



Urban Socio-Economic and Vulnerability Study of Gazipur City Corporation



Women participate in a mobility mapping exercise, so CARE can better understand restrictions on their mobility both within and beyond their immediate communities.

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ACRONYMS

<i>ADPC</i>	<i>Asian Disaster Preparedness Center</i>
<i>BBS</i>	<i>Bangladesh Bureau of Statistics</i>
<i>CDMP</i>	<i>Comprehensive Disaster Management Program (Phase II)</i>
<i>CUS</i>	<i>Center for Urban Studies (Bangladesh)</i>
<i>DFID</i>	<i>Department for International Development (UK)</i>
<i>DRR</i>	<i>Disaster Risk Reduction</i>
<i>GCC</i>	<i>Gazipur City Corporation</i>
<i>GDP</i>	<i>Gross Domestic Product</i>
<i>ICDDR,B</i>	<i>International Centre for Diarrheal Disease Research in Bangladesh</i>
<i>LGED</i>	<i>Local Government Engineering Department</i>
<i>MDG</i>	<i>Millennium Development Goals</i>
<i>NGO</i>	<i>Non-Governmental Organization</i>
<i>SEBA</i>	<i>Services for Empowering the Backward Areas (Bangladesh NGO)</i>
<i>SALT</i>	<i>Social Analysis Learning Team (CARE)</i>
<i>UNDESA</i>	<i>United Nations Department of Economic and Social Affairs</i>
<i>UNICEF</i>	<i>United Nations Children's Fund</i>
<i>UPPR</i>	<i>Urban Partnership Renewal Program</i>
<i>USAID</i>	<i>United States Agency for International Development</i>

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EXECUTIVE SUMMARY

Between March 2014 and June 2014, CARE Bangladesh undertook a qualitative study to understand the risks and vulnerabilities for residents of two unplanned settlements or slums¹ within the newly formed Gazipur City Corporation. The exercise mapped risks, identified areas of vulnerability, and worked to understand mechanisms being used by communities to cope with adverse events. A survey was also designed for the two studied communities, identifying service shortfalls that reduced resilience to cope with both seasonal and unexpected manmade and natural disasters.

The study was undertaken in two locations that varied widely in terms of size, resident composition and services. The first location surveyed was the Tongi Medical Slum (referred to as the **Tongi slum**) located on government land. Tongi slum houses over **2,000 residents** at constant risk of eviction. The second study site was within Konabari (known locally as Poshim Baimail Purkur Par and referred to as **Konabari slum**). This slum was built on private land holdings and is home to over **20,000 residents**.

To ensure an accurate picture of these two very different communities, CARE developed a comprehensive survey that encompassed direct data collection from residents, as well as structured interviews with key stakeholders. The survey utilized modified participatory rural appraisal tools designed to elicit information in a range of ways directly from the stakeholders living in these two communities. CARE's assessment team also conducted a number of key informant interviews with civil society actors and government officials, including members of the Gazipur City Corporation and the fire service. The data and interviews generated during this process were further supplemented by an extensive literature review of over 60 publications.

Through this comprehensive survey process CARE could accurately map the strengths and vulnerabilities of the two communities and understand both the social and economic situations of the poor and extreme poor populations living within these two slums. Broadly, the key vulnerabilities of these two communities can be summarized as:

- An absence of sanitation infrastructure and services resulting in the poor disposal of household and industrial waste and the regular inundation of properties with toxic water.
- Increased fire risks due to poor wiring and the buildup of rubbish in walkways. Most residents lack basic fire safety knowledge and are not serviced by a reliable fire service.
- Pervasive social concerns, including gender-based violence, increased drug consumption and high indebtedness to cover gambling debts.

The survey also revealed that mandated government agencies within the newly formed Gazipur City Corporation lack development plans and the will to provide services to these vulnerable communities, and need substantial support to become active change agents for the communities they serve.

In the subsequent pages of this report information is given on Bangladesh, including the social and economic picture of the two studied communities. Data is also provided on the civil and political structures covering the two settlements and the scope of services being provided. A detailed profile of both the Tongi and Konabari slum settlements is included, incorporating information on housing and employment as well as key points of vulnerability for the men, women and children residing in Tongi and Konabari.

Lastly the report details a range of recommendations that address the many social and economic

¹ Characteristics of slum communities are defined in Text Box 1.

problems being faced in these two communities. These recommendations are specifically designed to mitigate risk and raise the resilience of the two communities to cope with seasonal and unanticipated events, including fires and floods. The recommendations are intended to impact at household, community and government levels to optimize the resilience of poor and extreme poor communities to cope with disasters. They also include specific recommendations to address gender empowerment concerns and identify areas for advocacy.

These substantial recommendations can best be summarized into the following four areas:

1. Support government agencies and community platforms to jointly undertake risk assessments that subsequently inform the development of *risk reduction action plans at household, community and ward² levels*. These plans would guide the process of service delivery and address the ongoing shortfalls in sanitation, water and electricity being experienced by the residents of Tongi and Konabari.
2. *Empower women to be active and informed community members* able to influence policy makers and confident to plan for and mitigate the impact of natural and manmade disasters. This recommendation includes providing women with support structures, information sharing services and networks able to directly link women to key service providers.
3. Build a cadre of *volunteers (women, children and men) able to deliver disaster risk reduction messaging to the broader community*. These trained community members will be tasked with leading disaster response initiatives, as well as helping the community prepare for and mitigate the impact of disaster events.
4. *Build the capacity of government agencies* (City Corporation, Fire Service and Civil Defense) *and private sector* (e.g. garment industry, construction sector) to undertake risk reduction approach.

A. INTRODUCTION

Bangladesh has an estimated population in excess of 154 million people, of which 40 million ³reside in urban centers. By 2060, when the total population of the country is expected to stabilize at 230 million, more than 70 percent of the population will be urban-based.⁴ Currently, it is estimated that 43% of urban dwellers are poor and 23% extremely poor.⁵ And, according to UNDESA (2013), 42% of the population is below 19 years old, and have yet to fully enter the labor market. Most government safety net programs within the country are rural-based, and do not cover these poor and extreme poor urban-based households.⁶

Bangladesh is vulnerable to both natural and manmade hazards. As a low-lying country with multiple large river tributaries and a large coastline it is particularly vulnerable to slow onset hazards including sea level rise and global temperature rises. It is also susceptible to rapid onset events, including flooding, heat waves and large coastal storms. The country sits within a

² Ward: A ward is a subdivision of a local authority ("Union" in rural area and "Municipality/City Corporation" in urban area), typically used for electoral purposes.

³By 2015, Habitat for Humanity estimates 50-65 million people will be living in an urban setting in Bangladesh. The UN estimates 21.3% of the population is currently urban-based.

⁴ Paper titled "Overview of Urbanization in Bangladesh" presented by Professor Nazrul Islam, Chairman, Centre for Urban Studies (CUS) Dhaka at a national workshop on 01 September 2013

⁵ At the Urban Dialogue Conference organized by Habitat for Humanity (1 September 2013), it was estimated that eight million people live in urban slums.

⁶ DFID presentation by N. Chowdhury, September 2, 2013

number of fault zones and is at risk of earthquakes and the associated liquefaction⁷ of its alluvial soils. In terms of manmade hazards, many communities experience annual water-logging due to insufficient drainage, fires, building collapses, and increasing pollution from the discharge of untreated human and industrial waste.

Over the past twenty years, Bangladesh has made substantial inroads in addressing many of the concerns highlighted in the Millennium Development Goals. Since 1990, maternal mortality has dropped from 800 per 100,000 live births to 240 deaths per 100,000 live births in 2010. Likewise, the rate for children severely underweight has almost halved to 36.4% of the population in that cohort. Despite these tremendous achievements, 43.3% of the population continues to live on less than US\$1 per day⁸, as many of the underlying root causes of poverty are inadequately addressed by existing development programs.

Characteristics of a slum settlement

Slum & Floating Population Census Bangladesh Bureau of Statistics (2014)

- Shelter is constructed from flimsy materials including tin, reeds and cardboard
- Dense population with over 30 houses per decimal of land
- No ownership of land
- Minimal water supply and access to sanitation
- Lack of roads or public lighting

Within Dhaka megacity there are three City Corporations that administer the city.⁹ Gazipur City Corporation is the newest, and was incorporated in June 2013. This City Corporation covers 57 wards populated by over 3.5 million people¹⁰, and has an annual growth rate of 5.21%¹¹. The Gazipur City Corporation is composed of parts of the old Gazipur Sadar (district) along with former Tongi municipality.

Institutional capacity and limitations

Within Bangladesh, there are 11 key legal and policy frameworks¹² covering a range of issues including urban planning, population, agriculture, construction and industry.¹³ Additionally, across the country there are 260 physical development plans for towns and urban areas.

Bangladesh is also one of 168 signatory countries to the Hyogo Framework for action that was developed in January 2005 as a global guiding framework to reduce disaster risk. The current framework covers a ten-year window from 2005-2015. Bangladesh submitted its last national progress report 30 April 2013, updating its progress on key benchmarks related to disaster preparedness and response, as well as mitigation strategies.

⁷ Liquefaction: A process by which water-saturated sediment temporarily loses strength and acts as a fluid. This effect can be caused by the shaking during an earthquake.

⁸ The Local Government Engineering Department 2011 urban poverty development plan estimates 31.5% of urban dwellers are living on less than US\$2 per day.

⁹ Dhaka South City Corporation has 130 slums with 39,184 households. Dhaka North City Corporation has 290 slums with 50,106 households. It is estimated each household is composed of 10 members. Figures drawn from Slum and Floating Population Census of 2014.

¹⁰ Bangladesh Bureau of Statistics, March 2011 census and PSE Fact Sheet 2011.

¹¹ Ibid. DFID estimates 35% of the urban population lives in slums and these slums have annual growth rates of 5% per year.

¹² The two most key for this study are the Standing Order on City Corporations and National Plan of Disaster Management (2010-2015).

¹³ Perspective Plan: Strategic Plan 2010-2021; 6th Five Year Plan: Urban Growth and Poverty Reduction (2011-2015); National Urban Policy (draft); National Housing Policy (1993); Population Policy (2004); Agriculture Policy (2004); Industrial Policy (2005); National Plan for Disaster Management (2008-2015); Bangladesh Urban Management Policy (1999); Local Government Act (2009); Building Construction Act (1952, revised 2008).

While substantial work has been done in-country on creating the legal and policy frameworks – and many community works are budgeted – implementation remains problematic. Specifically, problems remain on filtering the legal framework down to local government structures to ensure these governance mechanisms have the mandate to address DRR issues at the community level.

Shortfalls also exist in Bangladesh on the provision of safe water and land to impoverished communities, and on the inclusion of risk-sensitive regulations in land zoning. This zoning is particularly key as many of the slums in Gazipur are located on both public and private land not designated for low-cost housing, thus lacking adequate water and sanitation infrastructure.

Within CARE, concern remains that ***many of the mechanisms being focused on by the government exclude the vulnerable populations living in slums.*** Residents of slum or informal settlement communities are rarely included in disaster risk reduction planning platforms; their communities are not formally recognized. For example, safety net programs do not target urban slum-based populations that often live on low-lying land prone to flood and water-logging.

B. STUDY APPROACH

a) *Objectives*

The overall objective of this study was to understand the socio-economic vulnerabilities within the marginalized Gazipur communities of Tongi and Konabari. By assessing these vulnerabilities through an urban-industrial context, CARE intends to use the information gleaned to design programs with greater impact that build community resilience.

b) *Tool overview*

The study utilized a range of modified participatory rural appraisal tools (See Text Box 2) to collect data from both primary and secondary sources, including beneficiaries residing within the Tongi and Konabari slums.

The survey team also conducted a range of key informant interviews with formal and informal structures including civil society groups and government departments operating within the Gazipur City Corporation.

CARE mapped the application of these assessment tools in advance ¹⁴ to ensure the information generated could be triangulated through various sources and used to build on initial findings identified in the early days of the survey. For example, the social resource map was developed in the first two days of the survey, allowing the team to identify key infrastructures, the housing pool, places of employment and access points for gas, water and sanitation. The mapping process also helped identify key civil society actors providing basic services in the community, and gave an initial picture of the power dynamics within the two slums. The information generated in this social mapping exercise also helped identify hidden pockets of poverty and assisted the team in determining the best locations to speak with key informants. Other survey tools then built on these initial observations to identify key findings.

¹⁴ See list of key informant interviews in Annex D and survey timeline in Annex E.

- c) *Capturing community input*
 Within both Konabari and Tongi, data collection schedules varied. Overall, the data collectors found the collection of information most effective in the morning between the hours of 8am and 11am. Fridays were particular effective for capturing a wider audience. In Tongi, data collection was also very reliable in the afternoons after 3:30pm. The team also found it helpful to speak with residents working in the nearby factories after 5pm, during a shift change.

(Interestingly, in Konabari, men provided more detailed information; conversely, in Tongi, women were better sources of information. CARE believes this is related to migration trends. In Konabari, women have jobs outside their homes, making it difficult to connect with them in a deep way during the day. In Tongi, most women are at home and have lived in the slum longer than those in Konabari.)

The vulnerability and risk assessment tools were particularly effective in talking with women in the Tongi slum. Sensitive issues related to drugs, violence, abuse and gambling were discussed separately with both men and women. Women were seen as more reliable in terms of understanding the impact of domestic violence and abuse on particularly vulnerable households. Specific information related to polygamy, child-headed households and female-headed households was gleaned during focus group discussions with women. The

Short descriptions of the PRA tools used in this study

Community resource map: A method of showing information regarding the occurrence, distribution, access to and use of resources; topography; human settlements; and activities of a community from the perspective of community members. Enabling people to picture resources and features and to show graphically the significance attached to them.

Wealth ranking: Involves the ranking of diverse groups of communities according to locally-developed criteria of wellbeing. Performing such exercises for communities illustrates the significance of factors and assets which affect poverty at the community, group or household level.

Time Line: Good for identifying trends and changes over time to identify important events, occurrences, services and risks over time.

Risk mapping: Good for understanding the vulnerability context, delineating perceptions of risk at different levels and examining the multiple risk and vulnerabilities (the most vulnerable will experience multiple risks) and concomitant vulnerabilities as a result of a policy change; Risk mapping helps to identify the covariance of risk and the coincidence of (multiple) vulnerabilities that impact most severely on the poorest.

Institutional mapping/Venn: A visual method of identifying and representing perceptions of key institutions (formal and informal) and individuals inside and outside a community and their relationships and diagramming importance. Enables understanding of how different community members perceive institutions both within the community (in terms of decision-making, accessibility and services) and outside the community (in terms of participation, accessibility and services).

Mobility mapping: A visual representation of people's movements within and outside their community. Identifying issues and problems related to socially differentiated mobility and access to resources (e.g. land, water, health and education services, information, capital, decision making). Socially differentiated mobility within and outside a community can indicate differing levels of freedom, wealth, empowerment, and rights. Consequences of socially differentiated mobility for different social groups, their households and livelihoods.

Observation: Direct observation is a method of gathering data, documenting and understanding through observing people, physical objects, events, processes, behaviors, actions, and interactions. Participant observation involves observation as an accepted member of the community being studied.

Focus group discussion: Focus group discussions are organized with specific goals, structures, time frames, and procedures by homogenous groups of people on a subject of interest.

Force-field analysis: Force-field analysis is an illustrative method that presents an overview of key stakeholders' analysis support and opposition to particular reforms. It provides an overview of the pressures for and against change.

Seasonal calendar: A visual method of showing the distribution of seasonally varying phenomena (such as political activities, resource availability, production and exchange activities, problems, illness/disease, migration, natural events/phenomena, and climate) over time.

discussions with men were helpful in understanding drug usage rates and the prevalence and impact of gambling on the community. These closed forums also provided information on decision-making structures and behaviors within households and the broader community.

d) *Site selection*

Informal settlements within the Gazipur City Corporation vary substantially. A number of slums are housed on private land, while others are located on state-owned land (known as khasland). To ensure CARE obtained a broad understanding of the two types of slums, the study was undertaken in two different slum communities.

Tongi slum, located on khasland, is a smaller, older settlement with a largely homogenous population at constant risk of eviction. Konabari slum, built on private land, is a much larger, fragmented community housing residents from across the country with few kinship ties. In looking at these two different communities, CARE hoped to understand their shared vulnerabilities and risks, as well as identify community-specific concerns and associated coping mechanisms.

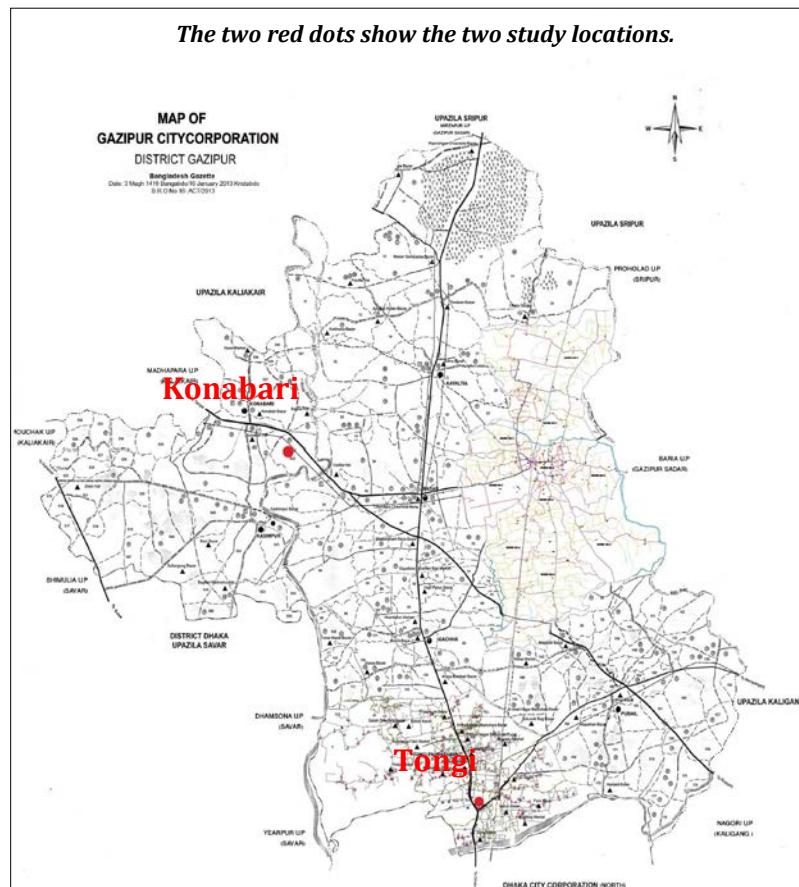
e) *Data collectors*

Sixty percent of the data collectors were drawn from within CARE's Social Analysis Learning

Team (SALT), with four additional external data collectors and a translator recruited specifically for the study. Six men and three women comprised the assessment team. CARE's Action Research Coordinator oversaw the development of the tools and provided daily mentorship and guidance to the nine data collectors.

All team members underwent a two-day orientation to review the tools, and discuss approaches for maximizing data collection. Issues of gender and safety were also reviewed. Additionally, the team trained on specific techniques for interviewing children.

During the data collection phase, the male team members divided into two assessment groups. One group of men went to Konabari slum and other group went to Tongi slum to focus on a specific community, build a more in-depth understanding of the issues and build



trust with each community. As the survey team only had three female members, these three women covered both Tongi and Konabari. Each evening all nine assessment team members met to discuss their observations and share findings.

During the data collection phase, CARE staff – along with an external consultant – provided in-person support to the data collectors to review initial findings, adjust data collection approaches and, where needed, refine collection tools. This approach of daily consultation ensured that as issues arose, they were quickly addressed. This also allowed for additional data to be collected on unexpected issues that were raised by the community. For example, within the first day, community members indicated they were burning polystyrene packing sheets for mosquito control. The team then adjusted its data collection tools to further explore this issue and the impact of this practice on the health of residents.

f) *Secondary data sources*

A range of secondary data sources was also reviewed. Over 60 publications were sourced, covering disaster risk reduction and other sector issues. Additionally, a number of key informant interviews were conducted with both civil society and public actors, including staff from the newly formed Gazipur City Corporation. **Annex C** includes a comprehensive list of the literature reviewed, and **Annex D** includes a list of all key informant interviews.

g) *Strengths of the approach*

The use of multiple tools allowed for the survey team to verify issues of community concern from multiple sources. The approach ensured that an accurate and community-specific picture was created of vulnerabilities and coping strategies. It also ensured that an accurate picture was generated of the type of services (or lack thereof) provided by formal institutions and community associations. Using multiple tools to solicit information ensured findings were verified and cross-checked.

h) *Limitations of the approach*

Within both communities, the time for data collection on so many issues was limited, and often the team used multiple tools concurrently to solicit input from stakeholders on a variety of issues. While community members appreciated being consulted, they were time-poor and reluctant to meet with the research team for interview sessions that required substantial time commitments.

Notably, the study was conducted in only two localities of the vast Gazipur City Corporation. There might be some common characteristics with other localities, but there are some distinct features as well which require further investigation. There were also scarcity of secondary literature and administrative information on Gazipur City Corporation.

Strengths and limitations of the study approach, and mitigation strategies

In the table below, the strengths and limitations of the tools are outlined along with the mitigating strategies the team used to offset challenges.

Study Tool	Strengths	Limitations	Mitigation Strategies
Social and Resource Map	<p>Provided:</p> <ul style="list-style-type: none"> Overall map of the layout of the slums. Types of housing and role of landlords. Gas, water, electricity and sanitation services. Employment opportunities. Key social and community services provided by formal and informal institutions. Initial information on the role of middlemen in service delivery. Types of social groups and their roles. Key risks for both the individuals and the communities themselves, including: pollution, water-logging and unsafe zones for women and children. Information on the informal leadership structures and grievance mechanisms. 	<ul style="list-style-type: none"> The slum in Konabari is very large; it was difficult to determine its boundary and get an accurate picture of the various risks for people in the community. It was difficult to identify all the key groups, and associated power brokers, in Konabari. This was the first time CARE Bangladesh had utilized these PRA tools <i>in an urban context</i>, and as such, more time was needed to find the key entry points into targeted communities. (We note, however, CARE has been successfully using these tools for similar assessments in rural areas. That experience and learning helped to contextualize the tools for an urban setting.) The communities in urban settings have less links and connections to each other, making data collection more time consuming. Social bonding is greater in rural areas, where generations of families live. 	<ul style="list-style-type: none"> A number of information sharing sessions were conducted with both communities in advance of data collection, explaining the purpose and focus of the assessment. This helped to identify “hooks” into each community and establish goodwill with the targeted populations. The assessment team collected information from different points in both communities to ensure that data collected reflected the various groups living in each community. Extensive follow up was conducted to verify data collected and ensure that an accurate picture was generated of the vulnerabilities and risks in each community. CARE conducted direct follow up of key informant interviews with institutions, community groups and civil society actors to verify their presence and mandates within the studied locations. Where needed, gender-segregated sessions were conducted to allow community members to comfortably discuss sensitive
Venn Diagram	<ul style="list-style-type: none"> Helped to map a large number of institutions, civil society actors and associations providing services in both Konabari and Tongi. (For 	<ul style="list-style-type: none"> Translating the data collected was quite time consuming. Within urban contexts, disasters do 	

	<p>example, within Konabari, CARE identified 17 key actors working in the community.)</p> <ul style="list-style-type: none"> Identified shortfalls in information sharing between service providers, tenants and land owners on available services. Highlighted which were the key institutions used by women, men and children, as well as the frequency of access. <p>Provided:</p> <ul style="list-style-type: none"> Information on the salary level differences between men and women. Insights on the type of work undertaken by children and the level of pay they receive. 	<p>not occur on a daily basis. They can be slow, on-set or sudden and unexpected. Most community members are focused on ensuring they meet their daily needs and have not considered measures to reduce their risks or build resilience to either natural or manmade disasters.</p>	<p>issues, including gender-based violence, drug use and the impact of debt.</p>
Seasonal Calendar	<p>Provided:</p> <ul style="list-style-type: none"> A picture of the seasonality of work and the roles assumed by women, children, and men. Types of employment and the peak earning potential (by months). Insights into the credit loan system and the coping strategies of women during times of limited income. Information on the types of coping mechanisms residents use, including the practice of seasonal migration to ancestral villages. 		
Vulnerability & Risk	<ul style="list-style-type: none"> Helped identify the key problems faced in the community, as well as 		

Analysis	<p>the severity and frequency of events. In addition the tool helped identify preventative measures. (For example, the community in Tongi talked about water shortages, costs of purchasing needs, recycling strategies to minimize costs, and time needed to collect water.)</p>		
Women's Mobility Map	<ul style="list-style-type: none"> Effective in understanding where women go and the limitations they face in their mobility. 		
Livelihood Pie Chart	<ul style="list-style-type: none"> Effective in understanding how both men and women utilize income. <p>Provided:</p> <ul style="list-style-type: none"> Insights into the type of financial contributions children make towards household income. Detailed information on utility costs, rent and basic service costs (including health care). Information on savings levels among different types of households. 		
Trend Analysis (timeline)	<ul style="list-style-type: none"> Identified key events within both communities, and their impact on migration, employment and living conditions of men, women and children. 		
Well being analysis/ FGD	<p>Provided:</p> <ul style="list-style-type: none"> Profile of the socio-economic groups living in the community. 		

	<ul style="list-style-type: none">• List of events that enhanced economic stability as well as issues that increased vulnerabilities.• Information on coping strategies used particularly by women to reduce their vulnerabilities.		
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C. PROFILE OF THE STUDIED COMMUNITIES

a) *Gazipur City Corporation Profile*

The Gazipur City Corporation was created in January 2013 and is composed of 57 wards drawn from most of the previous Gazipur Sadar Unions¹⁵ and the entire former Tongi Municipality. The Mayor and 76 elected Councilors administer the City Corporation. Nineteen of these elected Councilors are women. (Note: A select ratio of seats are reserved for female Councilors, per law.)

Gazipur has an estimated population of 3.5 million living in 329 square kilometers. The Bangladesh Bureau of Statistics estimates that within the City Corporation there are approximately 750,000 poor¹⁶ residents, of which 700,000 are living in one of 1,410 slums or informal settlements. (It is important to note that prior to January 2013, sections of the new Gazipur City Corporation operated as a separate district and many of the available statistics are from this time.) Currently, no one is able to provide a complete profile of the communities now considered part of the new boundaries.¹⁷

Elected Councilors meet with City Corporation staff on a regular basis and raise issues of concern from their constituents. For example, issues of sanitation and waste management are regularly discussed within the waste disposal subcommittee. And yet, despite these regular meetings, no plans have been developed to identify a long term waste disposal site or even a short-term waste management system.

Across the newly formed Gazipur City Corporation, no official settlement survey has been conducted. Service provisions to these settlement communities are poor, with no tax revenue raised from these vulnerable populations to cover costs. In 2013, the Urban Partnership for Poverty Reduction Program (which covers some but not all slums within Gazipur) estimated 56% of Dhaka residents are renting housing. Only 30% have access to water and 10% to sanitation services.

Most unplanned settlements in the City Corporation catchment area are located either on freehold or leasehold land (Konabari slum) or squatting on government land (Tongi slum). It is estimated that Dhaka needs 55,000-83,000 new housing units per year to cope with an annual 5% increase in migration into the city. Presently, 25,000 units per year are being built by either government or private citizens.

Currently, Gazipur has weak legislation and no formal land use plans to designate areas as residential or for industrial purpose. The area also lacks a waste disposal site to cope with the 150 tones of rubbish ¹⁸produced daily.

Within Tongi *ward* there are 193 development committees in 12 clusters. These

¹⁵ Union Councils (or Union Parishads) are the smallest rural administrative and local government units in Bangladesh. Unions 47 and 67 are *not* included in the new Gazipur City Corporation.

¹⁶ According to the World Bank, urban poverty is a multidimensional phenomenon. The urban poor live with many deprivations. Their daily challenges may include: limited access to employment opportunities and income, inadequate and insecure housing and services, violent and unhealthy environments, little or no social protection mechanisms, and limited access to adequate health and education opportunities.

¹⁷ Figures provided in the profile are collected through key informant interviews with representatives of the Gazipur City Corporation. These numbers are extrapolated from the Bangladesh Bureau of Statistics household surveys and studies covering sections of the newly created City Corporation.

¹⁸ BRAC is currently building a recycling and waste processing plant. Once on line it is expected to absorb all rubbish currently being produced. However with no water disposal site identified, growing migration is expected to lead to an increase in waste production. The BRAC plant is therefore expected to only provide a short-term solution to the waste disposal issue in Gazipur.

development committees have been formed to push forward initiatives funded under the Urban Partnerships for Poverty Reduction (UPPR)¹⁹, developed to address a range of issues including water and sanitation shortfalls within some but not all of the Gazipur City Corporation slums. Despite this large-scale program, the City Corporation lacks funds and sufficient staffing to maintain project infrastructure once handover from UPPR has occurred²⁰. **Please note: The two studied slums – Tongi and Konabari – in this survey are not part of the UUPPR initiative.**

World Vision, the International Centre for Diarrhoeal Disease Research in Bangladesh, the International Angel Organization (Japan) and the UN are active in both Konabari and Tongi wards, though not in the *slums* studied by CARE. Additionally a number of local civil society actors are also present and include BRAC, SEBA, ASA, Grameen Bank, Sajeda Foundation and the Bureau Bangladesh. These key civil society actors provide microcredit programs and some minimal health services on a fee-for-use basis. During CARE's assessment, awareness of the presence and work of these aforementioned organizations was limited, with few community or government actors able to identify their specific activities.

As the hub of the readymade garment sector, there is an estimated 844 factories operating within the Gazipur City Corporation.²¹ These are both primary factories that take large overseas orders, and secondary factories that are often subcontracted to fulfill parts of these large overseas orders.

b) *Garment Industry*

According to McKinsey & Company (2011), the Ready Made Garment (RMG) sector contributes 13% to GDP and 75% to the export earnings of Bangladesh. Garment factories are primarily located in Dhaka mega city, including Savar, Narayangonj and Gazipur City Corporation.

The layout of the garment industry is complex. Primary or formal garment factories²² generally follow stricter regulations that include new fire safety inspections. These primary factories are usually supplied by multiple secondary or subcontracting factories. The subcontracting factories often do not adhere to the same safety or employment standards, and usually have exploitative practices, poor safety records, and employ underage workers. ***The communities surveyed estimated that for every primary garment factory, there are three to 12 sub-factories feeding supplies into the primary factory.***

Within Konabari, for example, 70% of the tenants work in the garment sector, both in primary and secondary factories. The remaining 30% of Konabari residents work in informal spinning and knitting factories²³, cosmetic factories, brick kilns, or as day laborers.

Factory size varies substantially. Large factories employ up to 15,000 workers, while midsized factories have a staff of up to 7,000 workers. Small factories can have as few as 10-12 employees. All factories usually operate in three eight hour shifts (6am to 2pm; 2pm to 10pm, and 10pm to 6am) although it is routine for many employees to do three to seven

¹⁹ UPPR is the result of concerted efforts between the Government of Bangladesh, the Government of the United Kingdom and the United Nations to lift three million people out of urban poverty and integrate them in the cities of Bangladesh. <http://www.upprbd.org>

²⁰ Based on interview with Slum Development Officer, Gazipur City Corporation

²¹ Ibid

²² Complex Bhabon in Konabari is an example of a regulated primary factory.

²³ There are 4-5 large spinning factories in Konabari employing 20-25,000 employees.

hours of extra shift work per day, especially during peak production seasons. The impact of these long shifts can best be illustrated in sleep patterns of workers. On average, female garment workers are able to get only four hours of sleep per day while male garment worker employees can usually get six to seven hours of sleep per day.

Most subcontracting factories lack set working hours, are not unionized and do not have limits on the maximum allowable work hours or minimum wage requirements.

Around Konabari, the community identified between 8-10 primary factories employing up to 35,000 workers, which adhere to some government and/or buyer standards in terms of safety, pay and benefits. They also identified a further 40 to 50 subcontracting factories employing over 20,000 people in the knitting sector²⁴. Residents spoke of an

additional 2-3 collar production factories that feed stock into the aforementioned primary factories, though it was unclear how many people worked in these collar factories.

The community indicated salaries at the subcontracting factories was as much as US\$90 per month, but no overtime was provided and pay was often delayed. Within these factories, child laborers were routinely employed as a cost saving measure.

c) *Profile of Konabari*

Konabari is located on private land bounded by the Tangail highway²⁵, brickfields, a commercial market, industrial park, garment factories and a pond. The unplanned

²⁴ Sweater sub-factories are seasonal employers with no work available for up to 4 months per year. During this period of unemployment many workers migrate to their ancestral homes and live off savings.

²⁵ Traffic accidents are common with the community; 405 people were killed in the past year.

Types of Employment & Salaries in Konabari

1. Services (garments, textile)
 - Machine Operator: US\$65 to US\$91 per month (usually female)
 - Helper: US\$47 per month
 - Line Chief: US\$78 per month
 - Supervisor: US\$234 per month (usually male)
 - Quality controller: US\$65 to US\$78 per month
 - Ironing person: US\$104 to US\$156 per month (usually male)
 - Packaging: US\$39 to US\$52 per month
2. Rickshaw Puller/Van Driver: US\$4-6 per day
3. Day labor: US\$3-4 per day
4. Potter: US\$4 per day
5. Child Labor (pot or shoe factory, cotton or paint mill): US\$32 to US\$39 per month
6. Landlord (Small land holding): US\$78 to US\$195 per month
7. Landlord (Mid sized land holding) US\$455 to US\$1430 per month
8. Landlord (Large land holding) US\$1560 to US\$7792 per month

NB: Following the Rana Plaza tragedy, many helpers were laid off to cover the expense of increased wages for machine operators. Previously there was one helper for each sewing machine operator. Following the wage renegotiations, the ratio changed to one helper for every five or six machine operators. This has resulted in massive unemployment within the community, particularly for women.

* Salaries are calculated on an exchange rate of US\$1 = 77 taka

settlement was first established in 1947 with the construction of a brick road. Expansion of the community continued following the establishment of the first cotton mill in 1972. In the early 1980s a series of industries moved into the area, including a drug manufacturer, plastics factory and brick kilns.

Migration into the settlement was predominately from Mymensingh, Barisal, Putuakhali, Kapasia and Kishoreganj. Early housing was constructed from mud; following the 1988 flood almost all housing was lost. In 1998, the community was again devastated by floods, resulting in the loss of most re-built dwellings. Following the second flooding, landlords rebuilt rentable housing using tin sheeting and concrete footings.

The presence of the garment industry began in 1991, though rapid expansion of the sector was not until 2001. Many of the machinist and helper jobs created after 2001 were filled by women migrating into the community.

In 2007, a cadre of workers from within the community was established to clean the drains and large rubbish areas in the settlement. In 2009, following further flooding, many landlords raised the settlement housing by six feet. Despite these efforts to clean the main drains and raise the housing, water-logging continues to be a significant issue and a push is now underway within the community to raise the land by an additional nine feet.

Today, there are seven local NGO²⁶ providing health, micro-credit and some basic education services within the settlement.

i. *Socio-economic status of residents*

The community's residents have a range of differing socio-economic profiles. During a series of focus group discussions in Konabari the residents categorized a group of 150 people into five distinct social groupings.

Extremely Well Off

Ten families (6.5%) were seen as extremely well off. They owned over a quarter-acre of land and had a monthly income between US\$1200-US\$6400. These families had a range of business interests, including renting out housing to cover monthly household expenses. Their children regularly attended school. Notably, the mobility of wives and adolescent females was limited, as male-dominated families exerted control on all activities. These ten families owned motorcycles, had generators and were able to provide additional water during water shortages to their tenants. They were identified as the main adjudicators of conflict within the community.

Well Off

A further ten families (6.5%) were identified as well off, with land ownership between a quarter and an eighth of an acre. The men in these ten families worked as small business owners or as supervisors in nearby factories. They were able to consistently pay cash for household expenses and were able to send their children to school. They often owned their own motorcycles. Similar to the extremely well off families, wives had limited mobility, typically remaining in their homes.

Moderate

²⁶ Local NGOs: Grameen Bank, BRAC, SEBA, ASA, Sajeda Foundation, Bureau Bangladesh and Angel

Approximately 26 people (17%) were identified as having a moderate economic standing. These community members owned their own residences and were able to rent half of their properties to make additional income. They worked as garment or machine operators in primary factories. They paid cash for goods and were able to send money to their ancestral villages to purchase assets and cover the costs associated with sending their children to school.

Poor

Fifty-five (37%) community members were identified as poor and were working in subcontracting factories as seasonal labor. Most had loans through NGO-based microcredit programs. They were able to send only minimal income to their extended family members and often incurred debts buying daily staples, including food. Their children did not attend school and were often working to supplement the household income. Workplace harassment in this cohort was common, as they were unwilling to complain for fear of losing jobs. These poor community members also worked as van pullers or helpers outside of factory settings.

Extreme Poor

Forty-nine extremely poor households comprised approximately 33% of the population mapped in this exercise. Many of these extremely poor residents were abandoned or divorced women or children now heading up households. These community members worked as day laborers, “odd job” helpers in factories, and van pullers. They had irregular income and were heavily in debt. They could only afford very low rent housing that has no access to basic services, and were particularly vulnerable to flooding and water-logging.

Story 1: Maya Begum

Maya Begum, originally from Pancha Ghare District, is 30 years old and works as a cook in a mess that provides food and accommodation for single men. She has worked there for the past three years. She was married at age 12 or 13 and has three children aged 2, 10 and 12 years.

Shortly after the birth of her third child, Maya was abandoned by her husband, whom she suspects has remarried and has a second family. Due to her early marriage, she has only three years of primary education.

For the past two years, Maya’s two eldest children have worked in a nearby pot factory making containers for coconut oil. With the contributions of her children, the monthly income of the family is US\$130. The family’s monthly expenses for food, rent, medicine and other expenses is US\$104. Maya is able to minimize her food costs by taking the leftover food from her work home to her family.

Having her children work has allowed Maya to build up a small savings reserve. Each month she deposits US\$26 into a savings program. She plans to utilize this saved money to cover unanticipated expenses and where possible provide money to her parents still residing in her ancestral village.

Seasonal Work Calendar: Konabari

Area of Employment		Mid Mar-mid Apr	Mid Apr-Mid May	Mid May-mid Jun	Mid Jun-mid Jul	Mid Jul-mid Aug	Mid Aug-mid Sep	Mid Sep-mid Oct	Mid Oct-mid Nov	Mid Nov-mid Dec	Mid Dec-mid Jan	Mid Jan-mid Feb	Mid Feb-mid Mar
Sweater Factories	Men	••••••••••••••		••••••••••••••				••••				••••••••••••••	
	Women	••••••••••••••		••••••••••••••				••••				••••••••••••••	
	Children												
Brick Field	Men	••••••••••••••						••••••••••••••					
	Women	••••••••••••••						••••••••••••••					
	Children							••••••••••••••					
Rickshaw/Van puller	Men	••••••		••••••••••••••			••••••		••••••••••••••				
	Women												
	Children												
Jhute sorting	Men	••••••••••••••		••••				••••••••••••••					
	Women	••••••••••••••		••••				••••••••••••••					
	Children												
Mason Helper/Day Labor	Men	••••••••••••••		••			••••••••••••••		••••••••••••••				
	Women	••••••••••••••		••			••••••••••••••		••••••••••••••				
	Children												
Mason/Carpenter	Men	••••••••••••••		••••••••				••••••••••••••					
	Women												
	Children												
Maid Servant	Men												
	Women	••••••••••••••						••••••••••••••				••••••••••••••	
	Children												
Coping Strategies	<i>Characterized by changing jobs, migration in/out, taking loans (formal-informal sources), making a purchase in debt, sending children to work, saving money by eating less nutritious food, 10-15% women use their savings in family purposes.</i>												
Migration	In		••••••••••••••					••••			••••		
	Out	••••••						••••	••••••				
Water Logging		•		••••••••••••••	••••••••		••••••••	••					
	In this time, brick field laborer, mason helper and several garment workers changed profession and pull rickshaw and van. If it rains ,1-2hr. then create water logging and sometimes water enter into room and reach about 1 foot.												
Diseases		from Jaundice, Diarrhea, go to traditional healer, take oral saline, take other medicine from local		In this time people suffering from diarrhea, fever, cold-cough. They used to visit NGO clinic and nearby pharmacy for treatment.								People suffer from Jaundice, Diarrhea, go to traditional healer, take oral saline, take other medicine from local pharmacy	
Income	Better	Better	Poor	Poor	Poor	Poor	Middle	Middle	Better	Better	Better	Better	
		Make savings, women preserve money due to men do more expenses		Take loan, less dietary intake, expenses from savings, food purchase in debt, women get/seek help/support from her father's house, send children in job, sell out household's assets e.g. TV, cot, ornaments etc.									
Food Security	Somehow manage food/secured		Less food security				Only sweater factory's workers are fallen into food insecurity.				Somehow manage food/secured		

ii. Land ownership and origins of residents

Within the Konabari settlement, there are 20,000²⁷ residents living in a range of housing options. Four families from the extremely well off cohort – whose forefathers held the original land leases – today have the largest share of available land. There are a further 36 families from the well-off cohort who have married into the original land holder families and control smaller plots of land. Additionally, there are a number of families within the slum that married the daughters of the original settlers and currently live off the rent income of the original families. Several of them represent the moderate cohort, with limited land holdings. There are also landowners who purchased available land but are not related to the original inhabitants of the area. Lastly, there are a number of families that have taken five-year leases on available land owned by the well-off and moderate families. These poor families use this leased land to build tin sheds that can be rented to impoverished households.

Residents have migrated into the area from across Bangladesh and include a large number of young men and women working in the garment and industrial sectors. *There are approximately 40 child-headed households.* These forty children, along with 400 other working children, are regularly employed in shoe and pot producing factories.

iii. Housing and Services

Konabari maintains a range of available housing options for families. These have been categorized into three levels.

Level 1 is the cheapest housing, and is generally rented by seasonal bachelors and children engaged in work²⁸. These dwellings sit in low-lying areas at the outskirts of the community, and are most impacted by seasonal flooding and water-logging. They are composed of tin sheds on cement bases, and measure approximately 10x11 feet, with about four to ten residents per unit. These units rent monthly for US\$23- US\$25 and do not have individual access to running water or sanitation services. They do have access to shared sanitation and cooking facilities.

Level 2 housing is rented to families with working children. These dwellings are the same size as Level 1 housing, but are structurally stronger, with concrete flooring and walls and tin roofs. They have shared sanitation facilities and communal cooking areas. Monthly rent for these Level 2 houses is US\$27-US\$32.

Level 3 rentable housing is used by better paid garment workers and their families. They are larger raised houses, with concrete sides and tin roofs. They usually have shared toilet facilities for use by a limited numbers of residents. Families have better shared cooking facilities, and drains are usually covered with concrete slabs. Rent per month is usually US\$38 or more.

Level 1, 2, and 3 structures are located next to one another. It is common for residents to move frequently to housing controlled by landowners providing more reliable services.

²⁷ Based on the interview with City Corporation who indicated the number of registered and unregistered voters living in ward 11. Actual number is expected to be significantly higher with most housing units hosting at least five persons.

²⁸ 8-9% of girls aged 5-14 work. Source: UNICEF & Bangla Bureau of Statistics Study on Women and Girls (2010)

In Konabari, landlords use submersible pumps to extract ground water to supply to their tenants. Costs are included in housing rent. (This is not that much more expensive in comparison to the Tongi slum.)

On average, two latrines (one male, one female) are shared by 18 housing units. These 18 units also typically share four gas burner ovens, a submersible water pump and a common bathing area. There are no formal pathways and many community members walk on the edge of the large open drain to move around. Only 30% of landlords have installed slabs over the drain for use as a pathway.

Within each housing type, a bed is usually available for children to sleep on; adults generally rest on floor mats. Clothes and utensils are hung from walls and roof rafters. Wealthier households may have shelving or wardrobes along with tables. Ownership of mobile phones and televisions is common. (Low cost mobile phones are widely available and readily purchased by even low-income families. Televisions are typically seen in homes of extremely well off, well off, and moderate income families.)

Housing built on the outside of the plot of land usually has windows, whereas inner housing has only a single door for ventilation. During flooding or water-logging events, housing units can have between a half and a full meter of water inside, depending on location. Flooding is particularly acute for the cheapest tin sheds that sit on the fringes of the settlement on low-lying land.

Residents have access to small-scale grocery shops.

iv. *General Social Information on Konabari*

As a newer slum, tenants in Konabari tend to have limited connections to each other and are poorly informed on services and civil society organizations operating within the community. Information exchange between tenants appears very limited.

Children are engaged in various types of employment. A large number work in nearby shoe and pot making factories²⁹ or are tasked with delivering supplies to and from businesses. Children also sort through garbage dumps to find food or items to sell. Community members cited the high number of children involved in theft, and indicated it is common for children to be physically assaulted by other community members.

An increasing number of women in Konabari have opened new business ventures, selling household goods and food. Generally, women give all of their earnings to their husbands, who allocate household funds. Men control most decision-making within the family unit. In a small number of families the women hold all the income as a strategy to prevent their husbands from engaging in excessive gambling. Within most polygamous households (an uncommon but noted practice), each wife gives 30% of her income to her spouse and keeps 70% to cover household expenses.

Conflict on income and decision-making³⁰ is extremely high, with men viewing income

²⁹ The exact number of pot making factories is unknown. It is believed 75% of workers are under aged girls. There are two shoe-making factories. Their workforce is composed of 75% under aged labor of which most are girls less than 15 years old.

³⁰ Nationally, 48% of women have no role in decision-making within the family unit. Source: UNICEF and Bangla Bureau of Statistics Study on Women and Girls (2010)

as important to status, and women seeing the need for regular income to cover household expenses. Excess income³¹ is often saved or used to build up assets or cover expenses for family members back in ancestral villages. Single workers often send remittances home to parents or extended family members.

Broader conflicts within the community tend to focus on issues of land, debt/credit, access to water or sanitation facilities, or incidences of violence. Conflicts are generally mediated by the landlords, whose economic or educational status gives them authority and positions of power within the community. Formal governance structures in the community do not exist. For poor tenants, landlords represent the local guardian.

The nearest government school is located 1.5 km away. Attendance is minimal. There is a subdistrict (or upazilla) health clinic in Gazipur that Konabari residents can and do access for basic health care. They also seek medical help from local NGOs or, if available, through their employers (some garment factories have medical services).

d) *Profile of Tongi*

A quick comparison between the two studied communities: Konbari consists of privately-owned land, and tenants have access to gas, water, and electricity as provided by their landlords. Fees for these services are typically included in monthly rent. Conversely, Tongi is situated on government-owned land, and most tenants and landlords lack legal ownership of their land. Government services (e.g. electricity, water, gas) are not widely provided. However, as there are hospitals and schools in the area, Tongi slum has better access to healthcare and education.

Across Tongi ward, there are 19 slums or settlements with a combined population in excess of 651,222 people in 61,000 households.³² The one slum community studied in this survey is situated on government land and houses approximately 1,125 ³³residents.

The Tongi upazilla hospital, several factories, the Dhaka-Mymensingh highway and the Tongi Model Police station border the studied slum.³⁴ There is a large open drain surrounding the community that was built by industrial factories to discharge untreated effluents.

Tongi: Employment and Salary Options for Residents

Sorting at plastic/cotton/jute warehouses: US\$2.60 per day for men, US\$1.30 per day for women, and US\$0.90 per day for children.

Loading/Unloading Supplies: US\$5-US\$10 per day.

Maid Servant: US\$32-US\$45 per month or less than US\$2 per day.

Hawker (Child): US\$1-US\$1.30 per day

NB: Women on average are paid 60-65% of a man's salary for the same work.

The area experienced two large floods in 1988 and 1989, resulting in extensive destruction of housing and loss of substantial assets for households.

³¹ See examples of income usage in case story 1.

³² CARE, Wash Study 2012, Tongi

³³ This is an estimated figure provided by the community during the study. No actual figures exist on the number of residents in this unofficial settlement.

³⁴ These key structures were established in the 1960-1980s Construction at the BiswazAjtema complex began in 2007 and continues today.

There is a madrasa, two plastic warehouses and five grocery shops in the community. Additionally, there are four NGOs³⁵ operating in the community, providing microcredit programs. With the government hospital bordering the community, community members can easily access basic primary care and vaccinations. There is also an additional community-based maternal program for pregnant and lactating women. There are several kindergartens, and a primary and secondary school located close to the community. Despite the presence of these education institutions, only 25-40% of children attend school, most from wealthier households. Notably, most children, regardless of economic status, participate in religious education at the madrasa, where very basic literacy skills are haphazardly taught.

Arbitration of disputes and conflicts is generally resolved with support from three key community members. While not formally elected, these three individuals have attained their status through economic influence or education.

i. *Socio-economic status of residents*

As with Konabari, the residents of the Tongi slum represent a range of socio-economic profiles, from a small group of extremely well off residents to a substantial pool of extremely poor households, many headed by women and children.

Extremely well-off

Across the studied community in Tongi approximately 2% of the households are extremely well-off. These residents are landlords, owners of hauling businesses or have a middlemen business in which they control access to water, electricity and even employment in some of the large industries surrounding the slum. These residents have children in school or college, own their homes and have wives based at home with limited mobility. They have substantial household assets, including motor bikes.

Well-off

Eight percent of the survey residents are classified as well-off. Like the extremely well-off households, these households have small land holdings which they often rent to poorer residents. They are business owners in the hauling and sorting trades. Though they maintain substantial assets, they do rely on moneylenders to cover costs during income shortfalls. Their children attend school or college. Despite having more mobility, many of the women in these households are not engaged in business and have limited decision-making powers.

Moderate

Approximately 20% of the households in the community are moderately wealthy. Some of these households have small land holdings they rent, while others have sufficient income to rent large housing units. Many of these households run small family businesses, including grocery stores and tailor shops. Others work as civil servants or within the police force. Many women in these households are employed in nearby factories, including in garment factories. Some of the younger children attend private kindergartens. These households are more financially vulnerable, and routinely take out loans from both private lenders and microcredit NGOs to cover both asset purchases and monthly expenses.

³⁵ ASA, Bees, Shakti and Swapona

Poor

Across the community, 38% of surveyed households are poor. These poorer households usually have members who work as business owners, shopkeepers or traders of raw materials. These families are cash poor, often in debt and usually have their children working to help supplement family income.

Beyond the poor families, within the surveyed Tongi slum there are ten mass dwellings where up to 50 single men reside. These men work in the hauling trades or sorting jute, cotton or plastic bags in nearby warehouses.

These poor households do not own their own land, have no private transport options and are reliant on seasonal and contract employment to meet basic needs. Despite their vulnerability, a number of these poor households are able to save small amounts of money each month to cover unanticipated expenses.

Extremely poor

There are approximately 38 (32%) households who are extremely poor. These residents work as van pullers, loaders or maidservants for richer households. A number of extremely poor residents work in the medicine and neighboring garment factories as loaders or sorters.

An estimated 25 extremely poor households are headed by women. These women work as maidservants; packers/sorters in the plastic, jute or cotton warehouses; helpers in garment factories; or earth cutters (day laborers who work construction).

Notably, there are approximately seven extremely poor child-headed households in which the children work in tea stalls, hauling goods, or sorting at plastic/jute or cotton warehouses.

Work throughout the community for poor and extremely poor

Story 2: Sujan

Sujan is 28, and originally from Mymensingh. He has completed eight years of school. Sujan works as supervisor in a garment factory and currently earns 11,000taka (or USD\$142) per month.

Sujan is married to 20-year-old Moyna, who works as an operator at a garment factory. Though they have no children, Sujan and Moyna provide care for Sujan's mother.

In 2009, Sujan came to Dhaka and worked as a garment factory helper. With overtime, he earned 3000taka/month or nearly USD\$39. His monthly expenses were 3000taka, meaning he could not establish savings.

In 2010, he returned to his village and married Moyna. Both returned to Dhaka, where Sajun worked as an operator earning 4000taka/month and Moyna earned 2000taka/month as a helper. In 2011, Moyna was promoted to an operator and her salary (with overtime) increased to 7000taka/month. In 2012, Sujan was promoted to a supervisor and his salary increased to 8000taka/month.

Since 2011, Sujan is able to send regular remittances home, allowing him to purchase three cows and 1/8 acre of land in his village. This land has been leased, which provides the family additional income.

In 2014, Sujan contracted typhoid and was unable to work for a period of time. He borrowed money to cover medical expenses and for the past six months has been unable to send any savings back to his family. Prior to his illness the family was able to save 5500taka/month to build up assets within their ancestral village.

The income generated by both Sujan and Moyna is deposited into Sujan's bank account, and all money related decisions are made solely by him.

households tends to be seasonal. During the rainy season, seasonal migration to ancestral homes (particularly for single men) is common.³⁶ For married families, the rainy season often leads to periods of income insecurity that requires selling assets and reducing household expenses, including food. Child workers are likewise affected by seasonality of work and can face acute shortages in income and food during the rainy season. Borrowing from moneylenders or microcredit organizations increases during the rainy season. (Moneylenders charge interest in excess of 30%, while microcredit organizations including NGOs charge 20% interest.)

Seasonal Work Calendar: Tongi					
	March 15- May 14	May 15- Sept 14	Sept 15-Nov 14	Nov 15-Jan 14	Jan 15- March 14
MEN	Peak employment in sweater factories, brick fields, sorting jute, day laborer, pulling a rickshaw or van, carpenter/mason	Peak employment in sweater factories, sorting jute, day laborer, pulling a rickshaw or van, carpenter/mason	Employment in sweater factories reduces, lots of opportunities at brick fields, sorting jute, day laborer, pulling a rickshaw or van, carpenter/mason	Employment in sweater factories reduces, brick fields, sorting jute increases, day laborer, pulling a rickshaw or van, carpenter/mason	Peak employment in sweater factories, brick fields, sorting jute, day laborer, pulling a rickshaw or van, carpenter/mason
	<i>NB: Rainy season-</i> <ul style="list-style-type: none"> • Season migration to ancestral villages • People also switch professions from working in brick fields which are closed to rickshaw or van pulling • High water-logging risk 		<i>Brick fields reopen</i>		<i>Peak season in garment sector</i>
WOMEN	Employment in sweater factories, brick fields, sorting jute, day laborer, maid servant	Employment in sweater factories, sorting jute, day laborer, maid servant	Employment in sweater factories, brick fields, sorting jute, day laborer, maid servant	Employment in sweater factories, brick fields, sorting jute, day laborer, maid servant	
CHILDREN	Brick Fields		Brick Fields	Brick Fields	
OVERALL HOUSEHOLD INCOME LEVEL	Higher	Low	Middle	Higher	

ii. Land ownership and origins of residents

There are approximately 225 households with up to 1,500 residents living in a range of housing options. As Tongi slum is located on government land, officially there are no land ownership deeds for any of the residents, including the well-off households.

Despite the lack of legal papers, there are 39 landlords (six women) who control all rentable housing within the community. While the risk of eviction³⁷ by the government

³⁶ Please see seasonal calendar.

³⁷ Currently two slums within the Tongi ward are being evicted to allow for expansion of a railway service.

is high – as the settlement sits on government land – tenants and landlords remain in Tongi in the hope of benefiting from future land distribution programs that may benefit poor residents.

Unlike Konabari, many residents are originally from Mymensigh and have strong kinship ties. Tenants tend to be permanent and over time have created a more homogenous community.

iii. Housing and Services

As an unofficial settlement, there are no government water, sanitation or electrical services. Residents obtain water and electrical connections through two or three middlemen that control the sources. Like Konabari residents, Tongi residents pay a monthly fee of US\$9 for a light, fan and television connection. A fridge connection is an additional US\$3.20 per month.

Landlords do not always supply water, and most women collect water daily from central water points. The average household requires 18 jars of water³⁸ per day for cooking and drinking, at a cost of US\$8 per month. Additionally, the households must pay a further US\$0.20 for bathing or washing clothes per person per day. Where possible, women reduce the water costs by recycling water used for food preparation and reusing it for bathing or washing clothes.

Sanitation is also a problem in Tongi, with only seven latrines available. Two public latrines installed by CARE are now in the control of community leaders who charge a fee per use.³⁹ Most male community members use one of the 30 open defecation toilets built over the drain. Women, due to privacy concerns, do not use these defecation points during daylight hours. Instead they use plastic bags or children's potties in their homes to defecate or urinate in and then dispose of the waste into the central drain.

Water-logging occurs two to three times per year in Tongi. During these flood events many women are unable to work due to further flooding risk and the need to preserve as many assets as possible. Water-logging can result in up to 10 days of lost income for a household during the rainy season. Additionally, these events can occur when the surrounding pharmaceutical factory releases large discharges of water and effluents into the surrounding canal.

Cooking is done in small household ovens. Firewood is prohibitively expensive for most households, so women burn jute scraps or plastic bags for fuel to cook – a highly dangerous and unhealthy practice.⁴⁰ Cooking stoves are generally located in front of dwellings, or on wood structures placed over the main drain. Due to regular water-logging and blocked drains, the community has large infestations of mosquitoes. To mitigate the swarms of mosquitoes, community members burn fruit packing materials imbedded with chemicals, including formaldehyde.

³⁸ During the rainy season families are able to store sufficient rainwater to cover their daily needs. However during water-logging incidents stored water can be contaminated requiring a family to temporarily purchase water supplies.

³⁹ Defecation charge per use for residents: US\$0.12 and urination charge for residents: US\$0.06 per use. Non-residents are charged US\$0.32 per use.

⁴⁰ A bag of jute costs less than US\$0.50 as compared to firewood with a mound costing US\$5.

iv. *General Social Information on Tongi*

Within Tongi, men typically control income. In female-headed households, women make decisions exclusively. Interestingly, if both men and women work, decision-making appears to be more equitable. However among very poor households, where men are engaged as day laborers, men make all decisions.

Women's mobility – while limited – is not fully restricted. Women travel to schools, work, and shops. There are some restrictions around women's movement to the NGO offices providing microcredit, if the office is located outside. However, women can participate in NGO activities within the community.

Polygamy remains a common practice in Tongi, and men primarily control income within these families. A number of the child headed households within Tongi are the result of fathers abandoning children upon remarriage.

A large number of residents in Tongi work in surrounding factories. Another option – the pharmaceutical company Drug International – is seen as a strongly desired employer, with many prospective workers forced to bribe middlemen to obtain employment. This particular company is viewed as a good long-term employer with potential overtime and clean working conditions. Workers are initially paid \$2.33 per day plus \$0.35 per hour for overtime. Every three months, following a good performance report, workers can receive a \$13 bonus. After three years, an additional \$65 bonus is paid. This \$65 is then paid each year thereafter. Following three years of service at Drug International, free medical care is provided and workers can negotiate for more regular work hours.

Most companies surrounding Tongi have a daily pay schedule that takes an approach of no work/no pay and does not provide additional benefits such as health care or sick leave. Community members work in a range of other areas.

Workers at both Drug International and elsewhere use any additional income to build up their savings, often investing in their ancestral villages.

Key issues of concern for the Tongi settlement are: limited supply of water for drinking, bathing and washing; lack of safe sanitation and the associated risks of water-logging and pollution; and the limited and expensive supply of electricity and gas. Concerns exist regarding access to free basic schooling and the increasing violence, drug and alcohol use in the community. Socially, the impact of gambling and debt is growing and straining households' abilities to meet basic needs and save for periods of reduced income. Fire risks are substantial with limited access to water, narrow rubbish filled pathways, and no plans for minimizing and addressing these risks.

D. FINDINGS

Prioritized Vulnerabilities & Risks

The study has revealed a range of concerns within each of the slums studied. In **Annex A**, a brief summary of the key risks and vulnerabilities identified by each of the studied communities is outlined. Stakeholders within these two communities prioritized concerns, and indicated the most pressing issues are **access to water, safe waste disposal and access to safe sanitation**. CARE's assessment team – based on the data generated during the survey, the key informant

interviews and the secondary literature – outlined three tiers of vulnerability and risk for the Tongi and Konabari. These are:

1. Increased vulnerability to natural and manmade threats, including pollution, poor sanitation, lack of safe water, poor building construction, fire, water-logging/flooding and earthquakes.
2. Social risks that include a growing trend of gender-based violence, increased drug use, and a growing prevalence of gambling, resulting in high debt.
3. Institutional risks, including lack of provision of basic services (e.g. water and sanitation), and poor implementation of legislative provisions related to employment, housing, disaster and fire safety.

What follows are detailed descriptions of each of the prioritized issues. Where appropriate, community-specific examples are provided.

a) Sanitation

Sanitation is the primary concern of both the Tongi and Konabari slums⁴¹. In the 2006 Millennium Development Goals (MDG) progress update, 14% of the Bangladesh's population was found to be utilizing open defecation facilities, and almost 20% of the shallow wells surveyed had high arsenic levels. These high arsenic levels translate to 57 million people in Bangladesh drinking contaminated water daily. Across all urban areas of the country 16,380 tons of household and industrial wastes are generated each day.⁴²

In Tongi, a large open drain constructed by several factories (including a drug manufacturing plant)⁴³ borders the settlement. The drain is narrow and shallow, and was originally built by these factories as the discharge point for their untreated effluents. Today this drain is also used as the primary defecation point for the community, which has a very limited number of private latrines. The main drain is also the primary location for the disposal of household waste, including plastic bags.

While Konabari has access to more shared sanitation services, waste disposal remains a primary concern. Like Tongi, in Konabari untreated effluents are disposed of into the primary drains. These effluents have discolored the water and give off noxious fumes.

In both Tongi and Konabari, there is limited space available for the disposal of household waste and the pumping out of septic tanks. In both locations, twice yearly the community collects funds to clean out the drains and remove rubbish that obstructs the flow of water. For smaller drains that crisscross the community, attempts are made to clean out the drains every two weeks. Local drain sweepers⁴⁴ are hired by multiple families/landlords and shopkeepers to unblock drains and remove debris, including human waste, plastic bags and other household rubbish. Failure to regularly clean out side drains results in the overflow of fluid into households, making pathways slippery with rubbish. Rubbish collected from Konabari is routinely dumped next to the surrounding highway and once substantial is bulldozed by the Gazipur City Corporation.

⁴¹ Councilors for the Konabari ward indicated sanitation and waste management are the most pressing issues within the settlement. Lack of health services, problems of drug addition, lack of school facilities and poor housing are additional areas of concern. Dhaka needs to build over 55,000 new housing units per year to cover the migration needs. Currently only 25,000 units are being built per year by government and the private sector, which is less than 50% of the required amount.

⁴² All statistics drawn from updated progress reports against the key MDG indicators.

⁴³ The Gazipur City Corporation has indicated it will be cleaning out the main drain in Tongi prior to the start of the rainy season in attempt to minimize flooding and water-logging.

⁴⁴ Landlords pay US\$1.50 and shop keeper's 12 cents per month to cover the cost of cleaning out the drains.

Access to latrines and sanitation varies vastly between the two communities. Within Konabari, most housing blocks have a latrine that is commonly shared by the residents of that landlord. On average, for every 18 households there is one male and one female latrine. There is also a small bathing area. Cleaning of the latrines varies, and residents discussed the challenges of landlords failing to empty full septic tanks on a regular basis.

Within Tongi, there are only two communal latrines. Control of these is unclear. External are charged a fee for usage. Most households do not have access to private latrines. Instead, makeshift structures have been built over the open drain to allow for open defecation. Women in the community tend not to use these makeshift facilities during the day for fear of being overlooked by the surrounding buildings. Instead they utilize child potties or plastic bags in the privacy of their homes. The content of the child potties and plastic bags are then thrown into the open drains.

In both communities, access to water is limited, with each family paying a surcharge. In Tongi, a single person requires a minimum of US\$4/month to cover water costs for drinking, bathing and washing clothes. A family of four needs at least US\$13/month. To save money, families often use the grey water generated from washing vegetables to bathe or wash clothing. Multiple households pool water to minimize the collection time women need to fetch water. The ward counselor for Tongi indicated submersible pumps were designed to extract water for 10 families and are currently covering 50 families.

Within Konabari, landlords provide two buckets of water as part of household rent. Additional water for drinking and bathing can be purchased from private submersible pump⁴⁵ operators for US\$0.12 per bucket.

Disease from contaminated water is common and particularly acute during the rainy season, when the two communities become water-logged.⁴⁶ Diseases commonly found include diarrhea, respiratory infection such as coughs and colds, skin diseases, and infections impacting the kidneys and liver. Basic medical care is provided at the local upazilla government clinic or through a number of local NGOs. Additionally, Konabari has three traditional birth attendants and a number of local healers⁴⁷ providing support for the treatment of basic illnesses.⁴⁸

Under the Urban Planning for Poverty Reduction⁴⁹ project submersible pumps and latrines are expected to be installed in some settlements. Yet, in interviews with ward and Gazipur City officials, many stated the planned installations under the UPPR program will not be sufficient to meet current or future needs.

⁴⁵ While submersible pumps usually provide a good source of safe drinking water, within Bangladesh there is a high level of arsenic in the soil and as such arsenic poisoning is a growing concern. In most countries these arsenic levels would result in increased use of surface water. However much of the surrounding surface water in these communities is heavily polluted by industrial effluents and human excrement.

⁴⁶ In 2012 the Civil Surgeon office had 43,800 cases of diarrhea reported. Of these, 9% were severe.

⁴⁷ Local healers are called Kabiraj

⁴⁸ The Urban Partnership for Poverty Reduction estimates only 7.3% of urban populations access public clinics. A further 20% are served by NGO-run and -managed clinics.

⁴⁹ The Urban Partnership for Poverty Reduction project will focus on a number of areas, including disaster risk reduction, access to services and poverty reduction initiatives including livelihoods. It will cover Gazipur, including settlements in Tongi and Konabari (though not the specific slums that CARE studied).

b) Electricity

Landlords or middlemen usually control electrical connections. Within Tongi, legal connections appear to be held by only one or two people, who then charge tenants for access. The landlords provide communal areas, including shared cooking spaces, with tenant rents covering the costs. Additional household electricity for lights, a fan or television is paid directly by tenants to middlemen. The cost per month for a household to have one light, one fan connection and one TV connection is US\$9.⁵⁰

In Tongi, the floodlights from the neighboring factories provide lighting for women to travel to the latrines built over the canal. Because the Tongi settlement is located on government land, establishing legal electrical connections is difficult as tenants lack legal status to reside on the land.

c) Schooling

Approximately 40% of Tongi families who are poor or extremely poor do not send their children to formal schooling.⁵¹ Where possible, children participate in madrasa classes and/or engage in small-scale employment, such as selling popcorn, flowers or tea. The remaining 60% of Tongi children attend a government school located 1.5km from the slum.

In Konabari, many children do not attend any schooling system. While there exists a large number of kindergartens, costs are prohibitive.⁵² Families indicated they had sent children aged 9 to 10 years back to their ancestral homes to be cared for by extended families. For a number of families, eldest girls are kept at home to care for younger siblings. Concerns over security (transportation of girls to and from school) along with the costs of school fees are indicated as primary reasons for not participating in educational activities. Families also stated the lack of affordable schooling opportunities also impacts vaccination rates. (Government vaccination programs are primarily based on school attendance.) For those children who do attend school, the dropout rate is estimated at 5% per year, as children increasingly take on employment activities to supplement household incomes.

d) Fire

Fire was identified as a very pressing concern within both Tongi and Konabari. High concentrations of housing, combined with narrow access pathways, limit the ability of the fire service to quickly respond to fires. Large amounts of debris, including rubbish, litters the walkways as well, further increasing fire risks. Additionally, the burning of polystyrene products, including plastic bags and jute scraps in cooking stoves, poses high fire risk. Poor and unauthorized electrical and gas connection lines are also seen as increasing fire risk.

Despite the examples cited above, mass awareness of fire risk is limited. In both communities, residents are not aware of contact numbers for the local fire services and cannot provide strategies to reach the fire service in case of fire. Still, communities have adopted a range of self-implemented measures to reduce fire risk. The burning of materials is done in the middle of the room away from flammable materials. Two to four times per year, communities conduct large-scale garbage burning. For larger electrical circuits,

⁵⁰ It is well documented that the poor usually pay higher costs for services. In the case of electricity this is particularly acute. If each household had a direct connection for power they could pay less than US\$1 in electricity to cover the cost of one fan, one light and one television for one month. Significantly less than the US\$9 paid in currently to the middlemen.

⁵¹ UPFPR 2013 estimates only 26% of urban populations are able to access government schooling.

⁵² Twelve kindergartens were identified. Costs varied from US\$3 to US\$13 per month per child. The local madrasa charges US\$4/month.

community members pool income to hire electricians to address electrical problems.

In both Tongi and Konabari, the fire service indicated a number of key concerns. Lack of sufficient water, limitations on physical access across the two slums, crowd control during emergencies, and awareness on how to contact the fire and police services are seen as substantial causes for concern.

Gazipur City Corporation has indicated it earmarked funds for response activities related to manmade or natural disasters. Preparedness planning, however, was extremely weak.

e) Gender-based Violence and Other Social Issues Impacting Women

Across Bangladesh, 87% of women are victims of domestic violence, of which 80% is verbal abuse. Only 8% of women have reported *never* experiencing physical or verbal abuse. In a 2010 Violence Against Women Survey, 50% of women had sustained serious injury, and over one-third of all cases in which women initially sought medical assistance subsequently refused treatment for fear of further abuse. The same survey found that 52% of urban men and 46% of rural based men reported routinely abusing their partners. Over half of all men interviewed in the 2010 survey felt there were no consequences to their abuse of women and that they were within their rights to abuse a partner for failing to provide sex, food or proper care of children.⁵³

Women surveyed in the CARE study indicated abuse is common in the home, during movement to and from work, and at their workplaces. The increasing rate of drug consumption (particularly yaba, a combination of methamphetamine and caffeine) and gambling corresponds to increased risk of violence in the home for women and girls.

Women in both communities talked about marriage scams, in which unmarried women are raped or forced into affairs. Once the sexual contact occurs the perpetrators extort money from the women in exchange for their silence. Alternatively, the men force the women to marry, pay a dowry and hand over their monthly salaries.

Women also indicated they are vulnerable to rape and assaults on their transport to and from work. Sexual assaults and harassment by male colleagues are common. To mitigate the risk of physical, verbal or sexual assault, women minimize their movements around the community after 5:00pm. Routinely, market shopping or travelling to and from work is done in groups of five or more women. (This is also used as a strategy by young girls who are harassed by young men.)

The CARE survey revealed restrictions on the movement of women as their social standing increased, particularly within the Tongi slum. Across both communities, women restrict their daily movements to travelling to and from work or making household purchases at shops within 300 meters of their homes. Accessing services provided by NGOs or other community groups – including the Gazipur City Corporation – requires travel of two to 14km, and thus permission from husbands or guardians.

Restriction of a women's mobility is particularly acute among well off and extremely poor

⁵³ Across the country ,one-third of all women and men interviewed indicated domestic violence of women by men was justified. Source: UNICEF & Bangla Bureau of Statistics Survey of Women and Girls (2010)

households.⁵⁴ Most of the men in these households do not allow women to work and restrict their movements. Among day laborers, attempts to restrict movement were also cited. Women indicated that their spouses harass them should they not adhere to the movement restrictions. Men stated that the reason for the restrictions was that they did not want their wives to find out about the affairs they were having with other women or be vulnerable to physical assaults. Across both Tongi and Konabari, rates of abuse and violence against women appeared high.

Early marriage⁵⁵ is an issue of concern. Girls aged twelve are seen as being at risk of having sexual contact outside of marriage due to the high number of single men within the community. As such, girls either are arranged to be married around age 12, or are sent to their ancestral villages to be cared for by extended family.⁵⁶ Girls are often married early to provide economic security, particularly if their mothers have been widowed. Young boys are at risk of being beaten following accusations of having affairs with young girls. They are also at risk of alcohol and drug abuse, and routinely rounded up by the police in crime raids.

f) Drug abuse and gambling

Both communities indicated an increased use of drugs by men⁵⁷ within their communities. The drug of choice appears to be yaba, which is readily available and cheap (the average cost is US\$3-\$6/pill⁵⁸). Yaba users having trouble eating and sleeping, and are paranoid and aggressive. The addictive nature of the pills has resulted in high indebtedness among users and their families, and reduction in household assets normally allocated for periods of reduced employment.

Gambling also is common in both Tongi and Konabari. Men routinely borrow from moneylenders, who charge extremely high interest for short-term loans, to pay gambling debts. The stress of repayment often results in violence within the home, the depletion of cash reserves and the selling of assets to cover the high interest loan repayments.⁵⁹

g) Water-logging

Seasonal water-logging is very common for both Tongi and Konabari. Both communities indicated it is especially acute between June and September and results in flooding of housing by up to a meter. In both locations, drains are narrow and lack the capacity to meet the high flow levels in the rainy season. Additionally, the disposal of plastic bags, as well as household and industrial waste routinely clogs the drains, resulting in water-logging in the low-lying fringes of the two communities.

Community members complained about infrequent emptying of full septic tanks. They cited the need to hire one of the 15 drain cleaners every two weeks to sweep out and clean common drains. In 2009, Konabari settlement was raised six feet to reduce water-logging. Yet the problem of water-logging persisted, and today the community is looking to raise the settlement by a further nine feet in a bid to mitigate the issue.

⁵⁴ 35% of women require permission to leave the home. Source: UNICEF & Bangla Bureau of Statistics Women and Girls Study 2010.

⁵⁵ 90% of girls aged 10-18 have experienced eve teasing. Source: Violence Against Women (Hossain & Suman, January 2013)

⁵⁶ 75% of surveyed women indicated they had married below the age of 18 years. One in three women had started bearing children before the age of 20 year.

⁵⁷ Within Konabari community groups interviewed indicated up to 25% of men aged 17-35 years were regular users of drugs including yaba.

⁵⁸ Source: *World Post*, April 21, 2014

⁵⁹ Moneylenders routinely charge 30% or more in interest for short-term loans.

h) Existing coping strategies

Interviewees talked about the many coping strategies they use to offset the impact of natural or manmade events. A number of households are routinely saving portions of their income and depositing it into savings groups or sending to ancestral villages to buy assets, including animals or land. Wherever possible, households are shifting employment opportunities to maximize their monthly income potential. In Tongi, this included taking seasonal based employment. For the extremely poor households, finding employment for their children was essential to meet daily needs.

Socially, concerns over violence and pre-marital sex have resulted in many girls being married at a young age or being sent to ancestral villages. Additionally, women – including those in the garment sector – had changed their mobility patterns. Most women and girls move around in groups.

In response to disaster risk, community members talked about lobbying landlords to raise floor levels and, where needed, suspending household assets (clothing, cooking pots) above flood levels. They also talked of routinely hiring drain cleaners, and sharing costs among multiple households.

Community members were asked to identify conditions that would enhance the socio- and economic status of households. They indicated households where both men and women worked were survived more effectively. These households were able to build savings, using the money to increase productive assets or to start small side businesses.

The interviewed community members were also asked to identify what conditions would cause a family to become more vulnerable. They said divorce or abandonment lead many women further into poverty. Loss of a job following labor unrest and the seasonality of some work made households more vulnerable. Additionally, increased drug use and gambling was forcing many households to sell key productive assets and deplete savings.

E. RECOMMENDATIONS FROM THE COMMUNITY AND KEY STAKEHOLDERS

a) Disaster risk reduction-related recommendations⁶⁰ - Household level

- Strengthen mechanisms for promoting savings and building assets that can then be utilized to support families during floods, water-logging or fires. These assets could also support extremely poor households during periods of un- or underemployment, when seasonal migration back to rural communities is common. Mechanisms need to ensure the most vulnerable in communities – including the extremely poor, women- and child-headed households – are targeted.
- Increase information sharing on disaster risk reduction strategies, procedures and approaches. An informed community has higher levels of resilience as it can more adequately prepare for and respond to unexpected natural and manmade disasters. Simple messaging would help individual households undertake low cost solutions for disaster preparedness, such as keeping a bucket of sand nearby to use in case a fire breaks out.
- Increase information sharing on availability and costs of basic services. The study revealed many poor and extreme households pay higher amounts for basic services

⁶⁰ In 1991 Cyclone over 90% of deaths were women. Women's restricted movement impacts their safety and protection risks (rape, violence, trafficking and abuse) rose in the aftermath of the cyclone as existing community safety mechanisms for women broke down.

(gas, electricity, water) because they do not have access to meters and are not aware of unit costs.

- Support the development of fuel efficient cooking stoves that require less fuel and minimize the use plastics and jute scraps as fuel.
- Inform communities on the impact of gender-based violence, as well as the legal framework and mechanisms victims can utilize to air grievances and get support.

b) Disaster risk reduction-related recommendations – Community level

- Develop a comprehensive community-based plan that addresses fire, water-logging, waste disposal and other natural and manmade disasters. This plan should include contingency planning, training of community-based volunteers, and links to service providers (including the fire department). The fire-related component of the plan should include a plan of action for creating water reservoirs in the community that can be tapped in the event of large-scale fire events.
- Strengthen links and networks between service providers, including government departments, civil society actors, NGOs and community groups. These links could include joint discussions on disaster planning.
- Support settlement communities to build individualized community level disaster plans. These community plans could identify asset needs as well as prevention mechanisms. They could also include components around behavioral change messaging regarding behaviors that increase risk and reduce resilience.
- Work within community structures (e.g. local elites, social workers, imams, teachers, landlords) to identify children most at risk of harmful employment, abuse, exploitation or child marriage. Utilize community networks to reduce these practices and where possible address the underlying causes of these practices.
- Foster the creation of community-based platforms led by women to identify vulnerabilities and generate strategies for building resilience. These platforms could address gender-based violence, decision-making and life skills building for the most vulnerable women in the community. Link these platforms to civil society actors who can mentor these groups on ways to build up resilience among vulnerable women.
- Help develop and equip a cadre of community-based disaster volunteers who can distribute key DRR messaging and support community members during natural and manmade disasters/events. These volunteers should be trained on exit points for community members to use during large fires or floods.
- Support settlement communities to establish community level information hubs that provide DRR messaging as well as information on basic services, employment and costs for basic services.

c) Institutional recommendations

- Support the Gazipur City Corporation to develop a short- and long-term strategy to address the waste disposal needs of its communities. This plan should include aligning initiatives being undertaken by civil society, and must include the development of a long-term waste disposal site. The plan should include measures to promote the establishment of recycling ventures with the private sector, similar to an initiative being developed by BRAC. The plan should ensure it covers both domestic/residential waste, as well as the safe disposal of commercial and industrial waste.
- Support the Gazipur City Corporation to develop a water management plan that regulates the usage of water and includes reservoirs of water for use by the fire service during a large-scale fire.

- Reactivate the City Corporation disaster management committee to assist in developing the two aforementioned plans. This committee meets monthly but has not developed a plan of action to address waste, water and disaster concerns within the community.
- Develop a road safety plan that includes substantial messaging around safe crossing points. Many of the settlement communities are located next to large roads and highways. On a daily basis there are residents injured or killed navigating the unfamiliar roads. A program is needed to educate community members, including children, on road safety. This is especially key as most residents are coming into the settlements from rural communities with less vehicle traffic.
- Support key government departments to enforce regulations on the discharge of untreated effluents from industries surrounding the settlements and key waterways.
- Support the Gazipur City Corporation to modernize its fire stations through the provision of low cost equipment. Support the fire service to train and develop firefighters and volunteers at communities and industries.
- Create a volunteer brigade that includes women and children well informed on both manmade and natural hazards (such as water-logging, fire, etc.) and coping mechanisms. This brigade can distribute community messages, facilitate drills, conduct apropos dramas, and advise community members during natural and manmade events.
- Establish community clinics to address basic health concerns that in a crisis can be mobilized to provide emergency response.
- Establish a community policing system to address harassment, sexual assaults and yaba distribution.
- Create opportunities for formal and informal basic education services for school-aged children.

d) Advocacy-based recommendations

- Develop a garbage management system that addresses both short- and long-term waste issues for both residential and industrial stakeholders. This system should address disposal mechanisms, equipment shortfalls, and community messaging around waste management.
- Develop and enforce minimum standards for low-cost housing for poor and extremely poor households living in slum communities. These standards need to cover types of material used, as well as basic infrastructure provisions. Concerns of overcrowding and fire risk must be considered. Standards need to also include enforcement and monitoring measures.
- Develop a water usage plan. The current water usage is unplanned and does not take into account future needs. As such, extraction of water from submersible pumps does not factor in replenishment or the impact of a dropping water table. A water usage plan that manages supply will need to include measures that encourage rainwater harvesting as well as reuse of grey water. Advocacy will also be needed around the impact of untreated discharges from factories on surrounding communities.
- Develop a City Corporation-led land use plan that clearly articulates land allocation for residential and industrial areas. This plan should consider infrastructure needs as well as the need to separate residential dwellings from factories discharging large amounts of pollutants into water sources. This is especially key as existing practice is for residential complexes, including slums ,to be built in low lying land close to work opportunities. This land usually lacks basic services for water, sanitation or electricity.
- Enforce existing regulations on the treatment and management of industrial effluents to ensure untreated waste is not directly discharged into all water sources, including the

- Turag River. This is especially key, as many of the unplanned settlements are located near water sources, in low-lying land often used as discharge sites for untreated effluents.
- Support key governmental departments to undertake a study of the type and prevalence of industrial waste within the Gazipur City Corporation. This study could explore the impact of the waste on communities, the status of the policy and legal framework and work to build a pool of knowledge on this large community concern.
 - Advocate for the expansion of the fire service network. Currently Gazipur City Corporation has only two fire stations tasked with covering the needs across this vast geography. Establishment of smaller fire stations throughout the City Corporation would reduce response times and the impact of fire on communities. In line with this measure, CARE would advocate to expand the existing fire volunteer corps who could assist with key behavioral change messaging.

e) Gender specific recommendations

- Support mechanisms that create opportunities for women to have increased roles in decision making at the family and community levels. This includes savings mechanisms and community level governance structures.
- Support the establishment of safety mechanisms in settlement communities that protect women from gender-based violence during movement to and from work, in the community and within their homes. These mechanisms should include large-scale community awareness messaging around the legal framework for protecting women, the community mechanisms for hearing grievances, as well as cultural and religious writings on abuse and exploitation.
- Advocate with donors, government and community actors to expand mechanisms that provide technical training, finance and savings mechanisms for women, especially child brides and child/women-headed households.
- Advocate for understanding of the unique vulnerabilities of women-headed households, divorced or widowed women, and child brides.
- Advocate for the enforcement of minimum age of marriage to ensure women are not married as child brides and at increased risk of abuse and health risks, including obstructed pregnancies.
- Advocate for the continued expansion of behavioral change messaging that promotes access to education and optimal nutrition.

F. STUDY AND PROPOSAL

In response to this comprehensive study, CARE has drafted a project proposal designed to address a number of key issues raised in the study. Specifically, **CARE intends to work in six slums (including the two studied for this assessment) to aid community members to prepare for, mitigate, respond to, and plan for natural and manmade disasters.** CARE has chosen to focus on building resilience to shocks and stresses within the targeted urban communities and institutions as there are not many stakeholders working on these issues. The need is great. Development gains cannot be sustained unless we build the resilience of cities and communities.

The following points outline the rational for the proposed initiative:

- Gazipur City Corporation is new, with a huge population supported by limited resources. For example, the City Corporation disaster management committee is yet to be functional.

- Community leadership is absent in the selected slums for the initiative. To identify their vulnerabilities and to take appropriate measures, they need to build solidarity and learn how to raise their voices for change.
- Social exclusion is prevalent, and women are the prime victims of it. Necessary activities are needed to empower women both socially and economically.
- Community and state resources are limited to build resilience of these selected communities against disasters like fire, water-logging, floods, etc.
- Tongi and Gazipur Sadar fire station covers a wide area where fires are common. It is important to build well-equipped and prepared first responder/volunteer groups to minimize the risk of major loss due to disaster.

CARE proposes a project that includes:

- Building and strengthening slum-based households and community structures to a level where they can adequately prepare for, mitigate, respond to and recover from shocks and stresses, including regular fire, water-logging and flood events.
- Building a disaster response system that includes a robust cadre of disaster volunteers, a well-equipped fire service, and comprehensive community-based disaster response plans led by the City Corporation to mitigate risks in extremely vulnerable communities.
- Empowering poor and extremely poor women to become better risk managers able to respond to household and community needs and influence decision-making related to disaster risk reduction as well as violence against women.

The proposed project CARE has designed will work in six communities across two wards within the newly formed Gazipur City Corporation, including the two slums studied in this survey. The project will target households directly, through community empowerment and livelihood activities designed to help women be safe and active participants able to build up assets and offset periods of income insecurity. CARE will also work to strengthen the capacities of City Corporation staff and officials tasked with responding to issues – including water and sanitation – by helping them more effectively plan and budget for delivering key basic services.

While the CARE proposal will not address all the vulnerabilities identified in this survey, it will address many issues that impact the quality of life for poor and extremely poor households. To ensure there is no duplication of service, CARE will closely coordinate with the UPPR program and will implement activities in close partnership with Village Education Resource Centre (VERC), a local NGO with extensive networks within the Gazipur City communities.

G. CONCLUSION

In 2010, USAID and the Asian Disaster Preparedness Center cited Bangladesh as increasingly susceptible to natural and manmade disasters. The impact of this increased risk is especially acute on the poor, who lack assets and resources to draw on during periods of crisis. Existing disaster risk reduction initiatives tend to focus on response and do little to mitigate risk and build resilience. They also rarely focus on informal settlements or slums located within the large megacity of Dhaka.

The studied settlements in Tongi and Konabari are vulnerable to fire, flooding, and water-logging, and have poor waste management and sanitation systems. Residents in these two communities are poor, marginalized, and extremely vulnerable to the impact of natural and manmade disasters.

Coupled with household-based interventions, advocacy to and direct support for institutions providing basic services will be essential to build the resilience of these vulnerable communities to cope with natural and manmade disasters.

H. ANNEXES

ANNEX A: Prioritized risk and vulnerabilities by communities

Tongi	Konabari
<p><i>Poor sanitation and open drains:</i></p> <p>Within this community, there is a large open industrial drain built by neighboring factories. This drain is used by the surrounding industries as the main discharge point for their untreated effluents. Although large in size, it is unable to cope with large discharge volumes, particularly during the rainy season. As the community does not have a working sewage system or formal waste disposal system, makeshift open defecation toilets have been built over the drain.</p> <p>Gazipur City Corporation has no plan in place to dispose of or process the 150 tonnes of household and industrial waste generated across the corporation each day.</p>	<p><i>Waste and sanitation services at the community and household level:</i></p> <p>Despite being built on private land, sanitation services are inadequate given the number of residents. On average, up to 18 households or approximately 90 residents share two latrines. The capacity of these latrines is limited; landlords do not routinely empty the septic tanks. No garbage management system operates to clear away household or community waste.</p>
<p><i>Electricity supply and cost:</i></p> <p>The community is essentially squatting on government land, and thus legal connections are not permitted from the main electric supplier. Instead, two or three landlords and middlemen have obtained connections and sell the electric supply to residents above market rates.</p>	<p><i>Violence against women:</i></p> <p>Women face substantial violence in their homes, at work or while moving around the community. Young women routinely experiencing harassment or eve teasing from boys and young men.</p> <p>Additionally, increased drug consumption and gambling has resulted in high debt levels. It is common for poor and extreme poor households to be in debt during periods of income insecurity. Gambling has further exacerbated this problem with families taking out high interest loans to cover gambling debts. These two issues have resulted in increased violence in income stressed households.</p>
<p><i>School access:</i></p> <p>Access to education is very limited, with the nearest public facility located some distance away. The cost of transport and fees (uniforms, stationary, books) is prohibitively high for most poor and extreme poor households.</p>	<p><i>Water-logging:</i></p> <p>The lack of an adequate drainage system has resulted in the community being inundated with water multiple times per year, up to 10 days each. Concern exists in the community on the disease risk associated with these events. Additionally, families are concerned with the loss of assets – including cooking supplies and furniture – during these events. For many households, water-logging</p>

		requires time off from work and loss in income for extremely vulnerable families.
4	<p><u>Water-logging:</u></p> <p>The lack of an adequate drainage system has resulted in the community being inundated with water multiple times per year, up to 10 days each. Concern exists in the community on the disease risk associated with these events. Additionally, families are concerned with the loss of assets – including cooking supplies and furniture – during these events. For many households, water-logging requires time off from work and loss in income for extremely vulnerable families.</p>	<p><u>Pollution:</u></p> <p>There is a large amount of commercial waste being dumped into the slum from the garment, jute, spinning, drug, cosmetic and polish factories surrounding the community. Little information is known on the toxicity of these effluent or rubbish dumps.</p>
5	<p><u>Violence against women:</u></p> <p>Women face substantial violence in their homes, at work or while moving around the community. Young women routinely experiencing harassment or eve teasing from boys and young men.</p> <p>Additionally, increased drug consumption and gambling has resulted in high debt levels. It is common for poor and extreme poor households to be in debt during periods of income insecurity. Gambling has further exacerbated this problem with families taking out high interest loans to cover gambling debts. These two issues have resulted in increased violence in income stressed households.</p> <p>There are restrictions in women's movement. This is particularly common among wealthier households and extremely poor households.</p>	<p><u>Health – children and women:</u></p> <p>Poor nutrition, limited access to vaccinations (especially for children not enrolled in schooling), and limited or poor prenatal care services are available. Most medical services are located too far from the community.</p>
6	<p><u>Early marriage:</u></p> <p>An increasing coping strategy for many poor families is to arrange early marriages for young women aged 10-12 years. This practice is designed to prevent premarital sex and to reduce the household's expenses. For many of these girls, their ability to negotiate on income, decision-making or sex is limited or non-existent. Concern exists on the health impact for these girls due to early pregnancies.</p>	<p><u>High unemployment forces people into exploitative situations:</u></p> <p>High debt levels force many women into sex work. An estimated 30%-35% of women are involved in the sex trade. This is expected to increase, as the new salary requirements for garment workers will lead to many women losing their employment. This is particularly acute for helpers. (The ratio used to be one helper for each machine operator. With the newly mandated salaries, many factories have shifted to one helper for every three-machine operators.)</p>

<p>7</p> <p><u>Fire risk:</u> There is growing concern within the community of the risk of fire associated with cooking in confined spaces and burning materials such as plastic or jute scraps. Additionally, there is a high amount household and industrial waste being dumped on pathways, increasing fire risks. Electrical connections are poor, with sub-standard electrical cabling.</p>	<p>7</p> <p><u>Education:</u> There is very limited capacity to meet the basic educational needs within the community. Many children over the age of 9 are being sent back to family members in the village. Older girls are kept home to care for younger siblings. Many children have failed to complete 2-3 years of schooling and are considered functionally illiterate.</p>
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ANNEX B: Analytical framework of the study

Factors to be explored	Explanation	Tools to be used (definitions follow below)
Demographic and administrative structures	<p>Issues analyzed include:</p> <ul style="list-style-type: none"> • Demographic information and its change patterns ; • Administrative structures, and their advantages and limitations (particularly for poor and vulnerable citizens); • Recent development of government and private institutions and establishments (e.g. hospital, fire service, education institutions, factories, and other industries) 	Secondary data review (census, city documents/statistics, etc.) Four rounds of key interviews
Social diversity ,power structures and gender dimensions	<p>Issues analyzed include:</p> <ul style="list-style-type: none"> • Diverse social groups, socio-economic strata and attributes of different classes; • Socially excluded groups; • Social equity and cohesion; • Proportionate female headed households; • Social position, economical status, gender relations between sub-groups; • Duration of stay within the city, mode of migration; • Local power structure and politics, influence over the community, neighboring rural village and industrial set ups 	Wealth ranking –two exercises in two slums Community resource map- two exercises in two slums Time line – two exercises in two slums Mobility mapping – two exercises in two slums
Institutions, rules and behavior	<p>Issues analyzed include:</p> <ul style="list-style-type: none"> • Formal and non-formal institutions in the community, and their supporting or opposing mechanisms; • Extent of participation of sub-groups in formal and non-formal institutions, leadership and decision making process; • Institutional arrangements, organizational structures, and social norms that support or 	Institutional mapping/venn diagram – two exercises in two slums Key informant interviews – six exercises with Government of Bangladesh, private sector and trade unions

	<p>constrain the productive activities of poor or vulnerable people (with focus on disaster and risk management – e.g. fire services);</p> <ul style="list-style-type: none"> • Trade unions, extent of influence and participation of the poor 	
Stakeholders	<p>Issues analyzed include:</p> <ul style="list-style-type: none"> • Stakeholders (e.g. NGOs, slum committees, etc.) that are actively engaged into the community; • Services and support mechanisms to the diverse social sub-groups, including their gender dimensions; • Power structure and politics, extent of influence over community, neighboring rural village and industrial area. 	
Community participation characteristics	<p>Issues analyzed include:</p> <ul style="list-style-type: none"> • Slum dwellers' participation in different forums(slum committees, trade unions, etc.) within communities; • Opportunities and decision-making capabilities in community development; • Economic /livelihood activities; • Access to markets across different social groups, access to utilities (water, sanitation, electricity, fuel etc), health, education and safety nets 	Focus group discussion – two exercises in two slums
Social, environmental and natural risks	<p>Issues analyzed include:</p> <ul style="list-style-type: none"> • What are the local, regional, or national threats? (May include eviction, slum demolition, building collapses, civil conflict.); • Conflicts between government, community and private sectors, the “shocks” vulnerable people face (e.g. industrial pollution, fire), and community capacity to respond; • Vulnerability to natural disasters due to monsoon rains, heat stroke, etc. 	Vulnerability mapping – two exercises in two slums Seasonal calendar – two exercises in two slums NOTE: Much of the information will be captured from the aforementioned tools, including the community resource map, focus group exercises, institution analysis and observations by the CARE team.

	<ul style="list-style-type: none"> • Proportion of slums in hazardous sites, room crowding rate; • Gender dimension of vulnerability, including elderly and children; • Crime and violence • Risk of epidemics (e.g. diarrhea, dysentery), and infant and child mortality; • Given the shocks and vulnerabilities, what are the local coping mechanisms adopted by the poor? 	
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ANNEX C: List of secondary literature reviewed

- ACF, 2013. *Briefing Paper: Enhancing Resilience to Shocks and Stresses*
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- CARE, 2013. *Seema Project Wash Information: Gazipur Sadar*
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- CARE, 2014. *Working for poverty reduction and social justice: The CARE 2020 Program Strategy*
- CARE, *Working Paper Series for Regional Workshop: Capacity Building To Community Volunteers Under Bangladesh Urban Disaster Mitigation Project*
- CARE, 2014. *Elaborating the Impact Statement on the Most Marginalized Groups in Urban Areas: An Outline of the Analysis, Theory of Change and Learning for Impact*
- CARE, 2014: *Summary: NGOs Working Urban Settings*
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- Government of Bangladesh, 2005. *Industrial Policy*
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- Government of Bangladesh, 2010. *Perspective Plan: Strategic Plan (2010-2021)*
- Government of Bangladesh, 2011. *6th Five Year Plan: Urban Growth and Poverty Reduction*
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- Habitat for Humanity, 2013. Presentation: Critical Shelter Problems and Habitat's Initiatives
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- Professor Nazrul Islam, 2013. Overview of Urbanization in Bangladesh
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- World Post, April 21, 2014. Article: Drugs in Dhaka.
- World Vision Bangladesh, 2013. Presentation: Urbanization and Poverty in Bangladesh

ANNEX D: List of Key Informant Interviews

Sl	Name of the Key Informant	Date of Interview	Contact details
1	Chand Sultana	24/03/14	Branch Manager, Shakti Foundation (NGO), Rail crossing, Tongi, Gazipur
2	Moulana Mohammad Abdul Hannan	23/03/14	Director and Teacher, Al-Madina Qurania Madrasha, Adjacent of Tongi Model Thana, Tongi
3	Md. Salim Hossain	23/03/14	Ward Counselor, Tongi, Ward 55.
4	a. Nazrul Islam b. Md. Janhangir Alam Bhuiyan	24/03/14	a. Town manager, UPPR Project, UNDP b. Settlement improvement specialist, UPPR Project, UNDP
5	Mahmudul Islam	30/03/14	Slum Development Officer, Tongi Zone personal officials, Gazipur City Corporation
6	Md. Shafiqur Islam Bahar	30/03/14	General Secretary , United Garments worker league, Dhaka Registration: 4603, National worker league, member of Tongi regional Branch
7	Mintu Miah	23/03/14	Former garments operator, he has been living in Konabari for 13-14 years
8	Shahnaj Parvin	24/03/14	Woman Counselor, Ward 10, 11 and 12, Kobabari
9	Nurnahar Begum	23/03/14	Assistant Teacher, Baimail Govt. Primary School, Konabari
10	Md. Azizul Bari	23/03/14	Executive director, International Angel Association, (Voluntary Organization of Japan), Konabari, Gazipur.
11	MD. Farid Uddin	23/03/14	Project Officer, Level-8, BRAC Health Center, Kader Market, Konabari
12	Abbas Uddin Khokon	24/03/14	Ward Counselor, Ward No 11, Konabari.
13	Dr. Mohammad Shakil Akhter,	01/03/14	Department of Urban & Regional Planning, BUET), Dhaka, Bangladesh.
14	a. Brigadier General Ali Ahmed Khan, b. Md. Ataul Haque,	21/04/14	a. PSC, Director General, Fire Service and Civil Defence b. Joint Secretary, Project director, Directorate of Fire Service and civil Defence
15	Khaled Masud Ahmed	02/04/14	Program Coordinator and his other four team members, IFRC and BDRCS
16	Shah Muntamin Mujtaba	03/04/14	Program Manager DRR, Islamic Relief Bangladesh
17	Professor Abdul Mannan	03/04/14	Mayor, GCC and Sultan Mahmud, CEO, Gazipur, City Corporation (GCC)
18	Khemraj Upadhyaya	01/03/14	Manager, NARRI Consortium, Action Aid
19	Mohammad Abdul Qayyum	31/03/14	Additional Secretary & National Project Director, Comprehensive Disaster Management Programme (Phase II) (CDMP),
20	Jinat Ara Begum	03/04/14	Jinat Ara Begum, Head of Disaster Risk

			Management , Plan International
21	a. Khondker Fowze Muhammed Bin Farid b. Uday Sankar Das	07/04/14	a. Senior Planner, Urban Development Directorate, Ministry of Housing and public works. b. Senior Planner, Urban Development Directorate, Ministry of Housing and public works.
22	Muhammad Murad Billah	31/03/14	Senior GIS Coordinator, Asian Disaster Preparedness Center (ADPC), Dhaka Bangladesh
23	Sayed Motiul Ahsan	31/03/14	Senior Manager, DRR, Save the Children, Dhaka, Bangladesh.
24	Professor Dr. A. S. M. Maksud Kamal	11/04/14	Chairman, Department of Disaster Science and Management and Dean Facultu of Earth and Environmental Sciences, University of Dhaka, Bangladesh.