Bat hunting and illnesses: A case of Mahanta community in Bangladesh

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Statement of Approval

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Bat hunting and illnesses: A case of Mahanta community in Bangladesh

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Declaration of Originality

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Abdul Khaleque Md. Dawlat Khan

August, 2023

Abstract

This dissertation explores the different aspects of bat hunting practices in Bangladesh. Based on a year of ethnographic fieldwork in a hunting community in the west-central part of Bangladesh, I explore the community's beliefs about where the bat is a beneficial bird, their religious and cultural beliefs in different phases of bat hunting, and their relevance. They perform three types of rituals- curative, preventive, and initiation, and the meaning of these rituals is symbolized to them as sanctified, sacred hunting apparatuses and good luck in initiation that brings success in hunting.

The hunting community people have their own etiological explanations of illnesses and illnesses categorization: '*daktari osuk*' and '*kobiraji osuk*', where there is no relationship between illnesses and bat hunting in their etiological explanations. On the other hand, they use bat meat and their limbs to treat several illnesses, such as asthma, heart disease, deficiency of calcium, and night fever, and also to get sexual vigor.

The community people hunt bats as an economic endeavor born out of the seasonal dearth of conventional sources of income, as well as the socio-cultural fabric of the community; it shows the interplay within the community people. This dissertation contributes to the area of anthropology of hunting that highlights the different aspects of bat hunting practices in Bangladesh, in terms of beliefs on the bat, and beliefs and rituals practices in the different phases of bat hunting and symbolic meaning associated with these, functional views of the hunting including division of labor, gender roles and social solidarity, and etiological explanations of bat-borne illnesses and health-seeking.

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Glossary

Badur: Bat

Baccha badur: Baby bat (pup)

Baranda: Balcony

Boish: Age

Borsha moushuml: Rainy season

Boshonto moushum: Spring

Daktar: The term to address biomedical physicians and homeopaths

Dhoni: Rich man belongs to a higher class household

Dokan: Grocery

Ghor: Household

Gorib: Poor, belongs to a lower class household

Grishsha moushum: Summer

Hemonta moushum: late autumn

Kabiraj: It refers to ayurvedic practitioners and folk healers

Khub Gorib: Ultra poor

mohila: Female

Osukh: Illnesses

Pani pora: Sanctified water

Pitha: Traditional cake *Purdah*: Modesty, a physical separateness of women from outsiders particularly from men

Purush: Male

Sheet moushum: Winter

Shorat moushum: Autumn

Somprodya: A territorially defined social group

Tabij: Amulet

Tap Daha: Heat wave

Tel pora: Sanctified oil

Union: The smallest administrative unit comprised of several villages; Bangladesh is divided

Upazila: A small administrative unit with a police station

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Dedication

This thesis is dedicated to my respective parents, Abdul Ghani Khan & Dawlatan Nesa who, are my constant inspiration and have never let me quit.

Chapter One

1. Introduction

Anthropology has been a fertile ground for discussing the multifarious issues surrounding infectious diseases. Scholars have delved into several aspects, including the correlation between environmental degradation and infectious diseases, and the interplay between indigenous practices and these ailments. However, in this context, two divergent schools of thought have emerged. Mainstream development practitioners have tended to view indigenous practices as portending diseases, whereas anthropologists have contested this view. They argue that while some indigenous practices may contribute to the spread of diseases, others may not.

Against this backdrop, this thesis seeks to examine the relationship between indigenous practices and diseases in Bangladesh, with a particular focus on 'bat hunting', including the different aspects of bat hunting practices in Bangladesh. Bat-borne infections have been a growing concern in Bangladesh and globally. Within this context, I will discuss here a tad bit into the realm of bat-borne infections and illness that manifest themselves in Bangladesh and across the globe.

Bats are natural reservoirs of many emerging infectious diseases, such as Nipah virus, Ebola and Marburgvirus, SARS-like coronaviruses, GB viruses A and C, and Lyssavirus (Calisher, et al. 2006; Epstein, et al. 2006; Epstein, et al. 2010; Kuzmin, et al. 2006), have

caused significant human morbidity and mortality (Epstein, et al. 2006; Leroy, et al. 2005; Li, et al. 2005; Towner, et al. 2007). Despite the risks associated with bat-human interactions, which occur through sharing common food both by bat and human, hunting and butchering of bats, and infected domestic animals or environmental contamination (Chua, et al. 2000; McColl, et al. 2000; Selvey, et al. 1995; Smith and Wang 2013), bat hunting remains prevalent in many countries in Africa and Asia, including Bangladesh (Jenkins, et al. 2011; Kamins, et al. 2015; Lemke 1992; Openshaw, et al. 2017).

Literature suggests that bat hunting may lead to direct linkages to bat or butchering of bat and bat bush meat, causing a Nipah-like henipavirus in humans in Cameroon (Pernet, et al. 2014) and Ebola outbreak in Africa (Leroy, et al. 2009). However, there is no identified link of bat hunting causing Nipah virus infection in humans in Bangladesh (Hegde, et al. 2016; Hossain, et al. 2008; Rahman, et al. 2012) despite the practice being prevalent in the country (Openshaw, et al. 2017). Instead, Nipah virus spillovers from fruit bats to humans are identified in Bangladesh through drinking raw date palm sap contaminated by bats (Luby, et al. 2006; Rahman, et al. 2012) and then transmitted from person to person while caring for Nipah-infected individuals (Blum, et al. 2009; Gurley, et al. 2007).

Moreover, other possible routes of transmission of Nipah Virus in Bangladesh include consumption of partially bat-eaten fruits or direct contact with bat urine and saliva (Montgomery, et al. 2008). Since the emergence of Nipah virus disease in humans in Bangladesh in 2001(Hsu, et al. 2004), outbreaks have been occurring almost yearly, with

fatality rates of more than 70% (Gurley, et al. 2007; Hossain, et al. 2008; Hughes, et al. 2009; Lee, et al. 2020; Luby, et al. 2006; Nikolay, et al. 2019). In light of the recent outbreak of Ebola in Africa, it is pertinent to note that Bangladesh is also at risk, as recent research has found Ebola virus antibodies in fruit bats of the country (Olival, et al. 2013).

While information on bat-borne diseases' risks to humans is available, there is a lack of in-depth understanding of human-bat interactions or bat hunting in the context of social, economic, and environmental factors. It is essential to address this gap in knowledge to prevent further outbreaks of bat-mediated infections and diseases that pose a threat to human health and survival (Openshaw, et al. 2017; Wood, et al. 2012). The ensuing section delves into the intricacies surrounding the health landscape and the prevailing ailments within the borders of Bangladesh.

1.1 Health and Diseases in Bangladesh

I have presented here a brief overview of health and disease in Bangladesh that is relevant to understand the context of my dissertation. Bangladesh is one of the most densely populated countries in Asia, with 165.15 million people living in a land area of 1,47,570 square kilometers, and the density per square kilometer is 1,119 (BBS 2022). The ethnic minority population is 16,50,159 that is 1 percent of the total population in Bangladesh.

The Bangladeshi people have been suffering from several diseases for many years-commonly respiratory diseases like asthma, tuberculosis and pneumonia; diarrhoeal

diseases- cholera, diarrhoea, dysentery, rota-virus disease; vector-borne diseases- malaria, kala-azar and dengue recently emerged; infectious diseases- influenza, measles, hepatitis; sexually transmitted diseases- HIV/AIDS, gonorrhea, syphilis; and many non-communicable and genetic diseases like cardiovascular diseases, diabetes, thalassemia and so on. However, since the beginning of the 21st century, several highly infectious diseases emerged such as Nipah virus disease in 2001, H1N1 (swan flu) in 2009, avian influenza (bird flu) in 2007, and very recently, in 2020 the COVID-19.

In conducting this research, I perused a wide range of literature, which I have painstakingly categorized into distinct groups. Firstly, I have collated an assortment of literature that centers around bat hunting and its potential links to the emergence of infectious diseases. Secondly, I have incorporated several works on medical anthropology, wherein theoretical perspectives on disease and illness are discussed. Thirdly, given that discussions of illness and disease often overlap with the healthcare system, I have included a few literature reviews on healthcare systems within medical anthropology. Finally, as my research touches not only health and illness but also indigenous practices, rituals, and symbolic meanings, I have incorporated a handful of works that speak to these issues.

1.2 Bat Hunting and Infectious Diseases

My dissertation has honed in on the intersection of bat hunting and bat-borne infections in humans. Though this practice is relatively widespread, literature on the subject is scarce.

Nonetheless, in this section, I will endeavor to highlight a few examples of bat hunting practices and their potential consequences.

Kamins and others (Kamins, et al. 2011) conducted a study on bat hunting from November 2009 to February 2010 in southern Ghana. The study findings show that the hunters, vendors and consumers of bats depend on secondary protein and income sources from bat hunting. The study also indicates that the quality of life of the Ghanaian bat hunter might start to decline if the bat populations decline severely. Kamins and others (Kamins, et al. 2015) show that Ghanaian bat consumers have some beliefs regarding bat eating, such as stirring milk with a bat's head on a stick can bring good fortune and enhance milk froth. Additionally, bat meat is believed to be a nutritious diet with low cholesterol content, and various societies may employ bats and bat-derived products in medicinal, charm, potion, and other health-related preparations (Allen 1939; Openshaw, et al., 2016). Very few literatures indicate that direct link to bat or butchering of bat and bat bush meat caused of a Nipah-like henipavirus in Humans in Cameroon (Pernet, et al. 2014) and Ebola outbreak in Africa (Leroy, et al. 2009). However, there are so many literatures on evidences of bat hunting across Indonesia, Malaysia, Philippines, Bangladesh, Thailand and several islands in the Pacific and Indian Oceans (Mickleburgh, et al. 2009; Openshaw, et al. 2017; Wiles and Brooke 2009). In the forthcoming section, I will expound upon the medical anthropological viewpoints pertaining to contagious maladies while elucidating the scholarly contributions that are directly relevant to the scope of my research.

1.3 Medical Anthropology and Infectious Diseases

The above discussions indicate bat-borne disease infections in humans and few examples of socioeconomic and ecological factors in bat hunting. Now I will discuss medical anthropological perspectives on infectious disease and the works of a few scholars are relevant to my dissertation research. Inhorn and Brown (Inhorn and Brown 1990) are the most famous for their work from the medical anthropological perspective in infectious disease. They argue that the consequence of infectious diseases is a combined feature of biological and cultural rather than a single feature; it is not contemporary; it is both historical and contemporary, and theoretical and practical (1990). Literatures also indicate that several scholars categorize or label medical anthropological theories and perspectives. Hahn (Hahn 1995) illuminates the medical anthropology discipline by noting the existence of three dominant theoretical frameworks: environmental/evolutionary theories, cultural theories, and political/economic theories.

Meanwhile, Byron J. Good (Good 1993) offers a more comprehensive view and identifies four perspectives in medical anthropology: the empiricist paradigm, the cognitive paradigm, the meaning-centered paradigm, and the critical paradigm. Ann McElroy and Patricia Townsend (McElroy and Townsend 1996) similarly highlight four medical anthropological perspectives: medical ecological theories, interpretative theories, political economy or critical theories, and political ecological theories. Nevertheless, anthropologists Bear, Singer and Susser (Baer, et al. 2013) dispute the notion that any single theoretical approach is the most prominent at any given time. They argue that

multiple perspectives are utilized in medical anthropology, with their boundaries not always clearly defined.

First, I will discuss medical ecological approaches and a few examples of this approach to get inside, though there is no literature to link directly with my dissertation. The medical ecological approaches show the interaction between host and agent within a given ecosystem to research on infectious diseases. Medical geographer, May (May 1959) follows an ecological approach to research on infectious diseases. May's approach highlights the interconnectivity of physical environment, disease pathogens, human hosts, and cultural practices. Rather than existing as distinct entities, they operate in a dynamic and interactive process. From May's research on malaria in Vietnam and hookworm in China, it is clear that infectious disease transmission is closely linked to both the physical environment and sociocultural interactions. For instance, May demonstrates that lowland-to-highland population transplantation without modification of housing types resulted in higher rates of malaria among the former group. Conversely, the native people of the hill managed to adjust to the malaria threat by constructing stilted houses with living quarters above the mosquito's 10-foot flight ceiling. A similar example can be found in China, where rice growers who worked in fields mixed with raw human feces were more susceptible to hookworm infections, whereas workers who spent their days on ladders tending to mulberry leaves were not infected (Inhorn and Brown 1990; May 1959). In essence, May's work illustrates how infectious diseases represent temporary maladjustments between human hosts and their environment.

Numerous scholars have delved into the topic of infectious disease in May's nations, with Audy and Dunn being among the most distinguished. Audy's research (Audy 1971) examines the dynamic relationship between individuals and their environment from the perspective of health and disease. By exploring the transmission of scrub typhus (Audy 1968), Audy highlights the crucial roles of human behavioral and environmental factors in disease etiology. He introduces the concept of 'insults', referring to the physical, chemical, infectious, psychological, or social stimuli that impact an individual's response to their surroundings. This concept surpasses the limitations of a pathogen-specific approach to disease, acknowledging that exposure to a pathogen alone is not sufficient for disease development. Rather, the progression from exposure to disease is contingent on the health of the exposed person, which is never constant due to an individual's vulnerability to a complex array of insults. Audy's work underscores the importance of considering various factors that contribute to disease transmission and manifestation.

Dunn's exposition of May's perspective posits that to effectively comprehend the etiology of diseases or endeavor to curb their dissemination, one must consider a complex amalgamation of environmental, host-biological, and host-behavioral factors (Dunn 1972; Dunn 1977). This conception is a more extensive one that accounts for the interdependent assemblages of infection (Dunn and Janes 1986). Through his initial research with indigenous Malaysian populations, Dunn demonstrated how various environmental elements (e.g., altitude, temperature, soil composition, presence of scavengers) and human

behavioral factors (e.g., subsistence patterns, housing styles, community mobility) had a significant impact on the prevalence of parasitic infections.

Another point of the ecological perspective is behavioural adaptation to health threats. According to the view of Foster and Anderson, it is a sociocultural adaptation (Foster and Anderson 1978). McEloroy and Townsend (McElroy 2018) also argue for behavioural adaptation from an ecological point of view. They show how the artic people protect their eyes from snow and sunlight by using indigenous goggles.

Turshen (Turshen 1984) argues a different approach to disease causality. She says that the classic or traditional view of disease causation based on the epidemiological triad (host, agent and environment) fails to explain particularly on cause of disease- where many factors like social, economic, history and politics are involved. So, from her years of study in Tanzania, she proposes that social factor should be explained more to understand disease causation. She favors the Marxist view on health, including the perspective of colonialist and neocolonialist history, which includes all factors from human behaviour to politics, and she has labeled her view of health and disease as the "political ecology of disease". This view supports the development of critical medical anthropology (Singer 1989) as a core subject for understanding health and disease causation.

Critical medical anthropology posits that social inequality and power are the predominant factors that influence both health and healthcare provision (Baer, et al. 2003). This

particular standpoint perceives health problems within the overarching context of political and economic forces that dictate human relationships, influence societal behavior, determine shared experiences, reshape local ecologies, and establish cultural connotations at the institutional, national, and global levels (Baer, et al. 2003). The critical medical anthropological perspective can be viewed as an extension of political-economic approaches in anthropology, and it is closely linked to the political economy of health approach (Baer, et al. 1986; Morgan 1987; Morsy 1990).

There are so many recent works in disease ecology with political-economy perspective that though they are not oriented in Marxist view clearly. They have focused on ill health as the consequences of environmental disruptions caused by the development. In this view, ill health or disease is a so-called 'developo-genic' disease. In this view, Dubos (Dubos 1980; Dubos 1987) posits that development initiatives aim to shift the natural equilibrium towards the benefit of numerous flora and fauna species, including humans, while Hughes and Hunter (Hughes and Hunter 1970) contend that these projects have been neither balanced nor advantageous. Through their comprehensive review of development schemes and disease in Africa, they demonstrate that large-scale infrastructure projects, such as dam construction, land reclamation, road building, and resettlement in developing countries, have likely contributed the most to the propagation of infectious diseases, such as trypanosomiasis, schistosomiasis, and malaria, compared to any other factor. Numerous scholars concur with their observation that development initiatives increase the incidence of infectious diseases. For instance, Chapin and Wasserstrom (Chapin and Wasserstrom

1981) showcase how the intensive use of pesticides in cotton production in Central America and India led to a severe resurgence of malaria due to the rapid evolution of insecticide-resistant strains of Anopheles mosquitoes. Likewise, Kloos and colleagues (Kloos 1985; Kloos, et al. 1978) describe the expansion of Schistosoma-transmitting snail populations and the rising rates of human infection following the establishment of large, irrigated farming estates in the Awash Valley of Ethiopia and so on.

Margaret M. Lock and Nancy Scheper-Hughes provide a critical interpretation of the manifestations of ill individuals in the context of their experience (Lock and Scheper-Hughes 1987). They employ the concept of the 'mindful body' to elucidate the state of health, well-being, disease, or distress of an individual. The notion of the body encompasses the natural, supernatural, sociocultural, and spatial relationships of human suffering. The power dynamics are expressed by individual and social bodies within a society and the global system. Scheper-Hughes illustrates how the experience of suffering is socially constructed and shaped by the political-economy forces in her work on Bob Jesus in Brazil (Scheper-Hughes 1992). She highlights the vulnerability of mothers and their children, and other Bom Jesus, due to a lack of income, as the number of sugar plantations decline because of agribusiness development and industrialization sponsored by the transnational and Brazilian state.

In my above discussion, I have expounded upon the ecological and political-economic approaches within the realm of medical anthropology. I shall delve into culturally

prescribed behavioral patterns, which are regarded as risk factors of infectious diseases. Alland, a pioneering anthropologist, recognized the significance of comprehending culturally proscribed and prescribed behavioral practices and their impact on the transmission of infectious disease agents. Alland's theory, grounded in evolutionary principles, highlights how cultural behaviors can enhance human hygiene and health. He employed the mathematical term 'minimax' to denote cultural practices that minimize the risk of disease and maximize health and welfare (Alland 1970). Conversely, Roundy (Roundy 1978) and Dunn (Dunn 1976b; Dunn 1979) refuted Alland's theory, positing that not all human behavior is adaptive from an evolutionary perspective and many culturally prescribed behavioral patterns that actually promote the spread of infectious diseases.

Furthermore, not all cultural practices are intentional. Wood (Wood 1979) demonstrated the use of alkaline laundry soaps that destroy mosquito breeding sites, clothing styles that serve as mechanical barriers to biting insects, the use of malodorous traditional pesticides and insect repellents, and seasonal migrations away from mosquito vectors. Nevertheless, there is generally a dearth of empirical evidence for the efficacy of such practices. Brown (Brown 1981) also contributed to the discourse, elucidating the social epidemiological distribution of malaria. He contended that the combination of nucleated settlement patterns and inverse transhumance decreased exposure to malaria in Sardinia. Behavioral adaptations to malaria in other cultural contexts include fava bean consumption in the Mediterranean (Katz 1987; Katz and Schall 1979), traditional medicines in Nigeria (Etkin and Ross 1982) and the use of thick blankets and netting in Africa (MacCormack 1984).

Many ethnomedical beliefs exists concerning the etiology, diagnosis, and cure of infectious diseases. Dunn's perspective on the social, cultural, and psychological factors influencing human behavior with regard to infectious diseases (Dunn 1983) has been echoed by several other anthropologists, including Gorman, Hesser, Inhorn and Brown, and Nations (Gorman 1986; Hesser 1982; Inhorn and Brown 1990; Nations 1986). Ethnomedical beliefs about infectious disease treatment can have both positive and negative repercussions. Kendall and coworkers (Kendall, et al. 1984) conducted research on diarrhoea in Honduras, which showcased the critical role of ethnomedical beliefs in its successful treatment. Specifically, diarrhoea attributed to empacho, a folk illness, was consistently not treated with oral rehydration therapy, as empacho called for a purgative cure. In contrast, malaria treatment has been a successful example of ethnomedical treatment worldwide. Etkin & Ross (Etkin and Ross 1982) identified 31 antimalarial plant medicines used by either herbal specialists or the general population, some of which have been shown to alter the oxidation-reduction status of red blood cells - a physiological condition impeding the development of the malaria parasite (Eaton, et al. 1976). Additionally, parasitological testing of extracts of these traditional medicines using a mouse model of malaria demonstrated that three of the substances were highly effective cures. Similarly, in China, chemists identified artemisinin, a promising compound extracted from a traditional antimalarial treatment, such as, quing hao, or 'green herb', related to Artemisia annua. (Klayman 1989). This biochemical evaluation of native ethno-pharmacopoeias for the effectiveness of antimalarial treatments, with its historical roots in the discovery of quinine, has gained added significance in the wake of the evolution of chloroquine-resistant strains of the disease. In the upcoming

section, I shall engage in a comprehensive exploration of disease etiology and the intricate web of healthcare systems, accompanied by the scrutiny of select scholarly works that bear remarkable pertinence to the focal point of my dissertation.

1.4 Disease Causation and Health Care System

Now I will discuss healthcare systems or medical systems with a few examples. All human societies have their own medical system. The medical system promotes health and alleviates disease or illness according to society's beliefs (Baer, et al. 2003). Medicine is related to religion and politics in simple pre-industrial societies. The 'Shaman'-a part-time magicoreligious practitioner is in pre-industrial societies. The Shaman deals with the problem of his or her group by contacting supernatural power and healing and curing. Harner's (Harner 2011) research conducted among the Jivaro, a horticultural village society situated in the Ecuadorian Amazon, illuminates the Shamanss role in communicating the beliefs of the community. The Shaman performs a vital function by extracting enchanted darts from individuals who have fallen victim to witchcraft in a dimly-lit area of the house during nightfall, as it is believed to be the only time when he can decipher drug-induced visions that reveal supernatural reality. It is widely believed that the curative shaman must expel the intrusive object by means of vomiting, exhibit it to the patient and their family, and place it in a small container. Subsequently, the shaman releases the dart into the air, and as it soars through the sky, it returns to the malevolent shaman who initially sent it to the hapless patient.

In contemporary industrialized societies, a distinct form of medicine that is independent of religious or political influence is often practiced. According to Horace Minar's observations (Horace 1956), the North American community of Nacirema exhibits an exotic custom of 'body rituals', despite their highly developed market economy and rich natural surroundings. The Nacirema's core belief is that the human body is inherently unattractive and susceptible to weakness and disease. To counteract these traits, they rely on the powerful influence of ritual and ceremony, which they perform through various actors, such as medicine men, holy mouth men, and temple rituals. The Nacirema, whose name is simply American spelled 'backward', is considered a people imbued with magic. Minar suggests that to comprehend the true significance of this exotic custom, we must understand it within the context of their society. Similarly, Malinowski argues that even in developed civilizations with high levels of safety, magic played a crucial role in early man's ability to overcome difficulties and advance to higher civilizations (Malinowski 2015).

In the past, it was widely believed that diseases and illnesses were caused by supernatural beings such as gods, ghosts, ancestors, evil spirits, or even human witches and sorcerers. This medical system, referred to as the personalistic view, was described by Foster and Anderson (Foster and Anderson 1978). Another medical system, known as the naturalistic view, explains diseases and illnesses as resulting from imbalances within the human body. These two systems, while distinct, are not necessarily mutually exclusive. Moreover, the healthcare system is intricately connected to social relationships, particularly within the

bureaucratic structure of clinics, hospitals, and other healthcare facilities. Janzen (Janzen 1978a) noted that this social support system involves kinfolk, including friends, acquaintances, and community members, who assist and aid in the healing process.

Although the core of all healthcare systems is generally recognized to involve a dyadic relationship between healer and patient, medical anthropologists have argued that multiple subsystems of medical care coexist in diverse societies, varying across geographic and cultural settings (Chrisman and Kleinman 1983; Dunn 1976b; Lock 1980). For instance, anthropologist Dunn (Dunn 1976b) has identified three distinct types of medical systems that reflect geographic and cultural differences. Local medical systems, he argues, are those that exist within small-scale societies, such as foraging, horticultural, pastoral, or peasant communities, and tend to be folk or indigenous in nature. Regional medical systems, conversely, pertain to specific regions and include practices like Ayurvedic and Unani medicine in South Asia and Chinese medicine. According to Lock (Lock 1980), many societies supplement biomedical treatments with local and regional medicines. For example, the Japanese often use Chinese herbal medicine, *kapno*, to treat psychosomatic ailments like fatigue, headaches, occupational dizziness, or numbness, alongside acupuncture, body manipulation, and moxibustion therapy, administered by *kanpo* doctors. Finally, Dunn identifies cosmopolitan medical systems, which are often referred to as scientific medicine, modern medicine, or Western medicine, and represent the global medical system. Complex societies typically contain all three of these medical systems,

with many ethnic communities, particularly in the Indian sub-continent, utilizing local medical systems.

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Chrisman and Kleinman (Chrisman and Kleinman 1983) and Kleinman (Kleinman 1978) have developed a healthcare system model that encompasses three sectors: popular medicine, folk medicine, and professional medicine. The popular sector, also known as the 'non-specialist' sector, includes self-care and treatment provided by family members, friends, or relatives. The folk sector, which is similar to Dunn's local sector (1976), is practiced in both pre-industrial and non-industrial societies and is influenced by cultural traditions and philosophies. According to Kleinman, the popular sector employs both biomedical and non-biomedical systems, such as Dunn's regional sector, including Ayurvedic and Unani medicine in South Asia, Chinese herbal medicine, and acupuncture therapy. Kleinman's work in Taiwan (Kleinman 1978) suggests that the folk sector and the professional sector differ in terms of legality or formality: the folk sector is unofficial, illegal, or quasi-legal, while the professional sector is official or legal.

In Bangladesh, Begum (Begum 2012) has identified four types of healthcare systems in her ethnographic work on women's reproductive health. These are biomedicine, homeopathy, *kabiraji* (Ayurveda) and folk treatment. She has explored four categories of illness- *osukh*, *dushi*, *jadu* and *gojob*; based on the cultural knowledge of the study community. Her research has also illuminated that women's categorization and utilization of health services for this illness are shaped by various factors, including their authoritative knowledge, cultural practices, therapeutic management groups, kin networks, household economics, education, and gender-based disparities. Mahmuda Islam (Islam 1980) has studied folk medicine and rural women in Bangladesh. She has explored two types of

medicines- indigenous or traditional, and modern. She has identified numerous village traditional medical specialists- religious exorcists, snake charmers, faith healers, *kabiraj*, *dias* and so on. She has stated that the practitioners give treatment with a mixture of Ayurvedic, Unani and religio-magical systems. She has explored how sociocultural traditions influence health care. She also has explored the sociocultural traditions linked to of the women's economic dependency.

Now I will discuss few literatures on indigenous practices, rituals, and symbolic meanings that are relevant to my research topic.

1.5 Ritual, Symbol and Cultural Meaning

When discussing rituals, Arnold Van Gennep comes to mind first, as he is renowned for his concept of the term 'rite of passage' (Gennep 1960). This term was used by him in anthropology to encompass the rituals that symbolize the transition of an individual or group from one status to another or to denote the passage of calendrical time. Arnold Van Gennep developed the concept of 'rite of passage' to explore the nature of ceremonies that mark personal or collective changes of identity in events such as childbirth, puberty, marriage, motherhood, and death, as well as collective celebrations of seasonal change like Easter and harvesting. Van Gennep identified three phases in these rites: separation, when the individual or group is distanced from their former identities; liminality, the transitional phase between two conditions; and reaggregation or incorporation, the final stage in which the individual or group is readmitted to society as a bearer of a new status. Because rites

of passage belong to sacred time, they are not a part of the profane everyday life, and their performance is formalized. The initiates are placed in a symbolically subordinate position vis-a-vis those initiated, such as elders, married individuals, mothers, and so on. They must undergo elaborate 'trials', such as isolation, humiliation, fasting, and so on, before being accepted back into the community. Van Gennep's ideas have influenced two well-known symbolic anthropologists of the twentieth century, Victor Turner and Mary Douglas (Tzanelli 2007). Turner (Turner 1966a; Turner 1966b) emphasized the significance of liminality or the transitional stage from one stage to another stage as a dangerous phase for the initiates and sustains social order. Douglas (Douglas 1966), on the other hand, regarded liminality as a point that negotiates two opposing structural situations: her analysis of 'dirt' as a moral sign that enables societies to establish boundaries between social categories, such as clean and unclean, good and evil, dangerous and safe, reiterates this idea.

Behold, I shall now present a few illustrative examples of the rich tapestry of rituals and symbols among the Ndembu people of northwestern Zambia (formerly known as Northern Rhodesia) in the heart of south-central Africa, as explored by the renowned scholar Victor Turner in his seminal works (Turner and Abrahams 2017; Turner and Turner 1970). Turner discovered that the Ndembu engaged in a multitude of rituals throughout various stages of individual physical and social development, as well as for the collective advancement of their community. He posited that the symbol, as the most fundamental unit of ritual, possesses the unique attributes of ritual behavior, and serves as the ultimate building block of specific structures in ritual contexts. Whether he refers to ritual as a prescribed formal

behavior for non-technological occasions or alludes to mystical powers or entities (Turner and Abrahams 2017; Turner and Turner 1970), he affirms that symbols are closely associated with human interests, goals, objectives, and strategies, whether these are explicitly articulated or must be inferred from observed behaviors. Turner meticulously observed that the Ndembu perform specific rituals tailored to specific circumstances and the individuals involved, and he identified two broad categories of such rituals: life-crisis rituals and rituals of affliction (Turner and Abrahams 2017; Turner and Turner 1970). The former includes ceremonies related to birth, puberty, and death, which not only affect the individuals they center around but also mark changes in the relationships of all those connected to them by blood, marriage, material possessions, political power, and other forms of social ties. Among the Ndembu, the arrival of a new baby, the birth of a mother, the ascension of a village headman's heir, or the transition of a husband into fatherhood, all entail changes in behavior and social status that reverberate throughout the community (Turner 1966a; Turner and Abrahams 2017).

Turner posits that when an individual passes away, all social ties are severed, and a fresh pattern of relationships must be established. As he astutely observes through his studies of the Ndembu people, if the deceased happened to be a headman, then a suitable successor must be identified, his assets must be divided among his heirs, his debts must be settled by someone, his widow's future must be decided, and all those who had particular relationships with him must know where they stand in relation to his successor and heirs. During this critical juncture, an interval period must be observed to make the transition

from the old to the new order. Among the Ndembu, this phase coincides with the duration of the mourning camp, also known as ‘Chipenji’ or ‘Chimbimbi’(Turner 1966a; Turner and Abrahams 2017).

Through his meticulous examination of the Ndembu people, Turner scrutinized the initiation ceremonies that the boys and girls undergo. The boys’ circumcision ceremony, referred to as ‘Mukanda’, is a rite of passage that marks a man's entry into the hunting cults, as Turner has elucidated in his studies (Turner 1966a; Turner and Abrahams 2017; Turner and Turner 1970). As for the girls’ puberty ritual, known as ‘Nkang’a’, it prepares a woman to participate in the fertility cults, according to Turner’s findings. While Turner maintains that the life crisis rituals are automatic and common to all Ndembu, the hunting and fertility cults depend on individual afflictions by shades and are not automatic.

In addition, I have reviewed a few literatures related to the functional view of several societies. E.E. Evans-Pritchard works among ‘The Nuer’, and he argues that the practice of cattle raiding among the Nuer people of Sudan serves a functional purpose in maintaining social order and promoting inter-tribal trade. According to Evans-Pritchard, cattle raiding serves as a form of social control, as it helps to prevent any one group from becoming too dominant. It also encourages inter-tribal trade, as groups exchange cattle and other goods with one another as part of their raids (Evans-Pritchard 1940). Anthropologist Anne Fadiman examines the clash between Western medicine and Hmong cultural beliefs surrounding illness and healing (Fadiman 1997). Fadiman argues that Hmong cultural

practices, such as spiritual healers, serve a functional purpose in addressing the psychological and social aspects of illness, which are often overlooked by Western medicine. She suggests that a more holistic approach to healthcare that incorporates both Western medicine and traditional Hmong practices could lead to better health outcomes for Hmong patients.

The Hadza people of Tanzania, who are one of the last remaining hunter-gatherer societies in Africa. Frank W. Marlowe (Marlowe 2010) discusses how the Hadza build social solidarity through hunting and other communal activities, as well as the ways in which their social organization and subsistence practices have evolved over time. Anthropologist Asen Balikci works among the Netsilik Inuit people of the Canadian Arctic, who rely heavily on hunting for their subsistence. He explores how the Netsilik build social solidarity through cooperative hunting practices, as well as the ways in which their hunting practices are tied to their cultural beliefs and values (Balikci 1989). M. G. Bicchieri discusses his book 'Hunters and Gatherers Today: A Socioeconomic Study of Eleven Such Cultures in the Twentieth Century' a comparative study finding of eleven different hunter-gatherer societies from around the world (Bicchieri 1972). He explores how these societies build social solidarity through hunting and other communal activities, as well as the ways in which they maintain social order and resolve conflicts.

1.6 Chapter Outline

In Chapter 2, I will discuss my field research, including research locale, objectives of the dissertation research, research methodology that I have followed in my research, and theoretical framework of my research.

Chapter 3 presents the geographical location and community (Mahanta community) establishment in the research village, demographic information of the Mahanta people and village environment, including the physical structure of the village and climate of the research area.

In Chapter 4, I will describe the earnings, economics, and socioeconomic status of the Mahanta people, including household characteristics. This chapter also presents NGO activities and credit program on how it is related to their economic life.

Chapter 5 presents the family, kinship, and marriage, including caste, clan, inheritance of wealth, marital ability, bridge-wealth, dowry and divorce. This chapter also discusses the society's governance system.

Chapter 6 explores the hunting customs of the Mahanta, shedding light on their historical struggles and how they are intertwined with their hunting practices. It discusses the practicalities of bat hunting, which is further impacted by the seasonal economic uncertainties that afflict the Mahanta. Additionally, the planning procedures that are put in place for bat hunting are expounded upon, along with the utilization of weapons during the

hunting process Furthermore, the chapter offers a vivid portrayal of the hunting experiences and the participation of the community in the endeavor, followed by the intricate dynamics of bat meat trading, influenced by supply, demand, and the financial climate of the Mahanta. Lastly, the chapter delves into the social and legal aspects of bat hunting sites regarding the bat hunting.

In Chapter 7, I will present an account of beliefs, rituals and symbolic meanings associated with bat and bat hunting of the Mahanta people. Firstly, I will explore beliefs on bat catching, killing bats, and eating taboo of bat meat; secondly, several rituals of bat hunting related to the activities and their symbolic meanings among them, as well as rites of passage whereby the bat hunting as their liminal phase of the life cycle; thirdly, functional views including social solidarity, division labour and gender roles, in planning, decision-making, preparation and packed-up hunting apparatuses, butchering, cooking, consumption, distribution and sharing of bat-meat.

In chapter 8, I will expound upon the perils of unbridled bat hunting amongst the Mahanta community, highlighting the inherent health hazards and bat-borne diseases that are likely to ensue. In this chapter, I will also explore both the biomedical and local perspectives on illness and healing are explicated, with particular emphasis on the impact of bat hunting on human health. Furthermore, this chapter delves into the intricacies of health-seeking behaviors, exploring the prevalent use of bat meat and limbs in traditional medicinal practices.

In chapter 9, I will present a conclusion summary of my dissertation and future directions.

Chapter Two

2. My Field Research

This chapter expounds upon the research locale, elucidating the multifaceted objectives, meticulously devised methodology of data collection, and the underpinning theoretical framework that fundamentally governs the trajectory of my dissertation. Firstly, my discussion commences with a comprehensive exploration of the research locale.

2.1 Research Locale

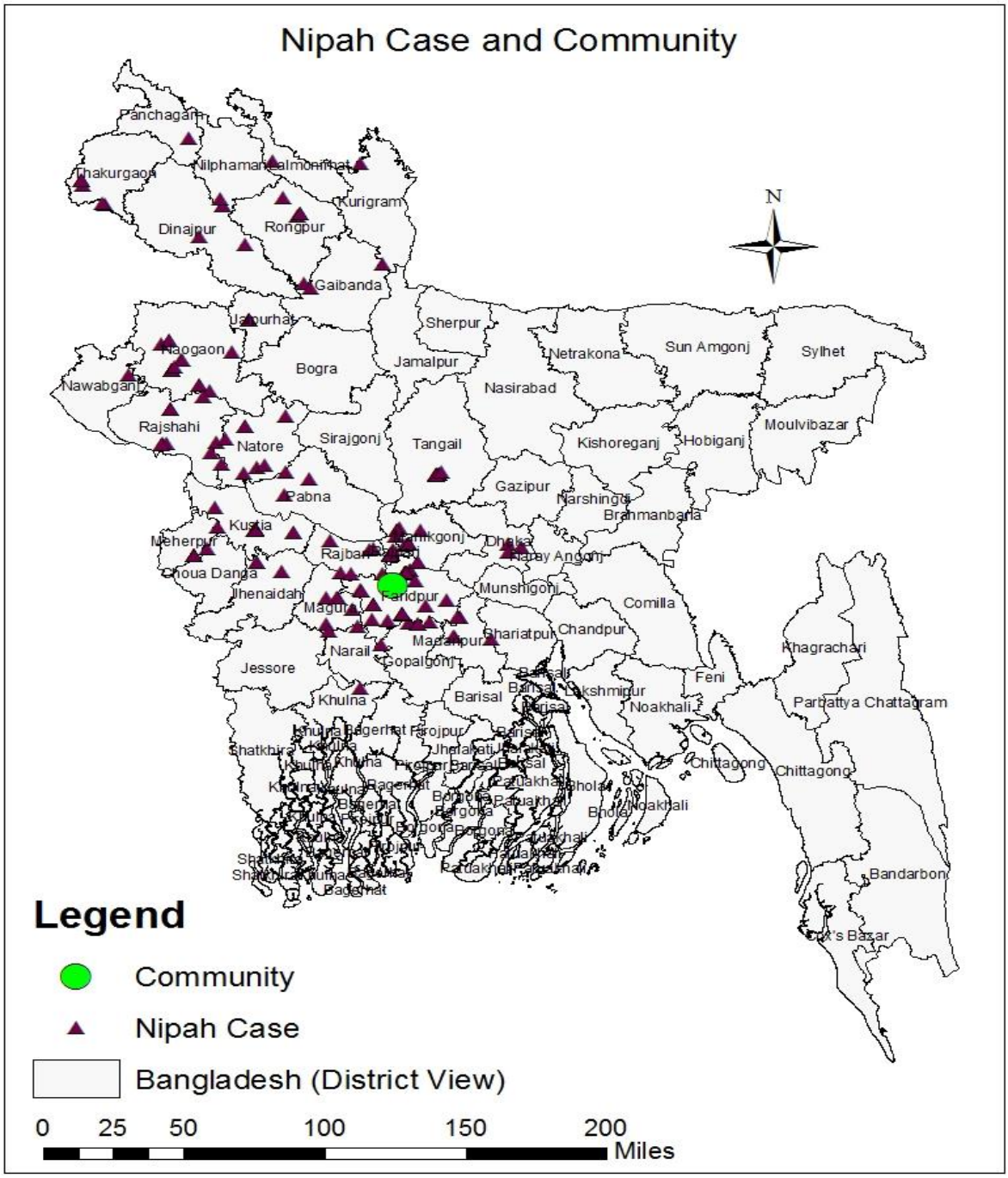
My exploration took place in the quaint hamlet of Ibrahimdi nestled within Sadar Upazilla, in the heart of Faridpur district, Bangladesh, where the Mahanta people reside. The village, situated 10 kilometers south of Faridpur town and a mere kilometer west of the Faridpur-Magura highway, is home to a local community colloquially referred to as the 'Buno' *Sumprodai*. The denizens of this community also apprised me that they belong to the Mahanta *Sumprodai,* a unique caste-sect with a penchant for hunting bats and indulging in their succulent flesh. Their religious leader is Prabhu Jagatbandhu, a Brahman who, in the early 20th century, imparted mystical teachings of his religious fervor among the ostracized Dom and Numasudra communities (Usuda 1997). Prabhu Jagatbandhu's missionary work among the Doms of North Kolkata and the Namasudra in Faridpur and Jessore earned him the admiration of the Mahanta sect, who have since forged their own distinct identity (Usuda 1997).

In the community, a populace of 61 households, predominantly engages in day labour at the local jute mills and jute *godown*s or storehouses. On certain occasions, these community members embark on a bat hunting expedition, which occurs twice a year during the Bangla months of Ashar for one episode, and Agrahan Poush, and Magh for another. The primary motivation for this activity is the procurement of bat meat, which is utilized for both personal nutritional needs and commercial purposes, sold to other households within the community and a select few Muslims residing in the nearby village. Additionally, the people of this community harness the medicinal properties of bat meat and its limbs, implementing it for treating several illnesses. Further elaboration on bat hunting and its multifarious issues and implications, will be provided in chapters six, seven and eight.

In the community where my research was conducted, I shall provide a succinct account concerning the prevalence of Nipah virus disease amidst the bat hunting populace. Officially, no evidence exists of Nipah virus disease prevalence within the Mahanta community. Nevertheless, Nipah virus surveillance conducted by icddr,b (unpublished data) attests to the highest incidence of Nipah virus disease within the Faridpur District, accounting for 21% of the 30 districts identified as Nipah cases in Bangladesh. Furthermore, GPS data from icddr,b delineates a greater incidence of Nipah virus disease in close proximity to the community, as depicted on Map 1 (Nipah case and community, data source: GPS data from icddr,b). Map 2 illustrates the distribution of Nipah virus cases and outbreaks across the districts of Bangladesh, wherein the Faridpur district, serving as

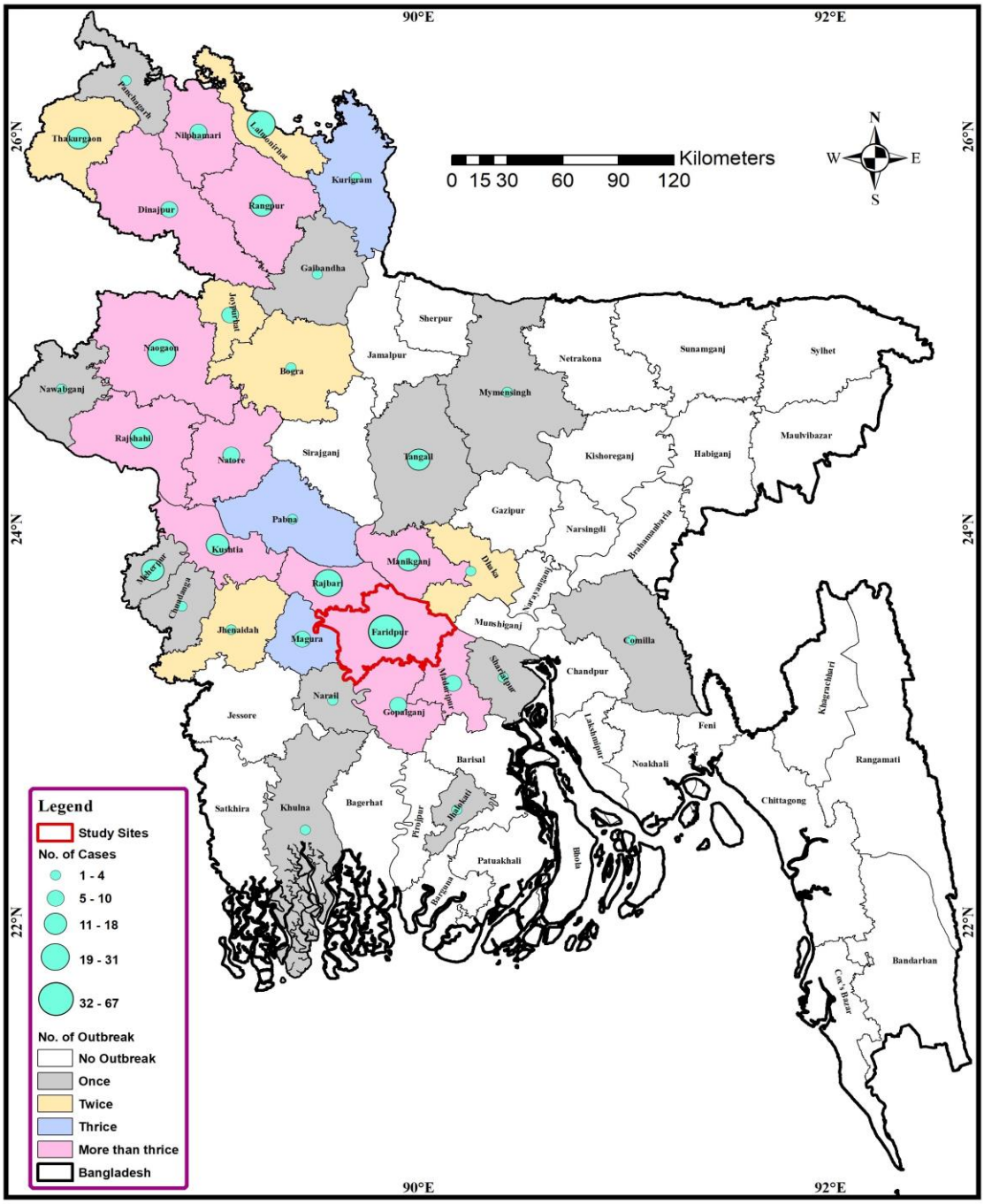
the locale for my research, exhibits the greatest number of occurrences (data source: IEDCR, Bangladesh). Numerous afflictions pervade Asia and Africa, denoted by Western terms, yet the local people are not privy to their existence. (Hewlett and Bonnie 2008) However, amidst the Mahanta community, I chanced upon a case of Nipah-like syndromes and christened it *dosh*-er *khechuni jor* (expatiated in chapter seven).

Figure 1 : Map of Nipah Cases and the Mahanta Community



(Data source: icddr,b)

Figure 2 : Map of Nipah Virus Cases Distribution and District of Bangladesh



(Data source: IEDCR, Bangladesh)

2.2 Objectives of the Dissertation

The main aim of my dissertation was to understand the dynamism of bat hunting practices in Bangladesh in terms of bat-borne disease illness perspectives. Based on this aim, I explored a few issues according to the following specific objectives in my dissertation:

1. To explore the beliefs of Mahanta community about the bat-human relationship and religious and cultural beliefs in different phases of bat hunting. It intends to explore the symbolic meanings of rituals associated with bat hunting.
2. To explore the community's understanding on the etiological explanation of illnesses.
3. To understand whether bat hunting functions in the society as an economic process or an ancestral practice.

2.3 Methodology

I collected data from two sources: primary source and secondary source. As a part of the primary source, I conducted field research through my residence in the community for one year, applying traditional anthropological/ethnographic method, i.e., participant observation along with other techniques. I chose the ethnographic method, because of it; by the method, I became able to describe the particular group or culture of Mahanta. To understand the behavior and views of a particular cultural group from that group's own perspective, ethnography involves participation in the life of the community. It allows me to have an open mind and the freedom of being receptive to all kinds of information

relevant to the particular phenomena- bat hunting and illness or the objective of the dissertation, which cannot be done through any other tool of data collection. In this regard, David M. Fetterman (Fetterman 1989) states that if we are to know the pros and cons of a particular action in a holistic approach, ethnography is probably the best tool to do it. Through participant observation residing in the community as the primary source of data collection, I gained knowledge on the everyday lives of the Mahanta. Besides, I also employed the following data collection techniques to get a more in-depth notion about the Mahanta people, symbolic meanings and explanations of their acts and interactions, the historical background of the community, and so on. As delineated below, I have explained these specific techniques, and the rationale and methodology underlying their implementation. In addition, I collected data from secondary sources. In this regard, I did considerable library work to analyze books, journals, and articles for a basic idea about the research topic.

Household Survey

I conducted a household survey following a questionnaire that is not a widely used method in anthropology. I used this method as there was no well-documented data for this community's characteristics, including family structure, gender, education, religion, occupation, earnings, ownership of assets and socioeconomic status, which helped me to get an overall idea of this community. In addition, these factors can influence health and illness and health-seeking behaviour. For example, economic status affects the ability to afford nutritious food, which increases the risk of diet-related illnesses. Economic

conditions can also influence health-seeking behaviour. Socioeconomic status and economic conditions can influence occupational choices. Hence, this information adds to my dissertation, to understand why the Mahanta were influenced to bat hunting, the health risks linked to bat hunting, and the health hazards and illnesses associated with it, and their health-seeking behaviours.

At the beginning of my fieldwork, I conducted the survey employing a structured questionnaire with basic information about the family type, age, sex, education, earnings, religion, primary and secondary occupation, landholding, household possession and artifacts, household composition, sanitation, and so on. This survey facilitated the interconnection between every Mahanta household and me in a brief span. As a result, a robust rapport was forged between myself and the Mahanta populace, thereby granting me profound insights into their everyday lives.

Key Informant Interview (KII)

The key informant interview aimed to get insights into the historical background of the Mahanta – a weave encompassing village chronicles, occupational narratives, and even the saga of hunting and/ or bat hunting. Through my participant observation residing in the community, I became acquainted with the everyday lives of the Mahanta. However, through the key informant interview, I gained a more in-depth notion about the Mahanta people, symbolic meanings, and explanation of their acts and interactions that have enriched my dissertation. The key informants possess a considerable depth of knowledge

and expertise in the specific topic that I elaborated upon in detail for my selected individuals highlighted below.

Among the Mahanta community, I meticulously handpicked four key informants based on several categories. These categories were bat hunters, senior people, and ritual specialists. From the category of bat hunters, I selected one senior hunter, who had accumulated extensive experience in bat hunting, and one junior hunter, who was actively involved in bat hunting. My goal was to inquire about the factors that influenced their decision to hunt bats, as well as their bat hunting plans, including the timing of hunting – whether it was during a particular season, day or night, the hunting equipment/weapons they used, and the process of handling the hunted bats or their meat. I also sought to gather insights on the availability of bats during different seasons and the occurrence of accidents, such as being bitten by bats or any other illness resulting from hunting. Additionally, I aimed to explore their beliefs about bats as an animal and their perspectives on the potential illness that could arise from bat consumption.

Furthermore, I selected two senior people from the community, who had a profound understanding of the village's history, occupation, marriage system, land pattern, and cultural beliefs. One of the senior individuals was a ritual specialist and a religious leader who was also involved in the community's healing practices. My intention was to delve into the Mahanta community's religious beliefs, ritual practices, and health-seeking behaviors through these key informant interviews.

Unstructured Interview

Through the key informant interview, I gained a comprehensive understanding of the Mahanta community's village history, occupational history, hunting, especially bat hunting, belief, rituals, illness perspectives, and health-seeking behaviours. I also conducted unstructured interviews with individuals from the Mahanta community to understand individual's experiences, perceptions, feelings, and thoughts, especially on bat and bat hunting, the use of bat meat and its limbs, and bat-associated illness perspectives and health-seeking behaviours. This depth of understanding of individuals is crucial for gaining insights into the layers of a community's way of life. I selected twenty persons, including eight males and twelve females, for unstructured in-depth interviews from the Mahanta community with a broader range of backgrounds and experiences – different socioeconomic statuses, including *dhoni*, *moddhabitta*, *gorib* and *khub gorib,* bat hunter and tortoise hunter, and bat meat eater and bat limb user for treatment purposes. This gained insights through the unstructured interviews, which I triangulated to the findings of the participant observation, key formant interviews, and other data collection techniques that have enhanced the validity and reliability of my dissertation.

Case Study

I conducted case studies to present the reality of the Mahanta on the following specific issues for engaging narratives that bring cultural practices and individual experiences that make my dissertation more relatable and accessible. I undertook the arduous task of delving into the intricacies of two fatal cases linked with bat hunting. The first case entailed Nipah-

like syndromes, while the second case involved a tragic fall from a tree during a bat-hunting expedition. In order to fully comprehend the underlying reasons for these unfortunate deaths, I meticulously gathered data from the bereaved family members. My primary focus was to uncover the belief systems and perceptions surrounding the causes of these mortalities, including those related to bat-borne ailments. In addition, I conducted another case study on complicated illness according to the Mahanta community people, and their health-seeking shifted due to financial unavailability. I also keenly investigated the healing practices that were utilized during the illnesses that ultimately led to these tragic outcomes.

Observations

By being present in the field, researchers can observe not only what people say but also what they do and how they do it. The Mahanta hunters told me the story of their bat hunting events in key informant and unstructured interviews. However, people often engage in behaviors that they might not be fully aware of or might not explicitly talk about in interviews. Through observation events, researchers can uncover these unconscious or implicit behaviors, shedding light on cultural norms, values, and practices that participants might not articulate verbally. I observed two bat hunting events directly at the hunting spots to understand the bat catching process, types of contact with bats, difficulties of bat hunting, and so on. Furthermore, these observation findings allowed me to triangulate data collected through other methods, and multiple data sources. It increases the reliability and validity of my dissertation.

2.4 Theoretical Framework

My dissertation has been conducted from the medical anthropological perspective, followed by the political economy approach to health and/ or illness. The political economy theory explains disease causality based on social, economic, historical, and political perspectives. The given theory explains the context of encompassing political and economic forces that pattern human relationships, shape social behaviours, condition collective experiences, reorder local ecologies, and situate cultural meanings, including forces of institutional, national, and global scale (Baer, et al. 2003). Many scholars have followed these theoretical views with medical anthropological perspectives. One of the pioneers and famous ethnographic works based on the political economy perspective of the disease is 'AIDS and Accusation: Haiti and the Geography of Blame' by Paul Farmer (Farmer 2006). He has stated how international and local forces shaped disparate responses to the epidemic of HIV disease in Haiti. He has explored how poverty and cultural beliefs, such as sorcery, help to directly respond to the disease and interactions between epidemiology and history to explain how HIV most likely arrived in Haiti via North American tourists. He also has shown the arrival of AIDS, its link to Haiti's history, and its continually evolving role in the regional economy dominated by the United States. Farmer has explored a few factors linked to transmitting HIV in rural Haiti, which are deepening poverty, gender inequality, political upheaval, traditional patterns of sexual union, emerging patterns of sexual union, prevalence of and lack of access to treatment for STDs, lack of timely response by public health authorities, and lack of culturally appropriate prevention tools. His ethnographic evidence shows how the above-mentioned

factors influence the accusation of AIDS in Haiti. He has explored that population migration from rural Haiti to the capital of Haiti, Port-au-Prince, due to the famine rural exodus, by periodically ravaged by hurricanes, soil erosion, and deforestation. Migrations of both sexes maintain strong ties with their regions of origin, where younger women of rural origin are commonly employed as servants. Thus, economic pressure pushes people into the city, into the countryside, and even out of the country. Unemployed women from rural areas are involved in prostitution in urban areas who have relations with the rural origins of the family. In addition, barriers to women's' access to STDs treatment and protection of STDs or HIV by using condoms, local beliefs, and folk treatment of AIDS; all are related to AIDS among the rural Haitians. My dissertation has followed Faul Farmer's perspectives. In my dissertation, the Mahanta people hunt bats from late November to early February after the jute harvesting season. During this time, the Mahanta became jobless or had fewer opportunities to earn and get involved in alternative sources like bat hunting. According to the Mahanta, heavy rainfall occurs in the Bengali month *Ashar* (usually the corresponding English month is June), and it is difficult to hunt bats and even go out from the shed. In addition, they also think that bats carry their baby in *Ashar*, and it is not ethically and emotionally sound to hunt the mother of the baby bat. However, very few Mahanta hunt bats in *Ashar* due to the unavailability of earning alternatives. In addition, bat hunting is a difficult job in terms of climbing tall trees in the season of heavy rainfall and very cold weather at night in a desolate place. There is evidence of death falling down from the tree during bat hunting. Despite this, their economic forces compel them to hunt the bat.

The political economy or critical approaches exhibit vulnerability is a historical process. In this dissertation, I explore how the Mahanta is a historically vulnerable or disadvantaged community. Conventionally, the Mahanta, from nomadic to settled in Faridpur and Jhashore in the current Bangladesh, and during the British colonial rule in this Indian-sub-continent the government engaged them to clean the jungle for the *Neel* (Indigo) production (Iqbal 2010). They also worked as menial workers in the *Zamindar* or rich houses. Kanaipur, close to the Mahanta community, is a business center locally called "Kanaipur Bazaar". it has been a renowned business center in the west-central part of Bangladesh since the British colonial era in the Indian sub-continent and recent years. Jute is locally imported here. There are many *godown* (storing houses) of rice, *da*l, and especially jute *godown*. The scope of earning works' sources of the Mahanta is limited due to the use of jute decreasing dramatically day by day the alternative usages of it, like polythene or plastic. New business and industry development would cause a lack of income (Scheper-Hughes 1992).

The human and animal interactions are connected with infectious diseases, i.e., host-agent interactions, and even with the environment (both the physical and the socio-cultural environment (Harthorn 1999). Faridpur is one of the Nipah virus epidemic regions in Bangladesh (Gurley, et al. 2007; Rahman, et al. 2012). The Mahanta live in the Faridpur District but are not concerned about Nipah virus infections. No awareness program for Nipah virus prevention is implemented among them by the government or any national or international development organizations.

The political economy approach or critical approach demonstrates a society's vulnerability and how the social structure of the society makes it vulnerable. The background of the Mahanta community indicates that they don't get opportunities that the mainstream people get- they are disenfranchised apparently. Disease and illness disproportionately affect the poor, racial minorities, marginalized people, and women (Farmar 1999).

Along with the political economy approaches, another approach has been used in my dissertation, the symbolic anthropological approach. In this perspective, I have followed Van Gennep's 'rites of passage'. According to Gennep, all rites of passage share three basic stages: separation, liminality, and incorporation (van Gennep 1908). In the first stage, the individual is separated from their previous social status or identity. In the second stage, they enter a period of liminality or 'betwixt and between' where they are neither fully in their old nor new identity. And in the final stage, they are incorporated into their new social status or identity. Van Gennep's ideas have influenced two well-known symbolic anthropologists of the twentieth century, Victor Turner and Mary Douglas (Tzanelli 2007). I also have used Victor Turner's and Mary Douglas's symbolic approaches to my dissertation. Victor Turner affirms that symbols are closely meaning associated with human interests, purposes, ends, and means. Turner worked among the Ndembu people, in northwestern Zambia (formally Nothern Rhodesia) in south-central Africa. He (1967) explored that the Ndembu practiced several rituals in several stages of the individual's physical and social development, and for the community's collective development. Whatever, he means by 'ritual' as prescribed formal behaviour for occasions not given over

to technological routine, it has reference to beliefs in mystical begins or powers. He explored that the Ndembu practiced specific rituals for the specific circumstances and the specific people are involved. Turner explored broadly two kinds of rituals: life-crisis rituals and rituals of affliction. He argues that the crisis ceremonies not only concern the individuals on whom they are centered but also mark changes in the relationships of all people connected with them by ties of blood, marriage, cash, political control, and in many other ways. Among Ndembu, when a new baby comes, and a young woman becomes a mother, a village headman gets an heir, a husband becomes a father, his mother becomes a grandmother, and so on, with all the changes in behavior and status involved in these new relationships (Turner and Turner 1970). The Mahanta perform rituals on life-cycle - birth, puberty, marriage and death. They also perform preventive and curative rituals for health, illnesses, and other purposes for their individuals and groups.

Turner (Turner 1966b) illustrated the significance of liminality, or the transitional stage from one stage to another stage, as a dangerous phase for the initiates and sustains social order. This idea is reappeared by Douglas. Douglas (1966) regarded liminality as a point that negotiates two opposing structural situations: her analysis of "dirt" as a moral sign that enables societies to establish boundaries between social categories such as clean and unclean, good and evil, dangerous and safe.

In addition, functional views have been used in my dissertation (Hovelsrud and Smit 2010; Kishigami 2000; Washburn and Lancaster 2017). All of these authors cited here argue that

sharing hunted animals or meat is a fundamental aspect of hunter-gatherers' culture, which enables them to establish and maintain social relationships and obligations.

Foster and Anderson have introduced an innovative approach to categorizing the origins of illnesses, particularly in societies beyond the Western sphere (Foster and Anderson 1978). They present a dual distinction between personalistic and naturalistic frameworks. In personalistic systems, ailments are attributed to deliberate and active interventions by entities like divine deities, spectral beings, ancestral spirits, capricious phantoms, or even human magic practitioners. Conversely, naturalistic systems elucidate maladies through detached and systemic explanations, attributing them to elemental forces or conditions such as cold, wind, moisture, or an individual's internal or societal imbalances.

Within medical anthropology, scholars delve into the coexistence of diverse medical care subsystems across various societies, showcasing a tapestry of variations interwoven with geographical and cultural nuances (Chrisman and Kleinman 1983; Dunn 1976b; Lock 1980). Taiwan emerges as a focal point for Kleinman (1978), who dissects a healthcare framework encompassing three vital sectors: the sphere of popular medicine, often termed the 'non-specialist' domain, encapsulating self-care and remedies dispensed by kin, companions, or acquaintances; folk medicine shaped by deep-seated cultural traditions and philosophical underpinnings; and professional medicine, duly recognized as the formal or authorized sphere. In a parallel endeavor, Dunn (1983) undertakes an exploration yielding three discernible archetypes of medical systems mirroring geographical and cultural

distinctions. These archetypes encompass local medical systems prevalent in close-knit societies and cosmopolitan medical systems, often identified as scientific, modern, or Western medicine, emblematic of the global medical panorama.

In my dissertation, I explore how the economic vulnerability of the Mahanta people, along with their cultural practices, impacts their engagement in bat hunting, shapes their perceptions of illnesses connected to this activity, and influences their behaviors related to seeking healthcare. The next chapter discusses the Mahanta community's geographical location, demographic composition, and village environment.

Chapter Three

3. Mahanta Community: Geographical Location, Demographics and Environment

Different regions and communities can have varying levels of access to healthcare resources, economic opportunities, education, and social support. Analyzing geographical location and demographics helps identify disparities in health outcomes and access to care between different groups. Demographics also can encompass various factors such as age, gender, ethnicity, and socioeconomic status. These factors can influence health behaviors, cultural practices, and social norms. Geographical location and environment can also play a significant role in shaping the prevalence of certain diseases. For example, certain infections might be more common in specific climates, and exposure to environmental pollutants can lead to various health issues. This chapter comprehensively depicts the physical architecture of the Mahanta village, elucidating its geographical position vis-a-vis significant cultural and topographical features. It delves into an in-depth analysis of the village's internal organization, encompassing the distribution of the streets, the layout of the temples and other communal structures, and the overall settlement pattern. Furthermore, the chapter sheds light on its demographic characteristics and the climate prevailing in the region. Thus, this chapter adds insights to my dissertation understanding the bat hunting and/ or bat-associated infection and illness perspectives among the Mahanta.

3.1 Geographical Location of the Village

The Mahanta village, where the Mahanta people reside, is located approximately 128 kilometers southwest of Bangladesh's capital city, Dhaka, accessible by road. In terms of air distance, it is around 60 kilometers from Dhaka. This village forms a part of Sadar Upazila in the Faridpur district, with an inter-district bus terminal connecting it to other towns and Dhaka. The Mahanta community is situated within the Kanaipur Union *Parishod*, approximately 10 kilometers southwest of Faridpur town, adjacent to the Faridpur-Magura highway. Local buses or *Mahindra* taxis are the usual mode of transport from Faridpur town to Kanaipur Bazaar, which takes about 30 minutes. The Mahanta community is situated about one kilometer east of Kanaipur Bazaar, after the Shikdar *Zamindar Bari*. The Shikdar family was the most prominent *Zamindars* during the British colonial period in India. Hindu Shah people live just after the Shikdar *Zamindar Bari*, while a connecting village road runs south of it, separating the Mahanta community from the Hindu Shah community. The Mahanta community is located to the northeast of the Shah community.

The Mahanta community is a compact settlement on level ground with an irrigation river, known as 'Kanaipur Nodi', flowing on its northern border. The eastern side of the village is surrounded by arable land while other communities occupy its remaining sides. The *Maji Sumpradai* people reside to the east, while a temple locally called *'Mandir,'* with a cremation ground called *Shashanghat,* is located on the northwest side, alongside the Kanaipur *Nodi* (river). The *Mandir* is exclusively used by the Mahanta community, while

the *Shashanghat* is utilized by the Mahanta and other neighboring Hindu communities. A water drain runs through the village from southeast to northwest and eventually falls into the Kanaipur *Nodi*. The community has two entry points; one is connected to the village road from the southwest, and the other is on the side of the *Mandir*. Both entryways are built with culverts using bamboo sticks to cross the water drain. The community measures approximately 120 meters from south to north and 70 meters from west to east, with no specific lanes to move within it. People use courtyards to move from one house to another. Furthermore, three households have mini temples or *Puja Ghars*, apart from the community temple maintained by the respective households.

Geographically, the Padma, one of the largest rivers in Bangladesh, creates a natural boundary between the southwest region of the country and the capital city of Dhaka. This vast river meanders through the southwest districts, including Barishal, Potuakhali, Sariatpur, Khulna, Satkhira, Jeshor, Jhenaidha, Kushtia, Magura, Gopalgonj, Bagherhat, Madaripur, Rajbari, and Faridpur (see Figure 3).

Typically, it takes around five hours to travel by road from Dhaka to Faridpur, where people cross the Padma by ferry boat at Patuary point in Manikgonj district and Dawlatdia point in Rajbari district. However, the construction of the Padma Bridge has revolutionized connectivity in the region. This two-level road-rail bridge connects the
southwest districts to Maoua point in Louhajang Upazila of Munshiganj district and Zajira point of Shariatpur district and Shibchar of Madaripur district to the southeast of the

Paturia-Dawlatdia points, including Faridpur district. Nonetheless, the rail line of this bridge is yet to be completed.

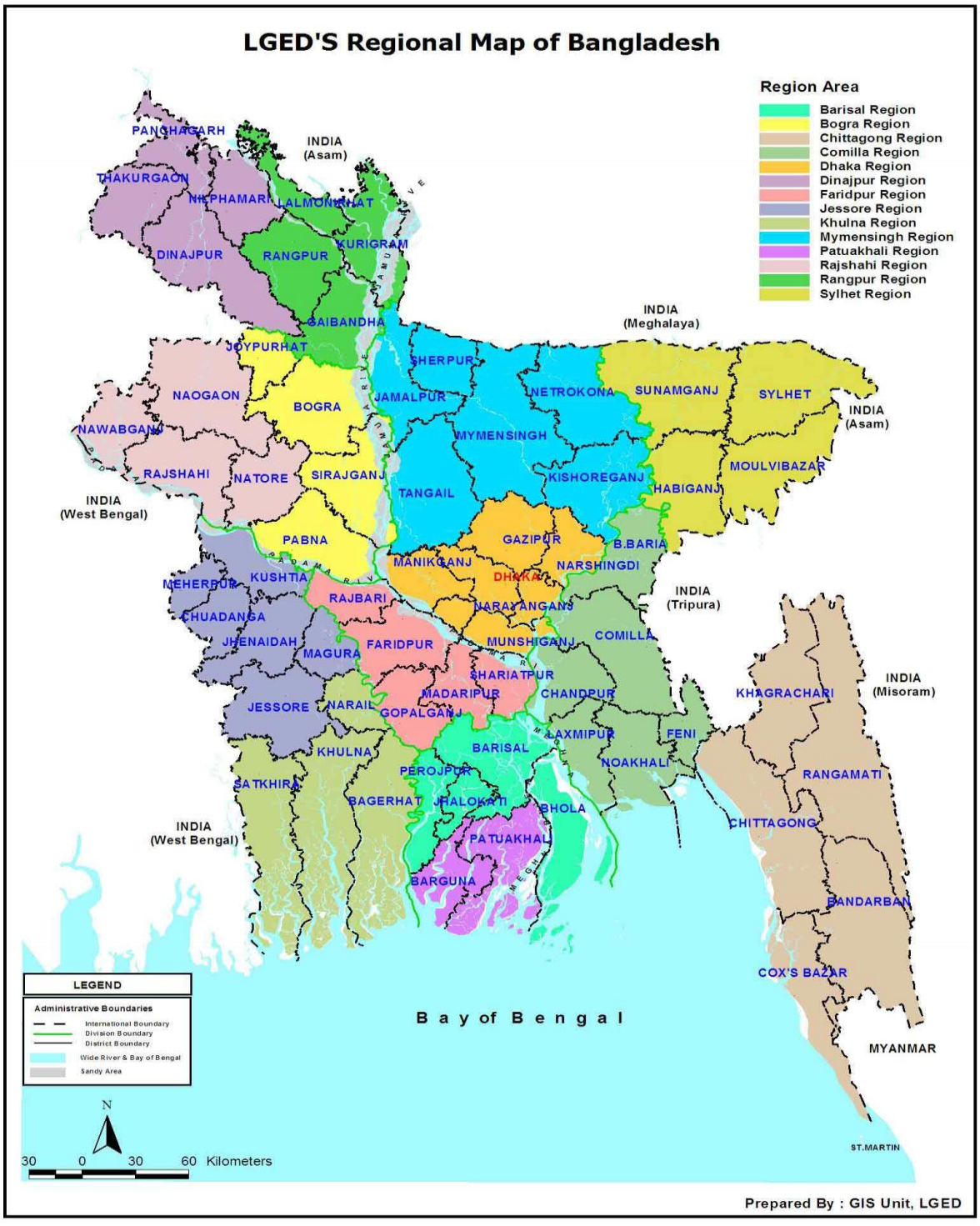
Nestled within the verdant Delta of the Padma lies the district of Faridpur, once known as ‘Fatehabad’ in honor of Fateh Ali, whose commendable efforts transformed the region into a veritable haven for both cultivation and human settlement. However, during the early thirteenth century, the illustrious Shah Fariduddin, a revered disciple of the esteemed Hazrat Mainuddin Chisti of Ajmeer, chose to establish his spiritual abode in the vicinity of the current collectorate building. In homage to his distinguished patron, Fatehabad was subsequently christened as ‘Faridpur’ (GOB 1977).

The Faridpur district is located in the Delta of the Padma and has many rivers flowing through it, such as Old Kumer, Arial, Khan, Gorai, Chandana, Bhubanshwarand, Lohartek, and other small rivers and canals and marshy areas (BBS 2013). The fertile land in this region is ideal for cultivating a variety of crops, including rice, jute, sugarcane, vegetables, peanuts, wheat, onions, garlic, potatoes, coriander, betel leaf, chili, species, pulses, oilseeds, and cotton. The district is also renowned for producing high-quality jute and sugarcane (BBS 2013).

Most of Faridpur district is covered by homestead forests that are home to a variety of fruit and other trees, such as Koroy Haldu (Albizzia procera), Bazna (Zanthophylium flavescens), Karobi (Thebetia pervuviana), Sheora (Streblus asper), Mehogini(Swietenia

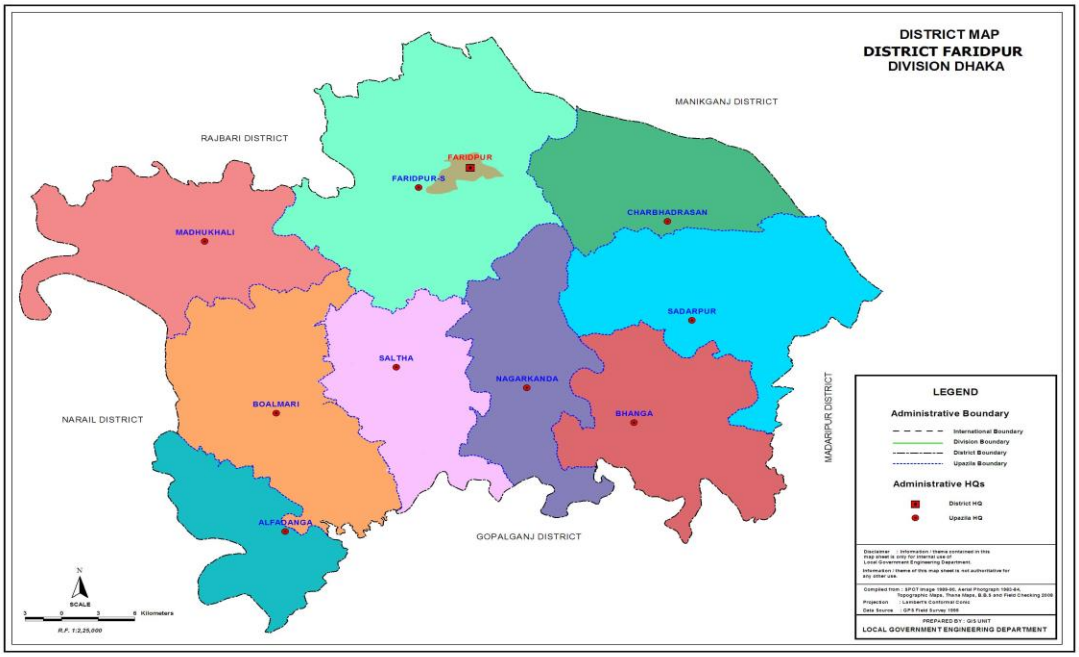
macrophylla), *jalpai*/olive (Elaeocarpus tectorius), bohera (Terminalia bellirica), amloki (Phyllanthus emblica) (BBS 2013), as well as mango, betel-nut, banana, jackfruit, coconut, litchi, blackberry, papaya, *jambura*/lime palm, Indian palm, tamarind, date palm, and guava (BBS 2013).

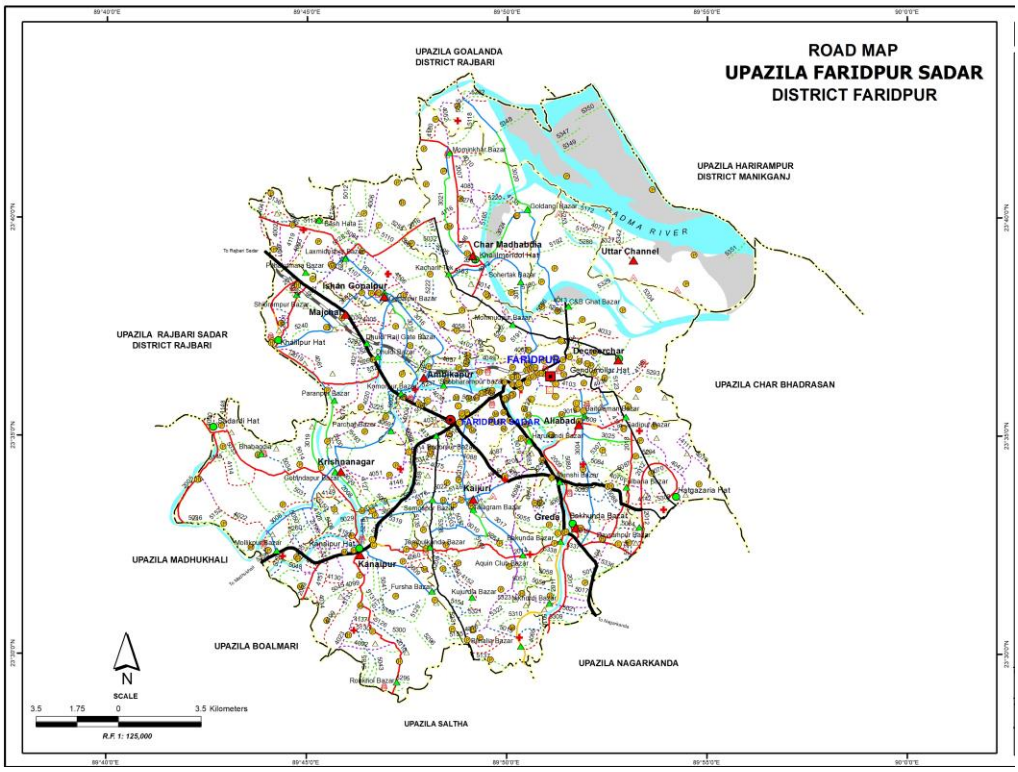
Figure 3 : Map of Bangladesh



Source: LGED, Bangladesh

Figure 4 : Map of Faridpur District and Sadar Upazila of Faridpur District





Source: LGED, Bangladesh

3.2 Demographic Characteristics of the community

Encompassing a comprehensive analysis of the populace's demography, this chapter comprises pertinent information concerning age, gender, education, profession, household dimensions, and headship. The community's total denizens' amount to a count of 279, and the ensuing tables provide a multifarious array of data, encompassing the distribution of the population based on factors such as age, gender, educational attainment, familial dimensions, and marital status of the household's head.

3.2.1. Household Population by Age and Sex

In their unique lexicon, the Mahanta people differentiate between the sexes, referring to males as '*purush'* and females as *'mohila'*. Additionally, they sometimes employ the terms *'beta manush'* and *'beti manush'* for males and females, although numerous other designations are based on age groups. They employ the term '*boish*' to indicate age. The mean age of the populace is 27.25 years, as denoted in Table 3.1. Interestingly, the average age of the male cohort is lower than that of their female counterparts, standing at 24.08 years and 30.35 years, respectively. Moreover, the male segment of the community surpasses the female segment in terms of numerical strength, resulting in a sex ratio of 97.8 males per 100 females.

The Mahanta people hold that individuals aged 15 years and above are adults, whom they refer to as *'boro manush',* signifying mental and sexual maturity. A notable 31.9 percent of the household population is under the age of 15, with 11.1 percent being below 5 years

old. The community's view is that individuals aged 65 years and above are deemed old, termed as *'boiska'* or *'bura'*, and are considered unproductive and unable to generate a significant income. The elderly population compries those aged 65 years and above, accounting for 5.4 percent of the community's total populace. Regarding gender, the proportion of males under the age of 5 and 15 is higher than that of females. However, the opposite is true for those aged 65 years and above, with females representing a higher proportion (see Table 3.1), indicating a greater reliance on household support for elderly women in the community.

Table 3.1: Distribution of Household Population by Age and Sex in Mahanta Community, Faridpur Bangladesh 2017

Age category (in year)	Total	Male	Female
<1	3.2	2.2	1.1
1-4	7.9	3.9	3.9
5-9	10.0	4.7	5.4
10-14	10.8	5.4	5.4
15-19	10.4	4.7	5.7
20-24	6.5	2.9	3.6
25-29	9.0	3.9	5.0
30-34	7.2	4.7	2.5
35-39	6.5	2.9	3.6
40-44	6.1	2.9	3.2
45-49	5.0	1.4	3.6
50-54	6.5	4.3	2.2
55-59	4.3	3.2	1.1
60-64	1.4	0.4	1.1
65-69	3.2	1.1	2.2
70-74	.4	0.0	0.4
75-79	1.1	0.4	0.7
80-84	.7	0.7	0.0
Total	100.0	49.5	50.5
Number	**279**	**138**	**141**
Mean age	**27.25**	**24.08**	**30.35**

Source: Field work May 2017

3.2.2 Education level of the Mahanta population

One of the major socioeconomic influences on a person's behavior and attitudes is education (NIPORT 2016). In pursuit of the UN Child Rights Convention, the government of Bangladesh has established a compulsory law mandating free and uniform primary education for every child, with the overarching objective of achieving universal primary enrollment by 2005 (NIPORT 2016).

The Mahanta people deem a person ‘educated’ when they possess the ability to read and write, having acquired such skills through formal education in school. Regrettably, nearly fifty percent of the Mahanta populace lacks a formal education (see Table 3.2), with less than a tenth completing primary education. As evident in the data, no Mahanta individual has attained an educational level surpassing secondary education, with only two people demonstrating such an accomplishment, representing a meager 0.8 percent. Additionally, a negligible number of young children, aged between three to five years, receive Mandir-based education under the pre-school program of the government, alongside other children like Maji *Shoprodai* and Hindu Shah *Shomprodai* in the Mandir of the Hindu Shah community.

The Mahanta community exhibits a literacy rate of fifty-eight percent, which regrettably falls short of the national average literacy rate of 72.3 percent (BBS 2018a). Typically, children in Bangladesh commence their academic journey at the age of six; however, an unsettling statistic reveals that a minute fraction, comprising 2.9 percent of Mahanta children aged six to nine years, do not attend school yet despite meeting the age requirement. Moreover, while literacy levels tend to decline as age progresses, this pattern does not hold true across all age groups within the Mahanta community.

Table 3.2: Distribution of Household Population by Education and Age in Mahanta Community, Faridpur Bangladesh 2017

Age category (in year)	No Schooling	Primary Incomplete	Primary Complete	Secondary Incomplete	Secondary Complete	Total
6-9	2.9	6.2	0.0	0.4	0.0	9.5
10-14	0.0	9.1	0.8	2.5	0.0	12.3
15-19	2.5	2.9	0.4	5.3	0.8	11.9
20-24	1.2	2.9	1.6	1.6	0.0	7.4
25-29	1.6	1.6	2.5	4.5	0.0	10.3
30-34	2.1	2.9	1.6	1.6	0.0	8.2
35-39	3.3	2.5	1.2	0.4	0.0	7.4
40-44	4.9	0.4	1.2	0.4	0.0	7.0
45-49	4.9	0.4	0.4	0.0	0.0	5.8
50-54	6.2	0.8	0.0	0.4	0.0	7.4
55-59	4.9	0.0	0.0	0.0	0.0	4.9
60-64	1.6	0.0	0.0	0.0	0.0	1.6
64+	5.8	0.0	0.0	0.4	0.0	6.2
Total	**42.0**	**29.6**	**9.9**	**17.7**	**0.8**	**100.0**
Number	**102**	**72**	**24**	**43**	**2**	**243**

Source: Field work May 2017

As illustrated in Table 3.3, the literacy rate of males outpaces that of females, aligning with the trend observed in the 2011, 2001, and 1991 censuses (BBS 2015). Nonetheless, both male and female literacy rates surpass those recorded in the 2011 census, with a marked increase from 49.8 percent to 59.9 percent for males and 45.5 percent to 56.4 percent for females, respectively.

Table 3.3: Distribution of Household Population by Sex and Education in Mahanta Community, Faridpur Bangladesh 2017

Variable	No Schooling	Schooling/Literacy
Total	42.0	58.0
Male	40.1	59.9
Female	43. 6	56.4

Source: Field work May 2017

3.2.3 Distribution of Household Population by Occupation

In the early days, the Mahanta people were primarily hunters who resided in makeshift huts near or within the jungle and hunted wild animals and birds for sustenance. While some members of the community did engage in cultivation, hunting remained their primary occupation. Fast forward to the present day, their profession has transformed, with some still pursuing their traditional line of work while taking on other jobs. Currently, the community's principal occupation is day laboring, which comprises a substantial portion of the population, amounting to 31.5 percent (see table 3.4). Notably, females also partake in day laboring, with 12.9 percent of the female population employed in this sector, albeit in smaller numbers than their male counterparts. However, it is worth mentioning that approximately one-third of the community is not employed, comprising children, elders, or those with disabilities. Additionally, 12.9 percent of the population has not received formal education, while 15.4 percent are currently students, with females outnumbering males at 9.7 percent versus 5.7 percent. Furthermore, a small percentage of the male population (6.8 percent) and even fewer females (0.4 percent) are engaged in beauty salon services. Interestingly, a segment of the population (2.9 percent) still identifies s as hunters, specializing in eel fishing and hunting for bats, tortoises, and rabbits, alongside day

laboring jobs. Nationally, data indicates that females tend to participate less than males (66.0 percent versus 9.6 percent) in economic activities (BBS 2015). Nevertheless, male and female involvement in economic activities within the Mahanta community are relatively similar (See Table 3.4).

Table 3.4 :Distribution of Household Population by Sex and Occupation in Mahanta Community, Faridpur Bangladesh 2017

Occupation	Male	Female	Total
Day labour	18.6	12.9	31.5
Homemaker	0.4	17.2	17.6
Man/Woman Beauty Salon	6.8	0.4	7.2
Singer of *Kirton*	1.8	0.0	1.8
Catch -Eel Fish	2.9	0.0	2.9
Not Employed	16.7	19.4	36.1
Child (Not start schooling)	7.5	5.4	12.9
Child (Stop schooling)	1.4	0.7	2.2
Child (Never Schooling)	0.7	1.8	2.5
Current Student	5.7	9.7	15.4
Elder	0.7	1.1	1.8
Disable	0.7	0.7	1.4
Others	2.2	0.7	2.9
Total	49.5	50.5	100.0
Number	138	141	279

Source: Field work May 2017

The Mahanta community recognizes the age range of 15 to 60 or 64 as the productive period. Nevertheless, some individuals may work beyond their designated age limit due to financial pressures on their family, whether children or elders. A Mahanta woman shared her story, detailing her need to work and earn a livelihood as,

“We are poor, my husband cannot work actively, he is aged, and my granddaughter (daughter’s daughter) lives with us. So, I work to maintain my family expenditures”. **[66 years old women]**

A quarter of the Mahanta population falls under the age of 24 (see Table 3.5). Employment is highest among the 15-19 age group and gradually decreases among those aged 35 and above, though not in a consistently ordered manner. Despite this, some individuals work beyond the age of 64, while others stop working before reaching that age. The majority of the Mahanta people (45.3 percent) aged 15 to 64 years or above work as day labourers, while 21 percent are employed in other fields, including beauty salons, eel fishing, and religious singing. Roughly one-third of the population does not engage in income-generating activities, instead taking on roles as homemakers, elderly caretakers, or people with disabilities.

Table 3.5: Distribution of Household Population by Age and Occupation in Mahanta Community, Faridpur Bangladesh 2017

Age category	Day labour	Homemaker	Work in	Kirton Singer	Catch -eel	No Employed			Others	Total
						Elder	Student	Disable		
15-19	3.2	3.7	2.6	0.5	0.5	-	3.2	1.1	0.5	**15.3**
20-24	3.2	3.7	1.1	1.1	-	-	-	-	0.5	**9.5**
25-29	3.7	6.3	2.6	-	0.5	-	-	-	-	**13.2**
30-34	4.7	2.6	1.1	-	0.5	-	-	1.1	0.5	**10.5**
35-39	5.8	1.6	1.1	0.5	0.5	-	-	-	-	**9.5**
40-44	4.2	1.6	1.1	-	1.1	-	-	-	1.1	**8.9**
45-49	6.3	1.1	-	-	-	-	-	-	-	**7.4**
50-54	6.3	1.6	0.5	-	-	0.5	-	-	0.5	**9.5**
55-59	4.2	0.5	-	-	0.5	0.5	-	-	0.5	**6.3**
60-64	1.6	0.5	-	-	-	-	-	-	-	**2.1**
64+	2.1	2.6	-	0.5	0.5	1.6	-	-	0.5	**7.9**
Total	**45.3**	**25.8**	**10.0**	**2.6**	**4.2**	**2.6**	**3.2**	**2.1**	**4.2**	**100.0**
Number	**86**	**49**	**19**	**5**	**8**	**5**	**6**	**4**	**8**	**190**

Source: Field work May 2017

3.3.4 Household Headship and Size

The composition of a household is a critical determinant of its inhabitants' overall health and well-being. In order to devise meaningful population-based policies and programs, a deep understanding of household headship and size is imperative. The Mahanta community determines household headship based on decision-making authority about family maintenance, earnings, expenditures, and even, marriage decisions. They call the head of a household as *'korta'* of the household. The head of a household, or 'korta', is typically an elderly male in their community. According to the Mahanta, males tend to earn more money and have more social connections within and outside of their community, making

it easier for them to make decisions for the household. Additionally, elderly males are often better known in the community than their female counterparts. As a result, households are referred to by the name of the male head, such as '*Katik er ghor'* (Kirtik's household), where Kirtik is the head of the household. As per Table 3.6, over 90% of households in the Mahanta community are headed by males, a figure similar to the national data of Bangladesh (NIPORT 2016). Nonetheless, some widows/widowers and divorced females do serve as the head of their households (see table 3.5), indicating that household headship in the Mahanta community is typically formed by elderly individuals, as widows/widowers tend to be older (BBS 2015).

Roughly fifty percent of households within the Mahanta community consist of five or more family members, with an average household size of 4.57. This figure slightly exceeds the average household size of 4.5 reported in the Bangladesh Demographic and Health Survey of 2014 (NIPORT 2016) and the 4.35 average reported during the 2011 census (BBS 2015).

Table 3. 6: Distribution of Household by size, headship with sex and marital status

Characteristics	Sex of Household Head		Total
Marital Status	**Male**	**Female**	
Married	88.5	0.0	88.5
Widow/Widower	1.6	8.2	9.8
Divorce	0.0	1.6	1.6
Total	90.2	9.8	100.0
Number of Household	55	6	61
Household Size			
Number of Household Member	**Number**	**Percent**	**Cumulative Percent**
2	6	9.8	9.8
3	10	16.4	26.2
4	17	27.9	54.1
5	15	24.6	78.7
6	5	8.2	86.9
7	4	6.6	93.4
8	3	4.9	98.4
12	1	1.6	100.0
Mean Size of Households	4.57		

Source: Field work May 2017

3.3 Village Environment

This section provides an overview of the physical layout of the Mahanta village, beginning with a succinct depiction of its internal organization, including the settlement pattern, street orientation, and location of community sites and temples. Furthermore, this chapter offers insights into the area's climate, delving into the distinct seasons experienced by the Mahanta community throughout the year.

3.3.1 Physical Structure of the Village

The Mahanta community is situated in a rural area and reflects its social structure in its physical layout to a significant extent. The distribution of the population is not arbitrary but instead follows a conscious plan that visually illustrates some of the fundamental bonds and divides within the village's social framework. Residents with similar social standings typically live in proximity, while those with differing positions are separated by distance. Physical distance is often perceived as a reflection of structural distance, although this is not uniformly evident in the Mahanta community but more so between different communities in the village. The village is segregated into distinct territorial sections, each with unique social values attached. The Mahanta cluster is just one of several within the village, including the Hindu Shah community and the Maji *Symprodai*, with the Muslim community situated southeast of the Maji community. Though not discussed in detail in this chapter, a small number of Muslims reside southwest of the Shah community, with a few mills established in that area where the Mahanta people primarily work, alongside employment at the jute *godown* in Kanaipur Bazaar. Several mills are dispersed across various parts of the district, as indicated in Table 3.7. The Muslim community primarily engages in agriculture, while the *Maji* focus on fishing and the Shah Hindu on business. The Muslims live mainly around the *Mazar* (grave) of Hakkani, an Islamic Sufi master or spiritual guide and a follower of the famous Indian sub-continent Islamic scholar, philosopher, and mystic Moinuddin Chishti.

The arrangement of households among the Mahanta community is closely related to their kinship ties and ancestral origin. The boundaries of individual households are not clearly demarcated, but the communal territory is distinctly separated from neighboring communities by the presence of a water drain running from southeast to northwest, a connecting mud road, the Kanaipur *Nadi* (river), and the Maji para, as described earlier in this chapter.

In the Mahanta community, the main entrance is located to the left of the village connecting road, after the Hindu Shah community. Here, a small *dokan* (grocery) is situated, which serves as a tea stall and sells dry foods such as cookies and cakes, as well as small quantities of rice, salt, and oil. However, the Mahanta people primarily buy their daily necessities from Kanaipur Bazaar. The *dokan* is a popular spot for men to gather and engage in gossip. There is an additional entrance to the community through the mandir. The mandir is also a popular gathering spot for men to chat. It is also used as a meeting place for decision-making during social occasions. Women in the Mahanta community also have two spots for gossiping. One is located the community's southeast, while the other is near the river's northeast side. Communication in the community happens in two ways - internally among women and externally between the Mahanta community and other communities in the village, as a few members of the Maji Symprodai, Hindu Shah, and even the Muslim community come to the *dokan* for supplies and conversation.

The Mahanta community exhibits a rich diversity in the architecture of their houses, with the primary building material being tin, but bamboo, straw, mud, and brick also being used. Typically, each household has one room, given that the Mahanta do not engage in agricultural activities, and this room is primarily used for sleeping. However, most houses also have a *baranda*, which is utilized for keeping domestic animals such as cows, goats, and various birds, including chickens, ducks, and pigeons. Interestingly, no clear boundaries separate the Mahanta community's households.

Table 3. 7: Number of Industry/Mill in Faridpur District 2011

Upazila	**Textile mill**	**Rice mill**	**Jute mill**	**Sugar mill**	**Oil Mill**	**Flour Mill**	**Others**
Alfadanga	-	-	-	-	32	20	-
Bhanga	-	70	-	-	16	70	-
Boalmari	-	-	-	-	46	34	-
Charbhadrashon	-	12	-	-	5	5	-
Faridpur Sadar	-	133	11	-	24	118	-
Madhukhali	-	1	3	1	16	22	3
Nagarkanda	-	2	-	-	6	20	-
Sadarpur	1	220	-	-	13	65	-
Saltha	-	-	-	-	0	10	-
Total	**1**	**438**	**14**	**1**	**158**	**364**	**3**

Source: BBS 2013, District Statistics 2011, Faridpur District, page 47-53

Table 3. 8: Educational Institutes in Faridpur Sadar Upazilla 2011

Education Institutes	Number
Government Primary School (I-V)	100
Registered Primary School (class I-V)	35
Private (non-registered) Primary School (class I-V)	2
Kindergarten School (pre schooling	243
NGO school	89
Government Secondary School	2
Non-government secondary	74
School and College (operating jointly	2
Government College	4
Non-Government College	8
Madrasah	13
Kawmi Madrasah,	21
Ebtedayee Madrasah	16
Technical and Vocational Institution	10
Medical College	2
Agricultural and Veterinary College	1

Source: BBS 2013, District Statistics 2011, Faridpur District, page 57-62

3.4.2 Climate of the Research Area

The Faridpur district experiences a wide range of temperatures, with an annual average ranging from a maximum of 35.8°C to a minimum of 12.6°C, while the yearly average rainfall stands at 1546 mm (BBS 2013). In 2016, the Faridpur district was recorded as the coldest place in Bangladesh (See Table 3.12). In 2017, the average monthly temperature in Faridpur district was at its lowest in January and highest in May (See Table 3.9). Meanwhile, the district experienced the highest average rainfall in July, while January and February were devoid of rain that year (See Table 3.10). Notably, data spanning from 1981 to 2010 (See Table 3.11) shows that the lowest average temperature occurs in January, whereas the highest average temperature is recorded in April. Additionally, the yearly

average rainfall from 1981 to 2010 was 154, with the highest rainfall in July and the lowest in January.

Similar to other Bengali communities, the Mahanta people experience six distinct seasons throughout the year, albeit with three being more prevalent. In Bengali, the word for season is '*kal*,' and the Mahanta people refer to it as '*moushum*', which is a synonym of *kal* and means 'time period'. Beginning from the start of the year, the six seasons are named *Grishwa moushum* (summer), *Borsha moushum* (rainy season), *Shorat moushum* (autumn), *Hemonta moushum* (late autumn), *Sheet moushum* (winter), and *Boshonto moushum* (spring). Among these, *Grishwa moushum*, *Borsha moushum*, and *Sheet moushum* are the three well-known seasons in Mahanta culture, and they are comparatively longer than *Shorat moushum*, *Hemonta moushum*, and *Boshonto moushum*.

Grishwa moushum is often referred to as *'Gorom kal'* by the Mahanta people, which means hot and humid. It starts in the month of *Boishakh* (typically April in the English calendar) and lasts until the end of *Joistha* (typically May in the English calendar). However, high temperatures persist until October (see Table 3.10 and Table 3.11) in the district. During *Grishwa moushum*, storms occur with only occasional rainfall, which the people call *'Kal Boishakhi'*. It does not happen every day, but when it does, the scorching heat combined with little rain results in what the community people call *'Tap Daha'*.

Table 3. 9: Temperature, rainfall, humidity during the years 2008-2011 Years

Year	Temperature (centigrade)		Rainfall (millimeter)	Humidity (%)
	Maximum	Minimum		
2008	35.2	9.6	1834	79.0
2009	37.4	11.4	1224	75.0
2010	34.7	8.7	587	63.8
2011	23.3	8.6	1620	78.0

Source: BBS 2013

The season of *Borsha moushum* commences in the month of Ashar, which typically corresponds to June in the English calendar, and culminates with *Grishwa moushum*, ending in *Sravon*, usually in July. The tropical monsoon climate arrives, with rainfall occurring almost daily. Over 75% of the precipitation in Bangladesh takes place during this season, caused by weak tropical depressions that are ushered into the country by the wet monsoon winds from the Bay of Bengal (Shahid, 2010). However, the weather remains hot and humid in June and July (see Table3.10 and Table 3.10), making it uncomfortable for the community. The rivers and *beels* overflow with water, and heavy downpours sometimes result in floods and riverbank erosion, particularly in areas near the Padma.

Shorot moushum follows soon after, beginning in *Vadro*, typically in August, and concluding in *Ashwin*, usually in September. The rainy weather begins to subside, and the sky starts to clear, removing the gloom that had shrouded the rainy season. The water level in rivers, canals, and ponds begins to recede.

Hemonto moushum, comprising the months of *Kartik* and *Agrohaiyan*, begins in October and November, respectively. Traditionally, this is the season for harvesting paddy, and the temperature starts to drop towards the end of *Hemonto moushum* (see Table 3.10 and Table 3.11). The season marks the beginning of the hunting period, starting with eel fish catching in *Kartik*, with the Mahanta people hunting for eel fish in canals and ponds. This season's conditions favor eel fish hunting since the water level of the ponds and canals is low, and the eel fish live in clay under the water. Bat hunting starts in late *Agrohaiyan*, but the peak bat hunting period is in *Sheet moushum*, which will be discussed in detail in chapter six.*Sheet moushum* takes place in *Poush* and *Magh*, typically December and January in the English calendar, although it commences in late *Agrohaiyan* and concludes in late *Magh*, which corresponds to mid-February. This is a season of various vegetables and date palm sap harvesting. Raw date palm sap is a delicacy to drink in Bengali culture, particularly in rural areas, and is used to make several *pithas* with flour. The Mahanta people rarely drink raw date palm juice since they don't cultivate date palm juice collection practices. Instead, they purchase molasses made from date juice from the Kanaipur Bazaar, particularly for making *vapa pitha*.

Bosonto moushum marks the arrival of spring, and the last two months of the Bengali calendar, *Falgun* and *Choitra*, typically correspond to February and March in the English calendar. With the onset of *Bosonto moushum*, the temperature begins to rise, and even in *Choitra*, the daytime can be scorching. This season sees the blooming of various fragrant flowers, and the harvesting of Rabi crops begins.

Table 3. 10 : Monthly average Temperature in Faridpur District 2017

Characteristics / Temperature (centigrade)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mim	12.2	15.0	19.6	23.7	25.5	26.0	26.3	26.8	26.6	24.6	18.9	15.6
Max	26.2	29.9	31.4	33.9	34.9	33.6	32.6	33.2	33.6	31.7	30.0	26.6
Rainfall (mm)	0	0	83	160	204	333	474	323	217	286	14	29

Source: Statistical year book Bangladesh 2017

Table 3. 11 : Standard Maximum and Minimum Normal temperature and Monthly Average Normal Rainfall in Faridpur District, 1981-2010

Characteristics	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Yearly
Min. Tem (Cen.)	12.2	15.1	19.7	23.4	24.5	25.8	25.9	26.2	25.9	24.0	19.3	14.2	**21.3**
Max. Tem (Cen)	24.4	27.9	32.5	34.3	33.7	32.5	31.5	31.7	31.8	31.6	29.2	25.9	**30.6**
Rainfall (mm)	7	26	51	115	229	318	338	294	265	160	35	13	**154**

Source: Statistical year book Bangladesh 2017

Table 3. 12 : Highest and Lowest Temperature of Bangladesh from 2012-2015

Highest and Lowest temperature of Bangladesh from 2012-15 Indicators	**2013**	**2014**	**2015**	**2016**
Highest temperature	41.5	43.2	39.8	41.2
Place	Chuadanga	Chuadanga	Chuadanga	Rajshahi
Lowest temperature	6.5	7.2	6.0	6.1
Place	Sitakunda	Sitakunda	Sitakunda	Faridpur

Source: Statistical year book Bangladesh 2017

3.5 Conclusion

The present chapter has effectively delineated the community's t demographic makeup alongside a comprehensive account of their geographical whereabouts and infrastructure facilities. Furthermore, it has provided valuable insights into the varying temperature and rainfall patterns, highlighting the distinctive seasonal features and natural diversities that prevail within the region. This next chapter discusses on the topic of earnings, economic conditions, and the socioeconomic status of the Mahanta people.

Chapter Four

4. Earning, Economics, and Socioeconomic Status

The overall wellness and physical state of those residing within a householdare intricately linked to their income, economic circumstances, and social status. Socioeconomic status is a major determinant of health and illness. A community's socioeconomic status can determine the affordability and accessibility of healthcare services. Economic status affects the ability to afford nutritious food, which increases the risk of diet-related illnesses. Economic conditions can also influence health-seeking behaviours. Socioeconomic status and economic conditions can influence occupational choices. Individuals from low-income backgrounds might have limited options and be forced into jobs with poor working conditions, lower wages, and higher physical or psychological risks. Such working conditions can lead to occupational health hazards and contribute to the community's overall health. This chapter discusses the topic of earnings, economic conditions, and the socioeconomic status of the Mahanta people. This chapter presents a supplement to my dissertation understanding why the Mahanta were influenced in bat hunting, which linked them to the health risks linked, the health hazards and illnesses associated with it, and their health seeking behaviours.

4.1 Earning sources of the community

The attainment of income is inextricably linked to the availability of opportunities for work or sources of income, the skills and experiences of the earner, and the individual's job preferences. The district of Faridpur, situated on the delta of the Padma, is renowned as the foremost jute-producing region in Bangladesh (BBS 2018b), with neighboring areas such as Jashor, Jhenaidha, Kushtia, Magura, Gopalgonj, Madaripur, and Rajbari also possessing significant jute producing potential. Furthermore, the area's thriving cultivation of wheat, maize, pulses, and oil seeds has resulted in the construction of several mills and *godowns* (see Table 3.7). Day labor is the primary source of income for the majority of the local population, with a significant proportion of Mahantas working in these mills, including jute, oil, rice, and flour mills, especially at the jute *godowns*. As per Table 4.1, approximately two-thirds of Mahanta households rely on day labor as their primary income source. Additionally, half of the households earn income through day labor as a secondary source of income (see Table 4.2). Hunting is another source of income for households (Tables 4.1 and 4.2), and it is a seasonal source of income in the area, as discussed in Chapter Six in great detail.

Table 4. 1 : Primary Household Earning Source in Mahanta Community, Faridpur Bangladesh 2017

Primary Earning Occupation	Number	Percent
Day Labour	39	63.9
Driver	2	3.3
Hair Salon	8	13.1
Singer of Kirton	2	3.3
Catch -eel Fish	6	9.8
Others (specify)	4	6.6
Total	**61**	**100.0**

Source: Fieldwork May 2017

Table 4.2 : Secondary Household Earning Source in Mahanta Community, Faridpur Bangladesh 2017

Secondary Earning Occupation	Number	Percent
No Secondary Occupation	21	34.4
Day Labour	30	49.2
Hair Salon	6	9.8
Singer of Kirton	2	3.3
Catch -eel Fish	2	3.3
Total	**61**	**100.0**

Source: Fieldwork May 2017

4.2 Household Characteristics of Mahanta

The structural integrity of housing, level of occupancy, availability of potable water and sanitation facilities, and the nature of the fuel used for cooking are all physical attributes that provide valuable insights into the overall welfare and socio-economic standing of a household.

4.2.1 Housing Characteristics of Mahanta

The construction materials employed by the Mahanta in their households include bamboo, straw, mud, and tin, which is the most common roofing material used in Bangladeshi villages and is prevalent in the Mahanta community as well, with nearly all households utilizing tin for their roofs (Table 4.3). However, a single economically disadvantaged household could not afford to procure tin and resorted to using straw as the roofing material, which is comparatively less expensive, as the roofing material. Tin is also used for the walls of the Mahanta homes (Table 4.3). An overwhelming majority of the Mahanta households, more than ninety percent, have mud floors (Table 4.3). Notably, no Mahanta homes have roofs made of brick, though a small number of them have employed brick for their walls and floors. The housing materials and techniques used by the Mahanta have changed over time, as one member of the community illustrated:

"Now we are in an environment that was not once. Once, it was like my kitchen room (actually the *baranda* of his house, its roof is made of straw), as the same environment, means it (the roof of their house) was made of straw or the leaves of sugarcane. It was damaged quickly, such as after one year. However, now, it is a little bit more developed. For example, someone made a house with tin or wall (brick)". **[Man, 55 years old]**

Table 4. 3: Distribution of households by housing characteristics

Housing Characteristics	Number of Household	Percent
Roof Material		
Straw	1	1.6
Tin	60	98.4
Wall Material		
Mud/ Bamboo/ Straw	11	18.0
Wood	1	1.6
Tin	38	62.3
Pucca/Brick	11	18.0
Floor Material		
Mud	56	91.8
Pucca/Brick	5	8.2

Source: Field work May 2017

4.2.2 Household Composition

The Mahanta people dwell in congested quarters with their kinfolk, with over three-fourths of the household members cohabiting in sleeping quarters alongside more than two family members. Furthermore, more than half of the households (55.7 percent) own just one living room (Table 4.4). This contrast with the national statistics, which illustrate only one-fourth (27.2 percent) of households have a single living room (BBS 2015).

Table 4. 4 : Distribution of household based on living rooms

Room Use for Sleeping	Household Number	Percentage
One	34	55.7
Two	24	39.3
Three	2	3.3
Four	1	1.6
Persons Per Sleeping Room		
1-2	14	22.95
3-4	38	62.30
5-6	8	13.11
6+	1	1.64
Total	**61**	**100.0**

Source: Field work May 2017

4.2.3 Water and Sanitation

Access to safe water and sanitation is crucial to overall health and well-being. Improved sanitation is essential, with private facilities being the only ones deemed ‘improved’ by WHO standards (WHO 2006). No matter how improved, even shared facilities are considered unimproved according to these standards (Ekane, et al. 2014; WHO 2010). Some examples of improved sanitation facilities include public sewerage connections, septic system connections, pour-flush latrines, simple pit latrines, and ventilated improved pit latrines (WHO 2017).

While public sewerage connections are primarily found in urban areas of Bangladesh, the Mahanta community is rural and lacks such connections. Only a small percentage of households use pit or septic latrines, and a significant proportion rely on unimproved open

latrines (See Table 4.7). Additionally, not all households in the community have their own latrine. Over one-third of the households share other households' latrines (See Table 4.6).

The Mahanta people generally believe that tube-well water is safe to drink and rely on it exclusively for drinking purposes. However, a significant number of households do not have their own tube-well and must use those belonging to others (See Table 4.5). In addition to drinking, the tube-wells are also used for washing utensils, cooking ingredients, and general washing purposes, while some households opt to wash their utensils and cooking ingredients in nearby rivers if they do not have their own tube-well.

Table 4. 5:Tube-well ownership in Mahanta Community, Faridpur Bangladesh 2017

Drinking Water Sources	**Number**	**Percentage**
Own tube-well	23	37.7
Shared tube-well (with other households)	36	59.0
Government Provided Tube-well	2	3.3
Total	**61**	**100.0**

Source: Field work May 2017

Table 4. 6 : Latrine ownership in Mahanta Community, Faridpur Bangladesh 2017

Latrine Usages	**Number**	**Percentage**
Own Latrine	42	68.9
Shared Latrine (with other households)	18	29.5
Government Provided Tube-well	1	1.6
Total	61	100.0

Source: Field work May 2017

Table 4. 7 : Type Latrine uses in Mahanta Community, Faridpur Bangladesh 2017

Type of Latrine	Number	Percentage
Septic tank/modern toilet	1	2.4
Water sealed/slab latrine	29	69.0
Pit latrine	1	2.4
Open Latrine	11	26.2
Total	**42**	**100.0**

Source: Field work May 2017

4.2.4 Fuel Choices of the Mahanta for Cooking

The type of fuel utilized for cooking holds significant implications for the health of those inhabiting a household. Exposure to cooking smoke increases the risk of respiratory infections and other maladies. The Mahanta, a people of distinct customs and practices, construct a fire pit, known as a *'chula'*, into the ground of their *baranda* or courtyard for cooking. They fashion this *chula* by excavating a hole in the *baranda* and proceeding to introduce fuel, igniting it for cooking. The Mahanta do not expend currency for their cooking fuel; instead, they rely on the natural resources available to them, such as dry leaves, grasses, and dry dung cakes. More than half of the Mahanta households employ dry leaves and grasses gathered from their own homestead gardens or others (Table 4.8) as their primary cooking fuel. On the other hand, households with cows may choose to use dry dung cakes.

Table 4. 8 :Type of Fuel uses in Mahanta Community, Faridpur Bangladesh 2017

Type of Fuel	Number of Households	Percentage
Dry Leaves/grass	33	54.1
Dung cakes	4	6.6
Wood	23	37.7
Other	1	1.6
Total	**61**	**100.0**

Source: Field work May 2017

4.2.5 Mahanta's Household Possessions and Artifacts

The Mahanta households possess several durable goods. Roughly half of the community's households own a television, though approximately three-quarters have access to electricity. Moreover, more than three-fourths of the households own at least one mobile phone. Although the Mahanta people lack agricultural land, they maintain homesteads. This situation has remained relatively unchanged over time, as one senior member of the community attests: "I don't know what our predecessor was. After I got older, I found my father and grandfather didn't have; we are about the same. Then we have bought two to four decimals land by earning as a labourer, and built household". **[50 years old Mahanta Man]**

This statement suggests that the Mahanta community did not have land to build households at one point in time but have since purchased small plots of land for their homes, with no agricultural land to speak of. During my research, I found that eight households out of 61 do not have land for housing. The landless members of the community utilize the

homesteads of others for housing. In addition to their houses, the Mahanta people use them for domestic animals rearing, such as cows, goats, and birds, including chickens, ducks, and pigeons.

Table 4. 9 : Household Possession in Mahanta Community, Faridpur Bangladesh 2017

Possession	Household Number	Percentage
Ownership of Durable Goods		
Almira/Wardrobe	27	44.2
Table	29	47.5
Chair	52	85.2
Wall Clock	9	14.8
Cot/*Khat*	50	82.0
Radio	4	6.6
Television	27	44.3
Bicycle	3	4.9
Mobile Phone	52	85.2
Electric Fan	45	74.8
Ownership of Farm Animal		
Cow	7	11.5
Goat	12	19.7
Chicken	13	21.3
Duck	11	18.0
Pigeon	2	3.3
Electricity Supply	46	75.4
Land (Homestead)	53	86.9

Source: Field work May 2017

4.3 Mahanta's Social Status: Exploring Factors and Trends

Social status, a concept encompassing the level of respect, honor, and prestige accorded to individuals, groups, and organizations in a society, is a crucial determinant of the manner in which people interact with one another. Social status, also known as status, is defined by an individual's rank in a social hierarchy, which is typically based on prestige or honor and comes with its attendant rights, duties, and lifestyle. In the village, the Mahanta community is regarded as low-status compared to other communities, such as the Hindu Shah community, the Maji community, and the Muslim community. Nevertheless, there are variations within the Mahanta community itself.

The Mahanta community considers social status to be determined primarily by household income, the education level of the household head, and one's connections to political leaders, high-ranking government officials, and law enforcement agencies. The Mahanta classify household status into four categories based on social status: *Dhoni* (rich class), *Moddhobittoa* (middle class), *Gorib* (poor), and *Khub Gorib* (ultra-poor) (See Table 4.10). According to the Mahanta, household income and the education level of the household head are the main determinants of social status. A Mahanta woman stated: "Once our ancestors lived in the jungle or near to the jungle, and collected foods from the jungle, or worked in the Zamindar house. Our statuses are increasing day by day, since we or our children have started education, mixed with other community people and earn money to work in several sources". **[62 years old]**

In addition to education level and income, power, as derived from connections with political leaders, high-ranking government officials, and law enforcement agencies, is also a significant factor in determining the social status of the Mahanta. It is worth noting that hunters belong to the *Gorib* and *Khub Gorib* categories, and the *Dhoni* and *Moddhobittoa* are customers of hunted animal meat, especially bat meat. The next chapter will discuss social hierarchy in terms of caste. Social status and social hierarchy in terms of caste also refer to the way in which social position, rank, and honor are determined based on one's caste affiliation.

Table 4. 10 : Social Class and Hunting Status of Households within the Mahanta Community, Faridpur, Bangladesh 2017

Hunting Status	**Social Class**	**Number of Household (N=61)**	**Criteria of Social Class**
Not Involved	***Dhoni***	3	• **Monthly household income:** Tk.20,000 to Tk.30,000 • **Household head's educational level:** at least primary level completed • **Household head has the connection:** with the government officials or political leader
Not Involved	***Moddhobitta***	18	• **Monthly household income:** Tk. 15,000 to <Tk.20,000 • **Household head's educational level:** at least visited primary school
Involved	***Gorib***	30	• **Monthly household income:** >Tk.10,000 to <Tk.15,000
Involved	***Khub Gorib***	10	• **Monthly household income:** ≤Tk.10,000

Source: Fieldwork May 2017

4.4 NGOs activities and Credit program

NGOs in Bangladesh have played an immensely significant role in facilitating access to credit for impoverished and remote populations. However, it is worth noting that Bangladeshi NGOs did not commence their microcredit operations until they relied on external funding to provide services for the poor. During the 1970s, NGOs focused primarily on the social sectors, such as education, health, sanitation, and family planning. Nevertheless, most of the NGOs during the early 1970s were established from overseas to provide relief and rehabilitation. Towards the end of the 1970s, the provision of microcredit emerged as one of the primary activities of NGOs to assist small groups. According to Gauri and Galef's 2005 report (Gauri and Galef 2005), the majority of NGOs (92%) in Bangladesh have been offering microfinance services. In 2000, over 90% of villages in Bangladesh had at least one NGO (Fruttero and Gauri 2005), and foreign aid to the nation channeled through NGOs has been above 10% since 1993 (Ahmad 2002).

The Mahanta community continues to embody its distinct traits despite the presence of five non-governmental organizations operating within its boundaries. The NGO workers perceive the Mahanta populace as economically disadvantaged, with limited opportunities for growth. These NGOs offer solely microcredit facilities to the community, without other essential services like healthcare, education, sanitation, or rights-based programs. The community refers to these organizations as *'Somity'*, which translates to 'association'. Some community members credit their improved quality of life to the credit programs offered by these NGOs. A 56-year-old Mahanta man notes,

"We were impoverished beyond measure. But since the advent of *Somity*, we have seen a marginal improvement in our circumstances. We can now afford to purchase tin and land, which previously was beyond our means."

The community had previously relied on *'Sone'* (straw) for housing, a cheaper and cost-free option. However, with the loan facility from *Somity*, they can now afford brick and tin for construction. However, there are dissenting voices in the community that view the credit program as a source of additional burden. The high interest rates of 12-14% mean that they must pay back the loans in weekly installments. This becomes a challenging task during lean months when they cannot earn enough. To meet their financial obligations, they resort to taking loans from other NGOs or the same ones they had previously taken from. The NGOs offer repeated loans after the completion of a particular number of installments, leading to an increasing burden of debt with each passing day. There is also a bi-monthly installment payment system with high-interest rates.

Monimala, a 37-year-old woman, resides in the community with her husband and two sons, aged 23 and 13. She earns 4,500 taka per month by repairing roads for the local Upazilla Parishod, while her husband works as a day laborer in a jute *Godawn*. Her elder son also works as a day laborer, catching eel fish when no other jobs are available. Her younger son attends a local primary school in Kanaipur bazaar. Their total monthly household income is 20,000 taka, with 18,000 taka spent on maintaining their household expenses. Monimala claims that they save 2,000 taka per month. However, she has taken out loans of two lakhs

taka from several NGOs to buy land for housing and build a house made of brick and tin. She pays 20,000 taka per month in loan installments. She has increased her loans not only for buying land or building a house but also for covering the installments of the current loan scheme during off-seasons when no other earning sources are available. While acknowledging the negative impact of the credit program on their lives, Monimala believes that loans from NGOs are helpful in some contexts. She expounds upon the impact of the credit program on her existence:

"Among the benefits, have bought land, have built a house by the loan from NGOs, in the context, it is good, but now, for bearing the installment of two lac taka, sometimes are paying from the (other) loan with interest, cannot pay from income, five thousand in a week, it is difficult to us".

At times, the Mahanta folks resort to borrowing from their own community members or neighboring Muslims, but with a steep interest rate, solely to fulfill the obligation of paying the installment of the loans taken from NGOs. The borrowed funds are procured expeditiously, even within the hour, as prompt payment to the NGOs is imperative. The repayment terms of these borrowed loans are exceedingly short- a week or a month- and the interest rates are not fixed. Typically, the interest accrued for a loan of one thousand taka is fifty taka per week and one hundred or two hundred taka per month. Notably, practically all households in the community are involved in the NGO's credit program and find themselves in circumstances akin to those of Monimala.

4.5 Conclusion

This chapter has provided a thorough depiction of the community's various sources of income and the building materials used for their roofs, walls, and floors, such as tin, bamboo, straw, or mud. It has also delved into the ownership of durable goods, farm animals, electricity, and homestead land among households, their living room conditions and levels of overcrowding, and their water and sanitation situations. Additionally, it has examined the fuel used for cooking, social classes such as *Dhoni, Moddobitta, Gorib, and Khub Gorib*, along with their respective incomes, and the impact of NGOs' credit programs, whether viewed as an asset or a burden. This next chapter discusses the Mahanta's family, kinship, marriage, and societal governance.

Chapter Five

5. The Mahanta Society: Family, Kinship, Marriage and Governance

In their pursuit of comprehending any given society, anthropologists place paramount importance on researching its family, marriage, and kinship systems. Such a focus has traditionally been a cornerstone of their research into small-scale, non-Western societies. The purpose of this chapter is to explore the Mahanta community's family, kinship, marriage, and societal governance systems. Family, kinship, and marriage often intertwine with cultural practices and traditions. These practices can affect health behaviors, dietary habits, and medical decision-making. Family and kinship ties can shed light on how inherited occupations can impact the health and opportunities of individuals within a community. The structure of a society and its governance systems can influence the distribution of resources, access to education, and availability of healthcare services. These factors collectively play a significant role in shaping health outcomes.

Within this chapter, I delve into the intricate web of family dynamics, kinship relationships, marriage practices, and societal norms of the Mahanta people. My exploration encompasses a broad range of topics, including the types of families and marriages found within their society, the intricate ceremonies and traditions associated with marriage, the role of dowries, the intricacies of caste and clan structures, and the impact of hierarchy and

inheritance on societal governance. Thus, this chapter further enriches my dissertation by providing insights into the cultural practices and traditions of the Mahanta, particularly concerning bat hunting and the associated health concerns. It sheds light on their attitudes towards bat hunting, bat-related illnesses, and their approaches to seeking healthcare.

5.1 Family Structure of The Mahanta: A Unique Typology and Its Characteristics

The family is an intrinsic feature of humanity, and anthropologists speculate that its origins can be traced back to our primate heritage. Across all human societies, there are numerous challenges in regulating sexual access, organizing labor within the family, assigning childcare duties, establishing clear frameworks for rights and responsibilities, and facilitating the transfer of property and social status across generations. The family is defined as a social group of two or more individuals related by blood, marriage, or adoption who live together for an extended period, sharing economic resources and caring for their young. Anthropologists observe both rules and realities when studying marriage and family, as rules and ideals of family structure are connected to cultural values but also shaped by individual choices. The Mahanta people define the concept of 'family' as living together with household members, sharing earnings and expenses, and inheriting property. They refer to the family as *'ghor'*, while the Bengali word for family is *'paribar'*, with *'ghor'* specifically indicating living in the same household.

Despite variations in family types and forms across different societies, there are three common types of families worldwide: nuclear, joint, and extended. While all three family types exist in Bangladesh (Chowdhury 1995), the Mahanta predominantly have two types of families: nuclear and joint. The majority of Mahanta households are nuclear (Table 5.1), consisting of a man, his wife, and their unmarried children living together in a single house with a common hearth. In contrast, joint families are larger, consisting of grandparents, parents, uncles, aunts, and their children living together under one roof. After marriage, the children remain in the same household as their parents and other family members. They cook together in a common hearth, store grain in a common granary, and have coparcenary rights in common property. However, the Mahanta do not have substantial property holdings except for their homestead, so they consider their common income as a shared asset. The head of the joint family is usually the eldest male member, except in the case of the six Mahanta households headed by elderly females who are widows or divorced.

Table 5. 1 **: Family types of the Mahanta, Faridpur, Bangladesh 2017**

Type of Family	Number	Percentages
Nuclear	36	59
Joint	25	41
Total	61	100

Source: Field work May 2017

The Mahanta family system is heavily influenced by patriarchal values, where men hold primary power and occupy leadership roles in politics, morality, social privilege, and property control. Men make decisions related to the family and society, such as earnings

and expenditure for the family, child education, marriage of family members, and religious activities. Some patriarchal societies are also patrilineal, meaning that male lineage inherits property and title. This patrilineal system is discussed further in the subsequent section.

Over time, the Mahanta have seen an increase in nuclear families, with sons typically separating from their parents shortly after marriage to form their own elementary families comprising only the husband and wife (Aziz 1979). However, this separation is not always permanent, as the family unit can be reclassified as a joint family when sons grow up, get married, and return to live with their parents and co-owned property. Family members often disagree, and family heads must make decisions to avoid the breakup of the family. Sons usually leave the household after a year or less of marriage, often due to domestic disputes, but they may return to their parents' home with their families after several years or the birth of children.

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they may return to their parents' home with their families after several years or the birth of children.

5.2 Kinship System Among The Mahanta

Anthropologists have traditionally focused on studying kinship, which they consider the most important social organizing principle. In primitive societies, kinship plays a significant role in regulating and organizing social life (Chagnon 2017). However, in industrial societies, kinship's impact on daily life has diminished due to various factors such as occupation, social class, ethnicity, education, political affiliation, and religion. Usually, kinship relationships are based on family ties through blood or affinal relations through marriage.

Kinship plays a crucial role in providing continuity and passing on property, political office, and traditions from one generation to the next. It serves as a vertical function that binds successive generations together. Additionally, people maintain kinship relationships through marriage practices, which serve as a horizontal function. The Mahanta people select partners for marriage within the Mahanta community, whether in the same or several locations.

Descents assign people to social categories, groups, and roles based on inherited status, making them a crucial aspect of kinship. Descent systems are divided into two categories: unilineal and cognatic systems. Unilineal systems trace descent through either the mother's

or father's side, while cognatic systems trace descent through either or both parents. Although cognatic kinship institutions are familiar to people of European ancestry, only 30% of the world's cultures reckon descent and group membership on this basis. The majority of societies, including India and China, follow unilineal principles (Murdock 1949). The Mahanta community follows a patrilineal descent system.

5.3 The Mahanta: Caste, Clan and Inheritance

Social scientists typically define castes as occupational groups that are hereditary, endogamous, and ranked in terms of status. On the other hand, Clans are exogamous lineal descent groups into which members of castes are organized in the Indian context. In Bengali Hindu culture, various Sanskrit and Bengali words like *jati, varna, jana, sreni, kula, vamsa,* and *gotra* have been used to define 'castes' and 'clans'. The Mahanta community defines clans as *'gotra'* and *'bongsha'*. In anthropological and historical accounts of Hindu society, the term *'jati'* is often cited as the native word for caste, referring to an endogamous, hereditary occupational group. In English, the term *'kula'* is used more specifically in combination with the names of specific men to refer to units designated as 'clans', 'lineages', or 'families'. The clan comprises individuals who share a particular person as their first ancestral male. For example, the 'Ghosh-kula' clan is referred to as 'Ghosh'. The term '*gotra*', used synonymously with *kula*, refers to a clan. As subdivisions of *jatis*, *Kulas* or clans were defined not only by bodily substances, such as the semen of particular ancestral males, but also by their combination with worship, territorial, and occupational substances. The word *'samag'* was used to refer to a

community in the most general sense, meaning ‘going together’. It referred to aggregates of persons conceived of as belonging together and forming a whole, with proper order among its parts, and possessing the power to bring about the well-being of the persons it contained. The Mahanta community uses *‘shaprodai’* in this sense.

The caste system in India is a social structure that divides different groups into ranked categories. The system is believed to have ancient roots, with Sanskrit texts from the second millennium BC referring to dividing individuals into social groups called *‘varnas’*. The four principal classes that emerged from early Hinduism are the Brahmins, the Kshatriyas, the Vaishyas, and the Shudras, in descending order of prestige. Individuals of higher castes enjoy greater social status than those of lower castes. According to the myth, these groups were created from the mouth, arms, thighs, and feet of an ancient character named Purusha. The Mahanta community exists outside the four-tier varna system and is considered a subsect of the Namasudra community (Usuda 1997). Among the Mahanta are four clans: *chang, nag, kashia, and shipra*. The clans are represented by a totem (Ali 2008), although one was not found for the Mahanta. The elders of the community believe that the totem might have existed in the past but is no longer practiced.

The Mahanta, belonging to the same caste-sect, do not subscribe to any hierarchical system. While there may be a few groups of clans, no hierarchical difference exists among them. However, it must be noted that a hierarchy is indeed present within the Mahanta community

and is based on income and communication with society or government officials, as discussed in the previous chapter.

While some may contend that untouchability continues to pervade the Indian caste system even today (Deliege and Scott 1999), it cannot be denied that over the last century or so, the caste hierarchy, along with its forms and manifestations, has undergone a considerable transformation (Jodhka 2006; Shah 2000). The boundaries of pollution and purity, which used to be strictly upheld, have gradually diminished, granting the lower castes greater access. It is noteworthy that a few Mahanta women have now secured employment as domestic helpers in the houses of higher-caste Hindus, where they are tasked with cooking. Such access was unheard of in the past when the Mahanta were considered to be of the Numasudra.

Inheritance, the practice of bequeathing property, titles, debts, and obligations, has long been a crucial facet of human societies. It has prompted the development of an array of inheritance laws in different societies. However, the term's significance extends beyond its common use; we, as human beings, inherit traits and characteristics from our family at birth. The regulation of property inheritance and status succession constitutes a primary function of a society’s kinship structures.

The Mahanta adhere to the patrilineal descent system. Upon the father’s demise, his sons inherit his assets, comprising both fixed and moveable assets, such as land, dwellings, utensils, ornaments, livestock, and hunting instruments. Notably, the Mahanta hold

homestead land with no cultivated land. However, a daughter receives no share of her father's property except during her marriage ceremony. If the deceased has no son, his brother's sons receive his assets. The father's assets are distributed equally among his sons. In the event of the husband's death, the widow is entitled to consume her husband's assets but does not become the owner of such assets. Moreover, if a woman possesses any assets, particularly ornaments, her son's wife inherits them upon death.

5.4 Marriage System among the Mahanta: An overview

Mahanta's custom, marriage is considered a social and civil contract. The community follows an endogamous marriage system, meaning they marry within their own group. However, marriage within the same clan is strictly prohibited under Mahanta law, and thus, they follow a clan exogamous marriage system. Upon marriage, both husband and wife are expected to sexually monopolize each other. The bride typically moves to the bridegroom's house after the wedding ceremony. It's worth noting that polygyny is strictly prohibited in the Mahanta society.

The nature and concept of marriage vary across time, societies, and religious beliefs. In general, marriage is considered the social unit of the family, which serves as the foundation of every society. The Mahanta follow Hinduism, where marriage is considered one of the most significant institutions in social systems, especially in the Indian subcontinent. The concept of marriage has undergone significant changes over time, from ancient to modern periods in the Indian subcontinent. During the Vedic period, the concept of marriage was

primarily concerned with fulfilling the desire for offspring and having a son who could perform the funeral rites for the father. Sonlessness was deplored in society as much as poverty. Marriage was not explicitly prohibited within *gotra*, but it was strictly forbidden between brother and sister, father and daughter. During the Upanishad and Sutras periods, marriage attitudes changed due to social and religious perspectives. Anuloma marriage, where a male of a higher caste marries a female of a lower caste, prevailed in this period. However, in the Epic's period, members of the same caste were preferred, but marriage within the same gotra was prohibited. This prohibition is similar to the Mahanta marriage system, where marriage within the same *gotra* is prohibited. The caste system was firmly established during the Commentaries and Digests period, and the marriage rules of the four castes prevailed. Marriage was permitted between males and females of the same caste, but Brahmanas could only marry Kshatriya and Vsisya women in exceptional circumstances. On the other hand, the marriage of a Brahman with a Sudra girl was banned.

As a symbolic action, marriage creates solidarity (Inden and Nicholas 1977) between family components, and new members are symbolically initiated into the solidarity. Symbolic work is used to rebuild, re-establish, and strengthen a set of harmonious relationships. Marriages are also concerned with the allocation of a number of distinguishable classes of rights (Leach 1991), and children receive legal validation from both their parents and society through marriage. Couples receive their legal status as parents through marriage. The Mahanta marriage system also helps to strengthen the affinity relationship between the wife's and husband's family members.

The Mahanta follow the Hindu laws in marriage, which were enacted during the British colonial period, starting with 'The Racial Inability Remission Act, 1850'. The laws regarding Hindus were found in Sanskrit texts from early stages and commentaries exclusively, and the 'Institute of Manu' is the legislative source of the Hindu laws. The Hindu laws derived originally from the 'Institute of Manu,' also known as the 'Legislation of Manu.' Although there were no legislative authorities governing civil rights among Hindus, the Hindu laws roughly originated from Brahmanical, an early stage in the development of Hinduism during the Vedic period. However, Mayne (1922) argued that Hindu law is based on earlier immemorial customs and is not subject to Brahmanism.

5.5.1 Criteria for Marriage: Eligibility and Ability of Mahanta

The Mahanta posits that the potential for matrimony rests upon the physical maturity of both the male and female counterparts, as well as the economic capacity of the family, particularly regarding the male. The Mahanta believes that physical maturity can be measured by age. Specifically, for females, the Mahanta deems the age of sixteen to be an appropriate benchmark for marriage. However, it should be noted that the legal age for marriage in Bangladesh is 21 years old for males and 18 years for females (Bangladesh-Gazette 2017). Despite this legislation, national data from Bangladesh indicates that the average age of marriage for girls is 16.1 years old (NIPORT 2016). Generally, the Mahanta expects that females will marry between the ages of sixteen and twenty years.

In contrast, the Mahanta holds that the male marriage age range should be from twenty to twenty-five years old. This range is predicated on the male's physical maturity, as well as their economic capabilities. Nevertheless, in love marriages, the marriage age may be younger to avoid any unauthorized relationships. In some cases, a small number of Mahanta adolescent males and females become involved in affairs, causing concern among their guardians that they may engage in *Kukam* (unauthorized sexual relationships) during the course of their relationship. To prevent any potential scandal for both families involved, the parents/guardians of these individuals often arrange a marriage, even if the boy and girl in question are younger than sixteen years old, provided they have already passed their puberty period.

5.5.2 Marriage Partner Selection: An Overview of Mahanta Tradition

Selecting a marriage partner varies significantly across different societies and cultures. Among the Mahanta, a set of rules governs this process is similar to those followed by Hindus and Muslims in the Indian subcontinent. Typically, the guardians of both the male and female candidates initiate the search for a potential partner. A family member or close relative may act as a mediator to find a suitable candidate from the same community or region. This involves a visit by the *Salie Pakka* (family members and guardians of the male candidate, including the male candidate himself) to the *Maie Bari* (home of the female candidate). Known as 'Maie Dekha', this visit is primarily aimed at evaluating the physical appearance of the female candidate. Additionally, the *Salie Pakka* also assesses the household and family members of the *Maie Pakka* (family members and guardians of the

female candidate), as well as their assets and other factors. If the *Salie Pakka* selects a candidate and her family, they extend an invitation to the *Maie Pakka* to visit the *Salie Bari* (home of the male candidate). During this visit, the focus shifts to evaluating the male candidate's ability to support a family after marriage. Both parties discuss the terms and agreements for the future, and if they are in agreement, the marriage is finalized. Details of the bride-wealth, dowry, and expenditure for the marriage ceremony are discussed in the subsequent sections of this chapter. Additionally, elders from the community, neighbors, or the *Matabbor* (community leader) may be present during the discussion at the *Salie Bari*.

5.5.3 From Bride-wealth to Dowry: Unpacking the Mahanta Wedding Customs

A myriad of customs, are practiced across different societies, and they vary based on culture, religion, and geographical location. Even within the same religion, there can be variations based on regional or cultural beliefs. The Mahanta community follows Hinduism, and their marriage weddings share similarities with the Bengali Hindu culture.

When the esteemed individuals of the *Salie Pakka* and *Maie Pakka* come together to discuss and agree upon a union of matrimony, a variety of topics are deliberated upon, such as the customary bride wealth, dowry, and the expenditure required for the wedding festivities. It is a common practice among the Mahanta community to provide the bridegroom with a dowry, which entails a demand for monetary compensation from the bride’s family. The amount of this financial settlement is determined through a negotiation process between both parties. Moreover, the bridegroom’s family often requires the bride’s

family to present her with ornamental jewelry, which is considered a gift from her family. However, these items are ultimately owned by the groom post-marriage. In some instances, the groom's family may offer a singular ornament to the bride, such as a golden ring. The expenses of the ceremonial proceedings conducted at the bride's house are borne by her family. Conversely, the costs of the wedding ceremony held at the groom's residence are exclusively covered by his family. In situations where the bride's family is impoverished and unable to finance the costs of the marriage ceremony, the community members may extend their support and offer aid to the family.

In the Mahanta community, the winter season is considered more suitable for marriage due to the dry weather conditions and the end of the busy period at the jute *godown* and jute mills. To find the auspicious time for the wedding, they call upon a *purohit* (priest), who is usually from a different caste. The *purohit* belongs to the highest upper caste in the Hindu caste system, the Brahmin. He determines the *logno*, which is the date and time for the wedding according to the *Ponjiga* (moon calendar). Though a few rituals are performed separately at the bride and groom's respective houses, the main wedding ceremony of the Mahanta takes place at the bride's house with the bride and groom present. Several rituals are performed during the wedding, and the *purohit* leads the ceremonies. Many relatives participate in performing these rituals, both of bride and groom.

5.5.4 Marriage Prohibitions among the Mahanta: Divorce, Widow/Widower Remarriage, Clan Restrictions, and Gender Norms

The Mahanta community enforces a strict prohibition on marriages within the same clan, disallowing any such unions to take place. Additionally, widow/widower marriages are a rarity in this society but occur depending on individual's wishes. Usually, remarriage occurs between widows and widowers, but the former can marry an unmarried male, and the latter can marry an unmarried female. Such alliances are formed through mutual understanding between the parties involved. In contrast to some other cultures, divorce is virtually unknown in the Mahanta community despite the legal provision for it under Hindu law. Furthermore, there are no age restrictions on marriage for adults of either gender, though it is customary for the male partner to be older than the female.

5.5 Society Governance

In the Mahanta, there exists a community leader known as the *'matobbor'*. However, this individual does not make decisions unilaterally for the community. Despite being predominantly male, the *matobbor* arranges community meetings to make collective decisions that benefit the society, such as organizing puja and developing drainage systems to facilitate water flow around the community. Furthermore, this leader liaises with the government and various development organizations to obtain aid and resources for the community's growth and development. In times of discord between community members, the *matobbor* may also serve as a mediator to resolve disputes. Leadership within the Mahanta community is not inherited but is rather bestowed upon those with exceptional communication skills, the power to liaise with other communities, and those who have

garnered the support of local elites and government officials. This selection process enables the *matobbor* to exert control over their community, safeguard their people's interests, foster alliances with other communities and organizations, and ultimately provide effective leadership for the betterment of the Mahanta community.

5.6 Conclusion

The current chapter has presented a comprehensive overview of the intricate social fabric of the Mahanta community. The detailed discussion on their family structure, kinship ties, marital customs, caste system, clan affiliations, social hierarchy, and mode of governance, all reflect their nuanced socio-cultural existence. The next chapter explores the hunting life of the Mahanta people, including their historical struggles intertwined with their hunting practices, especially with their bat hunting practices.

Chapter Six

6. Hunting Life of the Mahanta

Hunter-gatherer societies exist in some parts of the world today. These societies are characterized by small, mobile groups of people who rely primarily on hunting, fishing, and gathering wild plant resources for their subsistence. These societies typically have a deep knowledge of their local environment and possess sustainable practices for utilizing natural resources. They often have a close relationship with the land and live in harmony with nature. These societies maintain aspects of their traditional lifestyles, while adapting to the changing world around them.

With the ongoing and ever-increasing incidence of rapid deforestation, coupled with the radical change in resource availability and the invasive influence of a cash economy, individuals who have traditionally depended on the forest are finding it increasingly difficult to adapt their social, cultural, economic, and political systems (Dounias and Froment 2006). Such challenges are widespread and can be observed across the globe, with many formerly nomadic groups being forced to settle in permanent locations while still depending on hunting and gathering for their livelihoods. These groups continue to migrate seasonally into the forest in search of forest resources (Dounias and Froment 2006).

During the early years of anthropological field studies, few studies were conducted on hunter-gatherer societies. Examples of such studies include those carried out by Kroeber in California (Kroeber 1952), Boas on the northwest coast (Lee, et al. 1999), and Radcliffe Brown in the Andaman islands (Radcliffe-Brown 2009) and Australia (Radcliffe-Brown 1930). These ethnographic studies aimed to reveal cultural traditions, including language, folktales, myths, kinship, rituals, house types, tools, dress, and religious objects. However, as anthropological research developed, a different view emerged regarding ethnographic facts (Lee and DeVore 2017).

The interaction between humans and animals is linked to infectious diseases, such as host-agent interactions, and the physical and socio-cultural environment (Harthorn 1999). These emerging issues are now integral to the study of medical anthropology.

This chapter presents a succinct chronicle of the hunting customs of the Mahanta, shedding light on their historical struggles and how they are intertwined with their hunting practices. It discusses the practicalities of bat hunting, which is further impacted by the seasonal economic uncertainties that afflict the Mahanta. Additionally, the planning procedures that are put in place for bat hunting are expounded upon, along with the utilization of weapons during the hunting process Furthermore, the chapter offers a vivid portrayal of the hunting experiences and the participation of the community in the endeavor, followed by the intricate dynamics of bat meat trading, influenced by supply, demand, and the financial

climate of the Mahanta. Lastly, the chapter delves into the social and legal aspects of bat hunting sites regarding the bat hunting.

6.1 Hunting and Vulnerability: The Mahanta Historically as a Disadvantaged Community

"I didn't see, but I heard; I mean, even I observed few, they (their ancestors) did nothing, only they pulled palanquin. Then, they worked as hired labour for cutting wood and cleaning gardens (of rich households). For these, (we) are called '*buno*'. They did it in bushes; it's meant in the jungle, such as hunted pigs. However, the main work was to clean the jungle of the rich man. Now, there is nothing, even that jungle. It has changed the situation day by day, and now there is no palanquin. Now, there have been developed roads, and we have shifted from these to the labour work in the *bazaar*. Though few people of us worked in agricultural land, that is not at present; for this, we work as *kuli* (labour) and catching fish (eel fish), and are engaged in bat hunting". **[50 years old, Mahanta Man]**

There is a conventional story among the Mahanta: once upon a time, they were nomadic and moved from one jungle to another and builtup settlements in the jungle or close to the jungle, mainly in the districts of Faridpur and Jashore in the current Bangladesh. They basically hunted wild animals for their livelihood. Besides, the Mahanta worked in the rich houses as a menial worker or a day labourer cutting wood. During the British colonial rule in this Indian sub-continent the government engaged them to clean the jungle for the *Neel*

(Indigo) production. The district was renowned for the Indogo resistance Movement under the leadership of Pir Mohsin Dudu Mia (Iqbal 2010).

Kanaipur is a business center locally called “Kanaipur bazaar”, closest to the Mahanta community. Kanaipur has been a renowned business centre in the west central part of Bangladesh since the British colonial era in the Indian sub-continent and recent years. The Shikdar Zamindar Bari is in Kanaipur and close to the Mahanta community. The Shikdar was one of the most prominent among the famous *zamindars* during the British colonial period in India. Rani Bhabatarini was a widow who took over the Shikdar *Zamindari* in the second half of the 19th century and was a competent ruler of her time. Rani Bhabatarini used to rule the estate with the support of her only son, Satish Chandra Shikder. Rani Bhabatarini was also very efficient in dealing with her businesses and trading throughout India. There are many goods like rice, sugar, potato and jute come here from local and several parts of Bangladesh. Jute is locally imported here. Kanaipur has actually been used as a distribution selling point. Locally, the distribution centre of business is called *Mokam*. The Mahanta work mainly in jute *Mokams.* The scope of earning works’ sources of the Mahanta is limited due to the use of jute decreasing dramatically day by day by the alternative usages of it, like polyethene or plastic. New business and industry development would be the cause of the lack of income (Scheper-Hughes 1992).

Religiously, the Mahanta are minor. They are Numasudra and untouchables in Hinduism. They follow Prabhu Jagatbandhu as their religious preceptor. Prabhu Jagatbandhu was a

Brahman who taught mystical lessons of his religious zeal among the untouchables like Dom and Numasudra in the early 20th century (Usuda 1997). He did his missionary work among the Doms of North Kolkata, and the Namasudra in Faridpur and Jessore known as Mahanta sect (Usuda 1997). The Mahanta sect is a caste-sect based on their own characteristics (Usuda 1997).

In the village where the Mahanta live, many communities live, and they are *Maji Sumpradoy, Hindu Shah and Muslim communities*. The people of *Maji Sumpradoy* live on the east, and the Shah on the west of the Mahanta community. The Muslims live mainly around an Islamic Sufi master or spiritual guide, Hakkani house and his mazar (grave), who was a follower of the famous Islamic scholar, philosopher and mystic in the Indian sub-continent, Moinuddin Chishti, to the southeast of the Mahanta community. A *Mondir* with *Shashangha*t is north-west of the Mahanta community and on the bank of Kanaipur *Nadi*. Only the Mahanta use the *Mandir*. It is the community *Mandir* of the Mahanta. The Mahanta is a small community. It is situated separately from the other communities of the village. In the view of the other communities, the Mahanta are ‘dirty’, ‘untouchable’. The Mahanta people are locally call ‘*Buno*’, with the sense of dirty, and the community locally called *‘Buno’* community by the others of the village. The people of the village would not like to meet with them.

The Mahanta lived in several areas of Faridpur districts and other adjacent districts of Faridpur. The Mahanta community was relocated often. Industrialists or businessmen often

build factories, mills and warehouses. The land of poor or minority people is often targeted for these infrastructure developments. Because of this, the industrialist or businessmen can easily relocate the poor people by their high socio-economic status. One of the rich businessmen wanted to build a *dal* (pulses) mill in the area of Kanaipur Bazaar, and found out the land where the Mahanta lived. The rich man bought the land, though the Mahanta did not agree. The Mahanta was forced to leave their locality due to the pressure of the businessman and started living in another location of Kanaipur (current community) about 25 years ago. Although the businessman provided money to the Mahanta for the captured land, it was less than the market price of land in the area. The relocation or migration happen not only in the Kanaipur or in the district of Faridpur areas, butalso in other districts and worldwide (Terminski 2014). This relocation is development-induced or economic development-induced displacement or resettlement (Oliver-Smith 2006; Terminski 2014). There are so many examples from the ancient to recent periods, including colonial kingdom periods. The anthropologist Anthony Oliver-Smith (2006) explained the term 'resettlement' as basically a political phenomenon involving one party's power use to relocate another. The minority groups were victimized by the state or the elite/ business groups. Balai (pseudonym), one senior hunter of the recent Mahanta community, migrated from Saver under Dhaka district to the Mahanta community in the Kanaipur Bazaar area about forty years ago. He explained their migration with his family as follows:

"We have land property there (at Saver); the elite of that area relocated us by beating us. We were many there, at the bank town area, Baroigram (Saver), we were also many at

Kanaipur, but we were relocated by the terrorist activities with us…" **[Senior Man/Hunter, 55 years old Mahanta]**

With sheer muscle power, the housing builder laid claim to the land of Bolai and commenced the construction of residential buildings. A similar scenario played out in the lives of the Mahanta people when they resided in the Kanaipur Bazaar region. As a result of pressure from the wealthy individuals who erected a mill in the area, the Mahanta people identified and purchased a plot of land to create a new community where they presently reside. Nonetheless, only some the Mahanta families relocated to this area. A few opted to move to other locations within the Faridpur district. Initially, only three to four families migrated together to the new settlement, but ultimately about thirty families from their previous community followed suit. The choice of location for the Mahanta community to build their settlement was influenced by several factors. The land was situated on a high elevation with a river flowing alongside it, ensuring that there was no water accumulation on the land, with excess water easily draining away into the river. The community could also use the river water for various purposes in their daily lives. Furthermore, given their meager earnings, the land cost was relatively lower than in other areas, which was important to them.

The Mahanta people were once nomadic, living in the jungle, and relying on the natural environment for their subsistence. They foraged for plants and fruits and hunted wild animals for their meals. Wild pigs were the primary hunted animals in the jungle, but they also caught rabbits, *neel/gandharaja*, and a few bats while traversing the forest. They also

captured eel fish and tortoises near low-lying areas such as *beels* and ponds when moving through the jungle. As agriculture expanded and the population grew, the forest started diminishing (FAO 2007; Learning 2019). Recently, bat hunting and eel fish catching have become more prevalent among the Mahanta people as part of their economic activities rather than solely for sustenance. In the past, they hunted wild animals solely for their meat.

While the Mahanta community began engaging in the exclusive pursuit of bat hunting roughly three to four decades ago due to the availability of wild pigs started to decline, there exists a historical context connecting the Mahanta people to this practice, as their forefathers employed bat hunting along with other forms of animal capture to sustain their livelihoods in bygone eras. Initially, they hunted bats solely for their meat. However, they later started to hunt them exclusively for economic gain, selling the bat meat as well as consuming it within their own families. At that time, hunting was the only viable option for them.

6.2 Bat Hunting

Bat hunting is present in many countries widely in Africa and Asia, including Bangladesh (Jenkins, et al. 2011; Kamins, et al. 2011; Kamins, et al. 2015; Leelapaibul, et al. 2005; Openshaw, et al. 2017). Openshaw (2017) found 49% of villages in Bangladesh had evidence of occurring bat hunting in 207 villages from the nationally representative study conducted by the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b) from 2011 to 2013. This study also revealed that 61 (1%) household heads out of

5100 reported that members of their own households engaged in bat hunting. This information indicates that bat hunting is occurring in rural Bangladesh.

This is also mentionable that there are two major divisions among the bat populations- megabats and microbats (Springer 2013), and hunting is prevalent among the large-body fruit bats (*Pteropodids*) worldwide (Mickleburgh, et al. 2009). Three types of bats are found in the Indian sub-continent, including Bangladesh: Pteropus giganteus, Cynopterus sphinx and Roussettus leschenaultia (Bates and Harrison 1998). Although bat hunting has not been clearly described or quantified in Bangladesh, the hunting of similarly large-bodied species across Asia, the Pacific and Indian Ocean Islands and Africa is well known (Harrison, et al. 2011; Kamins, et al. 2011; Mickleburgh, et al. 2009). The Mahanta hunters hunt the large-bodied fruit bats. The fruit bats are found in Bangladesh mostly as *Pteropus giganteus (Khan 2001)*.

6.2.1 Intertwined Realities of Bat Hunting and Seasonal Economic Instability among the Mahanta

The bat hunting has only occurred for part of the period of a year among the Mahanta. It appears parallel to the seasonal unavailability of regular earning sources among the Mahanta. The Mahanta mainly hunt bats through the Bengali month, *Agrahan, Push* and *Magh* (the corresponding English month from late November to early February). The Mahanta people are busy working during jute season from Bengali month *Shabon, Vadra* and *Arshwin* (usually the corresponding English month is July to September). After the jute season, most of the Mahanta people who are daily labourers become jobless or have fewer

opportunities for earning sources. They face difficulties in maintaining their family expenditures. Then, they get involved in alternative earning sources like bat hunting. According to the Mahanta, this period (*Agrahan* to *Magh)* is suitable for bat hunting for three reasons. The first is they become jobless and engage in bat hunting; the second is that the bat is matured with their muscle and fats from *Agrahan* to *Magh;* and the third is bat's maternity season starts after *Magh*. According to the Mahanta, several fruits ripen from *Joistha* to *Kartik* (usually the corresponding English month is from May to October). The bat eats the ripened fruits, and becomes healthy with muscle and fats, and then, the male and female bats meet for mating. The Mahanta hunters stop the bat hunting from *Falgun* (usually the corresponding English month is February) as the bat maternity season starts from the *Falgun* and continues up to about six months. Like the Mahanta hunters, seasonal bat hunting practices are found in several countries worldwide. Kamins and others (2011) found that Ghanaian bat hunters hunted bats seasonally from November to March. They explored two reasons for hunting 'seasonality'. The first was that the bat (E. helvum) seemed to migrate seasonally, and the second was that the hunters could not hunt them due to limited time from their primary occupation -the farm harvest season. In Indonesia, there is no specific season or months for bat hunting in a year. However, the wet and/ or late dry season was the pick season for bat hunting in Indonesia. A very small proportion of the Indonesian bat selling vendors indicated that sale pick occurred exclusively during periods of haze produced from forest fires (Harrison, et al. 2011). Although the hunters of Mahanta hunt bats in *Agrahan, Push and Magh (Agrahan* to *Magh)*, the pick time is at the *Push (*usually the corresponding English month is December), and even, few of the Mahanta

hunters hunt bats in *Ashar* (usually the corresponding English month is June) due to unavailability of earning alternatives. One of the hunters explained the cause of the bat hunting at *Ashar:*

"The sky is covered in thick black clouds, heavy rains start, cannot get out, there is no work, no stomach work, bound to hunt the bat (by selling) to buy some rice. However, many do not hunt bats because of the emotion, as at this time, the *baccha (pup)* is with the *badur (bat)*." **[55 years old, Mahanta Ex-hunter]**

He explained that they were compelled to hunt bats for their daily family expenditure, as, they did not have alternative source of earnings. Here, many hunters cannot hunt the bats as the baby of the bats were with them (the bats), due to emotions on the baby bats. Like other Bangladeshi, the Mahanta people speak the 'baby bat' as '*badur baccha'*. The English word 'bat' means *'badur'* in Bangla and 'baby' means '*baccha*'. Usually, humans love human baby, and even, the babies of other animals. The Mahanta is not outside of this. If they hunt the mother bat, the baby of the bat becomes an orphan. The above discussion indicates that if few of the Mahanta do not have alternative sources of income, they hunt bats and earn money by selling the bat or bat meat, though they have affection for the baby bats. In fact, they are compelled to hunt the bat by their economic forces.

Table 6. 1 Mahanta's seasonal activities and income sources

Time Period*	Activity	Reason of Activity
Shabon, Vadra, Arshwin and *Kartik*	Work at Jute *godowns* (warehouses) in Kanaipur Bazar.	This period is the jute season that is in full swing, offering abundant employment opportunities in the jute *godown*, and is considered the primary source of income for the Mahanta during this time.
Agrahan, Push and Magh	Bats hunting	With limited means to make a living, the Mahanta resort to hunting bats generate income through their sale.
Falgun, Chairto, Boishak and *Jaisthai*	Work at dal (pulses) *godowns* in Kanaipur Bazar.	This period is the season of *Choitali* (also known as robi crop season); the Mahanta community has the opportunity to work as laborers in dal *godowns*. Given that Faridpur district sits on the Padma delta, numerous pulses thrive in this region, leading to the establishment of multiple *godowns*.
Ashar	Bat hunting	With other options scarce amid heavy rainfall, the Mahanta have resorted to hunting bats.

**Name of Bengali months,* Source: Fieldwork May 2017

The above discussion is restated as, the Mahanta hunts bats during the months of *Agrahan*, *Push*, and *Magh* due to a lack of alternative options of earning. During the '*Choitali*' season (rabi season), which runs from *Falgun* to *Jaisthai*, they return to Kanaipur bazar and work in the *Dal godown*. In addition, during this season, a select group of Mahanta are able to procure a considerable bounty of eel fish, owing to the relative abundance of said fish and the dearth of alternative employment opportunities. With the end of the Rabi season and

the start of heavy rainfall in *Ashar*, they are unable to find work and earn a livelihood. Some Mahanta still hunt bats even though the bats are carrying their young. They have to wait until the start of the jute season end of the *Shabon*. The jute season lasts from *Shabon* to *Kartik*, with the peak being in *Vadra* and *Arshwin*, which is the main earning period for the Mahanta.

"I am a day labourer of jute *godowns* (warehouse) in Kanaipur bazaar. I have to earn every day for my stomach with the big size of my family, including my five daughters and wife. After jute season, I have no work in *godown*s, but my stomach has not stopped; I am engaged in bat hunting. *Agrahan to Magh*, I hunt bats and sell in our community." **[37 years old, Mahanta Bat & Eel fish hunter]**

6.2.2 Planning and Preparation for Bat Hunting

There is a regular practice for Mahanta hunters to prepare for their hunting expeditions by making arrangements such as choosing the hunting site, involving individuals, determining the equipment or weapons to be utilized, estimating costs, and dividing the captured bats among those involved.

6.2.2 Hunting Site Selection

The Mahanta hunters have devised a meticulous plan to embark on a hunting expedition for bats. The selection of the hunting location is not haphazard but rather the result of a well-considered approach. The hunters rely on their previous experience to identify places where bats have been found in abundance. Additionally, they keep a keen eye on the bat

population while hunting other animals, such as eel fish, tortoises, and rabbits. They also rely on the observations of other hunters who have either hinted or caught these animals and have noticed bat activity in the vicinity.

In their observations, the hunters consider several factors, such as the number of bats available and the type of tree where they typically roost- whether tall or small. They also pay attention to the bat's moving route, which may take them over agricultural fields, water bodies, fruit trees, fruit gardens, or date palm juice trees. The hunters also consider the width of the bat's route as it moves between date palm juice trees, fruit trees, and/or fruit gardens. Moreover, they pay close attention to the proximity of the hunting location to localities or households, as well as whether it is situated in a bush or jungle.

The selection of the bat hunting location is a crucial decision, as it determines the number of team members involved in the expedition, the quality of their engagement, and the logistics and equipment required. The team members must be equipped with the necessary tools and logistics, and the quality of their engagement must be of the highest standard, as they will be required to climb trees to hang hunting nets. Thus, the selecting the bat hunting location is paramount, and the hunters take great care in identifying the most suitable spot for their expedition.

6.2.3 Folk Engagement in Hunting

The art of bat hunting demands meticulous planning, particularly when it comes to assembling a team of skilled individuals. Such a group must be able to work together harmoniously, utilizing their unique talents and abilities to achieve a common goal. The decision regarding the number of participants to embark on the expedition hinges on several factors, including the predicted availability of bats and the location of bat hunting. This could entail scouting for a grand tree where bats rest during the day, commonly referred to as a bat roost, or an area in proximity to fruit or date palm trees where bats flutter about in search of sustenance.

Furthermore, the nocturnal nature of the hunting expedition necessitates a degree of caution and apprehension. Hunters must be mindful of their surroundings and avoid any location where they fear the presence of supernatural entities. Thus, the hunting is carried out in remote areas, typically in open fields or locations devoid of human activity.

When constructing a team for bat hunting, these factors must be taken into account. If, due to unanticipated circumstances, the prospect of capturing a significant number of bats is unlikely, it may be best for a solitary hunter to undertake the task. In such a scenario, engaging another hunter would prove disadvantageous, as the smaller number of captured bats would need to be split between the participants. Conversely, when the location boasts an abundance of bats, such as a bat roost or an area with high bat activity around date palm juice trees, assembling a team of three to four individuals becomes feasible. Occasionally,

such a group may be divided into two teams, working from opposing directions to effectively encircle the population of bats.

6.2.4 Cost Sharing in Hunting

The hunting grounds are often located 15-20 kilometers away from the Mahanta community and near areas with bat roosts, and date palm trees that provide a source of fruit for the bats. The travel expenses for hunting are shared equally by all the hunters involved. It is worth noting that the hunting community is bifurcated into two distinct categories, namely, regular hunters and irregular hunters. As far as the expenses of the hunting expedition are concerned, the regular hunters are responsible for collecting funds from the irregular hunters. In case any member of the hunting team is unable to contribute monetarily, the other hunters step in and cover the costs on their behalf. However, the borrowing hunter is expected to reimburse the amount in due course of time. Moreover, if the borrowing hunter is unable to repay the borrowed amount, the price of the hunted meat is calculated, and the equivalent value is deducted from the meat before it is divided among the members of the hunting team.

occasionally, certain hunters may seek financial assistance from members of their local community to offset the costs of their hunting expeditions. In such instances, it is not uncommon for the hunter’s spouse to inquire amongst their neighbors in order to determine which individuals might be willing and able to provide a short-term loan. It should be

noted, however, that certain lenders may stipulate that the borrowed funds must be repaid with bat meat, a fact which is considered when selecting a potential source of financial aid.

6.2.5 Decision Making among Hunters for Bat Hunting

Each undertaking follows a protocol for arriving at decisions regarding its execution, and even the pursuit of Mahanta bat hunting is no exception to this rule. In this fact, usually, the older hunters become a leader of bat hunting. The seasoned hunters, with their wealth of experience in bat hunting, take the helm in leading the hunting party. The leader's role is multifaceted, encompassing the provision of direction, guidance, and training to their fellow team members, in order to foster collaboration and facilitate the achievement of a successful hunt. It is imperative that the leader possess a mastery of hunting skills honed through years of dedicated practice and long-term exposure to the nuances of the hunting terrain.

Revered by the other hunters in the team as their '*murubbi'*, the leader assumes responsibility for allocating resources, including hunters, nets for bat catching, travel costs, and mediating conflicts that may arise during the hunting expedition. It is not uncommon for member team who possesses extensive hunting experience and is of a similar age group as the rest of the team to take on the mantle of leadership in the hunting party.

6.2.6 From *Tera* to Net: An Overview of Tools and Tactics in Bat Hunting among the Mahanta

The pursuit of bats for hunting purposes has been a common practice among modern hunters in various countries, particularly in the Pacific Islands, as documented by Wilson and Graham in 1992. The use of a shotgun armed with birdshot loads at the roosting sites has become a popular method for capturing these elusive creatures (Wilson and Graham 1992). However, the Mahanta tribe has developed an alternative technique, using nets made of tiny parachute rope to ensnare the bats. To subdue or kill the bat, a small bamboo or wooden stick is necessary to strike it once it is caught in the net.

In preparation for the hunt, the hunters come equipped with a plastic bag to secure and transport the captured bats. When the bats become trapped in the net, two large bamboo sticks and rope are used to suspend the net. A da, or chopper, is utilized to clear the brush and dig holes for the placement of the bamboo sticks. At night, torch lights are employed to provide illumination, while blankets are utilized to ward off the cold weather. The plastic bag serves as a practical means of transporting the hunted bats.

The crafting of the net is a crucial aspect of the hunting process. While some hunters make the net themselves, others purchase them from skilled craftsmen. It is noteworthy that only a few male individuals possess the expertise required to produce nets suitable for bat hunting. Females are not typically engaged in this activity. Family members, specifically the hunter's wife, take on the responsibility of preparing the necessary equipment, including

the net, torch, bamboo sticks, blanket, and all weapons, which are packed into a bag when the hunter embarks on the hunting excursion.

Approximately four to five decades ago, the Mahanta tribe utilized a tool called *tera*, consisting of sharp steel with a bamboo or wooden handle, primarily used for fishing. This tool was employed to hunt bats during the daytime when the creatures were resting on the roost. At that time, the Mahanta only consumed the bats for their own consumption and did not engage in the sale of bats or bat meat. The net technique has enabled them to capture a significantly higher number of bats in comparison to the traditional hunting method, the *tera.* The Mahanta's decision to switch to this new approach appears to have been motivated by two primary objectives. Firstly, the Mahanta community intends to satisfy their own consumption needs by acquiring a greater quantity of bat meat than what they were previously able to obtain. Secondly, they have recognized the potential economic benefits of this new hunting approach and, thus, plan to sell the surplus bat meat to generate additional income. This strategy allows them to augment their financial resources while simultaneously catering to their dietary preferences.

6.2.7 Description of the Bat Hunting Event

Upon completing all necessary preparations for the hunting, the Mahanta hunters commence their journey to the hunting grounds from their abode at noon. They come equipped with various essentials such as a net, a diminutive bamboo rod, a torchlight, a blanket, a plastic bag, and a small amount of money to fund their travels. The departure

time from their residence is contingent upon the distance between their domicile and the hunting site. They carefully calculate the commencement time to ensure that they arrive at the destination approximately one to two hours prior to sunset, as they must hang the net before the sun descends. The hunters travel by either rickshaw van or bus, selecting the most cost-effective mode of transportation available.

Upon arrival, each member of the hunting party surveys the area for the optimal spot to set up the net. The group may have pre-selected two locations for this purpose. The hunters then evaluate the locations to determine which one is best suited for their purposes based on the prevalence of bat movement in the area. They may choose a location near another bat roost tree or an open route that bats frequently use to search for food. The second route is often located near a date palm tree, where bats congregate to drink raw date palm sap. If they decide to hang the net near the bat roost tree, one of the hunters must climb the tree to secure it. If the roost or the tree selected for the net is located on someone's property, the hunters must first seek permission from the household members. While most households grant permission to hunt bats, there are some who refuse due to concerns about theft or other nefarious activities.

If the hunters decide to hang the net in the route of the date palm trees, they must utilize two bamboo sticks that are approximately 8-10 meters in height to hang the net. The hunters do not bring these sticks from their homes; instead, they procure them from households located in close proximity to the net hanging spot free of charge.

The hunters eagerly anticipate the arrival of the bats, waiting patiently for them to take flight and begin their search for food. When the bats become ensnared in the net, the hunters lower it to the ground and use small, hard bamboo or wooden sticks to either weaken or kill the bats. They then collect the bats and place them into their bag. Sometimes, the hunters will utilize injured bats as bait by placing them on the ground, where their cries will attract other bats. According to the hunters, the other bats will try to rescue the injured bats but will also become trapped in the net. The hunters continue to hunt bats for one to two hours, the typical time when bats take flight from the roost to forage for food. They then rest on the open ground using the blanket they brought from home and await the next hunting opportunity until midnight.

After midnight, the hunters resume their hunt as the bats begin to return to their roost. They continue to hunt for one to two hours and wait until the sun rises. The hunters then bid farewell to the local community members and return any borrowed bamboo sticks. They do so to avoid any accusations of theft or other untoward behavior that may occur after their departure. The hunters do not slaughter the bats on site; instead, they place them in a plastic bag and bring them home for slaughter. They travel back home by the same means of transportation they used to reach the hunting spot, accompanied by the bats they hunted.

6.2.8 Social and Legal Dimensions of Bat Hunting Sites

It is important for those participating in a bat hunting event to be aware of and comply with all relevant social and legal requirements to ensure a safe, responsible, and enjoyable experience.

On the legal side, there may be regulations and laws in place that govern the hunting of bats. It is a domain of the Wildlife (Preservation) Act of 1974, amended as the Wildlife Conservation and Safety Act 2012, and is a key piece of legislation in Bangladesh that provides for the protection of wildlife and regulation of hunting and trade in wildlife and wildlife products. This act was enacted to ensure the conservation and protection of Bangladesh's rich and diverse wildlife heritage for future generations.

Under the Act, the hunting, capturing, or killing of bats is prohibited, and those who violate these provisions may face penalties. The act also establishes protected areas and wildlife reserves where wildlife, including bats, can live and breed without the threat of hunting or other forms of human disturbance.

Almost all the Mahanta hunters are not aware of the Wildlife Act. Very few hunters know and have faced that local police sometimes checked when they were hunting bats. At that time, the police demanded bribe money than legislative palatines.

In the bat hunting grounds, there exist social dynamics that give rise to two divergent perspectives among the local populace concerning bats and bat hunting. A faction of the villagers in these environs views bats as vermin that damage and consume their fruits, thereby advocating for the hunters to apprehend these winged creatures from their roosts. Conversely, another faction of the inhabitants prohibits bat hunting, holding that bats pose no threat to them. Nevertheless, the local populace, particularly in the bat hunting sites, regard bat hunters as outsiders, and as such, they are hesitant to welcome them with open arms. A few individuals among the villagers harbor suspicions that the hunters might purloin their possessions and merchandise under the cover of darkness during the hunt. In addition, the residents of these locales view the hunters as unclean and, therefore, untouchable. Conversely, some villagers view the hunters as destitute and impoverished. On occasion, the villagers extend charity by providing them with food and shelter during harsh weather conditions. In addition to the aforementioned challenges, hunters also encounter two major difficulties when attempting to rent vehicles for transportation after bat hunting. Firstly, public buses categorically forbid hunters from boarding with their bags of hunted bats. Even if they manage to sneak onto the bus undetected, once discovered, they are unceremoniously expelled from the vehicle. Recounting a particularly unpleasant experience, one hunter lamented,

“On one occasion, as I boarded a bus with my hunted bats, I was promptly accosted by the driver who bellowed, ‘Get out! Get out! You and your stench are not welcome here, you dirty, filthy creature!” **[30-year-old bat hunter]**

The second difficulty face by hunters involves securing motor van rentals, which come at a higher cost than taking the bus. Furthermore, hunters are often subject to exploitation, as some motor van drivers take advantage of their situation by overcharging for their services.

6.2.9 Bat Meat Trade: Process, Demand, Supply and Financial Circumstances of the Mahanta

On the one hand, the Mahanta hunters engage in hunting bats to secure a source of income, particularly in instances where alternative earning opportunities are scarce. On the other hand, members of the Mahanta community typically act as consumers of the bat meat. Once the hunters have successfully hunted the bats, they transport the dead animals back to their homes, where they proceed to butcher the creatures and sell the resulting raw meat. Interestingly, there is currently no established marketplace through which the bat meat can be sold, nor is there any known supply system in place to deliver the meat to local restaurants as is commonplace in other countries (Harrison, et al. 2011; Kamins, et al. 2011). It is worth noting, however, that a locally-based trading system for bat meat does exist in several countries across Asia and Africa, as has been reported in prior research (Harrison, et al. 2011; Jenkins, et al. 2007; Kamins, et al. 2011; Mickleburgh, et al. 2009; Oleksy, et al. 2015; Scheffers, et al. 2012). The Mahanta bat hunters primarily sell the bat meat to members of their own community and individuals residing in neighboring communities such as the Hindu Shah Community. Most consumers purchase the meat directly from the hunters' residences, while others make special requests to have the meat delivered to them by the hunters or their family members. It is not uncommon for some consumers, particularly those belonging to the Muslim community, to request that the

hunters catch the bats alive so that they may perform a ritual slaughter and use the cooked meat for medicinal purposes. It is important to note that according to religious beliefs, the consumption of bats that have died through means of beating or falling from a height is strictly forbidden for those belonging to the Muslim community (Bonne and Verbeke 2008). The cost of a live bat is significantly higher than that of a slaughtered bat, with the former typically weighing in at 500-700 grams and fetching a price of 500 taka, while the latter is typically sold for an average of 200 taka per kilogram. During the peak season in December, the hunters are able to catch between five and seven kilograms of bats per hunting event or per night.

The Mahanta people have a predilection for hunting not only bats, but also tortoises and eel fish. One particular hunter who engages in both bat and tortoise hunting but is currently more involved in the latter expressed his views on the pricing and appeal of bat meat compared to that of other animals' meat:

"...(tortoise) no, people don't buy it here. *Bapari* (who sell tortoise to the wholesalers) buy it, …the price is high, 500 taka per kilogram; the price of bat's meat is low, price of other animals' meat is higher (than bat's meat)." **[Male, 50 years old]**

He also highlighted that while boiler poultry is similarly priced to bat meat, a larger portion of the former needs to be discarded.

6.3 Conclusion

In this chapter, my endeavor was to elucidate the expressive correlation between bat hunting and the way of life of the Mahanta people, as well as to shed light on the reasons behind their dependency on this practice with their historical disadvantages and financial vulnerabilities. The discourse above highlights the fact that bat hunting is a seasonal occurrence, and the Mahanta hunters are compelled to partake in it owing to the dearth of other sources of livelihood.

Moreover, the chapter delved into the intricacies of the hunting process, encompassing the stages of planning and preparation, formation of a cohesive team, employment of weapons, and the trading of bat meat, which is driven by the demand and supply dynamics, as well as their economic circumstances. The upcoming chapter delves into the beliefs, rituals, and symbolic meanings associated with bat and bat hunting of the Mahanta people.

Chapter Seven

7. Beliefs, Rituals and Symbolic Meanings Associated with Bat and Bat Hunting

This chapter is an account of beliefs, rituals and symbolic meanings associated with bat and bat hunting of the Mahanta people, including functional views of bat-hunting, bat hunting as their liminal phase of rites of passage.

7.1 Beliefs and Rituals

The Mahanta follow Hinduism. They believe in several gods, but they are ritually active for Manosha. Manosha is a god. Besides, the Mahanta are the disciples of *Provu* Jagatbundhu, who was a Brahman, and taught mystical lessons of his religious zeal among the untouchables like Dom and Numasudra in the early 20th century (Usuda 1997). His monastery is in the Angina area of Faridpur town. Generally, a ritual is a sequence of activities involving gestures, words, actions, or objects performed in a sequestered place and according to a set sequence. Rituals may be prescribed by the traditions of a community, including a religious community. They include not only the worship rites and sacraments of organized religions and cults but also rites of passage, atonement and purification rites, oaths of allegiance, dedication ceremonies, coronations and presidential inaugurations, marriages, funerals, and more. Rituals are characterized, but not defined, by formalism, traditionalism, invariance, rule-governance, sacral symbolism, and performance (Lyons 1999). According to the Mahanta, ‘belief’ is related to their truths;

they used *'bisways'* to refer to belief. They also consider the belief as right and wrong on any particular issue in the society. The word '*Joggi'* is very important and related to their beliefs and rituals. *Joggi* meant to them, correct the particular event or issue by ritual practices. The Mahanta people related their beliefs and rituals to their religious events. The word "ritual" was first recorded in English in 1570, and came into use in the 1600s to mean "the prescribed order of performing religious services" or, more particularly, a book of these prescriptions (Boudewijnse 1998). Past and present societies have typically involved special gestures and words, recitation of fixed texts, performance of special music, songs or dances, processions, manipulation of certain objects, use of special dresses, consumption of special food, drink, or drugs, and much more (Tolbert 1990a; Tolbert 1990b; Wilce 2006). Bat hunting among the Mahanta is not only for their protein or income sources but also related to their beliefs and rituals. The Mahanta perform several acts as their rituals according to their religious and cultural beliefs related to bat and bat hunting. The following section delves into the beliefs and rituals of the Mahanta entwined with bat and bat hunting.

7.1.1 Beliefs and Rituals of Bat and Bat-hunting among the Mahanta

Bats are only a group of mammals that are capable of powerful flight (Lightner 2012). While the Mahanta people consider the 'bat' as a 'bird', they also view them as beneficial. However, there are certain beliefs and rituals surrounding the hunting and killing of bats that parallel with their cultural & religious perspectives.

The Mahanta hunters refrain from pursuing bats on certain days in accordance with their religious and cultural convictions. These particular days, namely Sunday and Thursday, hold a special significance for them, as they are considered their *'gurubar'*, or days of reverence for their religious *guru*, *Provu* Jagatbundhu. Their revered leader did not partake of meat, fish, onions, or garlic on these days, and as a gesture of respect for his legacy, they observe a vegetarian diet on these days. This practice is not exclusive to the Mahanta community; many Hindu groups across the Indian subcontinent also honor vegetarian days (Den Boer 2014; Nesbitt 2018), and during Puja, they also abstain from consuming meat. Thus, as they eschew meat during these times, the Mahanta hunters refrain from hunting bats. Now, I will expound upon the Mahanta's beliefs regarding ghosts and how this relates to their proclivity for bat hunting.

Belief in ghosts is prevalent cross-culturally, including in contemporary Western cultures (Baker and Bader 2014). Professor of psychology, Frank T. McAndrew writes that the types of ghosts that have been seen depend on the religious belief. The Mahanta people are not out of the sense. They believe in ghosts following Hinduism. Furthermore, the Mahanta community subscribes to the notion that malevolent spirits are prone to wandering on Saturdays and Tuesdays. Consequently, they regard hunting bats on these days as a perilous venture, owing to the dread of encountering ghosts. Furthermore, they believe that during *Amavasya*, the night of the new moon, the darkness provides a cover for these restless phantoms to roam free. Therefore, it is customary for Mahanta hunters to abstain from bat hunting on such days.

There is a belief that ghosts live in abandoned places (Daire 2017). If the bat hunting place is abandoned, i.e., far from the locality or in the jungle, the hunters feel fear of ghosts. The Mahanta hunters believe that ghosts can be transformed into a bat-like persona. In the event that they are unable to ensnare a substantial quantity of bats amidst the sizable creatures perched upon the trees, they are inclined to believe that the creatures are not of the bat species but rather supernatural entities. In such instances, a remedial ceremony is enacted with the aim of capturing the anticipated number of bats.

"Once night, we saw many bats on the tree, and they were flying, but they were not caught in the net. Some of them were *Bhoots* (ghosts). I recited three times, 'Hara Krishna, Hara Krishna; Krishna Krishna, Hara Hara; Hara Ram, Hara Ram; Ram Ram, Hara Hara' and moved around the tree; after that we caught more bats." **[35 years old Mahanta Hunter]**

I explore three types of rituals within the Mahanta community related to bat hunting: curative, preventive, and initiation. The above event of *Bhoots'* healing, is an example of curative rituals. In addition to such rites, I delve into certain initiation and preventative rituals associated with the pursuit of bat hunting. For instance, the Mahanta hunters sprinkle water infused with *tulsh*i leaves, a tree revered as sacred, upon their hunting equipment - including nets, *da* or chopper, bags, ropes, and sticks - in preparation for their hunting expedition. Through this ritual, these hunters believe that their apparatus becomes sanctified, and the meaning of symbolization as sacred is that they will be successful in their pursuit by this. They also believe that their equipment is imbued with spiritual protection, enabling them to accomplish their objective of capturing bats. Moreover, prior

to embarking on their hunting venture, the hunters perform initiation rituals by reciting the phrases, "*Oh Tot Sot*" and "Start for the name of *Provu* Jagatbundhu". The first phrase is derived from the tenets of Hinduism, which they adhere to, and is believed to bring good fortune by the grace of God. The latter signifies their belief that their spiritual leader will intercede on their behalf and aid them in their endeavors. The Mahanta people also repeat these verses in their pursuit of capturing more bats. These verses are not only employed during bat hunting but also in other daily activities, such as boarding a vehicle or tallying currency. Bat hunting is related to not only beliefs and rituals and/or their symbolic meanings but also illustrates functional views. The following section delves into the functional views of the Mahanta entwined with bat hunting.

7. 2 Functional Views of Bat-hunting among the Mahanta

Functional theories in anthropology view social and cultural practices as serving particular functions within a society, highlighting how cultural practices are shaped by their social context and meeting the needs of the society they exist in. Various functional theoretical perspectives exist in the social sciences, and anthropologists have examined them in different societies. Some of these perspectives are related to promoting community cohesion, while others are marked by conflict. Evans-Pritchard argues that the practice of cattle raiding among the Nuer people of Sudan serves a functional purpose in maintaining social order and promoting inter-ethnic trade. He also states cattle raiding serves as a form of social control, as it helps to prevent any one group from becoming too dominant. It also encourages inter-ethnic trade, as groups exchange cattle and other goods with one another

as part of their raids (Evans-Pritchard 1940). Anthropologist Anne Fadiman examines the clash between Western medicine and Hmong cultural beliefs surrounding illness and healing. Fadiman argues that Hmong cultural practices, such as the use of spiritual healers, serve a functional purpose in addressing the psychological and social aspects of illness, which are often overlooked by Western medicine (Fadiman 1999). There are so many examples of functional views. I have explored some activities of bat hunting among the Mahanta that illustrate functional views, such as division of labour, and gender roles. In the forthcoming sections, I have discussed these.

7.2.1 Division of Labour in Bat Hunting among the Mahanta: Planning, Decision-making, Preparation and Packed-up Hunting Apparatuses

In this section, I explore the individuals who are engaged in various facets of bat hunting, including planning, decision-making, preparation, and packed-up hunting apparatuses, among the Mahanta community. For example, in preparation for the forthcoming bat hunting expedition, a team leader of every hunting episode assumes meticulously strategizing every facet of the mission. Typically, an elderly hunter who frequently partakes in such quests takes the role of chief architect, orchestrating the transportation, logistics, and costs associated with the venture, overseeing the handling and management of the requisite hunting paraphernalia, and identifying the optimal hunting terrain.

Many anthropologists explored several societies around the world where hunting is primarily done by men, and decision-making about hunting activities is often influenced by factors such as age, status, and experience that are socially and culturally shaped; for

example, the anthropologists worked in hunter-gatherer societies in the central Africa - Hewlett among the Aka (Hewlett 1993), Turnbull among the Mbuti (Turnbull 1965) and Nelson among the Inuit people in the Arctic regions of North America, Greenland, and Russia (Nelson 1969). The parallels with other decision-making processes among the Mahanta people, the bat hunting expedition functions exclusively as male-dominated, albeit with the leader's wife assuming a supportive role in preparing the hunting apparatus and packing upon the party's return. Besides these, I specifically explore the 'role of gender' related to the bat hunting activities among the Mahanta.

7.2.2 Role of Gender among the Mahanta: Processing, Cooking, and Consumption of Bat Meat

There are many gender roles in several activities among the Mahanta. Here, I explore gender roles related to preparing, cooking, and consuming bat meat. The influence of gender on preparing, cooking, and consuming bat meat is palpable in the Mahanta community. Each stage of the process entails specific roles and responsibilities that are subject to gender norms and expectations, ultimately shaping the use and consumption of bat meat within the community. Gender roles play a significant role in the community's food culture, particularly in the processing, cooking, and consumption of bat meat, as they dictate who does what task, how the meat is prepared, and who gets to eat it. Gender, therefore, cannot be overlooked when analyzing the foodways and cultural practices of the Mahanta community.

Once the hunt has culminated in success, the hunters make their way back to their abode with their bounty, eager to initiate the butchering process. In preparation, the hunters unfurl the bag containing the hunted bats onto the courtyard and commence the procedure of dissection. Employing the versatile *boti*, which typically serves in the capacity of a culinary tool for chopping vegetables and other ingredients, the hunters undertake their gruesome task.

While the practice of hunting is commonly associated with the male gender in many countries (Anti, et al. 2015; Kamins, et al. 2015; LeBreton, et al. 2006), it is not uncommon for the female members of the hunting family to participate in the butchering process. Often, it is the hunter's wife who lends her aid by providing utensils to store the meat. These pots or plates, which serve a dual function of serving and storing food, facilitate the seamless integration of the bat meat into the family's diet. Throughout the course of the butchering process, the hunters discard unwanted components such as the skin, nails, head, and intestines of the bats. Additionally, the *asta*, a portion of meat situated beneath the throat and imbued with an offensive odor, is also discarded.

Subsequently, the hunters process the meat into manageable portions and meticulously wash it with water obtained from the tubewell in preparation for the ensuing culinary preparations. Finally, the meat is utilized to create a savory curry of bat meat, destined to sate the appetite of the hunters and their loved ones. The distribution of a particular type of meat curry among the Mahanta community is influenced by the gender of the household

members. The community believes that certain parts of the bat, such as the thigh or chest, are tastier and contain more fat. As a result, male children are given these parts since they are expected to inherit their family. Conversely, female children or women receive portions from the finger or neck of the bat. The discussions above serve as evidence of the division of labor being influenced by gender roles, as well as, it indicates the presence of gender inequality within the Mahanta community. Apart from delving into gender roles, I have also investigated several practices related to bat hunting that foster social cohesion among the Mahanta community.

7.2.3 Social Solidarity among the Mahanta Community: Distribution and sharing of Bat-meat and financial assistance to hunter's family

While it is true that the Mahanta community may experience conflicts in certain matters or activities, there exist several undertakings that foster solidarity within the society. This section sheds light on these activities. For example, after a successful hunting event, the Mahanta hunters divide the bat meat amongst themselves, utilizing the *dari palla* (scale) to ensure an equal distribution based on weight. Moreover, these hunters exhibit a remarkable sense of community by sharing their bounty with their less fortunate neighbors who are unable to afford the meat. This noble practice serves as a testament to their commitment to social solidarity within their society. Interestingly, similar customs are observed in various societies worldwide. For example, the Inuit community in Canada values the sharing of hunted animals or meat as a fundamental aspect of their culture, which enables them to establish and maintain social relationships and obligations (Kishigami

2000). Similarly, the Maasai community in Kenya regards the sharing of hunted animals or meat as an essential part of social solidarity, as it demonstrates generosity and fosters social relationships (Washburn and Lancaster 2017). Additionally, the Sami community in Norway perceives sharing of hunted animals or meat as a vital component of their cultural identity, which enhances social cohesion and strengthens community bonds (Hovelsrud and Smit 2010). Sometimes, the Mahanta hunters may encounter conflicts while bat hunting, which are typically resolved by the designated team leader overseeing the hunting excursion.

In addition, I have delved into a few activities associated with bat hunting that cultivate a sense of social solidarity within the Mahanta population. For example, sometimes, due to a tardy return home of a hunter from the event of hunting, his family's food is finished; in the meantime, affluent or moderately wealthy Mahanta households provide financial assistance or providing loans to them. This loan, typically of a short-term nature, is to be repaid upon the hunter's return, facilitated by the sale of bat meat. Moreover, it is mentionable that the affluent Mahanta are not engaged in hunting expeditions (as expounded in chapter five); nonetheless, they still relish the consumption of bat meat. In order to fulfill this appetite, they regularly visit the households of hunters during the bat hunting season to purchase the meat.

"Our rich people usually come to our house rarely, but during bat hunting season, they, especially women, frequently come to buy bat meat on the day of the hunted bats are taken

to, or on the day prior to, for the pre-requisition of buying bat meat". **[30 years old woman, wife of a Mahanta hunter]**

These recurring practices contribute to fostering strong bonds within the Mahanta community, ultimately strengthening social cohesion. The Mahanta's bat hunting practices are not solely restricted to functional views but also encompass significant rites of passage.

7.3 Rites of Passage: Bat-hunting as Their Liminal Phase

Bat hunting occurring period to the Mahanta hunters is the liminal phase of van Gennep's 'rites of passage'. As mentioned earlier, his 'rites of passage' delineate three fundamental stages: separation, liminality, and incorporation (van Gennep 1908). In the first stage, the individual is separated from their previous social status or identity. In the second stage, they enter a period of liminality or 'betwixt and between' where they are neither fully in their old nor new identities. And in the final stage, they are incorporated into their new social status or identity. When the Mahanta hunters embark on their hunting expeditions, they leave behind their previous social status and adopt the sole identity of a hunter with a singular goal of hunting. However, this detachment also renders them vulnerable, as they are away from their families for two to three days and sometimes subsist on wild fruits. At this time, they are neither fully in their old identity as a member of the community nor fully in their new one as a hunter. They are in between community identity and hunter.

Therefore, the hunting period represents a liminal phase for the Mahanta bat hunters. Once they return to the community, they reintegrate into their previous identities. Furthermore, male adolescents aged twelve to fifteen may also be included in the hunting team, and their hunting period represents a liminal phase in their life cycle. During this time, they learn hunting skills and undergo a period of liminality, where they are neither fully adolescents nor fully hunters or adults. Successful completion of the hunting training results in their incorporation into their new identity as a hunter and symbolizes his new social personality as a mature man. Besides, this status of the Mahanta people as 'hunter' represents 'masculinity' in their society. Turner uncovers a similar notion of masculinity among the Ndembu hunters in Africa, whereby the act of hunting is accompanied by men (Turner and Turner 1970).

7.4 Conclusion

In this chapter, I have tried to represent an account of beliefs, rituals, and symbolic meanings associated with the bats and bat hunting of the Mahanta people. Firstly, I have discussed their beliefs on bat catching and killing of bat, and eating taboo on bat meat; secondly, several rituals of bat hunting related to the activities and their symbolic meanings among them, as well as rites of passage whereby the bat hunting as their liminal phase of the life cycle; thirdly, functional views including social solidarity, division labour, and gender roles, in planning, decision-making, preparation and packed-up hunting apparatuses, butchering, cooking, consumption, distribution and sharing of bat-meat. Bat hunting is not only associated with beliefs, rituals, and symbolic meanings to the Mahanta

people; it is also related to their health, illness, and health-seeking. The next chapter discusses health, illnesses, and health-seeking in relation to the bat hunting of the Mahanta.

Chapter Eight

8. Bat Hunting, Health Hazards, Illness and Health Seeking

The practice of bat hunting teems with potential connections to health hazards and illnesses. In some societies hunting bats is associated with treating or preventing illness and healing. On the other hand, there is a risk of illness associated with bat hunting by direct contact with bats. In addition, the hunters face physical health hazards in bat hunting.

This chapter expounds upon an array of potentially deleterious health implications and safety concerns, particularly regarding the physical harm that may be incurred during bat hunting and the potential environmental ramifications that may befall those who engage in this activity. Moreover, this chapter also delves into the divergent perspectives that may exist between the biomedical community and the local population with respect to illnesses that may be transmitted via bat-borne viruses, as they pertain to the afflictions experienced by individuals belonging to the Mahanta community. Additionally, this chapter scrutinizes the manner in which illnesses may manifest within the aforementioned community, as well as the methods by which affected individuals may seek recourse for their ailments.

8.1 Health Hazards and Safety: The Physical Injury, Death, and Insecurity in Bat Hunting

The bat hunters face different types of difficulties and risks in hunting. When they catch out the trapped bats with their hands from the net, very often the bats bite them. The hunters face difficulties from the extreme weather like cold, rain, and heavy wind during hunting. However, they hunt bats tolerating these factors. Insects bite the hunters during hunting in the bush areas, and even sometimes, they encounter snakes.

The hunters also face insecurity from the local people's threats when they go to the hunting spot. The local people drive out the hunters. They think the hunters are strangers and may steal their assets. Sometimes, the local people become very angry and also become about to beat the hunters. Even the local youth people demand money from the hunters; otherwise, they stop the hunters in conducting hunting events.

The preceding discussion brings to light the challenges faced by Mahanta hunters, which encompass both social insecurity and harassment in hunting grounds and physical harm and health hazards stemming from the environment. In addition, even tragically, the perilous nature of climbing trees during bat hunting can result in fatal consequences, as was the case with the tragic incident of 'Nikhil' (*pseudonym).*

8.1.1 Story of Nikhil: A Dead Case Fell Down from Tree During Bat Hunting

Nikhil, 45 years old, an occasional bat hunter, met with a tragic end during one such hunting expedition. Two years ago, he ventured out with his 13-year-old son in a day, only to meet his untimely demise. Recalling the unfortunate incident, his wife shared with me that he returned home from his day job as a temporary labourer in Kanaipur Bazar. A *Somiti'*s worker (a loan provider) had arrived to collect their installment, but as they didn't have the funds, they requested an extension until the next day. Without having had lunch, Nikhil and his son went out hunting. Upon returning home that evening, his lifeless body was carried in. His fall from the tree, due to weakness from hunger and fatigue, had claimed his life. Although the locals rushed him to the Faridpur Medical College Hospital, the doctor declared him dead on arrival.

Nikhil's profession as a temporary day labourer often left him without work, particularly during non-harvesting seasons. He resided with his wife and unmarried son, while his two daughters lived with their husbands in another community. His wife had taken a loan from an NGO for cattle rearing, but the funds were diverted towards developing their home and meeting daily expenses during jobless periods. The constant pressure to repay installments mounted, even as employment opportunities remained scarce. Thus, Nikhil went hunting to sell bat meat and secure the installment payment. He was considered a victim of circumstances by his family and the community, who knew many such Mahanta people who resorted to hunting due to lack of alternative earning sources. The case study indicates

that the Mahanta community is compelled to engage in bat hunting, which entails a significant risk of physical harm and even mortality.

Apart from delving into health hazards and social and physical injury of the hunters in the hunting spots, I have also investigated bat-borne illness among the Mahanta community and their illness views. The subsequent sections illustrate these.

8.2 Bat-Borne Virus Infections among the Mahanta: Biomedical vs Local Views of Illness

The biomedical perspective is likely based on scientific and medical knowledge, and the local view, is expected to be based on traditional beliefs, cultural practices, and community-specific understandings of illness. First, according to the biomedical views, I explore bat-borne virus infections and illness among the Mahanta.

8.2.1 Bat-borne Virus Infections and Human Illness among the Mahanta: A Biomedical View

From biomedical perspectives, bats are natural reservoirs of many emerging infectious diseases, including Nipah virus, Ebola and Marburgvirus, SARS-like coronaviruses, GB viruses A and C, and Lyssavirus (Calisher, et al. 2006; Epstein, et al. 2006; Epstein, et al. 2010; Kuzmin, et al. 2006). Many of them are causing significant human morbidity and mortality (Epstein, et al. 2006; Leroy, et al. 2005; Li, et al. 2005; Towner, et al. 2007). The global fatality rate of human Nipah virus cases is 61% (Kenmoe, et al. 2019), however, in Bangladesh the fatality rate is approximately 70% (Luby, et al. 2009). Bat-human

interactions through sharing common food both by bat and human, hunting and butchering of bat, and infected domestic animals or environmental contamination, may lead to human exposure to zoonotic pathogens (Chua, et al. 2000; McColl, et al. 2000; Selvey, et al. 1995; Smith and Wang 2013). Direct link to bat or butchering of bat and bat bush meat caused a Nipah-like henipavirus in Humans in Cameroon (Pernet, et al. 2014) and Ebola outbreaks in Africa (Leroy, et al. 2009).

The following Table 8.1 presents an exposition of the emergence of bat-borne viruses, delineating their prevalence in both bat and human populations, identifying the sources of human infection and the ensuing maladies they cause, both in the context of Bangladesh and globally.

Table 8. 1: Bat-borne Virus and Human Illness: A Biomedical View

Bat-borne Virus	Worldwide		In Bangladesh		Sources/Route of Infection
	In bat	Human Illness	In bat	Human Illness	
Nipah	Yes	Yes	**Yes**	**Yes**	Date palm juice, Bat hunting, meat eating, direct contact with bat, person to person contact
Ebola	Yes	Yes	**Yes**	No	Bat hunting, meat eating, direct contact with bats, person to person contact
Hendra	Yes	Yes	No	No	Bat hunting, meat eating, direct contact with bats, person to person contact
Marbugvirus	Yes	Yes	No	No	Bat hunting, meat eating, direct contact with bats, person to person contact
SARS-like corona viruses	Yes	Yes	No	No	Bat hunting, meat eating, direct contact with bats, person to person contact

Source: Scientific Literatures (Calisher, et al. 2006; Chua, et al. 2000; Epstein, et al. 2006; Leroy, et al. 2005; Luby, et al. 2006; Olival, et al. 2013; Pernet, et al. 2014)

Furthermore, this table illustrates the afflictions that arise as a result of bat-borne viral infections, which can be attributed to hunting bats. Despite their aversion to consuming raw bat meat and other bodily fluids or organs, the Mahanta people engage in several modes of direct contact with bats that pose a risk of bat-borne infections in humans. While hunting, the hunters sometimes get bitten by the bats, and do not use gloves or other forms of

protection to catch the bats. Even they do not follow proper hygiene practices, such as washing their hands with soap or disinfectants after handling the bats. Even after processing the raw meat for cooking, they only wash their hands with water. Moreover, they wash the bat meat in their tube-wells, which they also use for washing utensils and collecting drinking water. Shockingly, children were observed touching the raw bats and fresh bat meat, which increased the risk of bat-borne infections.

From a biomedical viewpoint, all these occurrences create a high risk of bat-borne infections in humans (Chua, et al. 2000; Leroy, et al. 2009; McColl, et al. 2000; Pernet, et al. 2014; Selvey, et al. 1995; Smith and Wang 2013). To make matters worse, the Mahanta people dispose of the carcasses by throwing them into the river that runs beside their community or carelessly scattering them around. Domestic animals such as dogs and cats scavenge on the carcasses, often consuming the bats' intestines, heads, and nails of the bats. As a result, there is a risk of bat-borne infections spreading to these domestic animals (Chowdhury, et al. 2014; Mills, et al. 2009), which can then transmit the infections to humans (Glennon, et al. 2018; Singh, et al. 2019). However, in order to gain a more understanding of bat-borne diseases, it is imperative to provide a little bit exposition of the syndromes that manifest in human patients who have contacted such viruses. Based on the biomedical perspectives, the ensuing section delves into a discussion on the syndromes exhibited by human patients in Bangladesh who have fallen prey to the Nipah virus, an affliction propagated by bat-borne pathogens.

8.2.1.1 Biomedical Views of Nipah Virus: An Example of Bat-borne Diseases in Human Illness

The most frequently observed clinical features of Nipah illness with syndromes are fever, dizziness, altered mental status, headache, cough, respiratory difficulty, vomiting, and convulsions (Chua 2003; Hossain, et al. 2008). The following table is an example of Nipah virus patients' symptomatic features in Bangladesh with the consolidated data pertaining to four Nipah virus outbreaks.

Table 8. 2 Table: Clinical Characteristics of Nipah virus Infection during different outbreaks in Bangladesh

	Outbreak				
Characteristic	Meherpur, 2001 (n = 13)	Naogaon. 2003 (n = 12)	Rajbari, 2004 (n = 31)	Faridpur. 2004 (n = 36)	All (n = 92)
Age, years					
Mean± SD	40.2 ± 16.2	17.4 ± 13.5	15.3 ± 10.5	35.4 ± 14.7	27.0 ± 17.0
Median (range)	38 (4-60)	12 (4-42)	12 (2-50)	35 (5-60)	26 (2-60)
Fever	13/13 (100)	12/12(100)	31/31 (100)	36/36 (100)	92/92 (100)
Altered mental status[a]	13/13 (100)	10/12 (83)	30/30 (100)	29/36 (81)	82/91 (90)
Unconsciousness[b]	3/13 (23)	9/12 (75)	28/30 (93)	27/36 (75)	67/91 (74)
Headache	8/13 (62)	10/12 (83)	16/27 (59)	30/36 (83)	64/88 (73)
Severe weakness	NC	3/12 (25)	23/28 (82)	25/36 (69)	51/76 (67)

Cough and/or cold	10/13 (77)	6/12 (50)	14/29 (48)	26/36 (72)	56/90 (62)
Respiratory difficulty	9/13 (69)	7/12 (58)	19/29 (66)	27/36 (75)	62/90 (69)
Vomiting	7/13 (54)	6/12 (50)	20/30 (67)	20/36 (56)	53/91 (58)
Diarrhea	2/13 (15)	1/12 (8)	8/29 (28)	15/36 (42)	26/90 (29)
Convulsion	3/13 (23)	3/12 (25)	14/30 (47)	1/36 (3)	21/91 (23)
Case fatality	9/13 (69)	8/12 (67)	23/31 (74)	27/36 (75)	67/92 (73)

NOTE. Data are proportion (%) of patients, unless otherwise indicated. NC, not collected: ND, not done.
a. Altered mental status was defined as a lack of orientation to time, place and person. Unconsciousness was included as altered mental status.
b. Unconsciousness was defined as the inability to give a meaningful response to any stimuli.

Source: (Clin Infect Dis, Volume 46, Issue 7, 1 April 2008, Pages 977–984)

Apart from delving into biomedical views of bat-borne virus infection and illnesses, I have also investigated how the Mahanta community people evaluate bat-borne virus infections and human illnesses that illustrated in the next section.

8.2.2 Bat-Borne Virus Infections and Human Illnesses: A Local View among the Mahanta

Limited research has been conducted related to explore Nipah virus knowledge in Bangladesh. One study in two districts (Rajbari and Kushtia) adjacent to the Faridpur district (where my study locale) revealed that very few people (5%) heard the name of 'Nipah virus' disease (Nahar, et al. 2015). Among the Mahanta, no one does not know about the Nipah virus disease except one hunter. However, he knows very little about bat-borne infections. During the biggest Nipah virus disease outbreak in the two districts of

Bangladesh- Faridpur and Rajbari, in 2004, he knew that bats can transmit the virus, when he was hired as a bat catcher of bat sample collection for testing. However, he did not know the name of 'Nipah' virus. He only can say it was virus fever, no more about it. In addition, very few people in Bangladesh, like the Mahanta, know about bat-transmitted human diseases (Nahar, et al. 2015), as well as, it is mentionable here that Nipah virus disease is rare (Chua 2010) but highly fatal (Nikolay, et al. 2019).

"No, the bat doesn't transmit disease. If it transmitted disease, people did not eat that. On the other hand, it recovers from illness." **[55 years old Mahanta Man]**

"Why will bats transmit disease? Bats eat fruits above and, on the tree, and the best sweet fruits that humans usually do not get, then why will disease come from bats?" **[40 years old Mahanta Woman]**

The statement mentioned above alludes to the fact that the Mahanta community harbors the belief that bats are incapable of transmitting infections to humans. The crux of this statement posits that bats consume fruits that are typically located in high altitudes and remain uncontaminated. Furthermore, these fruits are characterized by their freshness and sweetness. Thus, the question among the Mahanta is posed as to why diseases would emerge from bats. In addition, they believe that bats can be leveraged for health seeking, which has been discussed in the subsequent sections. Nevertheless, from a biomedical standpoint, it is postulated that coming into contact with bats, particularly during hunting, can give rise to bat-borne infections and subsequent illnesses. I explore a patient who

exhibited Nipah-like syndromes from the biomedical perspective, delving into how the Mahanta people attribute causality to this affliction. In the next section, I will represent the particulars of the patient, as well as the views of the Mahanta people associated with this illness.

8.2.2.1 A Patient of Nipah-like syndromes among the Mahanta

Poresh (*pseudonym)* was a bat hunter. He was 40 years old. He went hunting with another hunter of the community. He saw a *dosh* (ghost) two years ago when he was hunting bats. His hunting partner went to deification. His partner heard a screaming of him. He went back immediately and found that he (Poresh) was screaming and looking in front of him someone, but he did not see anyone. They left the place and went to a house nearer of the hunting spot. He (Poresh) was shivering, and he became unconscious. After a while, he became awake. It happened at night. On the next morning, both of them returned home. At that time, he had fever. I heard these from his wife.

When I asked what happened to him, she told me, "He had had a *dosh* while hunting as he was alone. We called a *kabiraj* for leaving out the dosh from his body. The *kabiraj* provided *jar-fu* (the *kabiraj* recited his spiritual words silently and blew up into the patient's body) and *tel-pora* (the *kabiraj* recited his spiritual words silently and blew up into the bottle containing seed oil). I messaged the oil on his body, but he did not recover, and even he developed *khechuni* (seizure) and increased fear of seeing someone (*dosh*)."

After that, she provided him (Poresh) Napa tablet (paracetamol) to relieve the fever, but his temperature was repeatedly up and down. His family and even the whole community believed that he had a ghost. It is mentioned here some community members spoke 'dosh or ghost' as *'vut'.* So, they called the *kabiraj* again. The *kabiraj* again recited his spiritual words silently and blew up into the patient's body and also provided *tel-pora.* According to his wife's statement, he became very weak day by day; he could not know someone, and he sometimes talked unusual (that does not happen usually). It may be called a psychological disorder/altered mental status. He often became restless. Thus, after suffering 18 days, he died.

From the biomedical perspective, Poresh's afflictions manifest as akin to a Nipah patient. However, within the Mahanta community and among his kin, the belief is that his passing was a consequence of ghostly intervention. It is not uncommon for various diseases that exist in Asia and Africa to bear Western nomenclature, while the local populace remains oblivious to their technical designations and instead subscribes to their own customs and beliefs. Consider the case of Ebola, whereby anthropologists Barry S. Hewlett and Bonnie L. Hewlett (Hewlett and Bonnie 2008) collaborated with ethnic groups in Gabon, the site of an Ebola outbreak. Their findings revealed that the locals referred to the disease as "*ezanga*", a reference to evil human-like spirits. The Gabonese attributed the illness to people who coveted the material riches or socio-political sway of others, and could surreptitiously dispatch *ezanga* to devour their internal organs, rendering them ill or worse, dead.

The aforementioned deliberations serve to signify that the Mahanta community harbors a distinct perspective whereby they do not subscribe to the notion that bats act as a vector of diseases for humans. Notwithstanding, the denizens of this community do incorporate bats into their diet and medicinal practices as a proactive measure towards maintaining their well-being and health-seeking.

8.3 Bat Meat, Food and Medicine: Illness and Health Seeking of Mahanta

There are so many usages of bat or bat's meat worldwide (Anti, et al. 2015; Jenkins, et al. 2011; Kamins, et al. 2011; Kamins, et al. 2015; Mickleburgh, et al. 2009; Openshaw, et al. 2017; Wilkie, et al. 2011). People are mainly depended on the bat as a protein source for whom meat is an expensive commodity (Jenkins and Racey 2008) and also consumed as starvation food (Goodman 2006), and or income (Wilkie, et al. 2011), as well as for medicinal purposes (Mildenstein, et al. 2016; Openshaw, et al. 2017; Tuladhar-Douglas 2008). The Mahanta people are related to the bat population in overlapping ways, such as food and medicine sources. They eat bat's meat for nutritional needs and as medicine. The subsequent sections illustrate how the Mahanta people use bat meat as food and medicine.

8.3.1 Eating Bat Meat as Protein Source

This section sheds light on how the Mahanta people distribute bat meat, the specific types of meat that they consume, and the parts of the meat that are utilized, all of which serve as a source of protein for this community. First, I represent the distribution of bat meat among the Mahanta as a source of protein. All hunter families among the Mahanta take bat meat

from their hunted bats. The other families, particularly the *moddhobitto* and *dhoni* households, buy slaughtered bats - from the hunters. Here, it is mentionable that the Mahanta are engaged in hunting who belong to the *gorib* and *khub gorib.* In addition, the hunters and the consumers (who buy meat from the hunters) share curry with neighbors and or relatives, who cannot always buy bat meat. The Mahanta eat bat meat as curry, whereas the other countries' bat hunters eat bat meat as fried or soup (Kamins, et al. 2015; Lallanilla 2014; Lemke 1992; Viswanathan 1996). The female people of the Mahanta community process the slaughtered bats. They discard the intestines, skin, nails, nick, tongue, eyes, and head. They also discard *asta*. It has a bad smell. This is a piece of meat situated below the throat. They process the big log of meat into pieces and wash the meat with the tubewell water where the tubewell is situated for cooking. The pieces of the bat meat are cooked like other meats –chicken, mutton, and so on. They cook the meat mixed with ingredients of salt, chili powder, species power and water, for one and a half to two hours. Then they serve the curry of bat meat to take as lunch or dinner with boiled rice. The boiled rice is taken almost three times in a day among the Mahanta and even among Bangladeshi people. In Indonesia, bat's meat is prepared in two ways: seasoned with coconut milk and a bundle of spices, lemongrass, basil, pandanus palm leaf, turmeric leaf, lemon leaf, or fried with chili in the common rica rica style in Indonesian cuisine (Tsang 2015). Although the probability of bat-borne infections among the Mahanta from consuming bat curry is relatively low, there are still potential risks associated with preparing bat meat for cooking.

Furthermore, this section delves into the preferences of the Mahanta people with regard to consuming meat from male or female bats. It is observed that the Mahanta community tends to favor the meat of male bats, which they consider to be tastier than that of female bats due to their higher fat content. They believe that female bats are responsible for childbirth and have less fat in their meat. However, consumers who purchase bat meat generally have little control over whether they receive meat from a male or female bat, as they usually buy pre-slaughtered bats. In contrast, hunting families have the option of selecting either male or female bats for consumption. In addition to using bat meat as a protein source, the Mahanta people also utilize it for medicinal purposes. In the upcoming section, I delve into the various functions in which bat meat is employed as medicine.

8.3.2 Eating Bat Meat as Medicine

The utilization of bats for medicinal purposes is a widespread practice observed in various societies across the globe (Kamins, et al. 2011; Openshaw, et al. 2017). Among the various uses of bat meat, the treatment of asthma is a commonly known practice (Harrison, et al. 2011; Ng, et al. 2003). In parallel with other bat-consuming societies, the Mahanta community also employs bat meat to alleviate the symptoms of *Shasher Rog*, a condition characterized by asthmatic symptoms. In addition, the Mahanta people consume bat meat as a remedy for heart disease and *Betha* (a calcium deficiency). Notably, the consumption of cooked bat meat is practiced, as opposed to raw meat or blood. It is believed that consuming bat meat imparts sexual vigor. Moreover, the Mahanta community holds the belief that middle-aged individuals experience a certain degree of sexual unproductivity

despite harboring a strong desire for it. As a means of addressing this concern, the consumption of cooked bat meat is particularly favored among middle-aged Mahanta individuals, as it is believed to impart a sense of sexual vigor. In this regard, the preference of the Mahanta people leans towards the consumption of male bat meat, as it is believed to contain a higher concentration of fats that serve to enhance sexual potency, as opposed to the meat of female bats.

In the above section, I delve into how the usage of bat meat functions as medicine. The ensuing section delves into the health-seeking behavior of the Mahanta community within the purview of their cultural norms and further elucidates how this behavior intersects with bat hunting and/ or bat.

8.4 Bat-hunting, Illness, and Health-seeking: A Cultural Perspective among the Mahanta

Each individual possesses their unique interpretation to define and classify illnesses which they culturally acquired over time through cultural immersion (Mattingly and Garro 2000). The etiological explanations people hold for illnesses significantly impact their pursuit of remedies. Numerous instances worldwide exemplify this phenomenon. Medical anthropologists delve into the coexistence of multiple medical care subsystems in diverse societies, exhibiting variations across geographical and cultural contexts (Chrisman and Kleinman 1983; Dunn 1976b; Lock 1980). In Taiwan, Kleinman (1978) examines a model of healthcare system encompassing three sectors: popular medicine, commonly referred to as the ‘non-specialist’ sector, comprising self-care and treatments administered by family

members, friends, or relatives; folk medicine influenced by cultural traditions and philosophies; and professional medicine, recognized as the official or legal domain. Dunn's (1983) research identifies three distinct types of medical systems that reflect geographical and cultural distinctions. These include local medical systems prevalent in small-scale societies and cosmopolitan medical systems, also known as scientific, modern, or Western medicine, which represent the global medical system.

Anthropologist John M. Jazen conducts research in Lower Zaire, exploring the categorization of illnesses among the BaKongo people. They classify illnesses into two types: 'illness of God', caused by natural factors or unintentional human activities but not divine intervention, and 'illness of man', caused by human actions (Janzen 1978b). Gabriel B. Fosu's work in rural Ghana reveals that the rural Ghanaian population classifies illnesses into three main types: those caused by natural agents, those caused by supernatural agents, and those caused by a combination of both natural and supernatural factors (Fosu 1981).

In Bangladesh, Begum (2012) identifies four healthcare systems in her ethnographic study on women's reproductive health. These include biomedicine, homeopathy, *kabiraji* (Ayurveda), and folk treatments. Additionally, she explores four categories of illnesses- *osukh*, *dushi*, *jadu*, and *gojob*- based on the cultural knowledge of the studied community. Mahmuda Islam (1980) examines folk medicine and rural women in Bangladesh, identifying two types of medicine: indigenous or traditional medicine and modern medicine. She identifies numerous traditional medical specialists in villages, including

religious exorcists, snake charmers, faith healers, *kabiraj*, *dias*, and others. The practitioners employ a combination of Ayurvedic, Unani, and religio-magical systems in their treatments.

In this section, I illustrate that the people of the Mahanta community have their own explanations about illnesses and their explanations, which, in turn, shape their illnesses categorization and healthcare systems and how it is intertwined with their bat hunting practice. The Mahanta people categorize illnesses mainly into two types: '*daktari osuk*' and '*kobiraji osuk*'. According to their categorization, they seek treatme typesnts or follow medical systems. First, I explore *kobiraji* health care or treatment system of the Mahanta. The *kabiraji* health care system of the Mahanta is two types, and accordingly, *kabiraj* are also two types. The Mahanta divide the *kabiraj* into two categories: '*dosher kabiraj'* and '*gasra kabiraj'*. The Mahanta people follow a personalistic etiological explanation, which sees a disease as an outcome of the attack of external forces or agents. When they attack external forces referred to by them as 'dosh', they seek *kobiraji* treatment. Here, the Mahanta refer to spiritual healer as *dosher kabiraj.* This notion of the Mahanta is similar with Kleinman's (1978) folk medicine and Dunn's (1976) local sector of the medical system. There was a similarity with the above example of Poresh (a Nipah-like patient)'s health seeking (discussed in section 8.2.2.1). The family members of him thought that he had had a gosht, and they engaged *a kabiraj for* leaving out the gosht from his body. It is also similar to Begum's (2012) folk healers.

Another example is the use of bat's limbs for treatment purposes. Though many societies in the world, bat's limbs are used as ornament decoration, such as the teeth of bats are used for necklaces (James, et al. 2014) at the island of Makira of the Solomon Islands; however, the Mahanta people use bat's limbs as *kobiraji* treatment purpose. The Mahanta people use bat's tinny borne for treating night fever. They believe that ghosts are being moved at the night of *Amavasya* and may attack any human in front of it. They also believe that that night, by avoiding the gosht, any hunter hunts bat and collects bat's tinny borne from the bat at the hunting ground. This tinny can be used on the wrist or upper arm with tinny rope to cure night fever.

I also explore *gasra kabiraji* treatment among the Mahanta. Though I find two *dosher kabiraj,* there is no *gasra kabiraj* particularly among the Mahanta. They refer to the healing with plants or parts of the tree as *gasra kabiraji* treatment. In addition, in some facts, there has been used plant with animal products or only animal products. The Mahanta people also refer to it as '*gasra kabiraji'* treatment. I particularly explore bat's products for '*gasra kabiraji'* treatments. The Mahanta use the pest on the skin, made by the combination of the leaf of *Neem* (Indian lilac) tree with bat's fats for treating allergic inflammation. I have also discussed (in section 8.3.2) that the Mahanta community employs bat meat to alleviate the symptoms of *Shasher Rog*, *betha,* and heart disease.

Another broader category of illnesses among the Mahanta is '*daktari osuk*', that is explains a naturalistic view of the illness. There are some real reasons behind the sufferings that

define ‘illness in impersonal’, and ‘systematic terms’. The disease is thought to stem not from the machinations of an angry being, but rather from such natural forces or conditions as cold, heat, winds, dampness, and above all, by an upset in the balance of the basic body elements” (Foster 1998). The Mahanta seek treatment for the ‘*daktari osuk*’ through two treatment systems: one is biomedicine and another is homeopathy. The Mahanta people refer to biomedicine as ‘allopathy’. They also refer biomedical treatment as ‘allopathic treatment’ and treatment through homeopathy as ‘homeopathic treatment’. In the ‘*daktari osuk*’, the Mahanta community has bifurcated illnesses into two categories - normal and complicated. They consider general colds, coughs, sneezes, and diarrhea as normal illnesses; and seek treatment from *osuder dokan* (local medicine shops) in Kanaipur Bazaar. The medicine sellers provide treatment, and they are non-professional, treated only by their experience of selling medicines. In addition, the Mahanta community also relies on homeopathic treatment for certain ailments like goiter, which is a slow-acting remedy. These types of normal illnesses are treated by both allopathy and homeopathy.

On the other hand, when they suffer with complicated illness, they call it ‘*boro osuk’*, just like stroke. They go to a professional allopathic doctor when they suffer from ‘*boro osuk’*. Such as they go to the Faridpur Medical College Hospital (FMCH) or the district government hospital Faridpur. Like other government Medical College Hospitals in Bangladesh, the treatment at the FMCH is free and/ or low cost (Islam and Jabbar 2008).

It is mentionable here that people choose healthcare options based on the likelihood of cure, the costs associated with each alternative, the severity of illness, and the availability of resources for treatment within the household (Young and Garro 1981). Young and Garro also examine that even though people would prefer first to choose the highest likelihood of cure but economic limitations constrain their choices in favor of the lowest estimated cost, and approximating a cost-ordered sequence (1981). People cannot afford "modern" medical treatment due to their inability to bear the costs to access these services (Young and Garro 1981). I find many Mahanta change their decision of health seeking or medical treatment due to their inability to bear the costs to access these services. For example, Shewly, a 25-years old Mahanta woman lives with her day laborer husband and a 6-years old daughter, said,

"When we suffer from complicated illness (*boro osuk),* we go to Faridpur medical College Hospital. For example, I took my daughter to Faridpur to treat her ear's problem, it is inexpensive as it is a government hospital, but I had to return".

The doctor of the FMCH suggested to Shewly's daughter to d osurgery on her ear. The cost was much higher than other type of treatment that she could not afford. So, Shewly decided to start treatment of her daughter with a homeopathy doctor. The homeopathy treatment is less expensive to the allopathic, but the homeopathy treatment works slowly. In addition, she also said, "The ear pain is intolerable, the homeopathic medicine works slowly, it needs cure faster, we are poor, we couldn't." In addition, I observe the notion of medical pluralism (Dunn 1976a; Janzen 1978b; Kleinman 1978; Leslie 1998) among the Mahanta.

I explore *kobiraji,* including *dosher kabiraj,'* '*gasra kabiraj'*, and *daktari*' including biomedicine and homeopathy health care systems. These systems are developed over time through cultural immersion as well as the costs associated with each alternative treatment system, the severity of illness, and the availability of resources for treatment within the household. In the ensuing section, I shall expound upon the Mahanta's pursuit of bat hunting, delving into its economic and sociocultural ramifications through a comparative lens.

8.5 Bat Hunting as an interplay among the Mahanta: Economic vs Socio-cultural perspectives

The practice of bat hunting among the Mahanta community is related to the various factors of their everyday life. I have explored in this section how the Mahanta people are related to the bat hunting. I argue that the bat hunting is related to their economic as well as their socio-cultural life.

The economic perspective has focused on the financial benefits of bat hunting. The Mahanta hunters do not hunt bats for a year-round. It occurs parallel to the seasonal unavailability of regular earning sources though the months of *Agrahan, Push* and *Magh.* All of the Mahanta households are not involved in bat hunting. Though the Mahanta classify their household statuses into four categories based on social status: *Dhoni, Moddhobittoa, Gorib*, and *Khub Gorib*, but only the members of the *Gorib*, and *Khub Gorib* households hunt bats. The hunters from the *Gorib*, and *Khub Gorib* households hunt bats in order to secure a source of income, particularly in instances where alternative

earning opportunities are scarce by selling bat's meat. Besides, they consume bat's meat for their protein, as they cannot find alternative meat due to higher costs. On the other hand, even the other members of the Mahanta community from the *Dhoni* and *Moddhobittoa* households typically act as consumers of the bat meat. The Mahanta hunters sell bat meat to the *Dhoni* and *Moddhobittoa* households in their community. Actually, the Mahanta are financially poor. So, they can able the lower cost protein source, 'bat meat'.

Bat hunting is not only related to their economic issues but also their sociocultural practices. Though they started exclusively hunting of bats for earning sources from three to four decades ago, but their ancestors practiced bat hunting with other animals, as once they were hunter. Now, I will discuss how the bat hunting is related to their socio-cultural practices.

The socio-cultural perspective has explored the traditional beliefs and rituals that underpin the practice of bat hunting. For example, the Mahanta hunters refrain from pursuing bats on certain days, in accordance with their religious and cultural convictions, namely Sunday and Thursday, as the days of reverence for their religious *guru*, *Provu* Jagatbundhu did not partake of meat, fish, onions, or garlic. So, the Mahanta hunters do not hunt bats these days. In addition, belief in ghosts is prevalent cross-culturally, and the Mahanta people are not out of this notion. They also believe that gosht is moving in the night of *Amaborsha,* and even on Sundays and Tuesdays. As the bat hunting is performed at night, they usually do not go to hunt bats on the days.

I have also explored some activities of bat hunting among the Mahanta that illustrate functional views of this society, such as division of labour, and gender roles. The Mahanta men conduct hunting events and the decision-making process of hunting, but women of the community are engaged in preparing meat for cooking, and even in the consumption of meat, gender plays a significant role. For example, the parts of meat that consist of the rich food value are given to male children. Conversely, the pieces of lower food-valued meat is given to female children or women. These indicate the division of labor that is influenced by the societal gender roles, as well as the presence of gender inequality in the Mahanta community.

While it is true that the Mahanta community may experience conflicts in certain matters or activities, there exist several undertakings that foster solidarity within the society. Bat hunting increases the social coherent by distributing and sharing of bat-meat among the community and financial assistance to hunter's family by other households. These issues indicate the socio-cultural aspects of bat hunting in the Mahanta community.

In addition, bat hunting is related to the health-seeking behavior of the Mahanta community, such as the use of bat meat and its limbs for medicinal purposes, which is a preview of the cultural norms of health-seeking in their society.

Overall, the discussion likely sought to highlight the complex interplay between economic and socio-cultural factors in shaping the practice of bat hunting among the Mahanta and the need to consider both perspectives in any efforts to address the issue.

8.6 Conclusion

The current chapter expounds upon the perils of unbridled bat hunting amongst the Mahanta community, highlighting the inherent health hazards and bat-borne diseases that are likely to ensue. Both the biomedical and local perspectives on illness and healing are explicated, with particular emphasis on the impact of bat hunting on human health. Furthermore, this chapter delves into the intricacies of health-seeking behaviors, exploring the prevalent use of bat meat and limbs in traditional medicinal practices.

This chapter also expounds upon the practice of slaughtering bats at one's abode, which not only exposes hunters and family members to raw bat meat but also jeopardizes the surrounding fauna and flora due to of inadequate disposal of the bat carcasses. Such practices entail the potential transmission of bat-borne diseases to both humans and animals alike. The next chapter presents a conclusion summary of my dissertation and future direction.

Chapter Nine

9. Conclusions and Future Directions of My Dissertation

The main aim of my dissertation, entitled 'Bat hunting and illnesses: A case of Mahanta community in Bangladesh', was to understand the different aspects of bat hunting practices in Bangladesh. Based on this aim, I explored a few issues: firstly, the beliefs of the Mahanta community about bat-human relationships and religious and cultural beliefs in different phases of bat hunting. It intends to explore the symbolic meanings of rituals associated with bat hunting. Secondly, to explore the community's understanding of the etiological explanation of illnesses, and thirdly, to understand whether bat hunting functions in the society as an economic process or an ancestral practice.

I collected data from primary and secondary sources to find out the three queries mentioned above. As a part of the primary source, I conducted a field study through my residence in the community for one year, applying traditional anthropological/ethnographic method i.e., participant observation along with other techniques. By the ethnographic method, I tried to explore the behavior and views of the Mahanta people from their own perspectives on their bat hunting and illnesses. I also collected data from secondary sources. In this regard, I have done considerable library work to analyze books, journals, and articles for a basic idea about my dissertation topic and data, which have been incorporated into the thesis.

In addition, along with participant observation, I used a few techniques for primary data collection. I conducted a household survey with a structured questionnaire that is not a widely used method in anthropology. I only used this method as there was no well-documented data for this community characteristic, including age, sex, family structure, religion, occupation, household income, education and ownership of assets, and bat hunter or eater that helped me to get an overall idea including their socioeconomic backgrounds regarding this community. After getting this idea, I used anthropological methods with participant observation. Among the Mahanta people, I meticulously handpicked four key informants who were bat hunter experience extensively and actively involved in bat hunting to inquire about the factors that influenced their decision to hunt bats, as well as their bat hunting plans, including the timing of hunting - whether it was during a particular season, day or night, the hunting equipment/weapons they used, and the process of handling the hunted bats or their meat, the availability of bats during different seasons and the occurrence of accidents, such as being bitten by bats or any other illness resulting from hunting, to explore their beliefs on bats as an animal and their perspectives on the potential illness that could arise from bat hunting and bat meat consumption; senior people who had a profound understanding of the village's history, occupation, marriage system, land pattern, and cultural beliefs; and ritual specialist who was also involved in the community's healing practices, to delve into the religious beliefs, ritual practices, and health-seeking behaviors of the Mahanta community people. I selected twenty persons, including eight males and twelve females, from the community for unstructured in-depth interviews to understand various experiences and perceptions on bat, and bat hunting, the use of bats,

and illness perspectives from bats to humans. I also did the arduous task of delving into the intricacies of two fatal cases linked with bat hunting. The first case entailed Nipah-like syndromes, while the second case involved a tragic fall from a tree during a bat-hunting expedition. In order to fully comprehend the underlying reasons for these unfortunate deaths, I meticulously gathered data from the bereaved family members. In addition, I conducted another case study on a complicated illness according to the Mahanta community people and its health-seeking behaviors. Furthermore, I directly observed two bat-hunting events at the hunting spots to understand the bat catching-process, types of contact with bats, difficulties of bat hunting, and so on.

The Mahanta hunters hunt bats for protein sources and medicinal purposes and to earn money by selling bats' meat and its limbs. By my first query, I explore the beliefs of the Mahanta community, where they refer to 'bat' as a 'beneficial bird'; their religious and cultural beliefs in different phases of bat hunting and relevance of these, they perform three types of rituals- curative, preventive and initiation, and the meaning of these rituals are symbolized to them as sanctified, sacred their hunting apparatuses and good luck in initiation that bring success in hunting. Even bat hunting is related to rites of passage, whereby bat hunting is their liminal phase of the life cycle. In addition, I explore a few functional views, including social solidarity in the distribution and sharing of bat-meat, and division of labour and gender roles, in planning, decision-making, preparation and packed-up hunting apparatuses, butchering, cooking, and consumption where expedition functions exclusively as male-dominated.

In my second inquiry, I have explored that the people of the Mahanta community have their own etiological explanations of illnesses and their explanations, which, in turn, shape their illnesses categorization and healthcare systems. The Mahanta people categorize illnesses mainly into two: '*daktari osuk*' and '*kobiraji osuk*'. In their etiological explanations, I have found no relationships between illnesses and bat hunting. In stark contrast, they harness the powers residing within bat meat and appendages to address diverse ailments, ranging from asthma and cardiac afflictions to calcium deficiencies and nocturnal fevers, even imbuing them with the potential to enhance sexual vitality.

In my third inquiry, I delve into bat hunting within the Mahanta society, discovering it to be an economic endeavor born out of the seasonal dearth of conventional sources of income. While the Mahanta community began engaging in the exclusive pursuit of bat hunting roughly three to four decades ago, there exists a historical context connecting the Mahanta people to this practice, as their forefathers employed bat hunting along with other forms of animal capture to sustain their livelihoods in bygone eras.

In conclusion, bat hunting is relevant not only to the economic aspect of the Mahanta's lives but also to their socio-cultural fabrics. This dissertation explores how the economic vulnerability of the Mahanta people, along with their cultural practices, impacts their engagement in bat hunting, shapes their perceptions of illnesses connected to this activity, and influences their behaviors related to seeking healthcare.

Now, I will discuss the future directions of my dissertation, which are the potential paths or areas that scholars, researchers, or scientists may pursue in their studies or researches. It involves identifying and outlining new avenues, topics, or questions that have yet to be extensively explored or answered. Future research directions often arise from gaps in current knowledge or emerging trends and advancements in a particular field, and they serve as a guide for future investigations and scientific progress.

This research indicates a few issues for future expeditions of this community or similar hunting communities, such as:

a) Gender division of labor: The understanding of the 'gender division of labor' in a society allows us to gain insights into the roles, responsibilities, and tasks that are traditionally assigned to different genders within that particular social context. By studying the gender division of labor, we can examine the patterns and dynamics of how work and tasks are allocated based on gender norms, expectations, and cultural practices.

Knowing the gender division of labor helps to shed light on various aspects of a society, including social structures, power dynamics, and the distribution of resources and opportunities. It provides an understanding of how different genders contribute to and participate in economic, productive, and domestic activities. This knowledge is crucial for examining inequalities and disparities between genders regarding access to education, employment opportunities, decision-making power, and overall societal well-being.

In addition, understanding the gender division of labor can also inform discussions on gender roles, gender stereotypes, and the impact of societal norms on individuals and communities. It allows for critical analysis and identifying potential areas for gender equality advocacy, policy interventions, and social change efforts.

Thus, studying the gender division of labor may provide valuable insights into a society's social, economic, and cultural dynamics, enabling us to address gender inequalities and work towards a more equitable and inclusive future.

b) Relationship of the minority community people with the people of mainstream society: The relationship between minority and mainstream societies often reflects power imbalances, discrimination, and social injustices. Understanding this relationship allows us to identify and address systemic barriers, prejudices, and inequalities that marginalized communities may face. It provides insights into the experiences of individuals from minority backgrounds, aiding efforts to promote equality, social justice, and human rights for all.

Understanding the relationship between minority and mainstream societies also informs the development of effective policies and initiatives to address social issues and promote inclusivity. It helps policymakers, activists, and advocates to design targeted interventions, legislation, and programs that support the needs and rights of marginalized communities.

In addition, knowledge of the relationship between minority and mainstream societies facilitates cultural exchange and integration. By understanding the customs, traditions, and values of minority groups, mainstream society can foster mutual respect, appreciation, and dialogue. This understanding may promote cultural diversity, intercultural understanding, and the creation of inclusive spaces where all individuals can thrive.

It also examines the relationship between minority and mainstream societies that contributes to social progress and collective learning. It challenges stereotypes, biases, and misconceptions, fostering empathy, empathy, and a broader understanding of different perspectives. This knowledge may aid in dismantling prejudice, promoting intergroup relations, and creating a more inclusive society for everyone.

Thus, understanding the relationship between people from minority and mainstream societies may be crucial for promoting social cohesion, equality, justice, policy development, cultural exchange, and social progress. It may help us build inclusive communities where individuals from all backgrounds can live, work, and thrive together.

c) Changing occupation patterns: Exploring changing occupation patterns helps identify the economic opportunities and challenges faced by individuals from the hunting community minority societies like the hunting community. It provides insights into their employment prospects, income levels, and access to resources. Changing occupation patterns can also reveal employment discrimination or unequal access to certain

professions or industries. It may allow for the identification of barriers that prevent individuals from minority societies from entering or advancing in certain occupations.

In addition, understanding changing occupation patterns may allow for an examination of whether individuals from minority backgrounds have the opportunity to advance within their chosen professions or access higher-paying occupations.

Thus, understanding the changing occupation patterns of people from minority societies may be crucial for promoting economic empowerment, addressing employment discrimination, assessing social mobility, guiding skill development, and informing policy formulation. It also may contribute to creating inclusive societies where individuals from all backgrounds have equal opportunities to succeed and thrive in the workforce.

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