GOVERNANCE MATTERS: POWER, CORRUPTION, SOCIAL EXCLUSION, AND CLIMATE CHANGE IN BANGLADESH

by

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DEDICATION

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DISSERTATION ABSTRACT

Although there is a growing literature on non-climatic drivers of vulnerability to climate change, there are only a few empirical case studies that demonstrate the process through which vulnerability is produced. Moreover, existing climate literatures offer very limited insights on the linkages between governance and vulnerability to climate change. Within the governance framework, this dissertation tends to contribute to the current body of knowledge by exploring the role of governance in producing vulnerability to climate change. Using southwest coastal Bangladesh as an example, this study addresses three specific research questions: (1) how *mastaanocracy*, a form of uneven power relations shapes vulnerability to climate change; (2) the impact of corruption, particularly bribery and extortion on livelihoods in the face of climate change; and (3) the linkage between social exclusion and climate change vulnerability. Findings suggest that unequal power relation and corruption reduces the ability of the population to cope with the stresses of climate change. Social exclusion adds an extra burden to already vulnerable segments of population. On the other hand, climatic change pushes marginalized community further away thus exacerbating social exclusion. Based on the findings, I argue that it is difficult to build resilience and achieve successful adaptation without addressing the structural factors of power and inequality.

CHAPTER ONE: INTRODUCTION

Earth system scientists identified nine planetary boundaries crossing which may be devastating for a safe operating space for humanity. The boundaries are chemical pollution, atmospheric aerosols loading, stratospheric ozone depletion, global fresh water use, change in land use, ocean acidification, biogeochemical flow boundary, biodiversity loss, and climate change. None of these boundaries is independent rather they are interlinked and interdependent. Among these nine boundaries we already overstepped three boundaries including climate change (Rockstrom *et al.* 2009, Steffen et al. 2015). There is a growing recognition that human actions are responsible for this change and climate change is one of the greatest challenges for humanity that affects almost all the people on this planet earth. But every individual and every community is not equally vulnerable to the adverse impacts of climate change.

Climate change vulnerability

The use of vulnerability as a concept can be traced back to Roman Empire. Roman's used this concept to denote a wounded soldier's future risk in the face of enemy's attack (Adger 2000). So originally this term refers something that expresses the degree of an individual's weakness or feebleness to be harmed. Vulnerability is broadly defined as the degree of susceptibility of a system to harm from a stressor (Blaikie *et al.* 1994, Adger and Kelly 1999, Cutter et al. 2003, Smit *et al.* 2000, and Adger 2006). The system may be social or a physical or ecological.

As a social system it can include but not limited to individual, household, community, and institutions. As a biophysical System it includes river, lake, forest, grassland, wetland etc. Like system, stressors can be both social and physical. For instance, social rules and regulations, social system, power relation, transparency etc. can be listed as societal stressors. Biophysical stressors can be listed as floods, cyclones, storm surge, earthquake, drought, salt-water intrusion, climate change and variability so on, and so forth.

Though vulnerability is used in many disciplines, this dissertation uses the concept in relation to climate change. By vulnerability, I mean susceptibility of an individual, household, or a community in the face of climate change and variability. In the climate change literatures, we observe four approaches to vulnerability. The first approach identifies vulnerability as a threshold (Villagrán, 2006, Agard *et al.*, 2014). The second approach recognizes vulnerability as an exposure to climatic hazards (Eakin and Luers 2006, Füssel 2007). The third approach tends to see vulnerability as preexisting condition (Kelly and Adger, 2000, O'Brien *et al.* 2007). The fourth and last approach recognizes vulnerability as an out come (IPCC 2007; O'Brien *et al.* 2007, Sapountzaki 2012). This dissertation uses vulnerability in the sense of outcome. For instance, what is the out come of a livelihood system when multiple stressors interact in the face of climate change and variability.

The outcome depends on the manner and degree of susceptibility of the specific system that responds to climate change. But every individual and every community

is not equally susceptible to the adverse impacts of climate change, because vulnerability to climate change not only depends on biophysical drivers but also socio-cultural rules and institutions. Because rules and institutions shape use of natural resources, which further mediate peoples' vulnerability to climate change (Berkes and Folke, 1998, Adger 2006). Climate change may be what human being does to their environment but climate change vulnerability is not limited to our behavior to environment. Climate change vulnerability is highly shaped by what human being does to their fellow human being. How they treat each other and what are the underlying rules that governed their relationships, what we call human dimension of climate change. This dissertation broadly deals with this human dimension or socio-cultural dimension of vulnerability to climate change.

Socio-cultural dimension of vulnerability

Since vulnerability does not fall from the sky rather it is the product of complex socio-ecological system (Ribot 2010, Haque *et al.* 2014). It is critical to understand vulnerability both through the ecological and social lenses as successful adaptation and resilience building depends on our understanding of vulnerability drivers (Adger 1999). In fact, how we behave to our fellow human being is the key determinant of vulnerability. And our rules and regulation both formal and informal, governance system, socio-economic institutions guide our behavior and treatment to our fellow human being and how we exercise power through these institutions. Social vulnerability refers to the underlying socio-political drivers of

vulnerability process. But this social aspect of vulnerability is less researched area and got less attention by the climate change scholars (Adger 1999, 2006, Finan 2009, Cannon *et al.* 2015). Social drivers of vulnerability include poverty, power, inequity, gender, race, ethnicity, and governance among many others.

A governance approach to vulnerability

Within the social drivers of vulnerability governance is one of the major determinants because governance provides the space for who decides and how to decide to use natural resources and public services. A governance approach can significantly enrich our understanding of vulnerability to climate change. This dissertation deals with corruption, power, and social exclusion within the framework of governance to understand climate change vulnerability.

Most of the reports on climate change mention Bangladesh as one of the most vulnerable countries to the adverse impacts of climate change (see World Bank 2010, UNDP, 2007, 2014, IPCC 2014, Maplecroft 2015). But all the regions and all sections of population in Bangladesh are not evenly vulnerable to climate change. For example, due to sea level rise and storm surges, coastal region is more vulnerable than any other regions of Bangladesh. Women, poor, natural resource dependent, and other marginalized groups are more vulnerable than any other segments of population in Bangladesh (Chowdhury *et al.* 1993, Ribot 2010, Haque *et al.* 2014, Ayers *et al.* 2014). But we are lack of understandings why and how

these groups are more susceptible to the adverse impacts of climate change than other groups. What the mechanisms are through which vulnerability manifests of these marginalized groups? Within the framework of governance, this dissertation addresses power, corruption, and social exclusion as social drivers of vulnerability to climate change and explores the mechanisms through which these factors shape vulnerability.

Core of this dissertation is three articles (2nd, 3rd, and 4th chapter) on three societal drivers of vulnerability and those are power, corruption, and social exclusion. As such, second chapter of this dissertation addresses unequal power relationship and vulnerability under climate change. The third chapter deals with how corruption impacts on livelihoods in the face of climate change. The fourth chapter explores the links between social exclusion and climate change vulnerability. I conclude with future research and policy recommendation in the last chapter, which is also the conclusion of this dissertation. The conclusion argues that without disturbing the status quo it is difficult to achieve successful adaptation and resilience.

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CHAPTER TWO: TIGERS WITH TWO LEGS: POWER AND CLIMATE CHANGE VULNERABILITY IN BANGLADESH

Abstract

Successful adaptation and resilience building in response to the adverse impacts of anthropogenic climate change hinges on our understanding of underlying causes of both climatic and non-climatic vulnerability factors. Among non-climatic factors, socio-economic and political systems such as governance and power relations play pivotal roles in producing vulnerability. The role that uneven power relations play in shaping vulnerability, however, has not received adequate attention. Using mastaanocracy, a form of unequal power relations in Bangladesh as an example, this study draws attention to the role of uneven power relations in producing vulnerability, particularly in developing countries. I claim that anthropology of climate change could extend its focus to the role of informal institutions producing vulnerability to climate change.

Climate Change Vulnerability and the Anthropology of Climate change

Vulnerability is broadly defined as the degree of susceptibility of a system to be harmed from a stressor (Adger and Kelly 1999, Cutter et al. 2003, Adger 2006, Blaikie et al. 2014,).

Stressors could be biophysical that associated with hazardous conditions, human exposure to the source of hazard and the degree of loss. Stressors might be socio-

cultural, which includes poverty, power, inequity, gender, race, ethnicity, and governance among many others. By vulnerability, this paper means susceptibility of an individual, household, or a community in the face of climate change and variability. For instance, if a cyclone or storm surge degrades natural resources of a forest upon which a forest user depends for making his or her livelihood, the forest dependent is recognized as vulnerable to the impacts of the climatic disaster, cyclone or storm surges. If socio-cultural drivers, for example, violence contribute shrinking of a community's cohesion that negatively impact on social capital in response to climate change or variability the community is considered as vulnerable to the impact of climate change, where violence is a major factor of vulnerability, because it affects social capital, which is an important element of adaptive capacity.

Vulnerability to climate change is unevenly distributed and generally greater for the disadvantaged and impoverished peoples and communities (IPCC 2014a, World Bank 2010, Tanner *et al.* 2015). Moreover, the root causes of vulnerability are comprised by both climatic and non-climatic factors, because even when climatic hazards may be "natural," the consequences and exposure to hazards are not (Adger 2006, Bankoff *et al.* 2004: 2). Socio-cultural processes place some people in more vulnerable positions compared to others, depending on their ethnicity and cultural background, socio-economic status, power relations etc. (Huq *et al.* 2004; O'Brien *et al.* 2004; Ribot 2010, Cannon *et al.* 2003, 2015). In the socio-cultural system, power relations play key roles in determining vulnerability, because power relations

determine people's access both to natural resources and public services (Leichenko and O'Brien 2002, Erikson and Lind 2009, Erikson and Selboe 2012, O'Brien *et al.* 2008, Manuel-Navarrete 2012). Existing literatures on climate change mention poor health, rural unemployment, inadequate village infrastructure, governance, power, patronage, and hierarchy as human dimensions and social factors of vulnerability (Pelling 2003, Adger 2006, Blaike *et al.* 2014, Nelson and Finan 2009, Vasquez-Leon 2009, Nagoda and Eriksen 2015). If the underlying causes and contexts of vulnerability are not taken into account, there is a crucial danger that the magnitude, scope, and urgency of climate change will be underestimated (O'Brien *et al.* 2004). So, in order to better understand the variability of vulnerability to climate change, adequate attention needs to be paid to non-climatic factors. Unfortunately, the existing body of knowledge on vulnerability and climate change adaptation has not adequately provided the kind of detailed evidence required to demonstrate the role of power dynamics in producing vulnerability (Hornborg 2009, Sheridan 2012, Pelling *et al.* 2014, Cannon *et al.* 2015). Specifically, these literatures pay little attention to the local context of power relationships that shows how power is exercised at the local level.

Anthropology is a discipline that is well equipped for in-depth and empirical studies, and so particularly suited to study vulnerability to climate change. Existing investigations in the anthropology of climate change and climate ethnography (Nuttall 2009, Crate 2008, 2011, Rudiak-Gould 2011, Lazrus 2012,) as a sub-

discipline of anthropology currently focuses on how local and indigenous populations perceive and respond to climate change in their everyday lives (Crate and Nuttall 2009, Fiske *et al.* 2014). This study is intended to fill a gap in our understanding of how issues of uneven power produce vulnerability to climate change. This study focuses on mastaanocracy; rule by thuggery, a form of uneven power that influences vulnerability to climate change. This study also draws the attention of climate anthropologists to the issue of power and governance, and suggests that climate anthropology needs to focus on how vulnerability is produced through socio-political structures. An anthropology of climate change should not be limited to saying that non-climatic factors contribute to producing vulnerability as many other social scientists do, but needs to provide the empirical evidence that shows how non-climatic stressors contribute to create vulnerability. I strongly believe that anthropological research findings can help deepen our understandings of climate change—and make us better equipped to deal with issues of uneven power.

I use Bangladesh as an example to connect the power and climate change with a grounded reality. Bangladesh is a young nation with a long history of human suffering, which is tempered by creativity and resilience in the face of poverty, environmental change, and natural disasters. Climate change is simply the latest addition to this long list of stressors. Most reports present Bangladesh as an example a country most vulnerable to its adverse impacts of climate change (see

World Bank 2010, UNDP 2014, IPCC 2014b, Maplecroft 2015). It is the country considered as "Ground Zero" for climate change, and "Nature's laboratory for disasters" (Inman 2009). At the same time, over the last three decades "malgovernance" (Sobhan 2004) has hardened from a regulatory problem to a structural problem in Bangladesh. The roots of malgovernance can be traced to politics of confrontation, criminalization of politics, the role of money and muscle power in politics, and the rent-seeking collusion among the political parties, state machinery, and vested commercial interests (Sobhan 2004). In recent times, the rule of law has given way to mastaanocracy, the rule of thugs backed by political elites. In this study, I examine the role of mastaanocracy in producing vulnerability to the adverse effects of climate change in southwest coastal Bangladesh, and claim that such forms of governance contribute to increased vulnerability to the stresses of climate change.

Meaning of mastaan

Bangladesh achieved its independence from Pakistan through a nine-month bloody War of Liberation in 1971. Since then, the country has gone through many socio-economic and political changes that shaped common people's lives and livelihoods. One of these changes has been the emergence of a new stakeholder in both the urban and rural power structure known as mastaan. Mastaan is a Bengali word that means thugs or terror type persons engaged in violent activities. Most of the mastaans are young adult between 18 and 35 years old and do not have a college level education, although some in political leadership positions are

college/university graduates. Mastaans carry out criminal activities to establish control over socio-economic and political spheres of a society. By controlling different aspects of society mastaans gain dominancy over resources that provides them income and economic benefits. They collect illegal tolls, force people to serve their interest, control natural resources, and implement political programs. The major characteristic of their activities is forcing people to act against peoples' will. For example, mastaans tends to control over public construction and procurement process. If government agencies arrange a public tender mastaans tend to control the office space and surrounding area on behalf of a bidder and force other competitor bidders not to take part in the tender process. Mastaans control the use of common pool resources, for instance, Sundarban, by applying their force they determine who get access to this forest resources. Forest mastaans are locally known as *bonodosho* or forest gangs. By violent activities they establish a monopoly control over the process. The act of exercising the role of mastaan is known as mastaani, and their activities, networks, and the entire system I term here as Mastaanocracy. Mastaani is a means of making their living. Mastaanocracy is rooted in the existing structure of Bangladeshi society. Because of its structural orientation it is not possible for a person to be mastaan individually. Mastaans are part of gangs who enjoy patronization from political elites. Since mastaanocracy is a relatively new phenomenon there are a very few studies on this emerging stakeholder in the Bangladeshi power structure. In a search of the literature I did

not find any studies thus far that connect mastaanocracy with climate change vulnerability.

Several authors have discussed the meaning of mastaan. Among them, Khan (2000) who while portraying both their positive and negative sides emphasized the role mastaan plays in providing services to the public, and as a survival option. To Khan, mastaans are ambiguous and contradictory characters. They do harm to ordinary people as well as provide some services to people who have no access to public services due to their low socio-economic status. According to Wood

"The term mastaan is used to refer to an individual as well as to a system embodying hierarchies and coalitions of mastaan actors operating with an informal set of rules, norms and values" (1998: 16).

Devine (2000) sees mastaan through the lens of patron-client relationships and opines that mastaanocracy provides a minimum level of political and physical security where both patrons and clients receive benefits from one another. Patrons provide their clients access to resources and save them from enemies. Patrons lobby for loans, social security, shelter etc. for their clients. Here Devine portrays mastaans both as patron and client. They are clients of political elites who protect them from legal action. But they are patrons, for instance, to urban slum dwellers who get benefits from them.

What mastaan means to Bangladeshi populations

Although many scholars (for instance, Khan 2000; Devine 1998; Wood 2009) have tended to portray mastaan positively, my findings, however, significantly

depart from these previous studies. It claims that mastaan is a negative connotation and their activities go against public interest in an extent that local people term them as tigers with two legs. My study reveals that mastaan means different things to different people based on their socio-economic, gender and political status. There are more than fifty NGOs working on the southwestern coast of Bangladesh where I conducted this study. The region is a hub of NGOs engaged in providing resilient ecosystems and resilient livelihoods. NGO staff members I interviewed, who are involved in development activities often described mastaans as a force in the society that opposed development. Development practitioners are highly dissatisfied with mastaan because they force development workers to obey their wishes. For instance, mastaan sometimes force NGOs to select their project beneficiaries based on who they want. When selecting sites for development projects, mastaans create hindrances to project implementation and activities. Mastaans collect illegal tolls from local businessmen, and sometime do not pay for goods "bought" from small shopkeepers. Among my respondents, girls and young widows see them as criminals responsible for public sexual harassment and the molestation of women, known as "eve teasers." Forest dependent, marginalized poor tend to view all the political parties in Bangladesh as mastaan, who aim to force people to act against their will. They see all the characteristics of mastaan in political workers. They view the forest gangs as mastaan because their criminal activities are linked to local political elites and government forest officials. Though different sections of people perceive

mastaans differently but the key feature of mastaan is-they use force to get their way.

Due to their connections to politicians and local administration mastaan influence almost every sector of the local population including personal life, socio-cultural organization, formal and informal institutions, and local traditional judicial systems. For example, during my fieldwork, a director of an NGO fired a female employee for negligence of her duties. The employee maintained good relations with local mastaans and sought their help. Local mastaans intervened, threatening the NGO employees, and directing them to leave the area. The staffs of this NGO were unable to move freely in the area for couple of days, and the fired employee with the support of local mastaans regularly came to the office. Eventually, upper level officials from the NGO contacted the local Member of Parliament (MP) and a state minister, who were the patrons of the local mastaans, and with their backing were able to uphold their decision to fire this employee.

Mastaans typically have their own boundaries which they rarely cross, and have an established territory based on mutual understandings among different groups of mastaans. Mastaan themselves see their role—quite contrary to how ordinary people see them. They claim that they are protecting local people from the misrule and misconduct of social elites and powerful persons. They envision themselves as helpers of the helpless. A local NGO director, who was one of the key

informants of this study was previously known as mastaan to the local people but later established an NGO, and currently works for marginalized people says:

> "Mastaans are good for society. They help distressed segments of people in the society. They protest against unjust decisions of social elites. If there were no mastaans, there would be no help for poor people. The irony is, people confuse mastaan with *gunda* (professional killer), but they are not the same. Gundas do harm to the people but not the mastaans"

But other local people I spoke with adamantly reject the claim made in the above statement. They perceive the opposite. No other respondents portray mastaan positively. The scholars mentioned in the previous section merely echo the voice of mastaans in their writings. This study also suggests people in Bangladesh refer individuals who are engaged with mastaani activities as mastaan, one key informants who had worked in development sector for the last forty years in Bangladesh defined mastaan as follows:

> "Mastaans are people who cannot establish themselves in the society by virtue of intellectual, technical, social, and managerial capabilities. They want to make money quickly but are reluctant to spend time and effort. And the easiest way to make quick money is use of power. Mastaans lend themselves to political elites to exercise power over ordinary people. They are like the moon that has no light of its own but draws lights from the sun"

Most of the activity of mastaan is done forcibly against ordinary peoples' will, and the only language they know is force. Mastaans enjoy administrative and

bureaucratic support for their deeds through their patrons or political elites. A decade prior, locals perceived a clear-cut distinction between mastaan and political activists. Today, however, the boundary is very thin, and most ordinary people do not distinguish between these two groups.

Role of mastaan

The existing literature on mastaan, sheds light on their role in Bangladeshi society. In an unpublished thesis on rural mastaan in Bangladesh, Salim Ahmed Purvez opined that regardless of political orientation both rural and urban mastaans establish monopoly control over resources through violent activities. In the words of Salim Ahmed Purvez:

> "Whatever their orientation or association both urban and rural mastaan are engaged in criminal and violent activities. The main objective of the mastaan structure is to gain economic prosperity. So they try to ensure monopoly control over different resources and institutions by creating violence, criminal, and illegal activities. The violent activities created by mastaan always go against social norms, values and moral ideologies and very few moral qualms restrain the mastaan activities and their protectors". (Unpublished thesis)

Purvez identifies mastaan as a group that breaks social and cultural norms; that carries out criminal activities to ensure their monopoly control over people and resources. Their criminal activities and violence extends from individual, household,

and community, to even state level. Their antisocial activities have given rise to a new social order based upon injustice and desperate forms of corruption. Mastaanocracy is a perfect exercise of uneven power. Purvez found that mastaan virtually control the socio-political and cultural lives of people in rural Bangladesh. The study also reveals that the unholy nexus between political leaders and mastaan ensures the well-being both of these parties, but contributes to the ill-being of ordinary people in the community.[1] Mastaan often work for politicians as foot soldiers. Violence and other criminal activities carried out by mastaan negatively affect general peoples' economic health (Bardhan, 1993, Ryan, 1994), psychological health (Tensky, 1998), social harmony (Wood, 2003), and physical health.

In terms of urban governance, mastaan or intermediary musclemen play an important role providing services to slum dwellers. There are millions of people in Dhaka city, the capital of Bangladesh, who without the intercession of mastaans would be deprived of basic public services (Wood 2009). Mastaan activities fill the gap between the state and low-income citizens particularly slum dwellers, who do not have the capacity by themselves to ensure their basic rights like shelter, water and sanitation, electricity, and safety. Mastaans provide these services to slum dwellers by negotiating with local administration— police, municipal staffs, political leaders, and other government officials. In turn, mastaan collect a kind of fees for their service from the slum dwellers, which is much higher than formal government

[1] In a column in Holiday, a weekly Bangladeshi magazine, Rashiduzzaman termed the relationship between Mastaans and politicians an "unholy nexus."

fees. A part of this money collected by mastaans even goes to state level political leaders, hence these rent seeking activities reach the highest levels of leadership in both the ruling and opposition parties (BRAC 2012).

Changing role of mastaan in Bangladesh

There are many popular movies in Bengali language that portray mastaans and their changing role in the society. A short film, named Noya mastaan or new mastaan depicts the hero as mastaan but he does work for poor slum dwellers, oppressed by mastaan or musclemen's criminal activities. In this short film, the local mastaans are similar to gangsters, who perform a series of criminal activities that includes extortion, rape, illegal toll collection etc. In this movie, the hero became a mastaan who resists the gangsters and protects the slum dwellers from oppression. The hero becomes a mastaan to protect his people realizing that the local law enforcing agencies fail to protect the slum dwellers. This film depicts the new mastaans as a cultural hero who plays a pivotal role in protecting slum dwellers from oppression by local musclemen or mastaan, who are linked with local administration and local political elites. In another Bengali thriller movie titled "Mastaan," the story revolves around the life of a poor boy whose mother dies of starvation. The boy joins an underworld smuggler group to overcome his economic hardship and engages in anti-social activities. The central message of this film is- the hero became a mastaan against his will and it is poverty, deprivation, and existing social stratification that compelled him to become a mastaan. A recent movie on mastaan named Thekao mastaan Bachao Desh, which means resist

mastaans to protect the country. The movie recognizes mastaan as criminals that engage in illegal activities and do harm to the mass of people. The movie appeals to its viewers to resist mastaan in order to protect Bangladesh. The realities also echo the movie's appeal and unveil mastaan structure and its consequences to the Bangladeshi society and culture.

In rural Bangladesh, the traditional judiciary system, known as *salish* (Informal judiciary dominated by local leaders and elderly people to resolve conflict) resolves disputes among rural villagers. This salish is usually composed of elders, village leaders, schoolteachers, madrasha or religious schoolteachers. The Salish tries to resolve problems and obviate the need for people to go to formal courts for judgments. Salish as part of a wider social system is beneficial to villagers because it saves their money and time that would be devoted to courts and lawyers. Since people identify them as members of *somaj* or society, they welcome and abide by the salish verdict. The salish system was based on gerontocracy (Spencer 2009), a system in which power is concentrated in the hands of older men.

In many places currently, the salish has become dominated by mastaan who are politically linked. They control the salish and influence or direct its verdict in favor of people who are politically closer to them or those who bribe them. While the traditional salish system was free from bias and monetary exchange and vested interest, now it is dominated by mastaan and has become corrupted. The final verdict now comes from the top mastaan and people do not have alternatives but to accept the decision no matter whether it is right or wrong. In Bangladesh, due to the influence of mastaanocracy, might have replaced filial Piety (Ebrey 1990) or the

dominance of wisdom, experience, and righteousness). As a result, might is tantamount to right, elderly peoples are neglected, and the young are not inspired to become good people.

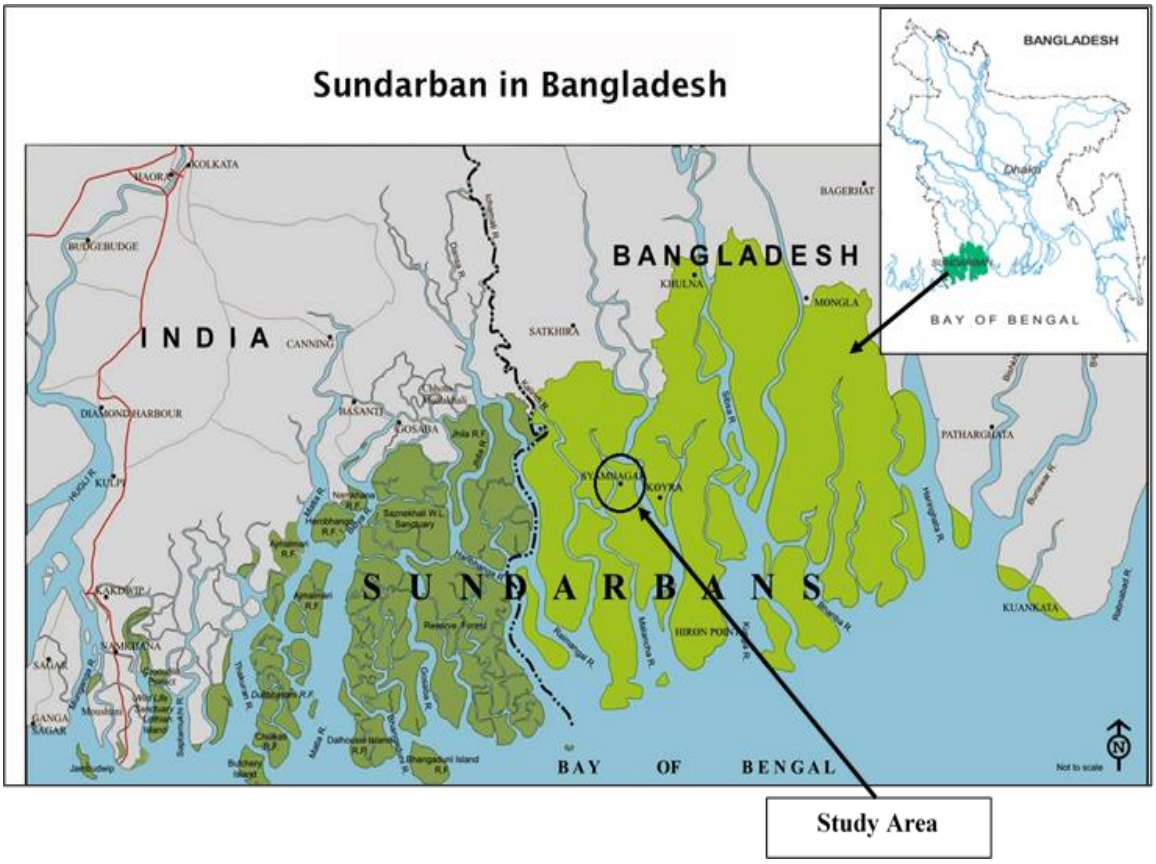
In the last decade or two, patron-client relationships in Bangladesh have shifted from being land based to being political party based and has assumed a new form where peoples' right is replaced by might. In the past patrons were village leaders, landlords or rich people in the community who served their clients partly out mutual trust and moral obligation. Now, however, my informants described them as distrustful and primarily motivated by material benefit. In the traditional patron-client structure only patrons were powerful, but in this system both political patrons and their clients' mastaans each are powerful in their own sphere, and the ultimate sufferers are the ordinary population.

Because of the criminalization of Bangladeshi politics over the last three decades mastaans have gained a kind of right and legitimacy, but they have yet to gain full social acceptance. Mastaans are seen as social evil or villains in the existing cultural system, and everyone knows who the mastaans are in a society. People do show them respect in public to protect themselves from their oppression, but explained that this does not extend to their personal belief. Mastaans are aware of their questionable status, do not introduce themselves publicly as mastaans. They do, however, feel comfortable referencing their sources of power; political elites. For instance, a mastaan would introduce by saying who is his political leader and which fraction he belongs to. The following section contextualizes

mastaanocracy within the Sundarban mangrove forest and sets the ground to discuss the implications of mastaanocracy in producing vulnerability to climate change in Bangladesh.

Climate change and Sundarban

Sundarban is the world's largest single block of mangrove forest. It is also a United Nations Educational, Scientific, and Cultural Organization's (UNESCO) world heritage site located in South-west Bangladesh and the Indian state of West Bengal. The forest, 60 percent of which is in Bangladesh and 40 percent is in India covers about 10,000 $km^{2.}$ Canals, creeks, and rivers with widths ranging from several meters to several kilometers cover about one fourth of the Bangladeshi Sundarban. These water bodies make almost every corner of the forest accessible. Sundarban provides half of the country's forest products, as well as a significant amount of inshore fisheries. Eighty percent of the forest revenue of Bangladesh comes from selling permits to local people to extract wood, honey, palm leaves, and fishes from Sundarban (Potkin 2004). The forest also constitutes a big carbon sink, and works as a natural shield against cyclones and storm surges. Approximately 3.5 million people living in southwest coastal Bangladesh depend on this forest for their livelihoods. Climate change, excessive land use, and corruption, however, have put the forest in peril (Zaman and Khuda 2011). Rahman *et al.* (2011) found that the mangrove forest lost its 450 km^2 over the last four decades and biodiversity loss was occurring at such a rate that it has begun to shrink the livelihood sources of local peoples.



There are three main harvesting seasons in the Sundarban: winter, rainy season, and spring. During the winter, forest dependent people gather palm leaves, to use as construction materials especially for roofing. Palm leaves can be stored for the whole year and sold for export outside of the Sundarban region. The rainy season is the most important season for local livelihoods as people collect honey and catch hilsha fish during this time. Hilsha is the national fish of Bangladesh and Bangladesh earns foreign currency by exporting hilsha to neighboring countries and even to Europe and North America to meet the demand of the Bangladeshi diaspora. Rainy season is also important for honey collection. Sundarban's honey is considered to be one of the best in the world because it is completely natural and

wild. Bangladesh exports Sundarban's honey to different parts of the world, and there is a particularly high demand of Sundarban's honey in Europe.

Spring is the high time to collect shrimp fry. A large portion of the shrimp fry supply comes from the Sundarban, and local shrimp cultivation depends largely on this supply. It is collected mostly by marginalized rural women and widows (whose husbands have been killed by tigers in the Sundarbans) that engage in this activity. Forest gangs, informally control the forest with the protection of local political elites who controls local administration and law enforcing agencies. Like mastaan in other parts of Bangladesh, forest gangs carry out criminal activities, collect illegal tolls, kidnap forest users and make hostage, do poaching so on and so forth. All of these activities earn money and a big portion of this money goes to their political patrons, even up to the state level political leaders.

Implications for vulnerability to climate change

Forest gangs in the Sundarbans are in reality mastaans. They are ideal example of mastaans and mastaanocracy. They use force to gain control over this common pool resource and their criminal activities are insured by local political elites who further connected to national political leaders. 15-20 forest gangs informally control the resources of this mangrove forest. Every group has 20 to 50 members that carry arms and perform the duties as assigned by their group leaders. In the last decade, law-enforcing agencies have killed more than 50 members of forest gangs. But the local forest dependent peoples' perception is that this happens only when something goes wrong with the relationship between

patrons and clients. More specifically, if patrons become dissatisfied over distribution of collected money, then law-enforcing agencies take actions. Actions may be face saving activities by law enforcing agencies and local elites.

The gangs are not constant as their internal feuds contribute to their break up, forming, and reforming. Generally every group has its own territory it controls. There is a mutual consensus among the groups that they will respective these boundaries. These gangs live in the deep forest, where it is difficult for law enforcing agencies to reach. They also live near narrow canals and creeks inside the forest that connects the forest to the big river systems. These small and narrow rivers are locally known as *Varani*. They also sometimes use government infrastructures built in the deep forest by silencing forest guards. Forest gangs are equipped with automatic guns, and some arms are even more powerful and sophisticated than government law enforcing agencies. A forest user may get into the forest by paying government fees, but cannot extract resources or get out of the forest without paying gang members.

Recently, gangs have begun kidnaping people from nearby villages for ransom. Some groups are linked with national and international poachers. Local gangs kill tigers to sell the skins, teeth, and other organs to national and international poachers. Sometimes they attack and kidnap forest officials and snatch their arms. For instance, in 2009, gangs kidnapped a forest guard and robbed his gun in Satkhira district of Khulna division (Jugantor, April 3, 2009). But

this is not a common phenomenon, as forest users believe that there is an understanding between the forest officers and the gangs based on reciprocal interests.

This uneven power relation between forest users and mastaans limits local populations' access to natural resources of the forest. As a result of this limited access forest users livelihood activities are constrained but livelihood is a vital part of adaptive capacity. Limitation of access to livelihood sources increases vulnerability to climate change (Cannon 2015) by decreasing income. This uneven power relation is embedded in the governance structure and leads to different allocations of risk to climate change impacts because local populations are forced to act against their will that reduces their options to adapt to environmental stressors (IFRC 2014). Power and political dimension are important factors determining vulnerability. This study indicates that mastaans or forest gangs that tends to mute local peoples' voice and participation, and limits income diversity by dominating forest users. Governance institutions are not successful or even close to success to plan for changing climatic conditions and risks that increases social vulnerability of forest dependent populations, local people thinks.

Forest users are thus exposed to a double set of risks (Leichenko and O'Brien 2008), one from the negative impact of climatic change, the other from uneven power relations, where local forest dependent populations are victimized by people in power, by mastaan and their political patrons.

Climate Change impacts and mastaans

In this coastal region of Bangladesh, salt-water intrusion makes land unfertile to cultivate paddy rice. To cope with the changing environment, people cultivate shrimp in this water body locally known as *gher*. Absentee farmers who live in nearest cities or capital city, Dhaka own most of the shrimp ghers and they use local mastaans to control their shrimp farming. Local mastaans work as foot soldiers for shrimp farmers cum political leaders and patrons, and serve their interest that undermine marginalized coastal population. Local mastaan will flood rice paddy fields with salt water in order to force marginalized farmers to rent their paddy field to the absentee shrimp farmers, who are equipped with money, muscle, and administrative support. As a result local people lose control over their physical capital- land that used to provide them food security. Immediate consequence of this process is that it reduces their adaptive capacity to the adverse impacts of climate change and variability.

Mastaans also control sand, which is an essential raw material for construction that is a common pool resource found in the local rivers. They decide who gets access to sandy land and rivers and who does not. Usually, no one can collect sand without paying to mastaans and their patrons.

Local mastaans also interfere in development activities by controlling development sites. For example, during my fieldwork, a local NGO director wanted to include an area in his mangrove reforestation project in a proposal that he intend to submit to an international NGO. The application process required him to obtain a

signature from the chairman of the union parished (the lowest administrative unit in Bangladesh) as proof that the local administration had no objection. But the chairman, who had been a mastaan, demanded that ten percent of the proposed budget would be allocated to project activities in his administrative territory, and when this was not forthcoming, refused to sign the proposal, compelling the NGO director not to include that forest area in the project. Even though the NGO director complained to the local Upazilla Nirbahi Officer (UNO), the officer could not do anything since the union parished chairman belongs to the ruling party and is a client of a cabinet minister.

By controlling access to this mangrove forest, mastaan control the livelihood sources of 3.5 million people who directly or indirectly depend on the ecosystem services of this forest. Local populations are already struggling to cope with the devastating impact of salt-water intrusion, as a result of cyclones in 2007 and 2009. Moreover, sea level rise, cyclones, and storm surges that have contributed to shrinking the forest and degradation of its biodiversity have already had negative impacts on the livelihoods of forest dependent peoples. In the face of climate change, mastaanocracy adds an extra stressor that broadens the existing list of vulnerability factors. This factor is embedded in the structure of governance and it is hard to see even though local populations experience this vulnerability increasingly in their everyday lives, and are along with the forest itself the losers.

Discussion

Power is a relation between people (Foucault 1990, Wolf 1999). A very uneven power relation is practiced in the Sundarbans; where political elite backed mastaans exercise power over natural resource dependent peoples, and so shape their behavior, lives and livelihoods. Mastaans have power over forest users to the extent that they can force local people to pay extortion that they would not otherwise do (Russell 1936, Dahl 1957:202-203, Foucault 1990). Sundarban dependent populations have no other alternative than to pay illegal tolls to forest gangs or mastaans to gain access to the forest needed to make their livings. The power that mastaans wield depends upon local political elites, who are linked to regional and even national political leaders. The patrons of the mastaans formally and informally control local administration and law enforcing agencies. Mastaans' illegal weapons and the power they exercise over resource extractors is contingent upon cooperation of the insurance patron or political elites. Mastaans not only exercise power over local forest dependent people, but they can also use government institutions to limit the scope of forest peoples' activities. They have the ability to make a "decision not to make a decision" (Bacharch and Baratz 1962) to take tough actions against them by law enforcing agencies. Mastaans ensure that local law enforcers, for example, Bangladesh Coast Guards, Rapid Action Battalion (RAB) and so forth do not take any serious action that can harm them significantly or can threaten their existence. In the face of climate change, power is not simply "out there" rather it is created by the current governance system of Bangladesh, which is dominated by uneven power relations. Power is reproduced by the social structure,

more specifically by the structure of governance (Giddens 1984, Parsons 1963), where mastaans enjoy the political power (Mann 1986) of their patrons by serving as foot soldiers. Most of the time, they do what their patrons want them to do. However, the base of power is coercion since they use force to gain their interest (Raven 1993). Power is embedded within the mastaan structure, and it is the relationship between controller and user of the forest that determines both access to resources in this mangrove forest and their distribution (Griffin 2012: 209-210, 214, 215).

This mangrove forest is the geography of the local peoples' souls. The forest is central to the cultural identity of local people, and who they are is deeply rooted in the environment. Mastaans not only exclude local marginalized people from access to natural resources, but in doing so also rob them of identity as forest people. Respondents perceive mastaans as a group pushing their society into an unsafe condition and a threat to their identity.

Conclusion

> "We face three deadly enemies in our everyday life; saltwater, tigers with four legs, and tigers with two legs. Tigers with two legs are more dangerous than saltwater and tigers with four legs"

This quote from an informant of my study sums up the vulnerability drivers of the local population to climate change. Local populations identify three threats to their lives and livelihoods. One is salt-water intrusion that destroyed most of their paddy

field and sources of drinking water. Due to salt water they had to compromise with their age-old occupation as paddy farmers, and this has contributed to their food insecurity. Another threat is the Bengal tigers, one of the endangered cat species in Sundarban. Because of losing its habitat and food sources, Bengal tigers kill forest users, sometimes even come to the adjacent villages in search of food, and kill villagers. So the fatal confrontation between man-eater tigers and human being has been many fold increased recently. But local populations think tigers with two legs or the mastaan, who control the forest informally, are more dangerous than saltwater and Bengal tigers. To them, mastaans are on top of everything when the vulnerability question arises.

There are many development projects in this region both by Bangladeshi government and international development agencies under implementation to address the salinity problem and to reduce the conflict between tigers and humans. The issue of uneven power between mastaan and climate victim forest users, however, has not been a target of climate intervention. Although climate change has majorly impacted Bangladeshi populations of this coastal region, the problem cannot be fully understand without exploration of the social implications of unequal power relations such as the mastaanocracy I have described here.

This study does not intend to discount or deflect our attention to climatic factors of vulnerability or does not claim that technological measures are unnecessary and

unimportant. Rather my point is that we need to pay more attention to power and governance as underlying drivers of vulnerability to climate change. Saline-tolerant rice varieties, climate-smart agriculture, climate neutral development, non-forest dependent livelihoods such as small business, duck rearing, and livestock's are very critical to the lives and livelihoods of millions of coastal population both in developed and developing countries. But if we ignore power relations, we will not be able to address a problem that significantly shapes vulnerability to climate change, which can be devastating to adaptation, international development, and sustainability.

Since mastaanocracy is embedded in the social structure, we should consider a massive transformation in governance to minimize the highly uneven power relationships between elite backed mastaan and marginalized forest dependent coastal population. It may require changing the social structure from a repressive form to one of greater equality that focuses and less visible causes and more on root causes to reduce vulnerability and risk. These drivers may be omnipresent and taken as fate by the people not in power, as seen in this part of Bangladesh, because they have grown to depend heavily on asymmetry and inequality. (Lyon 2004, Pelling 2011).

So more attention needs to be given to structure. The current governance structure disempowers vulnerable populations. The development community needs to think beyond working on the present structure and consider how to empower the

vulnerable. Instead of short-term interventions, development agencies should think in terms of longer-term interventions, and qualitative and social aspects of vulnerability in monitoring and evaluation (Indeberg *et al.* 2015). Rather than sidestepping structural and governance problems, it is urgent to face them. To face them we must strongly consider undertaking transformative adaptation that will fundamentally change the present functioning of social systems. These transformative actions doubtless will challenge the interests of people in power but also will promote the interests of others. To achieve this goal, it is urgent that we understand the underlying causes of vulnerability like mastaanocracy. Anthropology can help us to pursue this goal. Its holistic approach put this discipline in a unique position to contribute to these kinds of studies, because vulnerability has different spatial and temporal dynamics as well as different lenses of abstractions (Inderberg *et al.* 2015). Among the different subfields of anthropology, anthropology of climate change can play an enormous role using economic, political, development, governance, environmental, and medical lenses. No other discipline is as well suited as anthropology to explore underlying drivers of vulnerability. Anthropology's unique investigation tool, participant observation, can help a lot to unveil and to grasp these invisible factors of vulnerability.

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CHAPTER THREE: GOVERNANCE MATTERS: CLIMATE CHANGE, CORRUPTION, AND LIVELIHOODS IN BANGLADESH

Abstract

In world climate science, Bangladesh is considered a poster child of vulnerability. The primary stressors that affect the vulnerability of the Bangladeshi population include sea level rise, biodiversity degradation, saltwater intrusion, desertification, social exclusion, unstable political conditions, and weak governance systems. Governance is an important non-climatic stressor that has not received sufficient attention. Within this framework, this paper explores the impacts of bribery and extortion on livelihoods in the face of climate change. Findings draw attention to this critical issue in climate change adaptation and international development in general, particularly for developing countries.

Key words: Governance, corruption, livelihood, climate change, Bangladesh

Introduction

Most reports on climate change portray Bangladesh as one of the countries most vulnerable to the adverse impacts of global climate change (see World Bank 2010, UNDP, 2007, 2014, IPCC 2014, Maplecroft 2015). The country is known as "Ground Zero" for climate change and "Nature's laboratory for disasters" (Inman 2009). It seems Bangladesh is ready to be paired with climate change in word

association games due to its high vulnerability to the adverse impacts of climate change. But the causes of vulnerability are not limited to climatic factors as often is portrayed in climate vulnerability literatures. Finan and Rahman (2015) identified high levels of resource concentration, pervasive social inequity, lack of political voice and representation, social exclusion of women from public life, and embedded corruption, among others as factors of high vulnerability to the adverse impacts of climate change in Bangladesh. Furthermore, throughout the last four decades "malgovernance" (Sobhan 2004) has hardened from a regulatory problem to a structural problem in Bangladesh. Corruption is difficult to combat without changing the social structure as corruption embedded in the deep of the existing socio-cultural system. As such, roots of the problem can be traced to the politics of confrontation, criminalization of politics, the role of money and muscle power in politics, and the rent-seeking collusion among the political parties, state machinery, and vested commercial interests... As a result of this malgovernance, corruption has become a major challenge for Bangladesh, and the country was ranked 145th among 174 countries in the 2014 corruption perception index (Transparency International 2014).

Corruption is overlooked in terms of environmental change especially climate change. Understanding about the role of corruption in the face of climate change and livelihood is not supported by adequate numbers of empirical studies (Sundstrom 2015). In this study, I examine the role of corruption, particularly

bribery and extortion on livelihoods in southwest coastal Bangladesh. Using empirical data, I claim that such forms of governance reduce the ability of the population to adjust to the stress of climate change.

Many global actors held rural marginalized forest dependent population responsible for illegal logging, deforestation, and biodiversity loss that contributes significantly to climate change (Colfer 2011: 2147). But this study makes a very different claim and argues that Sundarban dependent populations are double victims of climate change and corruption. This findings contributes to forest related livelihoods and climate change discourse. This study has shown that malgovernance reduces the ability to adapt to changes, recover from climatic stressors and shocks, sustainable livelihoods, and resilient disaster recovery (Chambers 1987:15, Joakim 2013, Parizeau 2015). People of this coastal region of Bangladesh are already struggling to adapt to the threats posed by climate change, and corruption adds an extra pressure on their livelihood as they lose a significant amount of their income. In addition to general reasons, to combat corruption (see Becker and Stigler, 1974; Polinsky and Shavell, 2000) this study suggests that there is an urgent need to guard the guards of the forest, who act as "sleeping police" (Keane *et al.* 2008) to enhance livelihood resilience (Tanner *et al.* 2015) of the local marginalized population instead of undermining it.

This study further calls for serious consideration of the relationship between corruption and livelihood in the face of climate change. Bribery and extortion constrains forest dependent's access to income, food, and work that are essential

elements of their livelihoods (Chambers and Conway 1992). Findings intend to address the lack of attention to power and politics, formal and informal institution, and the failure to link rural livelihoods and governance debates in development and climate change adaptation (Scoones 2009: 182, Engle and Lemos 2010, Agrawal and Nicolas 2009). It also sheds lights on how weak governance creates space for local and trans-local powerful actors, for example, local political elites where they can represent their interests (Yates 2012:545). Moreover, this study clearly shows that power also flow through informal institutions, such as forest gangs, that negatively impact on livelihoods and shape adaptive capacity and actions.

Corruption in Bangladesh: Context and Extent

Bangladesh's current endemic corruption situation is deeply rooted in its recent history and the political process it has gone through. Bangladesh gained its independence in 1971 from Pakistan through nine months long bloody war. Since then civil government, military government, military backed civil but unelected government has ruled the country. Most of the political regimes were characterized by violence, instability, and lack of trust among the major political parties. Conflicting situation and lack of trust among the political parties given ways to military government and military backed civil government, who by nature, ignored peoples' participation and transparency (Sobhan 2007). Since governments not directly elected by the peoples of Bangladesh ruled most of the regimes, those governments did not feel accountability to its citizens. Moreover, main political

parties who ruled the country for last four decades are lack of democracy and transparency internally. A patron-client relation based on personal loyalty and rent seeking behavior dominates the recruitment of leadership process. Main political parties tend to favor people who have money and muscle power to win in the local government and national elections. As a result, corruption got rooted in Bangladeshi society through political parties and government both formally and informally. Corruption prevails almost all sectors and levels in Bangladesh that includes but not limited to education, health, judiciary, police, public procurement, social protection, Banking, and climate financing.

Poverty alleviation and growth is hampered by corrupt practices in Bangladesh. For example, Bangladesh is one of the countries with low per capita GDP. In 2014 its GDP growth rate was 6.1 percent[2]. The World Bank (2000) estimated if Bangladesh could reduce corruption to the level prevailing in Scandinavian countries, it could add 2.1 to 2.9 percent to annual per capita GDP growth.

According to the Global Corruption Barometer Survey 2013 conducted by Transparency International, Bangladesh (TIB) 98 percent respondents identified political parties and the police department as the most corrupt institutions, followed by judiciary, parliament, and government administration with 89%, 88%, and 84% corruption respectively. Sixty percent of respondents of this survey think that corruption increased in 2013 compares to the previous two years (TIB 2013: 17). In

[2] http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG accessed on July 27, 2015 at 11.58 PM AZ time.

another survey, Transparency International Bangladesh (2010) found that 72% of households were forced to pay bribes averaging US$ 69 for receiving different public services from June 2009 to May 2010, which sums to a total of US$ 1.4 billion for the country as a whole. Low income and female-headed households are identified as the worst victims of this corrupt practice. For instance, in 2007 low-income households lost 4.1 percent, middle-income households 3.6 percent, and high income households 2.4 percent of their annual income on an average to corrupt practices (Iftekharuzzaman 2009). Measured in terms of financial loss, the forest and environment department of Bangladesh is one of the most corrupt sectors, where 90% government officers are involved with corruption (TIB 2006). The sector this study addresses falls under the department of forest and environment.

Bribery and extortion are the two commonest forms of corruption take place in citizens' interactions with the state services in Bangladesh (Wickberg 2012). Poor citizens are the most vulnerable in this interaction because they depend on public services more than any other groups in the society. For example, poor people depend on government-sponsored education, health services etc. This paper deals with these two commonest forms of corruption: bribery and extortion.

Climate change and livelihoods in southwest coastal Bangladesh

In Bangladesh, the magnitude of climate change impacts, especially for coastal populations, is devastating. The coastal region covers 32 percent of Bangladesh where 35 million people live. A study conducted by the Soil Resource

Development Institute, Bangladesh indicates that the salinity-affected area has increased from 8330 km^2 in 1973 to 10560 km2 in 2009 (Soil Resource Development Institute, 2010). Furthermore, salinity intrusion from cyclones and storm surges has been a cause of major damage to rice crops and drinking water supply systems in many villages of the southwest coastal districts of Bangladesh. A recent study by the Bangladesh Center for Advanced Study (BCAS) found that 81 percent of households already experienced high levels of salinity in rice paddies compared to two percent of households a decade ago. As a result, about 80 percent of the households faced a severe food crisis ten times or more during the last ten years (Rabbani *et al.* 2013: 6). Besides agriculture, fishing livelihoods are threatened due to salinity changes in freshwater breeding grounds, and the fragile Sundarbans mangrove forests with their unique biodiversity, are in danger of disappearing altogether (Ahmed, Alam, and Rehman 1999; Ali 1999). Traditional paddy farmers adapted to this stress by cultivating saline-tolerant rice varieties until two catastrophic cyclones hit Bangladesh: Cyclone Sidr in 2007 and Cyclone Ayla in 2009. Cyclone Sidr alone killed 3,000 people, affected 5 million of families, and destroyed crops covering about 700,000 hectors. The Bangladesh government estimated the damage at $1.6 billion (DMB 2010). Due to saltwater intrusion, traditional paddy farmers are forced to abandon their age-old livelihoods and rent their land to local elites and absentee shrimp farmers. As a result, they become marginalized and depend more on the Sundarbans to make their living and put

more pressure on the natural resources of the forest, resulting in biodiversity degradation.

There are four main livelihoods that exploit Sundarbans resources: (1) wood cutters (Bawali); (2) honey collectors, (Mouali); (3) palm leaves collectors (Golpata collectors), and (4) fishermen (Jele- including mussel, clam, shrimp fry and oyster gatherers).

Woodcutters of Sundarban are engaged with various livelihood activities but their main livelihood sources are cutting, gathering, and selling firewood to the local market. Though woodcutting is legally prohibited they do it regularly by managing forest guards. Sometimes woodcutters go to forest by using permit for fishing or collecting palm leaves but cut trees and bring it out of the forest by escaping forest guards' eyes. Since local population mainly depend on Sundarban for their firewood the demand for firewood in in rise in the local market. All the three woodcutter respondents of this study heavily depend on cutting and selling firewood for making their living. Most of the woodcutters are too poor to do forest neutral livelihoods, for example, small business.

Honey collection is one of the oldest occupations in this region of Bangladesh. This is the livelihood activity that cannot be performed individually. Forest dependent people do make small group of 5-10 people and get into the forest for two weeks to collect honey. Forest department sell permits for honey collection only for three months in a year, from March to May. Honey collection is one of the most profitable livelihood activities in Sundarban. Honey collectors are also the most

vulnerable to tiger attacks, as honey collection requires access to the deep forest where Bengal Tigers live. Due to their access to deep forest they also face forest gangs and force to pay extortion.

Palm leave collectors: Nypa palm leaves are the material local people use for roofing. Palm leaves collectors sell their harvest in the local market as well as export to nearby districts. They are one of the most marginalized groups in Sundarban because they mainly depend on the natural resources to make their living. They also sometimes collect firewood hiding under the palm leaves from Sundarban. Though they are involved in other livelihood activities they mainly depend on palm leaves collection to make their living.

Fishermen: Fishing is the most common and everyday livelihood activity in Sundarban. This activity occurs in the rivers and creeks of the forest all over the year. Forest departments sell permits regularly to local population for fishing and there is no restriction on what kind of fishes can be caught. Fishermen collect shrimp fries or baby fish; catch both adult and baby crab, and other kinds of fishes. Though there are some restrictions on how much fishes can be caught in a certain period it is not enforced strictly by forest departments. Rural marginalized women have access to adjacent rivers without permit from forest departments. They do collect shrimp fry during the high tide of the day. This access is informal because by law everyone requires to pay revenue to the forest department to get access to the resources of Sundarban.

Non-forest livelihoods include small business, shrimp farming, day laborer, and skilled and unskilled laborers who also indirectly depend the forest. Climatic stressors such as saltwater intrusion not only force local populations to abandon farming and turn to the Sundarbans for their survival but also contribute to social unrest. Most of the shrimp cultivators are absentee farmers who are equipped with money and strongly connected with local political elites and administration. This process results in conflict between the local people and the musclemen or hoodlums who work for elites, known as mastaan[3].

Aim and methods

Corruption is widely conceptualized as the abuse of public office for private gain (Bardhan 1997, World Bank 1999, Treisman 2000, Transparency International 2009). This definition does not include informal institutions that play an important role in governance particularly natural and common pool resource management. TI considers eight forms of corruption: bribery, extortion, wage/asset stripping, fraud, favoritism (including nepotism and patronage), and negligence in the provisioning of services, influence peddling, and procurement irregularities. This study deals with the two most practiced forms of corruption: bribery and extortion. For the purpose of this study, bribery is defined as "the offering, promising, giving, accepting or soliciting of an advantage as an inducement for an action which is illegal, unethical or a breach of trust. Inducements can take the form of gifts, loans,

[3] Mastaan is a Bengali word that refers to the rule of thugs backed by political elites. For details please see Rahman 2015.

fees, rewards, or other advantages (Transparency International 2009:7). This study considers both cash and kind given to public servant or foresters by forest users in order to extract resources from Sundarban. Sundarban dependent populations informally pay to forest officials and forest guards to get into the forest. They also share their catches to meet the demands of public servants.

I also use the TI's definition for extortion, which is an "act of utilizing, either directly or indirectly, one's access to a position of power or knowledge to demand unmerited cooperation or compensation as a result of coercive threats (ibid 19). This study, by extortion, means the payment given to forest gangs both in cash and kind. Forest gangs share their earnings with political elites. Here political elites abuse their entrusted power via forest gangs that shifts public wealth to private property. The aim of this study is to assess the impact of corruption on livelihood practices. More specifically how bribery and extortion affects livelihoods of coastal inhabitants, who have little power but who are at the forefront of climate change impacts.

I conducted six months fieldwork in coastal Bangladesh from July to December 2013 in the Sundarbans among people who depend on Sundarbans directly or indirectly for making their living. The Sundarbans is the key breeding grounds for fish and shrimp in Bangladesh, and a refuge for the last few hundred remaining wild Bengal tigers. This mangrove forest is one of the world's great centers of

biodiversity and is a UNESCO Heritage Site[4]. Administratively my fieldwork site is located under the sub-district of Syamnagar in Khulna division in Southwest Bangladesh.

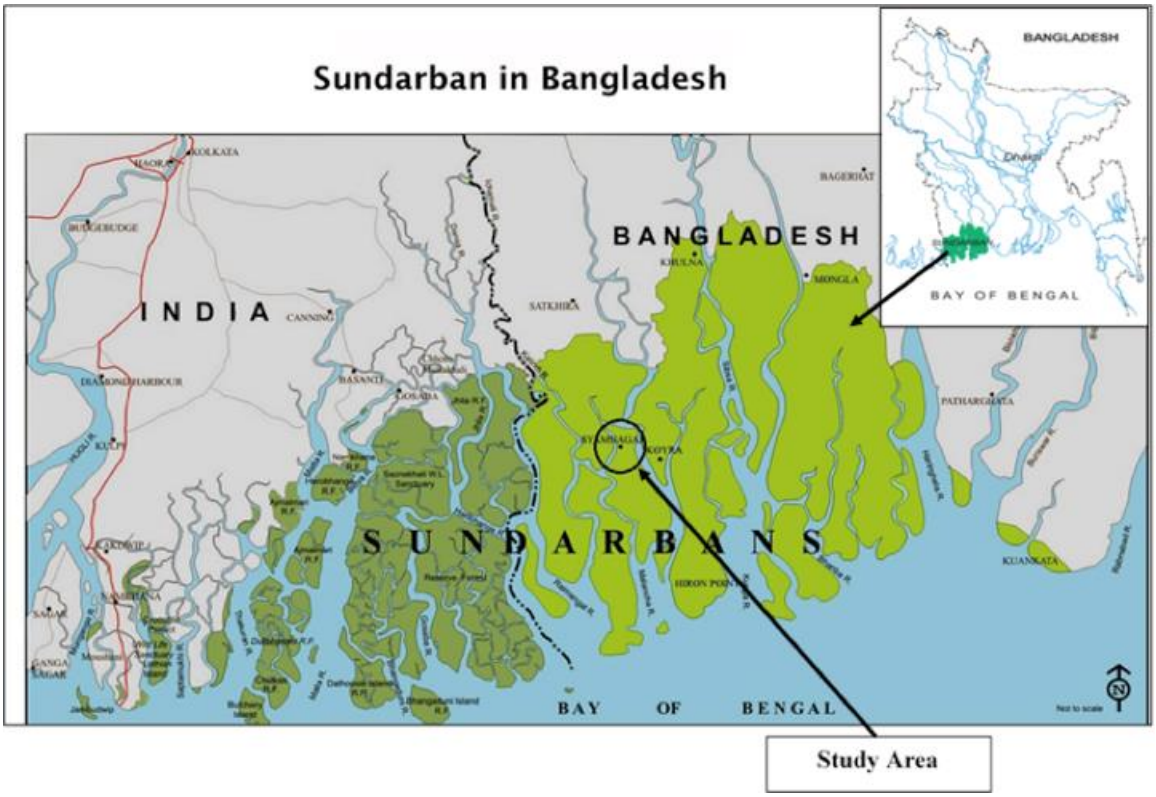

Figure 1: Study area

I used participant observation as an umbrella technique that included semi-structured interviews and focus group discussions. A total of 108 heads of households who directly or indirectly depend on Sundarbans for their livelihood were interviewed. Small business, rickshaw van pulling, skilled, and unskilled laborers are the people who indirectly depend on Sundarbans for making their living. Since corruption is a sensitive issue and people are usually reluctant to share

[4] Bangladesh part of Sundarban was inscribed as a world heritage site by UNESCO in 1997. Details can be found http://whc.unesco.org/en/list/798 accessed on July 6, 2015 at 11.40 pm AZ time.

their experiences (Kraay and Murrell 2013, Sundstrom 2015), In order to gain trust, I lived with them and worked as a forest resources extractor as they do. I accompanied them as they bought forest permits to get into the forest and observed how they pay bribes to forest officials. The government rate of revenue is printed in the memo bought by forest dependent people but they pay an amount much higher than the face value, which I document as a bribe. I got the bribe amount for forest users by subtracting the printed amount from that was actually paid amount. I also went into the forest with forest users to observe their livelihood activities and how they deal the forest guards. In addition to paying a bribe to get access to the resources they also sometimes pay part of their harvest when they return from the forest. To quantify this, I converted the harvest into monetary amounts and added it to the amount of bribes already paid.

Forest robbers, who informally govern the forest, collect extortion from the forest users in the form of money, food, and services. As a participant observer, I took part in my respondents every day activities that includes extracting forest resources, paying bribes and extortion as a member of a team of forest users. I intensively observed the process to know how local people pay extortion to the forest gangs and witnessed how gang members collect illegal tolls. During six months fieldwork, I administered my first semi-structured interview after two months in the field. I took time to build up good rapport with the local community members so that respondents would feel comfortable sharing their experience with me. During the survey, I interviewed only the household head as I consider the household as the

nucleus of all economic activities and the unit for development interventions. For example, a household head may be too old to work and recorded as having no occupation but his/her other family members might be involved in economic activities and earn for the family. As such, s/he is shown with income as well as victim of corrupt practices if any of his/her family members pay bribery or extortion. A female head of household may work as a household domestic worker that does not require paying a bribe to forest officials but one of her sons or daughters may go to the forest and be subjected to corrupt practices. So the figures on income or corruption represent the entire family's share under the name of the household head.

Bribery, extortion, and livelihoods

Bribery and extortion are the two most common and widely spread forms of corruption in Bangladesh as well as in this coastal region of Bangladesh. Populations of this region are hardest hit by global warming induced climate change.

Bribery payments

Empirical data analysis shows that 77 respondents out of a total of 108 interviewed (71.3%) pay bribes. People who depend directly on the mangrove forest for making their living are the worst victims of these corrupt practices. These are honey collectors, wood gatherers, fishermen, and palm leaf collectors. On average, every respondent pay 60 dollars but forest dependent people pay more than double this amount, at 125 US dollars per annum.

It should be noted that this is one of the most impoverished regions in Bangladesh and a vast majority of the coastal inhabitants live on less than a dollar a day. A Bangladesh poverty map produced jointly by the Bangladesh Bureau of Statistics, World Food Program, and World Bank shows this sub district where one third of the population lives under the extreme poverty line (World Bank 2010:7). The extreme poverty line applies to households whose expenditures are equal to the food poverty line using the cost of basic needs. Since most of the forest dependent people do not know how to read and write some of them are not even aware of this corrupt practice because they cannot read the government receipt. A majority of forest users buy the permit to get into the forest through middlemen who are familiar and connected to the government forest officials. Those who recognize the process as bribery resign themselves fatalistically to the fact that bribery is a "cost of doing business" in the Sundarbans.

Most of the 28 percent who did not pay bribes do not depend directly on Sundarbans for their livelihood. They are skilled laborers, household domestic workers, and small businessmen. Their interaction with the government civil servants is very minimal, although some small businessmen pay bribes to government civil servants to use electricity illegally. For instance, a small restaurant owner uses electricity in his restaurant through lines from his home, thus paying the lower domestic rate. Instead of paying a higher price for using electricity in his restaurant, he pays off the meter reader.

The forest department sells permits for a defined period to extract a fixed amount of resources from the Sundarbans. But those who pay bribes stay longer inside the forest; and as a result they extract more resources than they are supposed to harvest. For example, the official forest permit allows someone to harvest for a week but paying bribes they harvest for eight to ten days. The most profitable season is the honey collection season, when Mouali or honey collectors harvest and sell the honey to local buyers who then export it mostly to European markets. The best and most highly sought honey is locally known as Khailsha, which appears at the beginning of the season. During the high activity period, the forest officers demand higher bribes. People who have the ability to negotiate and pay higher amounts get the permission to collect honey during this peak time of the year. Sometimes, forest guards allow honey gatherers to get into the forest before the official harvesting season begins. In this case, the government loses revenue that is captured by corrupt forest officials. On the other hand this practice deprives marginalized rural poor forest users from their rights to this common property resource. Another form of corruption is buying stolen forest resource informally from the forest officials. Sometimes, if someone extracts prohibited woods, forest officers seize the resource and sell it at auction later. People who are connected to the forest department as well as local administration and political elites, take advantage of this and buy the resource cheaper than the market price from the

public servants. This practice may contribute to increase deforestation as well as government revenue loss (Zaman and Khuda 2011).

Forest-dependent people without the capital to purchase boats or other necessary equipment for harvesting, work as day laborers for others who have the means of production and connections with the local elites and forest officials. In the formal process, employers or owners of means of productions are invisible but bulk of the harvest goes to this elites. For instance, honey collectors purchase forest pass and harvest honey but they work for the elite who provides them capital. These day laborers are the worst victims of corruption, and they constitute one-third of the total number of bribe-payers. Within this group more than 63 percent pay bribes. One of the reasons for their vulnerability to bribery is that they receive a fixed wage and their marginal position in the community reduces their ability to negotiate with the public servants who collect forest revenues and oversee the forest. Moreover, they are under pressure from their employer to harvest more resources in an assigned timeframe. For about a third of this group, the employer paid the bribes in 2012-2013, which is usually the case when the employer takes a group of day laborers into the forest. Some non-forest dependent occupations (skilled laborer, cook, etc.) reported paying no bribes; while rickshaw van drivers are systematically compelled to pay bribes to local policemen. In the case of van drivers, they pay a monthly part of their subsistence income to an association that pays off the police in the name of all van drivers.

Women, who work as household domestic workers, are also work for government-financed projects "Food For Work[5]" during the dry season when the unemployment rate goes high. To get this work 75 percent of them pay a part of their earnings to the local project directors or the staff workers who control the project. Those who do not pay bribes in monetary terms pay in other ways to get work. An old lady who did not get work for the last two years in "Food for work" projects said with anger and frustration,

> "Why would they provide me work? What do I have in my possession to satisfy them? I have neither money nor *Shorir* (body). I have nothing. They demand not only work but also *Rong tamasha*".

By body she means her young age and beauty. She uses Rong Tamasha, which means recreation involving physical contact, inferring sexual activity. When she utters this word, her neighbor, a young lady covers her face as she feels shame and embarrassment, because she became so angry and frustrated that she reacted to using language normally taboo in everyday conversation in rural Bangladesh.

Extortion payments

In bribery, a government official is always involved. The forest officers and guards demand bribery but they do not threat to do any harm if a forest dependent refuses to pay the bribe. The officers simply deny serving the local people. But in extortion, no public officials are involved (Olken and Barron 2007) rather an

[5] Food for work is a government sponsored project in order to generate supplementary wage employment. The program started after the 1974 famine to support rural poor people. Government builds and maintain rural infrastructure through this project.

informal controller of the forest is receiver of the benefit. In this case, forest gang members not only bar them from getting access into the forest but also threaten the forest users with physical harm or even death. 56.5% of respondents are the victims of extortion and all most of all of them are forest dependent.

This study suggests that every wood gatherer who gets into the Sundarban pays extortion to forest thugs or robbers. Fifty percent of honey collectors pay extortion. The percentage is low because there are local and national NGOs who provide capital, boat, and all other necessary equipment to collect honey. By the leadership of NGO staffs they provide training and negotiate to forest robbers not to pay extortion. NGO supported boats carry the respective organization's flag recognizable by forest robbers so that they do not impose extortion and do not kidnap the honey collectors. Since NGOs are well connected with the local and national administration and law enforcing agencies, robbers do not want to clash with them. For instance, a national NGO owns half of a dozen boats and teams who collect honey for them and sell their collected honey to the local branch of the NGO. All the boats belonging to this NGO carry their special flags visible by forest robbers and it gives them safety against forest gangs. Robbers are scared of them because a high ranked police officer's wife works for the NGO in their head office in the capital city, Dhaka. If robbers try to collect extortion from the boats of this NGO, they know, they will be in trouble by law enforcing agencies. So forest robbers always maintains safe distance from the honey collectors of that NGO. 94.4% of fishermen pay extortion to forest gangs regardless of the amount they earn.

Table 1: Percentage of those paying extortion by occupation.

Occupation	Did not pay (Count/percentage)	Paid (Count/percentage)	Total (Count/percentage)
HH domestic work	5/ 41.7	7/ 58.3	12/ 100
Wood gatherer	0/ 0	3/ 100	3/ 100
Own business	6/ 66.7	3/ 33.3	9/ 100
Honey collector	1/ 50.0	1/ 50.0	2/ 100
Skilled laborer	2/ 66.7	1/ 33.3	3/ 100
Fishermen	8/ 44.4	10/ 55.6	18/ 100
Handicraft	0/ 0	2/ 100	2/ 100
Palm leave collector	1/ 100.0	0/ 0	1/ 100
No occupation	4/ 28.6	10/ 71.4	14/ 100
Day laborer (with no or little capital)	20/ 45.5	24/ 54.5	44/ 100
Total	47/ 43.5	61/ 56.5	108/ 100

On top of paying extortion in money terms sometimes they are forced to share their catch with the forest gangs. Furthermore, fishermen are forced to cook for gang members. If any forest resource extractor refuse to pay extortion, dacoits kidnap them and keep as hostage until his relatives pay on behalf of him. During the hostage, robbers physically torture their captives, do not give food, and water for long time.

Loans

Local people borrow money both from formal and informal sources. A formal source includes bank and local NGOs and informal sources are friends and family members, and moneylenders. They borrow money during economic hardship to meet different needs, for instance, agricultural investment, to start small business, to cover the loss created by climatic disasters, and governance issues particularly for paying extortion.

Analysis suggests that most of the respondents borrow money to pay to the forest gangs to free their family members kidnapped or made hostage inside the deep forest. In this case, they need to borrow a big amount of money within a day or two on a very high interest to protect the hostages from torture and even life threat. Data shows that only 1.1 percent of respondents borrowed money to cover the loss from climatic disasters in 2012-2013 but 32.2 percent borrowed money due to governance reason, more specifically for paying bribery and extortion.

Table 2: Loan purpose for those taking loan

		Frequency	Percent	Cumulative Percent
Valid	Agri investment	5	5.6	5.6
	Non-agri investment	19	21.1	26.7
	Climate emergency	1	1.1	27.8
	Governance issue (Bribery and extortion)	29	32.2	60.0
	Social needs	5	5.6	65.6
	Consumption needs	6	6.7	72.2
	Others	25	27.8	100.0
	Total	90	100.0	

If bribery and extortion are considered jointly 89 respondents out of 108 pay either bribe or extortion that is 82.4 percent. Only 17.6 percent pay neither bribe nor extortion and most of them do not depend on the forest for their livelihood and some of them are connected to local NGOs who further connected to high-ranking law enforcing agencies.

Perception of bribery

Analysis suggests that bribery is seen negatively by most of the informants, in general but respondents who had formal education and are comparatively richer than most of the forest dependents tend to sympathize with forest guards due to their low salary, long duty hour, and poor infrastructure facilities in the work station inside the forest. But no one shows sympathy towards officials who work in the office but receives bribery. This finding echoes the findings of Hunt and Leszlo (2012) in Peru and Uganda. They also found some clients who are sympathetic to corrupted officials. But the difference is-no respondent of this study is sympathetic to officials who work in the office room but receive bribe. Sympathy goes to low-salaried forest guards who work for longer hours inside the deep forest in a difficult and life threatening condition. Foresters use government institutional arrangements to enforce corrupt practices for their private gain and allow resource users for longer duration that increases the likelihood of over harvesting (Sundstrom 2015). Over harvesting further contribute to deforestation and biodiversity degradation of this largest contiguous tidal mangrove forest in the

world and a haven for a spectacular array of species, including the highly endangered Bengal tiger.

Bribery, extortion, and vulnerability

Drivers of adaptive capacity to these forest dependent populations are regular and adequate income provided by rich flora and fauna of the Sundarban. But bribery and extortion practices force them to over extract the resources that contribute to biodiversity degradation of this mangrove forest that shrinks their livelihood sources and contribute to increase vulnerability. Findings suggest that bribery and extortion do not contribute to decrease the number of forest users hence resource extraction because they do not have dependable alternative livelihood sources than use of this forest. For instance, Sundarban is the habitat of Bengal tigers, an endangered cat species in the world. The higher number of tigers indicates the richness of biodiversity or flora and fauna. Because of fear of tigers' attack forest users limit their resource extraction. This is one of the reasons Bengal Tiger is known as the guardian of Sundarban. A recent survey discovered that only 100 Bengal tigers roam in the Bangladesh part of Sundarban. This number represents a sudden drop from the 440 figure included in the last tiger census conducted in 2004[6].

In the face of climatic disaster, for example, cyclones and storm surges, they need cash money to respond to the sudden emergencies but bribery and extortion reduces

[6] http://time.com/3972820/bangladesh-tiger-100-sundarbans-survey/ accessed on July 28, 2015-07-28 at 3.48 am.

their capacity to respond to emergency situations because forest users saving capacity is seriously undermined by payment of bribery and extortion. Since forest users pay a significant portion of their income to these corrupt practices it pushes them to cross the threshold. As a result they fall down in relation to their capacity to adjust to the climatic stressors. For instance, 56% respondents of this study are forced to pay bribes, which means 56% populations' lost a significant amount of their income to corrupt practices that could be used to respond to the climatic stressors. Not only these, every forest users pay $125 per annum as bribes that could be used to gain access to health care, education, food, and shelter that could further increased their adaptive capacity. Saltwater intrusion, a biophysical stressor damages fertility of their arable lands and increases local populations' dependency on the mangrove forest. But extortion takes toll on their income that earned by extracting natural resources, which means extortion adds an extra layer to the existing vulnerability by reducing their income. Even local populations are forced to borrow money on high interest rate to pay extortion that reduces their 'livelihood resilience' (Tanner *et al.* 2015) significantly in the face of climate change.

Research findings suggest that by taking tolls on livelihood system, corruption undermines local populations' adaptive capacity to the adverse impacts of climate change. It adds an extra layer to the existing vulnerability drivers of climate change. Not only this, corruption also contributes to biodiversity degradation of the Sundarban mangrove forest including illegal logging. As a result, the forest is losing

its capability to sink carbon that further hampers the mitigation process. Corruption works as a double edge sword that reduces the adaptive capacity of the local population as well as negatively affects the mitigation process.

Sundarbans work as a bio shield against cyclones and storm surges for southwest Bangladeshi coastal population. Sundarban contributed to minimize the impact of climatic disaster by acting as a natural shield particularly in 2007 and 2009 against cyclone Sidr and cyclone Ayla. Undermining this capacity, corruption poses a serious threat building resilience against climate change.

Like many other countries in the world, Bangladesh follows revenue oriented forest policy rather than conservation oriented forest policy. This policy shapes forest management staffs, political elites and their clients mind toward the same policy; forest is the source of making money. As a result, foresters become motivated to use this common pool resource for private gain. They are also under constant pressure to collect the targeted revenue. The end result of these activities is forest degradation that increases the people's vulnerability to climate change.

Extortion is highly practiced by the gangs, who informally control the forest. This informal institution linked to mastaanocracy, rule of thugs patronized by the political elites. These political elites abuse the entrusted power given by the local population for their personal gain. The research findings underline the importance of curbing corruption by addressing the structural root of corruption to increase local peoples adaptive capacity to climate change induced problems.

Conclusion

This study indicates that corruption plays a significant role to increase vulnerability to the adverse impacts of climate change. But the problem is not created by itself rather corruption is rooted in the broader governance system that developed through the malgovernance of last four decades in Bangladesh. As I mentioned above, the military, military backed civil governments, and government with little support by its citizens dominated the last four decades of the country's rule. As a result, corrupt practices become salient features of the governance system that is unable to help people to respond to stressors like climate change. Social forces of poor governance with the natural sources of climate stress increase the vulnerability of the coastal populations. Moreover, this kind of governance system cannot be replaced suddenly by a new system that increases adaptive capacity of vulnerable populations. To address this structural problem to better equipped for responding to climate change impacts we need to consider long-term development solution. We may consider structural transformations of society that can help us to ensure sound adaptive governance.

This study covers two main forms of corruption found in Bangladesh; bribery and extortion. This study recommends further research on the impact of other forms of corruption; negligence to provide services, influence peddling, and procurement irregularities and their role regarding livelihood under the stress of climate change. Further researches on the other forms of corruption and their roles in response to

climate change may help us to get a complete picture of corruption and its impact on livelihood in the face of climate change.

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CHAPTER FOUR:HARBINGER OF BAD LUCK: TIGER WIDOWS, SOCIAL EXCLUSION, AND CLIMATE CHANGE IN BANGLADESH

Abstract

Among the socio-cultural drivers of vulnerability, this paper explores how social exclusion shapes vulnerability to climate change. Based on findings of six months ethnographic fieldwork in coastal Bangladesh this paper argues that social exclusion and climate change feed upon each other. Using tiger widows as an example, I claim that social exclusion adds an extra burden to already vulnerable segments of population to climate change. On the other hand, climatic change exacerbates social exclusion by pushing the marginalized community further away. This paper further explores the policy and development implications of an exclusionary social structure.

Keywords

Climate change, vulnerability, social exclusion, Tiger widows, Bangladesh

Introduction

Much of the climate change literature is lacks a human face. They tend to focus on the causes and consequences of climate change based on quantitative survey analysis. These literatures emphasize on loss and damage caused by climate change and debate on who should bear the burden and what proportion (Finan 2009, McNamara 2014). For instance, IPCC in its series of reports (IPCC 2007,

IPCC 2014) mostly documents the physical and economic consequences of global warming induced climate change. Often scientists are more interested in technical solutions rather than adaptive, behavioral, or socio-cultural solutions. Some social scientists, such as economists, may reduce climate change impacts into a single financial metric (For example, Stern 2007, World Bank 2010). But there is a need for more detailed qualitative analysis that shows the human side of climate change vulnerability. It is critical to portray the pains and sufferings of the most vulnerable segments of the population that cannot be expressed in monetary terms. Because of inadequate attention to human dimension of climate change, we are lack an understanding of the societal factors of vulnerability and we fail to give voice to large segments of vulnerable people in society. So this paper seeks to explore lived experience of marginalized groups through qualitative methods (Adger 1999, Vasquez-Leon 2009) to get a full understanding of climate change vulnerability.

Wicked problems are characterized by uniqueness and without precedence. There are no countable alternative solutions to wicked problems. Every wicked problem is a symptom of many other unforeseen problems. Wicked problems are neither strictly ecological nor social rather socio-ecological (Ronan 2014, Perry 2015, Gray *et al.* 2015). As a "wicked problem" climate change can contribute to create multidimensional and interconnected new problems. Social exclusion is one among the waves of problems created where climate change has a contribution (Davoudi *et al.* 2009, Jordan *et al.* 2010, Termeer *et al.* 2013). But the less developed question is

–what is the link between climate change vulnerability and social exclusion. So it is important to understand vulnerability factors of climate change through the framework of social exclusion (Weber 2006, Wilson *et al.* 2010, Arthurson & Baum 2015). This paper intends to contribute to this less debated area of climate change vulnerability. This paper sheds lights on social exclusion, an invisible process by which a group of women and their children become marginalized, and how this marginalization and social differentiation compound other factors of vulnerability to climate change. This paper also explores how climate change contributes to increase social exclusion.

The Sundarbans is the world's largest single block mangrove forest with a size of 10,000 square kilometer. Sixty percent of the forest is located in southwest Bangladesh and the remaining forty percent is in India. It is a UNESCO world heritage site and the reserve with the greatest number of Royal Bengal tigers. Global warming has induced a sea level rise, intense and frequent cyclones, and, indirectly, human pressure to over-harvest and shrinking the forest ecosystem. The forest lost half of its size in less than a century due to climate change related impacts, particularly sea level rise and alteration of water flows of the Himalayan headwaters (Rahman *et al.* 2011). Furthermore, weak forest governance, corruption, and over extraction resulted in tremendous biodiversity degradation of the forest (Zaman and Khuda 2011). This degradation has put extreme pressure on its surrounding people to over harvest, and consequently, has forced them to go deep

into the forest, increasing their chances of being killed by tigers. Tigers regularly kill forest users in this southwest part of coastal Bangladesh. In addition, due to habitat loss and the search for food, tigers are venturing into the nearby villages searching for food and even killing people in their homes. As a result, the Bangladesh parts of Sundarbans suffer the highest levels of human killing by tigers in the world (Barlow 2009). Tigers kill as high as 150 people in a year in the Bangladeshi part of Sundarban (Montgomery 2008:11). Recently local populations are experiencing a growing trend of deaths by tiger attacks. Naha (2015) found a tenfold increase of human deaths by tigers in the last three decades.

In effect, the competition over a shrinking natural resource base between human and animal has taken a deadly turn, and as a result has created a socially excluded class of women known as "Tiger Widows". Since their husbands are the main breadwinners of their families they are thrown into extreme poverty and hardship after sudden death of their husband. In addition to this hardship, tiger widows are victims of socio-cultural construction of identity that identify them as *Swami Kheko* or husband-eater (Chowdhury *et al.* 2014). Community members see them as unholy women and evil person who can bring misery and misfortune for their community. Because of this culturally constructed identity tiger widows are subject to social isolation driven by cultural stigma. They experience blame, helplessness, and distress. Their new identity and social status contribute to push them further away and exacerbate social exclusion. Using tiger widows as an

example, this study shows how social exclusion and climate change fed each other. I address the issues based on ethnographic data, collected using participant observation method, which included semi-structured interviews, focus group discussions, and participant observation.

What does social exclusion mean?

Social exclusion is a process of subordination whereby one group deprives another from public goods and services (Parkin 1979, Burchardt *et al.* 2002). It is a multidimensional process that separates an individual or a group of individuals from social institutions and prevents their normal or full participation in society. (Silver 2007, Nagla 2014). There are two salient features of social exclusion; deprivation or denial of equal opportunity and exclusion from full participation in the society. In social exclusion-

> "Various forms of exclusion are combined: participation in decision making and political processes, access to employment and material resources, and integration into common cultural processes. When combined, they create acute forms of exclusion that find a spatial manifestation in particular neighborhood" (Madanipour *et al.* 1998: 22)

These reasons that cause social exclusion may include limited to no or low level of education, unsafe or inadequate housing, inability to gain employment, inadequate family support, deprivation based on gender, class, race, and ethnicity (Morrow

1999, Tapsell *et al.* 2002, Cutter *et al.* 2003, Rygel *et al.* 2006, Satterthwaite *et al.* 2009, Arthurson and Baum 2015).

Social exclusion overlaps similar concepts such as poverty, ghettoization, marginalization, and the creation of an underclass (Burchardt *et al.* 2002: 2). Sen (2000) argues that use of the term social exclusion should be limited to instances where lack of participation arises through a failure of social relation. To distinguish social exclusion from poverty, Walker and Walker (1997) argue that poverty refers to mainly lack of material resources, for example, income. But social exclusion emphasizes on denial of civil, political, and social rights of citizenship that may contribute to producing lack of material resources.

Burchardt *et al.* (2002:7) has provided a framework for understanding social exclusion that presents different levels—family, community, national, and global—at which exclusion can occur. I use this framework to explore social exclusion of tiger widows. In this framework one level can influence any other level. In individual level a person can be socially excluded based on age, gender, race, disability, preferences, beliefs, and values. Immediate family, community, national, and global context, can also influence the individual. For the purpose of this study, deprivations in all of these levels are considered as social exclusion but emphasis is given on social isolation that manifests through avoidance and negative attitude of their family and community members.

Who are tiger widows? What it means to be a tiger widow?

A woman whose husband was killed by tiger is known as tiger widow. Since men are the principal breadwinners for their families in Bangladesh, they go to the forest on a regular basis to make their living, and they are the main victims of tiger attacks. Though tigers kill men and women, 90% of those who have lost a spouse are women, thus the name Tiger Widows. I conducted fieldwork in two unions of Shyamnagar sub district under Satkhira district in the southwest coastal Bangladesh. The unions are Munshigong and Burigoalini. There are more than five hundred tiger widows in two unions in Shyamnagar upazilla or sub-district. These two unions are only 91.73 square kilometer (Banglapedia 2015). Tiger widows are stigmatized and labeled as carrier of bad luck. The following section discusses what stigma is and how tiger widows are stigmatized in this part of Bangladesh.

Harbinger of bad luck

Stigma is a powerful negative social label that radically changes a person's social identity. In stigmatization process a person is reduced to a tainted and discounted one. Stigma can be transmitted through lineages and continue contaminating family members (Goffman 1963). An individual or a group of individual can be identified as stigmatized if four components of stigma co-occur. The four components are 1. People distinguish and label human differences 2. Dominant cultural beliefs link labeled persons to undesirable characteristics- to negative stereotypes 3. Labeled persons are placed in distinct categories so as to

accomplish some degree of "us" from "them" 4. Labeled persons experience status loss and discrimination that lead to unequal outcome. Stigmatization process is largely depending upon access to social, economic, and political power. Stigmatization leads to social exclusion in relation to different aspects of individual and collective life and livelihoods (Link and Phelan 2001: 367).

People distinguish and label tiger widows for being women and construct their identity as ostracized and cursed. Society imposes an identity upon tiger widows that devalues their human capacity and form stereotype. Society, which tiger widows belong to, makes a clear distinction between tiger widows and rest of the members of the society. Interview and observation data suggests that tiger widows are labeled, set apart, and linked to undesirable characteristics. This process leads tiger widows to status loss and discrimination. Killing their husbands by tigers pushes their life into further marginalization and discrimination- based on income, education, housing, and wellbeing. Their husbands' deaths immediately contribute to their downfall in the existing social hierarchy, where tiger widows are forced to maintain a negotiated identity. All of the mentioned above four components of stigmatization process co-occur in the lives of tiger widows. The following section focuses on the superstitious beliefs and practices that form the base of this stigmatization process.

There are many taboos for women to obey when their husbands are in the forest. These taboos limit their certain behavior and access to public goods and

services. Taboos also restrict their communication and social relationship to the rest of the society.

In part, the action of the wife is seen as an analogy for the experience of the husband in the forest. As such, if a wife breaks any taboo it increases the chances of death by tiger attacks. For example, they are told not to light a fire under the stove, they cannot wash clothes, and they are prohibited crossing rivers. A forest goer's wife cannot use soap or shampoo and cannot comb her hair. If the wife combs her hair, making straight lines, it creates risks for her husband. The straight line she makes is thought to produce another straight line inside the forest between her husband and a man-eater tiger. So by combing her hair, the wife jeopardizes her husband's life. Using soap or shampoo to get rid of dirt from her body is similarly interpreted. Dirt is symbolically equated with her husband, and wife who is trying to get rid dirt is seeking to be rid of her husband. As a result, god directs a tiger to fulfill her desire, and it attacks and kills her husband inside the forest. Villagers thus interpret the use of shampoo or soap to clean herself as a sign of a wife's desire to be rid of her husband. Because tiger only fulfills her desire, she is seen was responsible for killing her husband. When a woman's husband is in forest she cannot talk to men other than close relatives, and she should not fight or quarrel with anyone. It is believed that if she does any of these prohibited activities Bonbibi, the main goddess, who protects the forest, will become angry. If the Goddess becomes angry her husband will be at risk, and no one in the forest can save him. Similarly, wives are also required to speak softly when talk to someone.

Another such taboo restricts the wife of a forest extractor from burning or fry drying chili. It is common for poor peoples in rural Bangladesh fry or grill chili to take with rice when no other curries are available. But a woman whose husband works in the forest for to make a living is not allowed doing that. The underlying belief is that frying dry chili and its smell causes sneezing that creates weird noises. When a woman frying dry chili sneezes the smell is thought to cause her husband to sneeze, and the noise helps the tiger to locate and attack him. Again, the wife of the forest user who breaks a taboo is seen as responsible for killing her husband.

Another such belief has it that if the door of a house is closed at noon, the wife's husband may come to harm. The belief is that closing the door at noon is tantamount to her closing this door to her husband forever. Similarly these wives cannot clean their floor at noon with a broom. To do so, is seen as clearing the path for a tiger towards her husband, so it can easily can locate and kill him. If a woman breaks any of these taboos she seen as not only as helping to kill her husband, but she is also bringing misfortune and sufferings to the members of her family and community. Based on these superstitious beliefs tiger widows are seen as harbinger of bad luck in the community.

I interviewed 26 tiger widows and found only one tiger widow who was able to marry a second time. Unfortunately tigers killed her second husband too, who was the younger brother of her first husband. Empirical support for the kinds of

stigma found in the community that lead to increased vulnerability of subjects I will provide below a few firsthand accounts of what it means to be a Tiger Widow

In one interview, the widow, now 61 years old, who lives in one of her son's kitchen. She has tears in her eyes while describing how society has treated her, and how her two sons were humiliated in the school. Their classmates repeatedly told her children that the only reason their father was killed by tigers was that their mother was a cursed woman. Eventually, they dropped out from the elementary school. In replying to the question of what it means to be a tiger widow she said:

> "Tigers killed both of my first and second husbands and made me helpless. But the society joined with tigers and kills me every day. This society does not treat me as a human being rather considers me as harbinger of bad luck. No one wants to see my face. I am double widow. Tell me, am I responsible destroying the forest that causes lack of tiger's foods? Am I as powerful as Sidr and Ayla? " Interview#20

This old lady lost her husbands about 30 years ago. She considered herself fortunate, as she was able to marry second time because no one wants to marry a tiger widow. It is the fear that if someone marries a tiger widow he will be victim of tiger attacks. Currently it is not possible for a tiger widow to marry again. Sidr and Ayla were two devastating cyclones that hit southwest costal Bangladesh on 2007 and 2009, including the Sundarbans. The lady in her statement held climatic disaster responsible for destroying Sundarbans that feed the local population. She

views that due to climatic disasters Sundarban is losing its size, which shrinks food sources for tigers. By this statement, she is opposing the superstitious belief that held her responsible for killing her husbands. She also puts the burden on society, as her society does not treat her humanely. She held the changing climate as well as her community responsible for her misfortune. Society kills her every day by excluding her and her children from the public services and social relations, she means.

Another tiger widow responsible for supporting her six-member household said,

> "My husband used to take care of us. Ten years ago a tiger killed him while harvesting honey inside the deep forest. I did not work to earn money never before his death but after his death I regularly go out to fish for shrimp fry during the high tide of the day to support my two daughters, two sons, and my sister in law." Interview #53

Until his death by tiger, her husband was the main breadwinner of her family. To support her family, she fishes shrimp fry, collects firewood, and works as a day laborer. Her two sons help her during the day by fishing in the river and attend an evening school administered by a local NGO. Most of the students of this school are children of tiger widows. She earns $US1.5 to 2 daily to support her six-member family. She thinks her husband's death forced her to a life of poverty, exclusion, and outcaste from the community. To be a tiger widow is tantamount to social exclusion, deprivation, and poverty to her.

Tiger Widows' Livelihoods

More than 75% marriages in Bangladesh can be categorized as child marriage. Mean age at first marriage was 15.7 years in 2011, which is 1.4 years, more than it was a decade ago (Kamal *et al.* 2015) Women in this part of Bangladesh usually get married between the age of 13 and 16 years old; therefore, they have no time to acquire any livelihood skills before marriage. Hence, when their husbands die, they do not have any professional skill to survive independently, and mostly depend on natural resources to support their families. Most of the tiger widows catch shrimp fry and sell the catches to local gher or water body owners. They also collect firewood and palm leaves to sell in the local market for survival. Tiger widows and their minor children gather oyster, mollusk, and other resources from the local river. They also work as day laborers to shrimp gher and government sponsored projects food for work during lean season of the year.

Kinship

In traditional societies like Bangladesh, kinship plays a very important role in everyday life. Kinsmen stretch their helping hands in any hardship especially in the face of economic crises. But in the case of tiger widows, their husbands' families leave them immediately after their husbands' death. Relatives treat tiger widows as unwanted, and in-laws are particularly hostile, because they accuse widows of being responsible for the loss of one of their family members.

The State and tiger widows

Bangladesh revised its Wildlife Conservation and Security Act in 2012 in order to conserve forest animals, particularly endangered species. Under this law, the government imposes a fine up to $12,000 for killing a tiger, but pays compensation of only $500 to the family of a tiger's victim although no case of received compensation has been found in this study. In fact, most tiger widows are not even aware of this law[7]. My interviews suggest that tiger widows are the most vulnerable section of the community due to their persistent poverty, inequality, and deprivation in economic and social relations. They consider the state an institution for people in power and not for them. Bangladesh consistently takes a strong position in international negotiation for compensation for climate change victims based on the logic that Bangladesh is one of the most vulnerable countries. But in stark contrast, Bangladesh government is silent on the issue of support for tiger widows, one the most vulnerable segment among the Bangladeshi population. Public support and public resources from the national climate adaptation fund are not available for this group.

Marginalization of tiger widows' children

Interview and observation data indicates that the children of tiger widows are seen as cursed along with their mother. Other children are not willing to play

[7] http://www.unodc.org/res/cld/document/bgd/2012/wildlife_conservation_and_security_act_html/Wildlife_Act_2012_English.pdf accessed on July 5, 2015 at 2.34 pm AZ time.

with them and reluctant to interact to them. Because of this superstitious belief, widows' children are not welcome to attend schools with other children in the community. There are some evening schools administered by different NGOs where most of the students come from tiger widow families. Stigma transmits to the offspring of tiger widows and their family members. Due to the culturally constructed identity of their mother their children are deprived of some rights as their mother. The widow, who's both first and second husbands were killed by tiger complaints that her sons were treated badly by their fellow students. Fellow students constantly reminded them that their mother was responsible for killing their fathers. Eventually, two of her sons dropped out from the elementary school. When I was interviewing the widow her sons were harvesting in the forest and she reminds me several times not to utter the word tiger. Uttering this word may increase her sons' risk to tiger attacks. She is constantly in fear that her sons may become victims of tiger attack anytime. By not proactively protecting Tiger Widows' children, the state allows these children to become future food for tigers. Because they will have no other alternative sources of income other than get into the forest to make their living.

Exclusion based on gender

Women in Bangladesh are excluded from public sphere due to patriarchy and existing socio-economic system. Stigmatization process aggravates this gender discrimination. The following two cases shows how tiger widows are treated

differently than widower. The stories illustrate how gender based discrimination is intensified by the forest degradation induced by climate change.

Case 1: A forty years old tiger widow expresses her concern as follows-

> "Without him how will I survive? How will I make living for these four children? Will my community allow me to live in my house? I have nothing, my world is zero."

A tiger killed her husband in 2013 while harvesting honey in the deep forest of Sundarbans. She is afraid that she will soon have to leave her small house, made of palm leaves, thatch, and mud, and have to move to the area where other tiger widows live because her neighbors believe that if she continues to living in their community they may be the victim of tigers as well. She is concern about her housing. If she needs to relocate from the current residence she will be in difficult situation to manage housing for her and her children. Being a tiger widow is similar to deprivation of housing and social isolation to her.

Case 2: After finishing her morning household work, in the Pori bibi (age 35) and her husband Khaleque (age 38) went crab fishing in the forest. While they were fishing in a small river in the forest, a tiger attacked them from behind and pounced on Pori. As she lay dying on the river shore, she hugged her husband Khaleque and made him promise never to come to the forest again. Pori whispered to Khaleque, "What will happen to our children if a tiger attacks you?" Khaleque could not keep his promise to his departed wife. Just four months after Pori's death he found he

had no other alternative but to enter into the forest to support his three children and a new wife. He collects firewood, honey, and palm leaves from the forest and catches fish and shrimp fry in the small rivers in the Sundarbans. Khaleque says that whenever he enters the forest he cannot help but remember Pori. He cannot forget how he himself carried his wife's dead body from the forest, about three miles away from his house. He tries to suppress this memory, but cannot.

These two cases represent the stories of hundreds of widows and widowers, whose husbands or wives have been killed by tigers. Though there are both tiger widowers and tiger widows, climate change impacts tiger widows quite differently than widowers. In this patriarchal society in Bangladesh, women have very limited role and limited voice in their family and community. But only tiger widows are held responsible for their deceased husband's fate. A tiger widow and a tiger widower both are victims of tiger attacks but the degree of vulnerability varies depending on their gender. For instance, the widower in the second story was able to marry just after four months of passing his wife but the widow in the first story could not marry again because she is cursed, her husband was killed because of her. In relation to tiger widows, widow chastity (Birge 1995) is practiced in this southwest coastal Bangladesh. Chaste women do not serve two husbands as loyal subjects do not serve two masters.

Tiger widows' manifestations of social exclusion

My interview and observation data suggests that tiger widows are most vulnerable to climate change and suffer more social exclusion than any other group in the society, because they are in the intersection of gender discrimination and the existing economic class structure of the society. Due to poverty and unemployment, tiger widows are already excluded from some economic activities. For example, since they do not have their own land or access to water bodies, they are not involved in paddy farming or shrimp cultivation. On top of this marginalization, becoming a widow adds extra burden of social exclusion that restrain them participating economic activities like co-operatives, honey collecting etc. They are also exposed to social categories of exclusion based on gender discrimination. Social exclusion forms a well-defined class within society like a scheduled caste or untouchable. They are not fully free to interact to other members of their community. They are excluded from one of their basic rights to remarry. The existing social structure dominated by superstitious beliefs limits their mobility. In this traditional society, women's mobility is already constrained by patriarchal social system. Exclusion, the new stressor further limits their mobility rights.

Age differences at marriage shape family structure. Where women get marry at earlier age they tend to have more children. If men marry in teens they usually stay with their parents and the mother controls her son's wives. In this kind of family structure, the mother in law plays important role rearing children but her daughter

in laws lose their freedom (Ebrey 1990) that works as a barrier to gain professional skills. It happens to tiger widows, they did not have any scope to acquire professional skills to support their livelihoods after their husbands' death. Tiger widows in this community perceive this inequity as a joint venture of natural order of the universe and the social institutions artificially created by their fellow human being (Ebrey 1990). Lack of livelihood skills couples with other factors and increases vulnerability to climate change.

They are excluded in two categories–as members of a social group and of a forest dependent rural community, because they cannot exercise their rights as a woman. They are also deprived from sexual and reproductive rights. They are partially deprived from using a common pool resource; Sundarbans by losing their husband access is reduced. One of the salient signs of social exclusion is lack of autonomy and decision-making power (Askonas and Stewart 2000) and tiger widows are highly excluded on this aspect. They are not in a position to shape their fate and pursue their future as constrained by patriarchy, social taboo, and superstitious beliefs. Here exclusion of tiger widows are done by their community or a group of people (Byrne 2005: 2) but fostered by climate change impacts. This stigmatized and culturally constructed new identity, harbinger of bad luck leads to social exclusion. The following table shows in which level and how social exclusion occurs.

Table 3: Tigers widows' social exclusion in different levels

Levels where exclusion occurs	Manifestation of social exclusions
1. Individual	Low level of education, isolation from community, dire poverty
2. Family	Inadequate family support, cannot remarry, deprived from sexual and reproductive rights, children's' humiliation by peer and community
3. Community	Restricted mobility, limited social interaction, downfall in social status, not invited to weddings or social festival
4. Local	Excluded from local labor market, social relation
5. National	Deprived of widow benefit, do not get compensation from state for losing family members
6. Global	Uneven distribution of vulnerability, worst hit by climate change

In short tiger widows are excluded in all levels from individual to global.

How climate change and social exclusion fed each other

The case of tiger widows immediately implies that social exclusion and climate change feed into each other; social exclusion contributes to intensify climate change vulnerability and climate change contributes to exacerbate social exclusion and exploitation of widows.

How social exclusion produces vulnerability to climate change?

There are five main components of vulnerability: livelihood, well-being, self-protection, social protection, and governance-power relation. These components are

interlinked and feed on each other. For instance, livelihood provides income and income contribute to well-being or physical and mental health. Income and resources also help to achieve self-protection. Governance and power relations determines quality of social protection and distribution of assets that further help to build adaptive capacity. Poverty, social humiliation, and social isolation are recognized elements of vulnerability (Chamber 2006). In addition, loose cultural connection between household and other social institutions increase vulnerability (Cannon 2015). Findings of this study suggest that tiger widows are highly excluded from livelihoods and power structure. Because of their stigmatized constructed identity they are partially delinked from power sources and self-protection and social protection. Social exclusion limits their mobility and access to livelihood system. As a result they gain very limited control over resources, which is necessary to build resilience against the adverse impacts of climate change. If we conceptualize vulnerability as the function of exposure, sensitivity, and adaptive capacity (Fussel 2007) social exclusion fits well into the adaptive capacity. Social exclusion decreases adaptive capacity to the abrupt impact of climate change. Excluded individual or a group of individual are also lack of physical, natural, human, financial, and social capital that increases the vulnerability to the negative impact of climate change. In this way, coupling with the existing vulnerability drivers' social exclusion intensifies tiger widows' vulnerability to climate change.

Marriage, family, and kinship are the three important informal institutions that play pivotal role to cope with any stressors in traditional society like

Bangladesh. In the face of environmental change and climatic and non-climatic disasters these institutions work as insurance. In patriarchy, their husband controls women's sexuality and reproductive right. Climate induced social exclusion completely curb their sexual and reproductive rights by prohibiting marriage of tiger widows.

Without any livelihood skills they have to act as principal breadwinners of their families. The changing situation places them in a position that makes more vulnerable to the adverse effects of climate change. Moreover, their immediate families leave them so that they becomes less equipped to cope with environmental stressors like climatic changes. Kinship is a social capital and an important part of adaptive capacity as Vasquez-Leon (2009) argues when the formal institutions for acquiring capital don't work people become dependent on each other horizontally. But tiger widows lose their support from in-laws side. For instance, tiger widows already deprived of education, adequate housing, and social support. Lack of family support just adds another layer to the existing vulnerability drivers. Because of treating those as ostracized their relatives also ignore them. Combined deprivation of marriage, family, and kinship forms acute deprivation, which further intensifies their vulnerability because institutional context is a key determinant of vulnerability to climate change (Adger 1999).

Restricting their access to Sundarban, shrinking income sources, entitlement failure (Sen 1984), and downgrading social status intensify tiger widows' individual vulnerability to climate change. Their collective vulnerability is increased through

the deprivation of formal and informal institutions. For example, exclusion from the family support makes them worse to cope with environmental change. Deprivation from formal and informal social security undermines their capacity to adapt to environmental stressors.

One of the salient features of their livelihood systems is dependency on narrow range of natural resources. For instance, tiger widows mostly depend on catching fishes from the adjacent rivers, which lead to socio-economic stress within their livelihood systems. Relying on narrow range of natural resources and political marginalization undermine their social resilience to the adverse effects of climate change. As tiger widows are victims of high inequality based on gender, economic class, and newly imposed "scheduled caste on them" they become more vulnerable to environmental stressors, because inequality directly affects vulnerability (Adger 1999). In the case of tiger widows, both poverty and inequality jointly contribute to increase their vulnerability.

Climate change as aggravator of exclusion

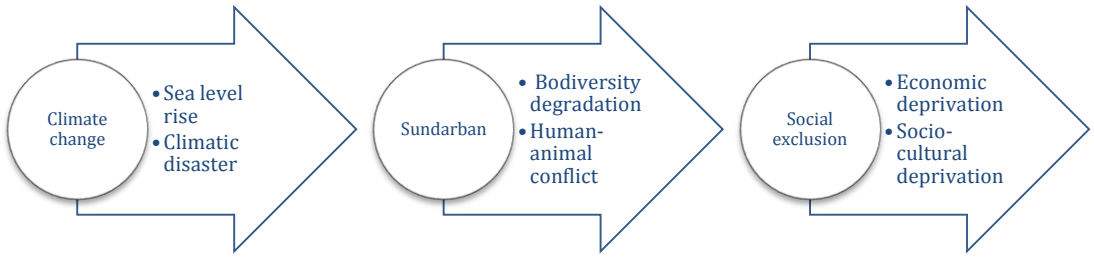
Tiger widows are more vulnerable and more likely to suffer than other women in their society because of social exclusion, which works through existing class, newly produced caste, and superstitious beliefs in Bangladesh. This is one side of the coin. On the other side, climate change also contributes to exacerbate social exclusion.

Global warming induced climate change contributes to increase the intensity and frequency of climatic disasters in this part of the world. Two devastating cyclones in

2007 and 2009 among many others damaged the mangrove forest Sundarbans. In addition, scientists found a significant sea level rise in this coastal region of Bangladesh[8]. Climatic disaster coupling with sea level rise and weak forest governance contributed to shrinking the forest and its biodiversity degradation. As a result, Bengal tigers are struggling to survive losing their habitat and food sources. On the other hand, shrinking the forest and its biodiversity degradation put extreme pressure on its dependent population to over extraction. As a result human-animal conflict is on the rise that resulted producing a socially excluded group of people, tiger widows. Tigers kill people and it is not a new phenomenon but huge environmental pressure intensifies this process and increases tiger attacks, hence increases the number of tiger widows. Though environmental pressure is not the only driver of this exclusion, analysis suggests that environmental pressure or climate change is one of the major stress that contributes to produce this socially excluded community, characterized by economic deprivation and social isolation. As marginalized population, tiger widows and their children are deprived, but climate change plays pivotal role to aggravate their existing deprivation. This process can be shown as follows-

[8] www.bbc.co.uk/bengali news on 13 December 2009 at 10 pm Bangladesh time

Figure 1: How climate change intensifies social exclusion



The case of tiger widows suggests that environmental change particularly climate change can play role to exacerbate social exclusion.

Does a focus on social exclusion change the climate change policy response?

This study presents new evidence on social exclusion in the face of climate change and shows the dynamics of intergenerational transmission of disadvantages of tiger widows to their children. These deprivations include but not limited to education, shelter, income, and access to public services. It is worthwhile to focus not only on poverty but also social exclusion to get a full understanding of vulnerability to climate change. A focus on social exclusion adds multiple deprivations to be addressed by policy makers that have no threshold but help underprivileged groups to empower and take part in public sphere. For instance, if we focus on poverty based on income it has a threshold to cross but if we focus on exclusion based on gender as with tiger widows, it shifts our attention to a broad

arena and help us to see a problem from a broader perspective: social interaction, political participation, and collective decision making (Hills 2002).

The move from poverty to social exclusion responding to climate change involves three main steps. First, it extends our attention to multidimensional disadvantages that is not limited to income only. For example, if we address the economic deprivation of tiger widows we may able to provide them livelihood skills and a descent income to support their family but we may not be able to eradicate their social isolation. Only income and material wealth may not help them to fight reducing their vulnerability, because their vulnerability is the product of a complex system that encompasses social isolation, lack of control on their everyday lives, and superstitious beliefs that portray them as harbinger of bad luck, among many others.

Second, an emphasis on social exclusion provides an avenue to focus on dynamic analysis instead of static. For instance, tiger widows' suffering is not a stagnant process. The nature of the problem is changing over time and they are currently victim of deprivation as a group, which was not a phenomenon even two or three decades back. Tiger widows' deprivation is transmitted to their offspring. This deprivation affects their basic rights including education, shelter etc. Not only this, a focus on social exclusion keeps our mind open to address disadvantages to emerge in future.

Third, social exclusion lens give us the opportunity to shift our attention from resources at individual or household level to community level, which is very

important to address vulnerability from a holistic perspective. Community treats tiger widows as a scheduled caste. As such, they are constrained to get access to the common pool resource, Sundarbans. As a new isolated group of individual their fellow community members deprive widows. So we need to address the community as a whole not forgetting their individual entity. If we can promote development that helps to uplift the community we may be able to ease tiger widows' sufferings.

Currently climate change adaptation projects in this part of Bangladesh focus on alternative income generating activities that barely consider tiger widows' social dimensions of vulnerability that further includes social exclusion among many others. In fact, "once the social dimensions of vulnerability are recognized, climate adaptation policy needs to address a broader range of concerns than is often the case" (Lindley *et al.* 2011: 3).

Conclusion

Investigating and reporting only the physical and economic aspects of vulnerability give us an incomplete understanding of vulnerability. It leaves a major component that embedded in the structure of a society and social exclusion is one of them.

The case of tiger widows strongly suggests that we will not be able to get a complete picture of climate change vulnerability if we do not pay adequate attention to socio-

economic and cultural dimension particularly which groups are socially excluded and the mechanisms of exclusions.

Tiger widows do not want to stay in this dehumanizing social condition; they are also in fear that they will not be able to break this system to be able to include as other members of the society. The problem is embedded in social structure as well as in their environment. They have neither control over Sundarbans nor its resources nor capable to stop climate change and variability that can provide food and shelter for tigers in order to reduce human-animal conflict.

Weak version of the solution to social exclusion discourse is to integrate or inclusion of excluded people. And the strong version is to curb the power of exclusion (Veit-Wilson 1998: 45). We need to act on both aspects of exclusion; weak and strong, which means we should go for initiatives to eradicate superstitious beliefs and empower tiger widows as well as to take necessary steps to address the structural problems that subordinate tiger widows.

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CHAPTER FIVE: CONCLUSIONS

This study explored three specific research questions: role of uneven power relations in shaping vulnerability to climate change, impact of corruption on livelihood practices in the face of climate change, and the linkage between social exclusion and climate change vulnerability. Findings of this study reveal that there is a highly uneven power relation between the vulnerable population and socio-political elites and their clients, mastaans. This problem was not as acute as it was three or four decade's back. By the last couple of decades mastaanocracy embedded in the social structure and was able to hold its grip tightly. This unequal power relationship contributes to decrease adaptive capacity and increase vulnerability by limiting peoples' access to common pool resources and muting their voice.

Corruption is not a new phenomenon but it coincides with the adverse impacts of climate change. Corruption takes toll on the income of coastal Bangladeshi population and reduces their material well-being. Government and foresters treat the world's largest mangrove forest as only a source of revenue. This kind of profit driven perspective may not help to preserve this forest rather it contributes to deforestation and degradation of this common pool resource. Moreover, corruption contributes to shrinking peoples' livelihood sources that make them less equipped to adapt with the negative impacts of climate change.

Due to social exclusion already vulnerable populations are struggling to adapt to the adverse impacts of climate change that manifested through salt water intrusion, cyclones, and storm surges. Social exclusion is not a new phenomenon in

Bangladesh but the degree of exclusion is increased due to the stigma. Importantly and interestingly, there is a match between the stigma and vulnerability to climate change. Climate change contributes to intensify the stigma by contributing to increase the tiger widows. Social exclusion that manifests through deprivation makes people more vulnerable to the impacts of climate change.

Unequal power relations, corruption, and social exclusion are framed as governance problem in this study. These three aspects are rooted in the social structure. If we want to make a real impact on these people who are hardest hit by climate change we need to address the structural inequality. Without disturbing the status quo it is difficult to build resilience against the adverse impacts of climate change. But development interventions are limited to addressing structural problem rather they emphasize on providing climate neutral livelihoods. This study suggests that we may invest our time, resources, and patience but if we do not address structural problem and do not plan for long term development we may not be able to help people to build resilience in response to climate change.

This study also recommends further research on the role of other social vulnerability drivers to get a holistic picture of vulnerability, for example, land use, social security, informal insurance, kinship, informal market, and role of value chain.

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