources that can be used to produce a flow of future income. It exists in a wide variety of forms, such as buildings, roads, tools, cattle and other animals, and automobiles. Investments in physical capital are usually conscious decisions and, when used by more than one person, require social capital. It also cannot function over time without human capital, in the form of knowledge and skills, which is needed to produce new products and

---


\(^{14}\) Ibid., 259.
generate income. Without a functional balance of these different forms of capital, negative externalities and development failures are common.\(^{15}\)

Human capital is the acquired knowledge and skills that an individual brings to an activity. Forms of human capital can vary with each type. An education gained through college is a different kind of education than that achieved through apprenticeship training. Human capital can be formed consciously in this way, or unconsciously as a benefit from other activities, such as swimming for pleasure. Acquiring new capabilities, such as learning a new language, also counts as human capital. Human capital is especially useful in tandem with social capital in cross-level interactions. Social capital helps to bridge different experiences and skills of human capital, facilitating knowledge, mediation, translation, and negotiation across levels.\(^{16}\)

Social capital is fundamentally distinct from physical, human, and even natural capital (natural resources) through four key differences:

- social capital does not wear out with use, but becomes stronger over time with proper use and deteriorates with disuse;
- social capital is not easy to see and measure;
- social capital is hard to construct through external interventions; and
- social capital operates most effectively when organized in complementary forms at multiple levels.\(^{17}\)

The more that participants cultivate trust and reciprocity amongst themselves, the more valuable social capital becomes. Trust grows with repeated interactions

---

\(^{15}\) Ibid., 260.

\(^{16}\) Adger, “Social Capital, Collective Action, and Adaptation to Climate Change,” 392

\(^{17}\) Brondizio, Ostrom, and Young, “Connectivity and the Governance of Multilevel Social-Ecological Systems.”, 262
among participants and groups. After a starting point that creates mutual understandings and ways of relating, those same tools can be used to accomplish different joint activities with lower start-up costs. However, if these established patterns of interaction among groups are not introduced to new members over time, the social capital will dissipate through turnovers in group membership.

Social capital, unlike physical capital, is difficult to see and measure. Unless the kinds of participation and organization that people partake in are surveyed along with the rights and norms that guide their behavior, social capital is usually given little conscious thought. While the processes of social capital have tangible, physical manifestations, such as a political investment in a local community project, the processes themselves are difficult to see, understand, and measure. However, without social capital to facilitate the physical capital, the outcome would not be sustainable.

Another distinguishing characteristic of social capital is that it cannot be cultivated through external sources. Governments can hire contractors to build a bridge, but without sufficient social capital the structure will not be used and will not operate efficiently. Social capital requires local knowledge and practices to use resources efficiently, and this information may be radically different from place to place. This local knowledge is essential to building social capital that promotes cumulative improvements in local conditions beyond just external subsidies and donors. It is important for bridging the gap between state and society, and acts as a mediating factor between the two.

The most effective form of social capital is organized in complementary forms at multiple levels, and is also known as synergy social capital. This form of social
capital refers to the partnerships between states and communities and across different sectors that allows for environmentally just development. When social capital is based on common values across macro and micro levels of state and society, it is useful for solving multilevel problems like building climate infrastructure or enforcing climate adaptation policy. Otherwise, if it is absent at one level, it will slow the growth of social capital at other levels. Different groups within society create competing forms of social capital when they want different uses of physical and human capital. This is especially common when social capital is concentrated within specific groups of society that are at the same level, such as different indigenous groups. If they aim to preserve a resource used by both groups, such as a forest, they may band together to establish a protected area. However, if the local government is ineffective and cannot adequately deal with the land use activities by private firms that take advantage of the forest—and moreover have a corrupt relationship with them—there is an asymmetrical accumulation of social capital. When this asymmetric relationship exists, what is missing is social capital at a larger scale that links governance across all levels of society to deal effectively with the interdependence of ecosystems.\textsuperscript{18}

As mentioned previously, synergy social capital can aid other forms of capital and lead to more environmentally just development and co-management. However, social capital is not easily quantifiable because it is multidimensional, requiring different levels and units of analysis. The nature of social capital also changes over time since it spans both informal and formal institutions and the balance between them may shift. Nonetheless, there are identifiable measures that approximate social capital.

\textsuperscript{18} Adger, “Social Capital, Collective Action, and Adaptation to Climate Change,” 391.
capital, such as measures of trust within communities, confidence in government, social mobility, membership in informal and formal associations, and participation in decision-making. To strike the balance between social capital’s qualitative and quantitative components, it is necessary to break it down into its component dimensions and compare them across many different countries and communities. At the macrolevel, there are more easily quantifiable proxies, such as political participation, but this does not always apply to countries that are not true democracies. Assessing environmental vulnerability, options for adaptation, and the contribution that social capital makes to adaptive capacity are contested policy and research areas precisely because of the difficulty in measuring social capital.

**Social Networks and Multi-Level Relations**

It is important to be aware of the distinct views of social capital in order to understand its affect on societal outcomes. The different views of social capital are communitarian, institutional, networks, and synergy. Out of these understandings, the synergy view of social capital has the most empirical support for comprehensive and coherent policy prescriptions. The synergy view emphasizes distinct dimensions of social capital, ranging from state to society and the partnerships between them, and recognizes its positive and negative outcomes. The discourse that all four of these views have generated is essential for scholars, policymakers, and community workers.

---

20 Ibid. 250
for bridging divides that prevent important policy prescriptions and actions from taking place.

Communitarian social capital theorists ignore any kinds of negative social capital, such as corrupt kinship ties that lead to dangerous nepotism in bureaucracy, gangs, and slums. To many communitarians, social capital only has positive consequences, and thus more social capital leads to more productive decision-making. However, real life situations disprove the communitarian social capital philosophy. There is still social strife in many developing nations despite the community groups and relations that exist between local organizations and citizens. In countries where there is rampant corruption, vast inequality, and a failure to safeguard property rights, there is less of an effort for schools, hospitals, and roads to be built. Investments in civic and government social capital are thus secondary to investments in more orthodox forms of capital accumulation.21

Institutional social capital theorists believe that community networks and civil society are the products of the political, legal, and institutional environment. Unlike communitarian and networks social capital, which can independently give rise to different outcomes, institutional social capital is dependent on macro-societal factors. Thus, the capacity of social capital to work in the collective interest is dependent on the formal institutions themselves. However, institutional social capital theorists fail to look at local level action and the social connections that exist on a small-scale day-to-day basis, which are not always dependent on the greater institutional structures. Additionally, a purely institutional view of social capital is not practical since it

21 Ibid. 235
would take decades to reform bureaucratic structures, the immediate effects of which would more likely suit corporate interests than those of the poor.

Networks social capital theorists believe that communities are characterized by their specific kinds of social capital, which can be positive or negative. This variance accounts for a range of community outcomes, from greater political participation to failed infrastructure projects. This same ambiguous view of social capital is what makes scholars and policymakers hesitant to use it as a theoretical construct or policy instrument.\textsuperscript{22} The clear challenge of the networks view of social capital is to identify the conditions under which the positive aspects of social capital can thrive, while discouraging the negative aspects from doing so. This view, however, may entail altering existing cultural and social norms that allow “negative” social capital to perpetuate. It does not take into consideration potentially positive state-society relations and largely ignores the effect that communities and organizations at the society level can have on institutions.

Synergy social capital theorists integrate the networks and institutional views, believing that both societal and institutional relations can complement each other and create cohesion across societal decisions.\textsuperscript{23} In the synergy view, neither the state nor society are “good” or “bad”; they are variable in the effect they have on the attainment of collective goals. It is the partnerships between states and communities and across different sectors that allows for environmentally just development. Ultimately, it is the state that has the most power and scope to make broad changes in society, as the provider of public goods and upholder of the rule of law. However,

\textsuperscript{23} Brondizio, Ostrom, and Young, “Connectivity and the Governance of Multilevel Social-Ecological Systems,” 270.
civil society influences the state through social relations between bureaucrats and members of civil society. This is especially apparent when bureaucrats are embedded in the industrial sector and forego the enforcement of certain policies in favor of industry elites. Similarly, a policymaker may be especially attached to improving the infrastructure in a community because of the personal connection they have with an NGO worker that is based there.

Societies with good governance and high levels of social capital that bridge societal and institutional sectors are more likely to be stable and have economic prosperity. In societies without this complementarity, social capital accumulates in social groups that are disconnected from each other, with powerful groups dominating the state while others are excluded. In these cases, inferior groups can form coalitions and build relations with allies in power; if successful, they can begin to gain rights and resources that they did not have previously.

To further understand the relationships that exist within synergy social capital, it is useful to study vertical and horizontal social networks. Vertical social networks are characterized by specialized, hierarchical organizational roles where there is an asymmetry of power. They cannot sustain social trust and cooperation, nor can they contribute to good governance. In patron-client relationships, for example, there is interpersonal exchange and reciprocal obligations, but the exchange is hierarchical and the obligation is asymmetric.\(^\text{24}\) The information flow in vertical relationships is less reliable than horizontal ones, due to intimidating power dynamics between superiors and their subordinates. It is also more difficult to promote sanctions against the threat of opportunism, since they are less likely to be imposed upwards.

\(^{24}\) Putnam, *Making Democracy Work.*, 174
Horizontal networks, on the other hand, consist of actors who have near-symmetrical power in their relationship. The kinds of social capital found across vertical and horizontal networks are known as “bonding” and “bridging” capital. Bonding capital represents the strong social ties between other family members and friends or those within dense social networks and ethnic groups. Bridging capital bridges connections between different groups that do not typically interact outside of opportunistic relationships, formal engagements, or work relationships. While both are important for cooperation, bridging capital is crucial to interconnectedness among state and society. Bonding capital may allow a vulnerable community to support itself during extreme disaster because of close ties between community members, but it is not self-sustaining without bridging capital. More well-off communities generally have bridging capital by nature of having more civic ties with government officials, and thus holding them more accountable for providing public goods. However, poor and vulnerable communities do not have the same level of bridging capital because of their lack of participation (due to their geographic or social circumstance) in civic associations. Without bridging capital, they do not have as high a livelihood as other social classes.

Strong interpersonal ties, such as kinship ties and intimate friendship, are less important for community collaboration than “weak” bridging capital, such as acquaintanceship and shared membership in civic associations. Bridging capital is more likely to bring together members from different small groups, whereas bonding ties are usually reserved to those particular groups. Dense but segregated horizontal

---

networks sustain cooperation within each group, creating a high level of social capital within them. However, social capital that cuts across cleavages and different state and society institutions makes wider cooperation more possible. This is why networks of civic engagement, which break out of bonding capital, are essential to a community’s stock of intersectional social capital.27

If horizontal networks help participants solve dilemmas of collective action, then organizations structured that way should foster more institutional success within the community. Additionally, complementary forms of social capital presented across state and society would allow for more successful collective action. Memberships in hierarchically ordered organizations (like the Mafia) should be negatively associated with good governance, since they accumulate social capital within their own groups, and are not open to other members of society.

Social Capital, Corruption, and Public Policy

Public policy depends on how individuals and groups within society behave, and is largely connected to the social capital conditions within prevailing institutional structures.28 The behaviors of citizens and organizations are influenced by their understanding and interpretation of social norms and ethics. Much of people’s behaviors are determined by how they perceive others are acting, and whether others are following societal rules or not—their reading of prevailing behavioral norms. Vertical networks are reinforced when it is apparent to citizens that others of similar

27 Ibid. 175
social standing are given greater advantages by higher-up powers, or that higher-up powers are living in opulent ways to the detriment of other social groups. This intensifies norms of corruption within society.

While some societies prioritize honesty and upright behavior, others are not so focused on morality. The asymmetry of social capital amongst different levels of society, of more “bonding” capital within certain groups while others have both “bonding” and “bridging” capital, allows for an imbalanced flow of information, resources, and power throughout society. Corruption is the norm when individual desire for power preempts upright behavior. It saturates certain networks with social capital while cutting off others from bridging these ties. These corrupt social ties usually trickle down into society from those higher up in power. Since political officials are the ones who enforce the rules of society, they illustrate the norms for rule-following. Their behavior sets an example for others in society, including local administrators, businesspeople, and community members.

The prevalence of corruption signals the existence of “bad” social capital. The institutional norms in corrupt society are to aid others within the institutions’ bonded social networks, to the detriment of those outside their social circles. Different groups will have different capabilities in terms of which social networks and resources are available to them. Thus, not all communities will have the same developmental capacities.

Developmental capacities across micro and macro levels of society are further complicated by the relationships between each level. In a society where corruption is the norm, it is important to analyze which elements of society contribute to these
norms most strongly. Most likely, a “bad” form of social capital is rampant among political elites, who prevent productive social capital that bridges different levels of society from taking hold. In this case, better institutional support that attempts to enforce the cultivation of productive social capital may gradually change the norms of corruption, although there is no holistic prescription for ridding a society of such norms. However, studying where different forms of social capital lie throughout society may help in furthering how social capital, and thus ethical norms, originate. Individual societal cases and their institutional structures are helpful for advancing the overall theory and in understanding how the relationship between the state and various aspects of society works.

In some authoritarian or transitional systems of government, where democratic mechanisms of accountability like elections are weak, government performance may still be good if officials are involved in “solidary groups”—groups not just of shared interest but also of shared moral obligation.29 When local politicians are embedded in social networks in their community, they may feel obligated to provide public goods because it is what their community group expects them to do. If they do not act accordingly, they know the group’s norms and networks will punish them by not voting for them or shunning them socially.30 These solidary groups add a moral element to the synergy social capital that is ideal for multi-level decision-making.

---

29 Lily Tsai uses the term “solidary group,” and not the more common phrase “solidarity group,” to refer to groups with shared interest and moral obligation. Lily L. Tsai, Accountability without Democracy: Solidary Groups and Public Goods Provision in Rural China, Cambridge Studies in Comparative Politics (New York: Cambridge University Press, 2007), 4.
30 Ibid.
Solidary groups that provide norms and obligations for political leaders to follow are informal institutions of accountability, unlike formal institutions such as political parties and business corporations.\(^{31}\) They hold officials accountable even though they are not officially authorized by the state to do so and were not created for that purpose. Solidary groups, such as lineages or religious organizations, give members moral standing by having a set of standards that reward it. They organize public activities and opportunities for people to demonstrate their behavior in conference with these standards.\(^{32}\) Political officials associated with such groups can gain further personal resources by participating within the bounds of these standards.

Two main characteristics of these solidary groups are that they are encompassing, open to everyone under a local government’s jurisdiction; and embedding, incorporating local officials into the group.\(^{33}\) This informal accountability is intended to address governmental provision of public goods specifically. The main problems that solidary groups can help solve are free riding and government accountability. Citizens are often hesitant to contribute their share to the provision of a collective good, and thus free ride on others’ contributions to goods like roads. Even without this issue, citizens must make sure government officials are held accountable with their use of public funds to implement public projects. If the democratic institutions are weak, it is likely that the officials will use the public funds for their own purposes, investing in industry or splitting them with friends and cronies.

\(^{31}\) Ibid., 13, 94.
\(^{32}\) Nurul Islam Nazem (Director of Dhaka’s Centre for Urban Studies) in discussion with the author, August 2014.
\(^{33}\) Tsai, Accountability without Democracy, 13.
Solidary groups can effectively deal with free riding and government accountability issues. The dense social networks that exist within solidary groups can strengthen group penalties and promote social trust and cooperation. By doing so, they transform selfish interests into more community-oriented concerns. However, government accountability is a more complex issue. In much of social capital theory, citizens increase their social trust and political skills through social groups and are able to organize and voice demands more effectively. This is not possible in political systems where free speech is not as welcome, or is even illegal. Better organization in the traditional sense can only have an impact through demonstrations and protest.

Through informal accountability, citizens have political voice on a day-to-day basis, which would likely have a more sustainable outcome in governmental provision of public goods. When officials belong to solidary groups that are open to all citizens under their jurisdiction, then the collective good promoted by the solidary group is synonymous with the public good of the citizenry. Once officials are embedded in the group, they earn their moral standing and use the group’s resources to elicit compliance of citizens with state policies. However, if they fail to meet the ethical standards of the group, citizens can not only sanction them, but also deny them access to moral authority and the group’s resources. The social groups in the informal accountability model thus differ significantly from the traditional civil society and social capital groups in that they are not purely political, but ethical and concerned with moral obligation as well.

Solidary groups can include “traditional” groups like clans, tribes, and religious organizations; or more modern groups like public advocacy groups,
philanthropic organizations and charities, and environmental groups.\textsuperscript{34} Solidary groups have a positive impact on local government performance when officials are embedded in the group, even in communities where formal accountability is weak. Most social capital theorists suggest that groups that are autonomous from the state do not enhance government performance due to the lack of ethical obligations officials have.\textsuperscript{35} When there is embeddedness combined with social groups with high levels of corporate coherence and norms of solidarity, the prospects for good governance are enhanced. Policymakers feel morally obligated to appease fellow members of the solidary group, lest they be shunned by the group and pay reputational costs. Thus, embeddedness allows for shared obligations between state and citizens, especially in states that are in transitional systems or lacking strong constitutions and laws.\textsuperscript{36}

If the structure of solidary groups parallels the political structure of local government, they can provide informal institutions that reinforce and may even substitute for the public duties and obligations that laws and other state institutions are supposed to set for officials and citizens. If there is a lack of complementary forms of social capital between state and society, it is possible to have dense social networks that are disconnected. A society in this situation is deemed an “hourglass society,” a lack of connections between social capital at the bottom and top social classes. At the top, elites cooperate with each other and use state institutions to pursue their interests, but nothing connects local citizens and elites with each other. As a

\textsuperscript{34} Tsai, \textit{Accountability without Democracy}, 17
\textsuperscript{35} Putnam, \textit{Making Democracy Work}, 177; Skocpol, \textit{Diminished Democracy}, 176.
\textsuperscript{36} Tsai, \textit{Accountability without Democracy}, 17.
result, government public service provisions are poor and citizens must rely on “informal coping systems” that provide resources in lieu of the state.  

Synergy social capital minimizes the likelihood of an “hourglass society.” It increases the possibility of public policy that is beneficial on the local level by cultivating bridging capital between state and society. This minimizes the power of norms of corruption. Solidary groups, where policymakers feel morally obligated to act in accordance with the wishes of fellow group or community members, are especially effective in convincing policymakers to pass public policy in their favor. These connections between state and society can aid in the creation and enforcement of climate adaptation policy. Climate governance actors can analyze the opportunities and gaps where synergy may exist. This way, they can better understand how to solve collective action problems in societies where there are norms of corruption and a lack of bridging capital and solidary groups.

Social Capital, Adaptive Capacity, and Vulnerability

In a synergy social capital analysis, the partnership between state and society, or lack thereof, signifies how attainable collective goals are. Synergy social capital mediates decision-making across different scales of environmental governance—from local resource governance to civil society forums and corporate structures. It gives more legitimacy to climate change adaptation, whether it is institutional or community-based. An approach that connects the community to state level has more

---

37 Ibid., 260
sustainability potential and also brings the climate change issue from a global to a local problem. This makes the adaptation project more psychologically viable, and makes mitigation strategies more possible as well.\textsuperscript{38}

Societies are inherently heterogeneous and will have variable experiences and successes in coping with stress that is brought about by climate change. Clear markers of successful social capital and networks across societies provide good qualitative metrics for societies to follow developmentally. Knowledge sharing among civil society and state organizations allow them to develop expertise on adaptation options and the contexts necessary to make adaptations sustainable in specific cases.\textsuperscript{39} Societies with disparate political, economic, and social contexts will adopt distinct strategies when faced with significant environmental change and extreme weather. Their ability to make a sustainable transition will be determined, in part, by their networks and social capital.\textsuperscript{40}

Vertical and horizontal social networks complicate the linkages across different governance levels and social organizations. Corruption and little social trust are the norm when vertical networks in a society are rampant. Thus, it is unlikely for collective resource management or community-based climate adaptations to happen in vertical networks. In contrast, horizontal networks are near symmetrical in power and allow for more collective decision-making. Realistically, societies have both vertical and horizontal social networks that are connected by bonding and bridging capital. Bonding capital represents the strong kinship ties within dense social

\textsuperscript{38} Adger, “Social Capital, Collective Action, and Adaptation to Climate Change,” 401.
\textsuperscript{39} Brondizio, Ostrom, and Young, “Connectivity and the Governance of Multilevel Social-Ecological Systems,” 272.
\textsuperscript{40} Adger, “Social Capital, Collective Action, and Adaptation to Climate Change.”
networks and is exclusive. Bridging capital connects groups that do not typically interact outside of opportunistic relationships. While both bridging and bonding capital are important for cooperation, bridging capital is crucial to interconnectedness among state and society.

Well-off communities generally have bridging capital by nature of having more civic ties with government officials, and thus can hold them more accountable for providing public goods. However, poor and vulnerable communities do not have the same level of bridging capital because of their lack of participation (due to their geographic or social circumstances) in civic associations. A synergy social capital analysis allows policymakers, researchers, and activists to see the status of bonding and bridging capital across society, as well as how rampant norms of corruption may be. This analysis helps them to advise local communities in collective decisions that are tailored to their specific living conditions.

Synergy social capital implements better information exchange across all levels of society. This leads to more informed citizenship and thus the possibility of more equitable political participation. Without this information exchange and with incongruent kinds of social capital across levels, it is unlikely that a lower-class citizen would have the same recognition of political rights as a higher-class one.

The next chapter applies the multi-level synergy social capital approach to look at the “macro” social networks in Dhaka, Bangladesh. This analysis shows that norms of corruption in Dhaka prevent climate change adaptation that is tailored to vulnerable communities from taking place. The city is divided economically, politically, and socially due to corrupt ties between the government and industry elite,
and little bridging capital to connect elite social groups to vulnerable communities. The chapter that follows the next one is a study of social networks in particular communities that are tied to the macro social networks of Dhaka. The success of one particular community in implementing successful climate change adaptation over others is closely connected to macro social networks. Thus, a synergy social capital analysis is key to understanding the overall social institutions of a city and underlying social networks at the community level. It reveals the gaps between local and citywide social networks and can inform sustainable climate change adaptation.
CHAPTER 3
SOCIAL CAPITAL IN THE MEGACITY:
A Multi-level synergy approach

It is a well-known saying in Bangladesh that “anything is possible if your uncle is powerful.”\(^{41}\) With *mamar jor* (literally, the strength of an uncle), you have access to a well-paying job, an apartment in a nice neighborhood, and admission to a good educational institution. Wealthy and influential relatives are the most important things to gain more access in both the social and economic spheres. In Bangladeshi society, these social connections, or social capital, have the power to divide society or bring it together.

The role of social capital in Bangladesh, especially in its capital city Dhaka, is complex. Bangladeshi culture is one that is embedded in social networks. It is common to meet another Bangladeshi person and be connected to them through a second or third cousin; they will at least know someone from your family’s hometown. There is a kind of gentle cordiality that is particular to Bangladeshi

conversations, one that instills a personal trust in the other person quickly. Despite this seeming connectedness, there is still a huge difference in the networks available to people of lower socioeconomic classes and those that are available to people of higher classes.

Civil society is a western concept that is usually connected to higher political participation. It does not have this effect in Dhaka, where society is divided along rigid, impermeable class and relationship-based boundaries, often resulting in deprivations of basic human rights. Class and social structures grossly divide people by even the basic terms of endearment of “apne” (formal “you”) versus “tumi” (informal “you”). Much of Bangladeshi society is run by patron-client relationships, caught up in kinship ties and vertical relationships. Bridging capital, which calls for horizontal relationships across class lines, is rare unless there is a middle party moderating between civil society and the government. The government itself has little accountability because of its bureaucratic corruption and close relationship with industry elites, whose factories produce much of the country’s exports.

Civil society in Bangladesh is an amalgam of personal relationships. This phenomenon goes back to the independence period, when pre-NGO civil society became increasingly politicized. Once the independent Bangladeshi government was formed in 1971, it used political party-affiliated civil organizations to gain more state authority. There is little government control of civil organizations, which hardly hold the state accountable. From a multi-level perspective, social capital is not used in

---

complementary ways among different sectors. There is little government accountability on the local and state level, rampant industry corruption, and large gaps because NGOs cannot provide services in place of the state.

Given the dysfunction that pervades people in positions of power, the infrastructure in Dhaka is poor, especially with the gradual influx of climate-induced migrants. The nature of vertical networks in Dhaka means that certain neighborhoods have much better access to resources than others. Members of these neighborhoods are able to hold their government officials more accountable than members of neighborhoods without the same advantages. As explained in the previous chapter, synergy social capital can bridge public and private institutions when state representatives, the corporate sector, and civil society establish ways in which they can pursue common goals. Looking at these actors in the Dhaka context—and how their relationships with each other encourage bonding capital amongst themselves to the exclusion of vulnerable populations—is helpful in understanding how there may be successful cases of adaptation and development even within a city of corrupt macro structures. This analysis can transform situations where a community’s social capital substitutes for weak, hostile or indifferent formal institutions into situations in which both civil society and state complement each other. A synergy social capital framework is also helpful for understanding the varying vulnerabilities and adaptive capacities across different communities in the city.

This chapter is a macro analysis of social networks in Dhaka, Bangladesh. Through a synergy social capital approach, it looks at the local and state levels of government, civil society, and industry, and analyzes the relationships between all
three sectors. Based on this analysis, it is clear that synergy social capital is difficult to achieve in Dhaka, as much of the social capital that exists is based on kinship ties and vertical relationships. Corruption pervades the state and elite levels of society, making it difficult for community level development to be sustainable. Bureaucrats feel pressured to cater to their neighbors and members of their social circles or be shunned from their community; it becomes a cultural norm for these kinship ties to exist. Many environmental policies are not enforced because of this corruption between the bureaucrats and industry elites. This results in environmental hazards and poor livelihoods for the city’s low-income and migrant populations, as there are increasing rates of environmental catastrophe and climate change. A macro analysis of social networks gives way to a more realistic approach to local adaptation and development, as outlined in next chapter’s case study.

**Government Priorities**

The Bangladesh government is formally considered a “parliamentary republic” with a multiparty system, though it is most accurate to describe it as “the battle of the begums,” a fight for power between the leading women of the two main political parties, both of whom are the widow and daughter, respectively, of former Bangladeshi prime ministers. The most recent elections were somewhat tumultuous

---


due to violent strikes, *hartal*, ordered by the opposing political party and a low voter turnout because of rampant street violence and traffic blockades. Still, there is no major civil society backlash because the middle class and elites have comfortable lifestyles and adapt to the daily annoyances of terrible traffic and occasional blackouts. The low-income population, for the most part, cannot organize amongst itself because of constant evictions due to industry growth. The government barely regulates industry because of its goal for Bangladesh to become a strong global economic contender.

Neither political party has made effective strides to deal with the impoverished areas of the country. Bangladesh’s significant improvement in health, education, and water sanitation since its birth in 1971 has been due to the grassroots work of both local and international NGOs and non-profits. Despite the dysfunction, it is still possible to get good work done due to the work of outside organizations. However, this does not lead to overarching institutional change and infrastructure improvement, which is needed with accelerating rates of climate change.

The Bangladeshi bureaucracy is beset by corruption. This dates back to the British era when an elite group distinguished by status and prestige was responsible for providing public services but was not at all accountable to the people. Despite Bangladesh’s declaration of independence as a democratic nation, the centralized

---

48 A newspaper called the *Dhaka Tribune* created a simple web-based application called “Is Tomorrow Hartal?” The app is mostly used by professional Dhakaites and expats to adapt their schedules to a possible hartal. “Is Tomorrow Hartal?,” *Dhaka Tribune*, accessed April 7, 2015, [http://istomorrowhartal.com/](http://istomorrowhartal.com/).
49 Hans-Joachim Hermann (Principal Advisor at Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)) in discussion with the author, August 2014.
51 Mollah, “Growth and Development of Civil Service and Bureaucracy in Bangladesh,” 138.
power of the first ruling party and the draconian military rule that followed did not set a good democratic precedent for the young nation. Although there are now democratic elections, the history of bureaucratic elitism and corruption is entrenched in the country’s political fabric. The polarization between the two main political parties distracts from effective governance and instead results in mass boycotts of elections and ongoing patronage of the bureaucracy.

It is a common practice for Bangladeshi civil servants to grant benefits to their relatives, friends, and key supporters. All of the Bangladeshi prime ministers have been accused of either direct or indirect involvement in large-scale corruption, not to mention the corruption that occurs between those on the lower rungs of leadership.52 This kind of social capital is what results in corrupt land deals between industry officials and civil servants, which harm people who live in slums and other low-income communities. It is more lucrative, and simultaneously beneficial in the short term, for policymakers to accept bribes in exchange for not enforcing property laws and rights. This is the reality that Bangladeshis must live with: the understanding that many civil servants will not take action in an already slow-moving bureaucratic machine unless they are given extra compensation. While the machinery of government is intended to streamline management of public services and facilities, Bangladesh’s bureaucracy instead hampers people’s participation in community development. Policies are significantly influenced by higher-level bureaucrats in the Prime Minister’s Office or in key ministries such as Finance or Land.53 Thus, the

52 Ibid., 148
53 Ibid., 153
organic creation of horizontal social networks that dilute the elitism in governance and create pathways to civil society participation is difficult.

The state- and local-level government institutions set the precedent for whether social capital is synergistic or not. These institutions rarely implement national-level environmental policies such as the Climate Change Action Plan and the Disaster Management Act. It would “make sense” that the national- and city-level government implement these policies, given the problems of climate-induced migration and Bangladesh’s climate vulnerability. However, they are more interested in economic growth in the short term, which would certainly be hampered if facets of these policies were implemented.\(^\text{54}\) The government’s relationship to the elites of the city is crucial here. The industry elites, as the industry owners and business developers of the city, bring in international business opportunities to the city and, moreover, head the ready-made garment industry that has earned Bangladesh some global economic prestige.

As of 2011, Bangladesh is the second largest exporter of ready-made garments in the world after China. Within five years, Bangladesh will likely be the primary exporter.\(^\text{55}\) The United States is the largest single country destination for

\(^{54}\) A clear example of misplaced economic priorities in Bangladesh is the ongoing construction of a coal power plant in the Sundarbans, the largest mangrove forest in the world. The exhaust from the coal power plant will harm wildlife, such as the endangered Bengal Tiger, and also will harm the health of the local residents. The power plant is being built through a partnership between local Bangladeshi politicians and an Indian state-run energy company and is a lucrative business deal. Jason Motlagh, “How Not to Love Nature: Shove a Coal Plant Next to Earth’s Biggest Mangrove Forest,” \textit{Time}, accessed April 8, 2015, http://world.time.com/2013/09/26/how-not-to-love-nature-shove-a-coal-plant-next-to-earths-biggest-mangrove-forest/.

Bangladesh’s garments, and the European Union is the largest regional destination.\textsuperscript{56} Since the mid-2000s, “Made in Bangladesh” tags have become ubiquitous, yet the conditions under which the garments are made are often overlooked. Bangladeshi factory owners see the garment workers, some of whom are recent climate-induced migrants, as a commodity of the larger garment industry; the workplace is more often than not below the safety standards set by the International Labor Organization (ILO).

The lack of oversight leads to hazards, like the factory fires in November 2012 and the factory collapse in April 2013, which collectively caused 1,241 deaths.\textsuperscript{57} These two catastrophic events are not isolated ones; they just happened to get the most international media coverage. Fires and building collapses regularly occur within workplaces in Bangladesh, mainly because there is no infrastructure to enforce building codes. The government’s lack of factory regulation makes it likelier for such catastrophic events to occur.

The relationship between the government and the elites is essential to understanding why climate adaptation policy to support climate-induced migrants is not implemented in the short term. The government has the power to enforce climate adaptation policy—for example, by creating low-income housing for recent migrants. There are approximately 15 government ministries that deal with environmental issues but there is little consolidation among them due to a lack of financial and technical resources and little political will. There is a true bureaucratic sense among

\begin{flushleft}
\end{flushleft}
many government officials that even if the political system is dysfunctional, they can only do what their own job designates.\textsuperscript{58}

More pertinent is the fact that certain government ministries in turn have more power than others. The Ministry of Land, for example, often trumps the many different environment-specific ministries that exist because the responsibilities among these ministries are so disorganized. A factory owner can conceivably allow industrial waste to pollute a nearby river because of his property rights. Additionally, there are no government agencies to deal with industrial waste disposal and management, since these new industries and factories are relatively new.\textsuperscript{59} There is also no universally accepted source of information on land availability and land rights, so there is a lack of transparency on land dealings and who has access to purchasing vacant land. Usually the people with access to these lands are high-income members of society or industry elites.

The government does not properly regulate environmental policies that are already in place because of its inefficiency. There are gaps in knowledge of what the best climate change adaptation practices are and, because climate research is just now growing in Bangladesh, the government created national climate plans just in the past five years.\textsuperscript{60}

One institutional climate adaptation that is directly in favor of recent climate-induced migrants is the creation of property rights through designated low-income communities.

\textsuperscript{58} Tariq Bin Yousuf (superintendent engineer at Dhaka City Corporation North) in discussion with the author, August 2014.
\textsuperscript{59} Ibid.
\textsuperscript{60} Khurshid Alam et al., “Planning ‘Exceptionalism’? Political Economy of Climate Resilient Development in Bangladesh,” in Climate Change Adaptation Actions in Bangladesh, ed. Rajib Shaw, Fuad Mallick, and Aminul Islam, Disaster Risk Reduction (Springer Japan, 2013), 392
housing.\textsuperscript{61} While there is vacant government-owned land that is supposed to be allocated to the poor, known as \textit{khas} land, it is often sold at a cheap price to private land developers.\textsuperscript{62} The government agency Rajuk is the capital development authority of Dhaka and is officially in charge of both “development” and “development control.”\textsuperscript{63} While it is constitutionally supposed to oversee the equitable development of land, it instead accepts bribes from private development companies to buy out vacant lands where climate-induced migrants tend to settle.

When the time comes to build on the land, the private developers contact government authorities to kick off the migrants, and the migrants must then move to the nearest empty plot of land. This creates an unsustainable cycle, in which more and more migrants are moving to the city and settling on private land only to be kicked off and settle even farther outward.\textsuperscript{64} These migrants illegally tap into the existing electricity and water supply, which already are scarce due to the city’s over crowdedness.

If the government acknowledged the presence of the migrants and formalized their place in the city, it would be taking steps to prevent more disastrous infrastructural outcomes in the long term. The government would be able to take into account the actual demand on resources of the city and overarching infrastructural

\textsuperscript{62} Nurul Islam Nazem (Director of the Centre for Urban Studies) in discussion with the author, August 2014
\textsuperscript{64} Nurul Islam Nazem (Director of Dhaka’s Centre for Urban Studies), in discussion with the author, August 2014.
changes needed if it created more permanent housing for the migrants, gave them property rights, and substantiated the climate-induced migration issue.

If the government does not take action to accommodate climate-induced migrants, the city will be increasingly negatively affected over time as more migrants put pressure on the city’s infrastructure. Higher rates of climate change occurrences mean more chances of flood, increased traffic due to higher population, and a generally higher demand for the scarce resources of the city. Historically, the government has been slow to respond to environmental catastrophes, such as the 1998 floods, described as one of the worst floods in Bangladesh’s history. Water submerged nearly two-thirds of the country affecting the lives of millions.65 The institutional response was slow because different agencies failed to share information with each other, resulting in extended periods of damage. Larger NGOs like BRAC stepped in with relief operations and to assist the government in creating disaster management and climate adaptation policies for the future.66 Industry elites also aided in relief efforts because their development areas were inundated and they lost consistent labor force during this time.67

66 BRAC was formerly known as Bangladesh Rural Advancement Committee but now does not represent an acronym. Ibid., 250.
There is about one catastrophic flood per decade and an increased probability of more frequent floods over time.\textsuperscript{68} It is in the interest of the government to make positive infrastructural and policy changes, especially with climate-induced population growth. With these changes, the government would not have to serially fix issues that arise from poor infrastructure and environmental change in the future. If the government does not enforce climate change adaptation policy for migrants, and additionally, if the elites continue their development, then the magnitude of environmental catastrophes like increased flooding will higher.\textsuperscript{69}

### The Bureaucrats and Industry Elites

Many Bangladeshi bureaucrats are factory owners themselves, have a significant financial stake in industry, or are closely acquainted with someone in industry.\textsuperscript{70} This is especially the case in Dhaka, where many socially elite policymakers, those who have an executive role within their ministries, engage in the same social circles as industry folk; and where the city itself encapsulates the national government’s belief that prosperity equals industrial growth, even to the detriment of the livelihoods of millions of people.


The patron-client system is so pervasive in Dhaka that finding loopholes within the bureaucracy to pass an environmentally just development policy is absolutely necessary. Even when passed, the policy is rarely enforced. The relationship between civil servants and industry is instrumental to the physical growth of the city. The land development where new factories and residential, commercial, and office buildings are built often happens on the peripheral northern and eastern edges of the city, as the city proper is already so densely developed. Many recent migrants settle on the urban periphery where there is vacant land. Some of these migrants are employed by the factory owners to work for cheap either in factories or in construction. Recent migrants decide to do cheap labor because of their potential short-term gains, even if their livelihoods suffer.

Industry elites often make under-the-table deals with government officials so that they can purchase cheap government land that is intended by law for low-income people. Elites develop the land to build factories or to house expat businesses and international corporations. 71 The cheap land aggressively facilitates industrial development that is conducive to the government’s desire to become an economic powerhouse.

Government initiatives to create better infrastructure, such as proper waste collection, are prioritized in areas that have the most political clout. These are usually the residential areas of industry elites, expats, and politically involved Bangladeshi families. The industrial factories and sewage and sanitation issues are in the poorer areas that are most vulnerable to the effects of rapid urbanization and mass climate-

71 Hans-Joachim Hermann (Principal Advisor at Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)) in discussion with the author, August 2014.
induced migration. However, because most of the electricity line and water supply are connected throughout the city, even the elite areas will be affected by increased pressure on the city’s infrastructure.

Government action on climate adaptation policy would result in broader infrastructural change and far reaching effects for migrants. It would even encompass the abilities of the industry owners to take contrary action, though they would likely still be able to develop land because of corruption gaps within different tiers of government. With higher-up institutional action, it would be more possible for local and international NGOs and research organizations to initiate research and carry out grassroots projects in low-income communities.

The growth in knowledge and research regarding climate change over time means that the government and industry owners will have more information at their disposal as to what the appropriate actions may be. With added time, civil society will be more knowledgeable about the effects of climate change and environmental degradation. Environmental curriculums have been added to schools, which means that a younger generation will grow up with more of an understanding and concern for the environment.

Since international media focuses on the plight of the poor, it is likely that the government will face international repercussions for failing to take action in the case of environmental catastrophe. Just in the past couple of years, there have been long-form journalism features about mass climate-induced migration that have attracted the
attention of international NGOs and other countries’ governments. If there is catastrophe and the government has not enforced climate adaptation policy, then it is likely to face global trade sanctions and reputational costs from the international community.

Though not a climate-related disaster, the Rana Plaza Factory collapse and the factory fires of 2012 and 2013 gained global attention for the Bangladesh garment industry and resulted in trade sanctions and worldwide boycotting of clothing companies associated with the factories. The factory fires in November 2012 and the factory collapse in April 2013 collectively caused 1,241 deaths. The United States took an economically coercive approach and closed off trade benefits to Bangladesh in order to force the country to comply. This action also prompted the European Union to threaten closing off trade benefits to Bangladesh as well. In response to this, the Bangladeshi government passed a new labor law, under which 5 percent of profits would be set aside for a welfare fund for workers and stricter building and fire safety codes are stated. Customers all over the world were outraged with the international clothing companies whose clothing was made in the factories. This forced the companies to sign the Accord on Fire and Building Safety, putting pressure on the factory owners to reform factory and worker safety policies, as they directly get their money from the international clothing companies. The International Labor Organization suggested to the Bangladeshi government that the minimum monthly wage for garment industry workers should increase from $38 to $68. With the

---

pressure from the international corporations, and the threat of another garment industry disaster if the factories continue to not comply, the government and factory owners complied.\(^7^4\)

This example shows how persuasive the backlash against catastrophe in Bangladesh can be. As more climate-induced migrants enter Dhaka, putting greater pressure on the urban infrastructure, more catastrophic events like these are likely. The likelihood that bureaucrats and industry elites will be affected by these more frequent climate occurrences increases over time. Because all the electricity and water lines are connected, they are more inclined to want improvements to the overall infrastructure of the city and to go along with government improvements to infrastructure.

**Role of NGOs in Creating Social Capital**

Civil society is the totality of groups and individuals in a country who show a consistent concern for the social and political affairs in that country without fulfilling the function of political parties.\(^7^5\) When there is a total lack of institutional support, NGOs can act as institutions themselves, thereby relinquishing their role as solely


part of civil society.\textsuperscript{76} In Bangladesh, NGOs have a complex role to play as both the providers of service to civil society, and as part of civil society themselves. They also must cooperate with the government to have permission to continue working in their designated areas, and to gain access to formal services and resources. NGOs can act as the middle ground between civil society and the government, and thus, are instrumental in the creation of synergy social capital.

NGOs can both facilitate and diminish the creation of social capital in Bangladesh depending on their approach. Some are particularly interested in providing direct services to poor communities, instead of assisting them in organizing amongst themselves for greater political participation. A case study of some prominent NGOs in Bangladesh highlights how advances made by highly technical income-generation projects came at the expense of community self-reliance\textsuperscript{77} Another study found that the micro-credit of the Grameen Bank in Bangladesh had created and cultivated a substantial level of social capital by creating trust, norms, and networks.\textsuperscript{78}

NGOs can be useful in sharing their knowledge with local trainers through interventions, supervision, and training. They can also strengthen the relationships between local producers and trainers and outside agents. However, a study that followed the practices of two prominent Bangladesh-based NGOs, Practical Action Bangladesh and Proshika, discovered that although they used local resources, some of their social networks with political elites were used for the NGOs’ own benefit.

\textsuperscript{78} Ibid., 372
instead of the benefit of local producers.\textsuperscript{79}

The NGOs’ greatest weaknesses were often internal, such as poor management. However, many of the issues had to do with the mistrust toward and mismanagement of the Bangladeshi government. The lack of social trust of the government, the meddling role of local power structures, donor dependency, and the lack of government initiative all impacted the work of these NGOs.\textsuperscript{80}

Large NGOs in Bangladesh are well connected politically. However, in the research that followed Practical Action Bangladesh and Proshika, there was no social trust or collective community support. Moreover, the NGOs’ exploitation of local community resources through money laundering, corruption, and misuse of donations were negatively regarded by the community. As a result, the NGOs could not find broader network-based support at the community level.

Most NGOs in Bangladesh depend on foreign donations. Due to the donors’ terms and conditions, the local NGOs lose their autonomy and instead practice non-culturally specific knowledge, which are often neo-liberal western ideologies that do not pertain to local Bangladeshi communities. These communities are often of low socioeconomic status and have specific cultural and political conditions that a universal ideology will not be able to tackle or relate to. The people in these communities have little time and understanding to participate in society building; they are too busy trying to make a living wage.\textsuperscript{81} As a result, these NGOs do not get local support or any help from the government, and are thereby unable to implement

\textsuperscript{79} Ibid., 379
\textsuperscript{80} Ibid., 381
\textsuperscript{81} Schurmann and Mahmud, “Civil Society, Health, and Social Exclusion in Bangladesh,” 540.
successfully any of their scientific tools or communication channels and trainings.\textsuperscript{82}

If NGOs are concerned with bolstering their success rate, they are more likely to provide services to marginally poor communities instead of extremely poor ones. The latter group is more transient, such as climate-induced migrants on the urban periphery. Thus, any NGO program that targets this group will be temporary compared to one based on a more stable target group. The ultra poor, those who are most vulnerable to extreme weather events, are desperately in need of services that they do not otherwise receive from the government.\textsuperscript{83}

The NGO Dushtha Shasthya Kendra (DSK) (Vulnerable Poor Health Center) led a successful community empowerment and participation model in Dhaka’s largest slum, Korail. The NGO approached WASA, the national water utility agency, in 1992 and offered to pay the bills of the people who lived in the slum in exchange for delivery of water to the settlement. The slum had previously been gathering water from a pool of wastewater of a chemical factory. Although one water point was taken over by local gangsters who refused to pay DSK, the second installment was successful. Two committees comprised of locals were put in charge of managing and maintaining the water point, including payment of bills to WASA and installment payments to the DSK. Four years later, the community was receiving water regularly and payments were received on time.

This positive experience convinced donors—such as UNDP-World Bank Water and Sanitation Programme, Swiss Agency for Development and Cooperation, and Water Aid—to work with DSK on replicating this model in other urban poor areas.

\textsuperscript{82} Islam and Morgan, “Non-Governmental Organizations in Bangladesh,” 382.
\textsuperscript{83} Schurmann and Mahmud, “Civil Society, Health, and Social Exclusion in Bangladesh.” 538
areas. The model inspired the final draft of the Dhaka Water Supply Policy to include community participation as a policy priority, stating that the communities will help monitor the implementation of the government policy and provide suggestions for better services. The policy commits, in theory, to ensuring full water-supply coverage to the urban poor in Dhaka slums, perhaps giving way to more institutional support for universal access to clean drinking water. The DSK community participation plan and other similar community-based projects show that slum dwellers are willing to pay for utility services if the opportunity is given, and that the mistrust of slums is misguided.

In a society of vertical networks, national and local civil society groups must align with political parties if they are to have their voices heard. Civil society survives in an alliance with power. The landlords, moneylenders, religious leaders, and town elites who run community-based services maintain political connections and work frequently in cooperation with bureaucracy. While civil society in Bangladesh often takes the form of NGOs, other civil society groups like trade unions, media, and cultural and professional groups also must work closely with political parties to gain more information or to maintain power.

NGOs must rely heavily on funds and methodologies from international donors and transnational NGOs, and thus are suspicious to the national government, which is concerned about losing its power among local communities. However,

---

86 Naushin Parnini, “Civil Society and Good Governance in Bangladesh.” 196
NGOs cannot bring about broad institutional change in the same way that the government can, and they also might run into problems working in the local cultural context because an implementation strategy that works in other countries may not work in Bangladesh. If NGOs can overcome existing problems of lack of accountability (to their local context and country), they can play a crucial role in strengthening the adaptive capacity of communities by building important social institutions.\textsuperscript{87}

NGOs and other civil society organizations can work on the ground level to educate marginalized Bangladeshi populations about different political participation mechanisms and human rights. They can also work in different sectors, such as public opinion polling, advocacy training, policy formulation, investigative journalism, and public interest law in order to fill the gap between corrupt vertical governance networks and the needs of the urban poor. Good governance can be promoted with a bottom-up approach, as long as bonding capital is promoted on a local level. In this way, it is possible to cultivate more horizontal networks and bridging capital with higher tiers of political institutions.

\textbf{Local Government Accountability}

While the macro structures of Bangladeshi politics consist of vertical networks that rarely trickle down into the society level and take local needs into account, the structure of local government can be beneficial in promoting small

\textsuperscript{87} Ibid., 202
infrastructural changes. The local government structure is divided into three tiers: by district, sub-district, and town. The smallest tier is called the Union Parishad (council) (UP), which is constitutionally mandated. It focuses on smaller communities at the “neighborhood” level. Its purpose is to enable the community to retain access and control over their natural and physical resources and to make collectives decisions for the public good.

The UP leaders are more accountable to people at the local level than higher tiers of government, or even locally based NGOs, are. UP leaders are directly elected by the community and are held accountable by political and social norms. They are part of the community and, as mentioned in a previous chapter, hold a moral obligation to community members or are shunned if they do not. The UP leaders form the fundamental civil society unit of the community and, if partnered with local NGOs and higher tiered government leaders, can accomplish sustainable development goals.

Government, civil society groups, and NGOs can be especially synergistic at the local level if they work in partnership with the local citizens, instead of nominally holding themselves accountable with international donors or side obligations in mind. The partnership of these actors is crucial for transitioning from vertical networks to horizontal ones, and for creating organic relationships toward collective action decisions.
Placing Social Capital: Geography and Property Rights

It is a common belief in Bangladesh that not everyone has equal rights. In fact, there is no nationwide policy to deal with the extreme poor, let alone issues of mass coastal to urban migration. Articles 18-25 of the Constitution say poor people should have access to basic necessities, but slum dwellers cannot access their most fundamental rights because the government does not support them. Land tenure is a growing problem in large cities in Bangladesh. In Dhaka, 70% of the population has access to a very small percentage of land while the remaining 30% of the city’s population holds 80% of the land.

There is a long history in Dhaka, dating back to the birth of the nation, of the urban poor being evicted off slums to make way for new development projects or to sell plots of land to middle class and rich families and property developers. The evicted, some of whom have lived in the slums for as many as 20 years depending on which slum it is, must relocate to the urban periphery in other slums. There, they encounter new networks that they must navigate until they are transplanted again. The haphazard eviction and movement of slums leads to land-filling and grabbing to make space for new settlements. This chaotic movement fills natural canals and low-lying catchment areas, which accommodate excessive water during the rainy seasons. Poor drainage due to unplanned land-filling has made the city more flood-prone. Even though slums pose risks to the greater urban infrastructure, they are rarely upgraded

90 Ibid., 577.
because NGOs and local governance actors expect their impending demolition. This leads to a vicious cycle of under-development and social exclusion. As the slums become more sprawled out and connected to more “developed areas,” even the wealthier areas are flood prone.

Inequality in Dhaka is most apparent in the real estate development practices, which allows higher income bureaucratic and political elites and foreign businesses to have more property privileges than low-income people, which make up the majority of the Bangladeshi population. In Dhaka, the accumulation of social capital is highest in high-income areas and in poorer areas that have economic relationships with those areas. Real estate development on vacant lands with slum settlements disrupts the accumulation of social capital amongst slum dwellers. Much of this development necessitates the eviction of slum dwellers from their homes, forcing them to relocate elsewhere and repeat the cycle because of similar development happening there. Any bridging capital is prevented from being made because evicted slum dwellers are forced to work for the majority of their day and do not have time to form relationships with neighbors. Since slum dwellers do not have any land rights they have insufficient social capital, and thus, they cannot effectively advocate for themselves. Social capital, which should empower citizens, is unavailable to people who are not considered citizens in the first place.

Though the National Housing Policy recognizes the rights of the urban poor, such as housing, shelter, and food, and also forbids the eviction of people who live in slum settlements without rehabilitation, settlements continue to be demolished. Despite protests by local and international human rights organizations and by slum

---

91 Ibid., 578
dwellers, the evictions continue to occur at alarming rates. One of the largest slum evictions was in 2004 and affected approximately 40,000 people who were dislocated elsewhere or were forced to move back to their family villages.92

There are periodically new master plans that are created for the major urban areas in Bangladesh, including Dhaka, which are spearheaded by the Ministry of Public Works and Housing and the Local Government Engineering Department. In 2008, there was a government-funded attempt to create low-income housing, which commissioned a private development company called North South Property Development. The proposed plan was to create 200-250 square foot apartments for the poor. However, the company received the land from the government for free and they took that opportunity to create larger apartments of approximately 800 square feet that the poor could no longer afford. The developers were more concerned about receiving revenue from expats and did not believe that the poor would be dependable payers. This created a scandal for the company and their contract was canceled.93

There is poor urban governance because of a lack of coordination within the city government. The Dhaka City Corporation (DCC) is autonomous but its power lies in the Ministry of Local Government, Rural Development and Co-operatives. Thus, the DCC’s lack of control over the Water Supply and Sewerage Authority (WASA), Dhaka Electricity Supply Authority (DESA), and Titas Gas Transmission and Distribution Company Ltd., the state-owned gas company, has contributed to

92 Ibid. 577
93 Nurul Islam Nazem (Director of Dhaka’s Centre for Urban Studies), in discussion with the author, August 2014.
poor urban governance and disorder.\textsuperscript{94}

Insecure property rights for slum dwellers coupled with the fact that they are settled on government or privately owned vacant land, make them an insecure venture for small NGOs. Since eviction is always a threat, NGOs are less likely to implement services in slums.\textsuperscript{95} This does not bode well for slums on the periphery of Dhaka, which are in industrial zones that are most vulnerable to eviction due to development. The city government rarely upgrades slum settlements because of their impending evictions, which often occur without resettlement plans.\textsuperscript{96}

The urban poor are further excluded from the city’s basic resources by the ease in which government officials are corrupted to split the profit of water and electricity with local gangsters who then control access to them. Slum dwellers must then pay egregious prices for access to basic necessities. With behavior like this normalized in slums, distrust is rampant among slum dwellers and toward any institutional power. If the law to allow legal right to land were amended and enforced, there would not be so much illegal extortion for access to basic utilities.\textsuperscript{97}

The shame and social stigma that come from living in slums makes it difficult for slum dwellers to leave the slum for better employment opportunities. If a slum dweller is lucky enough to work at an office of an NGO, it is likely that they will not reveal that they are from the slum in fear of losing their job.\textsuperscript{98} Additionally, the inequality between women and men in slums makes it difficult for women to

\textsuperscript{95} Ibid., 579
\textsuperscript{96} Ibid., 583
\textsuperscript{97} Ibid., 579
\textsuperscript{98} Ibid., 583
advocate for themselves. There are more opportunities for informal male labor in slums, working “higher respected jobs” as rickshaw peddlers, or selling fruits and trinkets; than female informal labor, often as domestic help or brick breaking. Single women usually work in the garments industry until they are married.\textsuperscript{99} Slumdwellers contribute positively to the economy on a daily basis, through small businesses and transportation services. These informal markets could be formalized to not only contribute to the overall profit that the city makes, but to allow for more sustainable infrastructure that is properly planned.\textsuperscript{100}

\textbf{Macro Social Networks and Community Vulnerability}

The extent to which corrupt social ties pervade Dhaka’s social and political norms greatly impacts the livelihoods of people in vulnerable communities. The government’s preoccupation with industrial output and business creates dense social networks on the elite tier of society. The haphazard urban growth that results from this relationship makes it difficult for vulnerable communities to be adequately supported on a daily basis. While NGOs may play a mediating role between the government and civil society, they cannot fill the role of government, such as giving slumdwellers property rights or adequately supporting the extreme poor, who are always in danger of getting evicted. An analysis of the role of social networks in

\textsuperscript{99} Nurul Islam Nazem (Director of Dhaka’s Centre for Urban Studies), in discussion with the author, August 2014.
\textsuperscript{100} Ibid.
creating broader political conditions that challenge the livelihood of the urban poor may highlight the varying vulnerabilities of communities.

The next chapter presents a case study of the Korail slum in Dhaka. The study shows that social capital on the micro level is affected by social capital at the macro level. In Korail, there is synergy social capital between small-scale and large-scale political and civic organizations. This suggests that a community’s vulnerability may be better dealt with if the gaps between state and society are studied. The relationships that exist on a local level, if strengthened, can benefit from the overlying social structures so that state and society may complement one another.
CHAPTER 4
DHAKA’S MICRO SOCIAL NETWORKS:
Korail Case Study

On a 40-minute boat ride circling Banani Lake, the unofficial center of a sprawling Dhaka city, the stark income inequality within this small geographical area is clear. Bordering the western side of the lake are the hanging latrines and tin shelters of Bangladesh’s largest slum, Korail, and on the eastern side, the high-rise luxury apartment buildings of Bangladesh’s most affluent neighborhood, Gulshan. This paints a clear picture of the environmental justice disparities in the city. The roughly 40,000 Korail residents reside on just .25 km$^2$ of land, lack access to basic utilities and resources, and are not formally recognized by the government. Expats and wealthy Bangladeshis, many of whom are political and industry elites, populate Gulshan and another nearby neighborhood, Banani. Both areas are known for their abundance of restaurants and high-end boutiques.
Korail’s proximity to Gulshan and Banani creates a symbiotic relationship between slum dwellers and their rich neighbors. Many of the Korail residents work as rickshaw pullers or are small business owners in the areas surrounding the slum. Some work in the construction of new residential or commercial buildings within these elite neighborhoods. There are also many female slum dwellers who work as housemaids for the high-income residents, as there is a prolific house-servant market in Bangladesh. Korail is thus valued as a community that offers cheap labor and services to the surrounding areas, where many politically active elites and politically connected NGO workers live.\(^\text{101}\) Even though Korail is built on government- and privately-owned lands, there has not been a major eviction of slum residents since

\(^{101}\) Nurul Islam Nazem (Director of Dhaka’s Centre for Urban Studies) in discussion with the author, August 2014.
There are far more frequent evictions in other Dhaka slums, such as those on the urban periphery.

Korail is unique compared to most Dhaka slums because its history and geographical proximity to higher-income residential and commercial areas allow its residents access to the macro-level vertical social networks of Dhaka elites. The slum was on the “old periphery” of Dhaka before the city began to spread outward at a rapid pace in the 1990s. The original settlement was created while the elites and industry were still slowly moving into the surrounding area. Korail slum dwellers and the surrounding elite were able to coexist in a symbiotic relationship: the migrants have not been kicked off their land for further development and, in exchange, they labor on behalf of the elites. Regardless of this relationship, the political power of the slum dwellers is limited to the slum community because of existing cultural norms of “boro lok” (big people) and “choto lok” (small people). This is a kind of social stratification in which both low-income and high-income people believe that they should not meddle with their respective social classes. While the increased social capital of the Korail slum dwellers helps them organize for their own community’s environmental health needs, it does not threaten the social balance between elites and low-income people.

Though the Korail slum dwellers do not have access to the social circles of the elites, and do not even have formalized property rights, they can achieve more

---

103 Neelopal Adri (Researcher at the International Centre for Climate Change and Development) in discussion with the author, August 2014.
104 Nurul Islam Nazem (Director of Dhaka’s Centre for Urban Studies) in discussion with the author, August 2014.
environmentally-just development goals and implement community-based adaptations—like drainage systems and sanitation programs—because of their political connections. Unlike most Dhaka slums, which are incredibly transient due to high rates of eviction, Korail has a true community because the residents are able to settle down and form bonds with one another after acquiring initial employment. People who migrated to Korail have settled for longer than residents of other Dhaka slums and have more stable lives with an income, shelter, and the ability to make connections with others in the community. A major result of this relative stability is that Korail has a politically active community, in which residents vote annually for community leaders that participate in the Union Parishad (or town-level government). Due to Korail’s stability, many NGOs work out of the slum providing healthcare, education, sanitation, and employment assistance. The prolific civic engagement work in the slum mitigates many of the community’s environmental and social problems.

Korail residents have formed strong bonding capital amongst themselves because, unlike slumdwellers in different areas of the city, they experience less frequent evictions. This stability gave Korail leaders more political clout in local government and the ability to form relationships with higher-ups in city-level government. Korail’s relative stability also makes it a “safe” bet for NGOs to provide basic educational and health services and create partnerships with the local government and community. It is also attractive for research organizations (such as the nearby International Centre for Diarrheal Disease and Research) because of the

---

length of time many slum residents have lived there.\textsuperscript{106} While it is by no means a perfect development and adaptation model, and the synergy social capital framework here still has gaps (there are still evictions in Korail), it is the most useful model for applying community-based adaptation to a vulnerable area.

Established slums, those that are not regularly evicted, have the potential to develop bonding capital and thus have the capacity to cope in response to climate shocks and stresses. Urban community-based adaptation can strengthen these efforts by reinforcing the ability of communities to act autonomously or to seek the support of actors who constitute a broad institutional landscape. In Korail, dwellings have been modified to improve circulation of air and withstand heavy rains, while community members have constructed pavements with drainage using funds from a national program.\textsuperscript{107} These developments take place in a context where both formal and informal networks have developed over years, which drive collaborative responses to a range of urban development pressures. Korail’s collective action development projects increase the community’s ability to implement more substantive climate change adaptation in the future. Though the developments are site specific, they can provide existing and new actors with a foundation for creating pro-poor climate change adaptation strategies.

This chapter builds on the social capital theory from previous chapters with a case study of the development in Korail. The synergistic relationship between its local government, NGOs, and research organizations allows these urban climate

\textsuperscript{106} Leanne Unicomb (Medical researcher at the International Centre for Diarrheal Disease Research, Bangladesh), in discussion with the author, August 2014.

governance actors to acquire resources from the city government. When Korail’s institutional structures are put in the context of Dhaka’s macro institutional structure, it is clear that social capital plays a key role in the slum’s community-based adaptation.

Contextualizing a particular community’s social networks within the macro structures of the city is useful to understand adaptation possibilities. For example, if there is no urban policy in place that acknowledges slum settlements or the coastal to urban migration issue, community-based adaptation in areas with limited social capital is not possible. Social capital is a major reason why certain vulnerable areas have community-based adaptation, while others require a more top-down adaptation. An analysis of Korail’s social networks is useful in understanding why certain adaptations are possible in some vulnerable communities and not in others.

**Local Governance Synergy with Civil Society**

In Korail, there is successful community-based adaptation because the high amount of social capital amongst slumdwellers is used to connect with more elite social networks. The low-income community actively taps into networks of actors operating at all scales of urban governance. Korail’s local institutions, NGOs, and geographical context aid this connection between local and macro social networks. Given all three elements, it is possible for Korail slumdwellers to implement community-based adaptations, for example, by building latrines and drainage
systems. The community’s ability to implement such projects makes it more qualified to receive government funding on future projects.

Adaptation in Korail begins at the household and community level and then scales up to gain resources from the city-level. The main concerns of Korail residents include frequent flooding, extreme indoor and outdoor temperatures, and open-fire hazards. These all pose high risks to human health and safety; primarily impact women, children, and the elderly; and cause a loss of key assets, inability to attend work, and high costs for medical treatment.\textsuperscript{108}

Individual households are usually small tin shelters insulated with cheap cardboard and they have barely enough room for a single bed. Some shelters are reinforced to withstand heavy monsoon rains and have simple ducts and drains to allow for circulation and better drainage, respectively. Most changes require substantial investment and long-term negotiation with informal landlords, none of whom are accountable for the quality of housing and services provided in the settlement.\textsuperscript{109} While quality of life in the slum is still poor and certain utilities like gas are coordinated by mastaans, the synergy social capital that exists among the various development actors is a good adaptation model to follow for other areas.\textsuperscript{110}

The NGO Dushtha Shasthya Kendra (DSK), or Vulnerable Poor Health Centre, is a powerful force for connecting state and civil society actors to benefit Korail’s community development. DSK supports Korail’s community-based

\textsuperscript{108} Ibid., 221
\textsuperscript{109} E. Lisa F. Schipper et al., eds., Community-Based Adaptation to Climate Change: Scaling It up (Routledge, 2014). 221
\textsuperscript{110} A mastaan is a Bangladeshi gangster that controls publicly sourced utilities, such as water, electricity, and gas. There are networks of mastaans in Dhaka slums, and slumdwellers must pay them an extra fee to gain access to these resources. Sometimes slumdwellers must pay four times as much for these utilities than a middle- to high-income Dhaka resident.
organizations (CBOs) in the construction and maintenance of drainage systems, and in the implementation of education and health programs. DSK initiated its community-based development programs at a time when Dhaka was not urbanizing at as fast a rate, and when the city’s prized commercial and residential areas did not yet surround Korail. DSK advocated for the slum to city government officials, claiming its residents had the ability to pay incrementally for a water supply and other utilities when policymakers thought otherwise.\textsuperscript{111} This empowered the residents of the slum to advocate for themselves as a community. Community leaders who emerged over the years are now active in local government, which gives Korail more formal recognition than slums normally receive.

Political participation in Korail is high. The sub-district government has a representative from Korail and, within the slum, all 50 of the community leaders are women.\textsuperscript{112} In the Korail community center where the leaders gather monthly, there is a poverty-marking map that divides slum households into four groups—better-off, middle class, moderately poor, and extremely poor—based on the condition of utilities and resources available to the household, and length of time spent in the slum. Through this system, the leaders are able to see which households need the most improvement and can set goals for how to improve them over time.

The Korail leaders feel a moral obligation to improve the conditions of the slum because of their deep attachment to the community. They are held accountable by their neighbors, and also form a critical link between the local community and

\textsuperscript{111} Rashid, “Strategies to Reduce Exclusion among Populations Living in Urban Slum Settlements in Bangladesh,” 579.
\textsuperscript{112} MD. Rabiul Alam (United Nations Development Programme project manager based in Korail), in discussion with the author, August 2014
policy makers. These leaders are working to change the social and cultural norms that slumdwellers are “lesser than” non-slumdwellers and valued only for their cheap labor. These norms are prevalent in all spheres of life, from the way urban policy is enforced to day-to-day treatment of people on the street. They encourage the city development authority to evict slum residents when it serves their purposes, which in turn makes it less likely that NGOs will base themselves in areas that are extremely poor.

Local government is essential in maintaining the productive social networks of the Korail community because it advocates for slum-dwellers who are not recognized by the city government. The sub-district government officials are aware that there are illegal connections that divert the city’s water, electricity, and gas supplies to Korail. However, they ignore this because of the trustworthy relationship that exists among the local CBOs, Korail leaders, and higher up government officials. Local government officials are granted autonomy by higher-up policymakers because they show that they can manage funds and operations responsibly when taking on community-based development projects. This lessens the workload of higher-up officials and makes the potential messiness of resettlement unnecessary. Once initial development partnerships have been established and projects have been executed, it is more likely that additional projects can be taken on in the future.

Community responses to climatic hazards in Korail are developed through a dense network of partnerships nested within CBOs, NGOs, municipal bodies, think tanks, and universities. Partners contribute technical expertise and support local

---

113 Md. Rabiul Alam (United Nations Development Programme project manager), in discussion with the author, August 2014.
CBOs in mobilizing, exerting political pressure, and advocating for policy and procedural change. In Korail, the existence of these informal networks responds to key urban development pressures like the lack of basic utilities, such as water and electricity, and land tenure security.\textsuperscript{114} DSK, Korail’s leaders, and partner CBOs and NGOs have built community latrines and drainage systems, and are working to make child education and healthcare available to everyone in the community.\textsuperscript{115} There is even a two-year community plan to expand healthcare, education, and utility services to the slum. This plan is more long-term than possible in other slums, whose residents are more frequently evicted.

Collective learning among the NGOs, CBOs, and local government officials based in Korail has resulted in increased trust among these urban climate governance actors. Use of participatory tools and pilot programs such as the channeling of urban development funds directly to communities increased the CBO leaders’ political clout and capacity to juggle organizational identities strategically, so as to demand inclusion in municipal governance structures. The city government now trusts Korail community members to pay for public utilities because the Korail CBOs demonstrated financial and service management capacity. This established trust has led municipal authorities to emulate DSK’s community management model in other Dhaka slums.

The main challenge in implementing community development projects is in bridging CBOs and the multiple professional and policy-making bodies who

\textsuperscript{114} Katarina Soltesova, “Community Participation in Urban Adaptation to Climate Change,” in \textit{Community-Based Adaptation to Climate Change: Scaling It up}, ed. E. Lisa F. Schipper et al. (Routledge, 2014), 221.

\textsuperscript{115} Md. Rabiul Alam (United Nations Development Programme project manager), in discussion with the author, August 2014.
influence Dhaka’s environmental planning and development policy at the city level. One group that successfully deals with this challenge is the Organization of the Urban Poor in Dhaka (NDBUS). The NDBUS is a federation of CBOs created in 1999 that works for the welfare of low-income communities. Partnering with the Centre for Urban Studies, an urban research think tank, NDBUS leaders engage in policy advocacy and make the case for environmentally just and pro-poor urban development. NDBUS uses the social capital it has acquired over time with policymakers to negotiate options for long-term resettlement plans.\textsuperscript{116} This initiative aids the acquisition of political and voting rights for urban poor populations.

With Korail’s relative stability—a result of its high level of synergy social capital—it is possible for its residents to bolster their human capital and pursue education and training for better employment opportunities. Korail political leaders have community development goals that range from health education and subsidized medical care to public education and job training, all with the aid of CBOs, international NGOs, and the city government. Synergy social capital has improved not only the environmental resources of the community, but also the overall quality of life within the slum. The successful community-based development in Korail gives the slum high adaptive capacity to cope with the effects of climate change. Thus, Korail would have a more dynamic approach to the lack of drinking water caused by seasonal droughts than a community with low adaptive capacity.\textsuperscript{117}

\textsuperscript{116} Ibid., 221
\textsuperscript{117} Soltesova, “Community Participation in Urban Adaptation to Climate Change,” 223.
Korail’s Case Compared to Other Communities

In the Asian Climate Change Resilience Network (ACCCRN) 2011 mid-term evaluation, critics argued that there were few interventions that directly targeted poor and vulnerable communities.\textsuperscript{118} While there is a clear gap between urban climate change resilience measures at the community level and those aimed at systems across the city, it is helpful to look at both of them together. In order to have development interventions that directly target poor and vulnerable communities, it is necessary to incorporate a citywide perspective from the outset. It is likely that the conditions that exist on the local level are closely related to the overall political, social, and economic structures of the city.\textsuperscript{119} In the Korail example, local development benefits from city-level resources because the community’s existing social networks take advantage of urban governance actors at different levels of power. Korail’s stability allows productive social capital to thrive and attaches the vulnerable slum to elite communities.

Korail’s history and location make it a unique development case compared to other Dhaka slums. The community has existed since the 1980s and plateaued in growth in the early 2000s because it became densely occupied and the price of land was too expensive for new migrants.\textsuperscript{120} Its successful local government has formed lasting partnerships with CBOs, NGOs, and other academic research organizations while gaining trust among higher-up policy makers because of its success in

\textsuperscript{118} Brown, Dayal, and Rio, “From Practice to Theory,” 550.
\textsuperscript{119} Ibid., 552.
\textsuperscript{120} Nurul Islam Nazem (Director of Dhaka’s Centre for Urban Studies), in discussion with the author, August 2014.
managing community development programs. Not only is there strong bonding capital within Korail, but there is also effective bridging capital that connects it to more elite social networks. The city government’s lenience with the slum’s informal economy prevents frequent evictions from taking place. It certainly does not hurt that the elites who live in the surrounding neighborhoods can influence the policy makers who have land jurisdiction over Korail.

In some of the “older parts” of Dhaka in the western portion of the city, there are more pronounced social norms discouraging mingling with slumdwellers on a day-to-day basis. These areas, unlike Korail, are not affected by nearby residential and commercial development. In Old Dhaka, there is very dense social capital because many of the people who live there have lived there their whole lives. This community is not as vulnerable to industry development because it is already densely occupied and the city is developing outwardly northeast. Due to dense micro social networks, the longevity with which Old Dhaka slums have been around, and the cultural significance they play by hosting annual cultural and religious festivals, residents are rarely evicted. Though Old Dhaka slums do not benefit from the elite social networks that Korail benefits from, there is still small scale NGO support there because of their relatively stability.

In the northeastern periphery of Dhaka, where many of the new factories are built, the situation for slumdwellers is much more dire. The surrounding areas are purely industrial, not residential or commercial. These slums are isolated from the areas where many of the key city-level policymakers reside, and thus do not benefit from the moral obligation some of them may feel for giving back to their community.
These peripheral slums are further plagued by the poor transportation infrastructure in Dhaka. Slumdwellers have a difficult time finding dynamic jobs where there are few nearby employment opportunities, or even running a rickshaw pulling service in non-residential areas where there are few customers. They must spend their days finding work and are constantly under threat of eviction.

While community-based adaptation in Korail has its challenges, similar efforts in peripheral slums are nearly impossible. Since these areas are considered “extremely poor” it is less likely that NGOs will assist them. NGOs that are funded by international donors do not want to spend time and money on unpredictable communities. These areas are incredibly transient because the area itself is in flux due to haphazard urban development. In the case of these slums, it is difficult to bridge the gap between micro and macro social networks because the micro networks are not fully developed. In the urban periphery, it is necessary for the government itself to create a mandate for comprehensive urban housing policy, especially with climate-induced migrants in mind.

Slums on the urban periphery are possibly the most vulnerable areas of the city; they do not have access to basic public utilities and resources and are usually occupied by the most recent migrants to Dhaka. These migrants do not have enough money to pay rent in areas like Korail, which are relatively more developed and densely occupied and, thus, more expensive. Migrants also settle in the areas where they have a previous kinship tie from their village or an acquaintance. These tend to

---

be in the peripheral areas since family members usually migrate within a short time of one another.¹²²

The recent migrants—usually men who migrate by themselves or young single women—tend to leave their homes in search of jobs in Dhaka. Once they’ve stayed for a few months to a year and earn enough money, they return to their village. However, it is now common for migrants to stay in Dhaka for longer because there are very limited economic opportunities in rural areas of Bangladesh. Additionally, the high global demand for cheap, ready-made garments creates many more job opportunities in urban areas like Dhaka, even though the working conditions of these factories are very poor. There is also a waning job market in agriculture due to extreme flooding, high temperatures, and increased salinity of coastal water. Extreme weather, such as flooding, has made certain coastal villages in Bangladesh entirely uninhabitable. Coastal to urban migration will become increasingly more climate-induced, with approximately 500,000 new migrants to Dhaka every year (approximately the population of Washington D.C.).¹²³ This will contribute enormously to the dynamic pressures that the city faces and the migrants will face a host of new vulnerabilities in Dhaka, much of which is determined by the pre-existing complex social networks and poor infrastructure.

The differences in social capital networks among these vulnerable areas directly affect their abilities to develop in sustainable, community-based ways. Some slums, such as those on the periphery, are not even bonded “communities” because

¹²² Nurul Islam Nazem (Director of Dhaka’s Centre for Urban Studies) in discussion with the author, August 2014.
they are so transient. Many recent migrants must spend their days working multiple jobs. As they do not have the stability of more settled slum dwellers, they do not have time to spend developing their community. These slums have difficulty connecting with city officials—especially if, in the absence of local political representatives, higher-up policy makers make infrastructural decisions. It is also probable that these peripheral slum dwellers will be evicted and forced to move further outward as private developers choose to build more commercial buildings, residences, or factories on the land currently occupied by the slum.

**Synergy of Micro and Macro Social Networks**

In order to implement effective urban climate change adaptation policies, it is important to take the micro and macro social networks into account. The increasing climate-induced migration to Dhaka, which leads recent migrants to live in poor conditions in slums, calls for new urban policies that are pro-poor. There needs to be availability of low-cost urban land for housing the poor and more participation on the community level in planning and implementing low-income housing. In order for this to happen sustainably, the national and city government must acknowledge coastal to urban migration as a serious problem that must be dealt with on policy and infrastructural levels. These policies should take into account the experiences of recent migrants and the vulnerabilities they face. They should also consider the social networks among society elites that prevent these vulnerabilities from being
remedied—such as eviction of slumdwellers in order to house higher-income people or to build factories.

Vertical networks and corrupt social ties complicate the main land and housing challenges for the poor in Dhaka. The main challenges are: (a) coping with the increasing rate of arrival of poor migrants; (b) adopting more proactive planning policies to address the urban environmental risks; (c) finding a way to enforce property rights so that land grabbing does not take place; (d) ensuring that any eviction from public or private property is done in a way that recognize the rights of those affected; (e) improving the accountability of the public sector as a whole in the delivery of basic services; (f) security of tenure; and (g) sustainable housing. In order to meet the emerging challenges, upgrading existing slum shelters and services and improvement of land tenure security are essential. Future housing needs must be met through a look at city policy and connections between the bureaucrats and industry elite, while coordinating with the needs of the local community. This approach will allow the provision of incremental services and infrastructure development while providing technical and financial support to recent migrants who are arguably the most vulnerable population in Dhaka.

Though Korail is a unique community in Dhaka because of its cohesion and political participation, it is a useful study because it is a microcosmic example of the complex social networks that exist in the city. The community-based adaptation in Korail is a useful framework for studying adaptation and vulnerability in other climate-affected areas both in Dhaka and other urban areas around the world.

Studying the connections between micro social networks and macro ones, and studying the cohesion or lack thereof, is useful in understanding why certain policies exist, or why changes that are pro-poor and environmentally just are not being made. Even though Korail has successful community-based adaptation because of the cohesion between micro and macro networks, this does not mean that a similar framework of analysis will not work in an area that is less cohesive. A more transient community may call for an institutional adaptation that has a top-down approach and is policy oriented. While this adaptation does not typically involve the consent of local residents, a policy that is pro-poor and enforced by the government may be useful in increasing stability and livelihoods and in creating community bonds that will grow into organic community-based decisions.

Having a local community-based social capital analysis, within a larger city-based social capital analysis is helpful when creating sustainable urban policy. Often times, the livelihoods of particular community members are directly affected by the social networks that exist among the elites of the city. If these social networks are exclusive and corrupt, it is difficult to connect local networks with elite ones, and thus advocate for those who are excluded. In this case, local communities are more vulnerable to climate change and their adaptive capacities are lessened. If a local community is barred from the resources of a city, it is less likely that they will be able to organize amongst themselves to call for more access and better services.
Chapter 5
CONCLUSION:
Social Networks and Climate Vulnerable Cities

This thesis is built on the premise that the sustainable transition of societies facing significant environmental change will be determined, in part, by the social capital networks in those societies. Previous chapters used a synergy social capital analysis, which looks at the partnerships between state and society, to determine the vulnerabilities of distinct communities in Dhaka. This analysis concluded that macro social networks of the city can enable at least one community, Korail, to develop successful climate change adaptation, while preventing other communities from doing so. In peripheral areas of Dhaka, communities are negatively impacted by norms of corruption between city bureaucrats and industry elites.

A synergy social capital analysis is important because it calls attention to the distinct social, political, and economic conditions of communities. Since climate change is such a multi-faceted problem, it calls for similarly multi-faceted adaptation. While the specific social network dynamics of Dhaka, and Korail in particular, are
not applicable to all cities and communities, they demonstrate the complexity in planning for adaptation. A study of social networks at elite tiers of society, along with local social networks, can inform policymakers, researchers, and NGO workers about what kinds of adaptation are possible and where gaps exist in knowledge between urban governance actors.

The particular geographical and historical context of Korail makes it a breeding ground for synergy social capital. Korail’s proximity to elite neighborhoods and relative stability create working relationships between urban governance actors in the slums and more powerful policymakers. Korail’s bridging capital connects it with elite social networks and enables the slum to express high adaptive capacity. Its community-based development projects, such as community latrines, drainage areas, subsidized healthcare, and education and work training programs, are highly sustainable. Community leaders and community-based NGOs developed these projects, with extra funding from international NGOs and the city development authority. Korail’s development projects, partnerships with higher authorities, and strong social networks enable the community to be more prepared to deal with extreme weather events.

Slums on the urban periphery of Dhaka are not so fortunate in their available social networks. Slum-dwellers are much more transient in these areas because they are regularly evicted due to haphazard land development by industry elites. NGOs in turn are less likely to spend their resources to aid slumdwellers who will shortly be evicted. Though there is a constitutional mandate to set aside extra land for the poor, corrupt government officials sell this land cheaply to private developers because of
pre-negotiated deals. This corruption restricts slums on the periphery from pursuing community-based adaptation. These slum-dwellers are also limited in the extent to which they can create bonding social capital amongst themselves. They are preoccupied with finding employment, as opposed to those living in more “stable” slums like Korail who tend to have steadier jobs and more leisure time.

Most slum-dwellers on the urban periphery are recent climate-induced migrants, and therefore face a slew of new vulnerabilities when they arrive in Dhaka. These migrants must adapt to living in urban slums, which compared to coastal villages are much more crowded and polluted. Slum dwellers on the urban periphery thus have low adaptive capacity because of their unstable living conditions and their lack of support from institutional structures. In terms of climate adaptation, slum-dwellers may have bonding capital with each other, which can enable them to share supplies and resources during weather events like floods. However, slums on the periphery cannot have more long-lasting infrastructure adaptation without bridging capital connecting them to important actors in urban governance.

This thesis establishes that the macro social capital networks in Dhaka increase certain communities’ vulnerability to climate change more than others. There are definite norms of corruption between bureaucrats and industry elites that prevent infrastructural development projects in the interest of vulnerable communities from taking place. In turn, these macro social networks affect local-level social networks and cut them off from other urban adaptation actors, such as NGOs that otherwise would develop local projects if the areas were more stable.
The influx of climate-induced migrants to Dhaka puts pressure on its fledgling urban infrastructure. The constant evictions of these migrants from slums on the urban periphery to allow industrial development just prolong this problem. Local social networks, which are so crucial to collective resource management, and thus, climate change adaptation, cannot flourish in the urban periphery. If communities are unstable, it is impossible for them to scale up development projects and connect with other civil society and governance actors.

The first urban climate change adaptation priority of the city government should be to recognize the property rights of vulnerable communities by enforcing the National Housing Policy, which sets aside subsidized land for low income communities. Other policy suggestions for improving the living conditions of the urban poor are as follows:

- developing mechanisms for better accountability for land use and better coordination of services in the city;
- promoting coordination between Dhaka City Corporation, RAJUK (the planning authority), and local government and NGOs working on urban projects;
- promoting and initiating NGO-led projects in vulnerable areas; and
- promoting research about diffusing the populating growth of Dhaka to secondary cities in Bangladesh.126

---

With more coordinated efforts among government officials, it would be possible to hold specific organizations accountable to particular infrastructural problems. If NGOs had government support for community-based projects in vulnerable areas, then they would not be so hesitant to aid extremely poor areas. The NGOs could also provide services for these areas when the government does not have the capacity to do so. Finally, more research should be done to find smaller urban centers for climate-induced migrants to migrate to. Dhaka, as a growing megacity with poor infrastructure and scarce employment opportunities, cannot accommodate the estimated number of migrants that are projected to settle there in the future. Urban areas that have similar employment opportunities as Dhaka but that do not have such stressed infrastructure may be a better alternative for climate-induced migrants. These migrants may receive better institutional support in areas where the city government has fewer infrastructural pressures and a more manageable population.

The Bangladeshi government must make policy changes to address climate-induced migration and the poor living conditions in especially climate-vulnerable slums. Recent catastrophic events, such as the garment factory fires, prompted the Bangladeshi government to enforce workplace safety regulations after it experienced an international backlash. However, with more climate-related extreme weather events projected for the future, and mass climate-induced migration, international backlash should not be the primary impetus for the government to act. Dhaka’s climate vulnerability will become more dire over time, affecting not just vulnerable slum-dwellers, but middle-class and elite citizens of the city as well. It is in all Dhakaites’ interests, not just those of vulnerable climate-induced migrants, to pursue
climate change adaptation. Given the primarily vertical social structures of Dhaka, however, there must be more state and society partnerships to make this kind of collective action possible.

In order to strengthen their ability to adapt, cities like Dhaka must tailor their development goals by considering climate-sensitive land use and urban planning; drainage, flood and solid waste management; water demand and conservation systems; and emergency management and early warning systems, among other issues. These considerations should be held alongside the capacity building, institutional coordination, and education that must be carried out in a multi-sectorial adaptation approach.\(^\text{127}\)

A synergy social capital analysis of Dhaka’s vulnerable communities and adaptation capabilities can be used as an example for similar analyses in other cities. Bangladesh’s membership in networks like the Asian Cities Climate Change Resilience Networks (ACCCRN), a membership-based platform that links climate resilience practitioners and their base institutions across Asia, can help expand and distribute knowledge. Its main objectives, as follows, are directly in line with the synergy social capital lens used in this thesis:

- capacity building: improved capacity to plan, finance, coordinate and implement climate change resilience strategies within ACCCRN cities;
- developing a network for knowledge and learning: shared practical knowledge to build urban climate change resilience deepens the quality of

awareness, engagement, demand and application by ACCCRN cities and other stakeholders; and

- expanding and scaling up: urban climate change resilience (UCCR) is expanded, with ACCCRN and new cities taking action through existing and additional support (finance, policy, technical) generated by a range of actors.\textsuperscript{128}

It is crucial to compare case studies of different cities, like the one in this thesis, to share knowledge about sustainable urban development and climate change adaptation policies. Clear markers of successful social capital networks in different societies will provide good qualitative metrics for cities to follow. They will also help cities develop expertise on the adaptation options and the historical, political, or economic conditions necessary to make adaptations sustainable in specific cases.

This thesis has proposed that an analysis of social networks and climate vulnerabilities in Dhaka can be informative for climate change adaptation in other cities. Its relevance can be summed up by a quote from an interview with Hans-Joachim Hermann, a Dhaka-based climate governance expert:

“When people ask me: ‘What are you doing in Bangladesh?’ I tell them, ‘I am living in the future of mankind.’”

Approximately 54 percent of the world’s population lives in urban areas, and this figure is projected to increase to 66 percent by 2050.\textsuperscript{129} Cities will have to adapt

\textsuperscript{128} Ibid., 532
their infrastructures to limited resources. Climate change will further complicate urban infrastructural development as more coastal migrants move to cities due to rising sea levels. Dhaka is already dealing with these issues, in more extreme ways than most other cities in the world. Its ability to use social networks to bridge the gap—knowledge, resource, and otherwise—between local communities and citywide structures may be informative to the sustainable growth and adaptation of other cities worldwide in the decades ahead.
BIBLIOGRAPHY


Hassani-Mahmooei, Behrooz, and Brett W. Parris. “Climate Change and Internal Migration Patterns in Bangladesh: An Agent-Based Model.” *Environment and Development Economics* 17, no. 6 (December 2012): 763–80.


