PEOPLE'S ADAPTATION PLAN – DIGANTA COLONY

AUTHORS & ACKNOWLEDGEMENTS

THIS REPORT WAS DEVELOPED BY

DESCRIPTIONS

Sector
Region
Keywords
Contact

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Executive Summary

A locally led, highly participatory process identified the primary climate threat to this community to be limited access to clean drinking water. The people's adaptation plan calls for immediate redress via two priority adaptation solutions: i) provision of 1x 50,000 liter water tank at the community level; and ii) repair and restoration of existing water tanks. Financing of USD 22,400 is required to address this water need. A series of other climate adaptation solutions were identified, most prominently improvements to housing, without which relocation would be required.

GCA and BRAC already invested USD 5,400 to install 40,0000 litre rainwater harvesting system inside a primary school premise. Further resources of USD 38,716 would be required for the remaining solutions taking total financing for this People's Adaptation Plan to USD 44,116.

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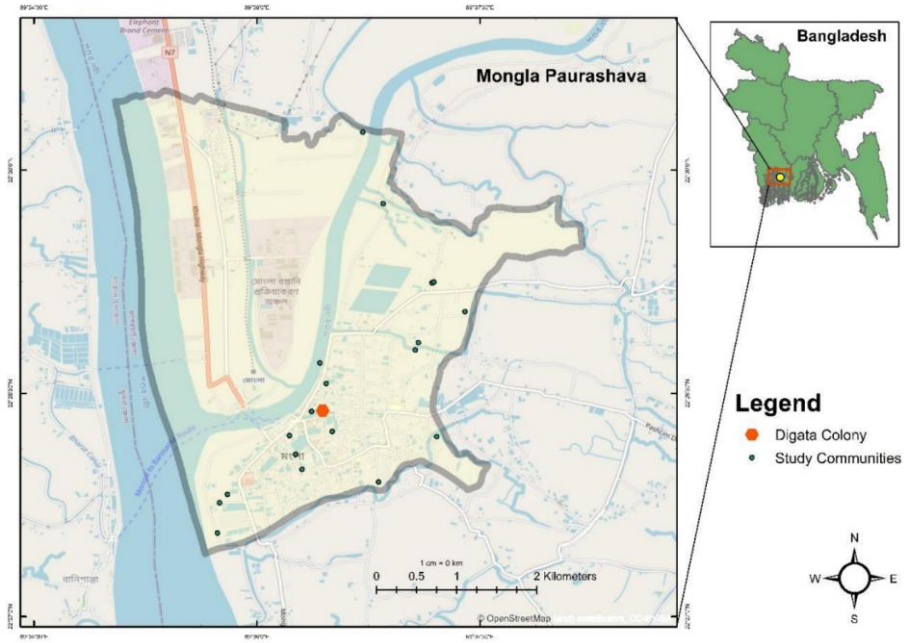
1. INTRODUCTION

1.1 About Diganta Colony



Diganta Colony was established inside ward number 6 of Mongla Municipality by the Port Authority in 1958 to accommodate laborers working at the ship loading dock. The residents are primarily migrants from nearby districts such as Barisal, Bagerhat, and Noakhali, who moved to Mongla seeking job opportunities at the port.

As per the household enumeration conducted by the communities in 2022, 32.26% of households currently have at least one migrant member. When the community was first formed, tin-shaded structures were built; these were replaced in the early 2000s with five four-story buildings. Since then, the Port Authority has not renovated the accommodation. Having been affected by multiple cyclones and earthquakes, the buildings' structures, including poles and beams, have weakened. Rising salinity levels have caused plaster and paint to peel, making the buildings unsafe for residents. Over time, more people moved to the colony and constructed additional tin-shaded structures to live in.

Key Features of the Community:

Total no. of HHs: 123

Total Population: 446

Avg. HH size: 3.6

Climate vulnerability ranking by communities: 15th

Gender ratio: Male (50.34%), Female (49.66%)

Female headed HHs: 14%

Per capita income: BDT 3,819 (USD 32.68)

Avg. distance to nearest health complex: 0.8 km

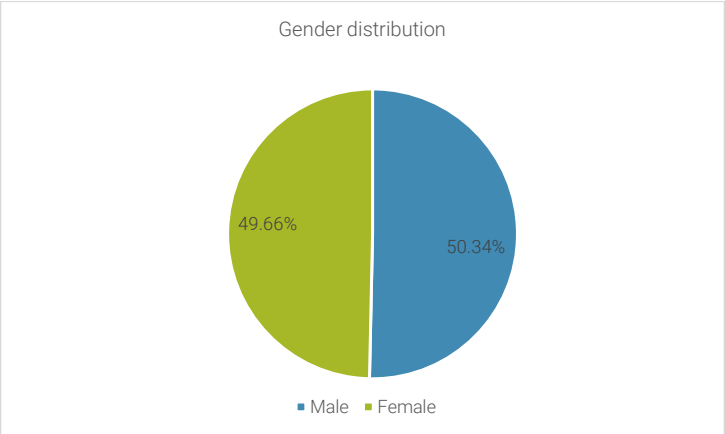
Source of drinking water: Municipality supplied water and rainwater

2. SITUATIONAL ANALYSIS OF DIGANTA COLONY

2.1 Demographic and Socio-Economic Overview

2.1.1 Population Size & Composition

Diganta Colony is home to an estimated 446 residents, comprising 225 males (50.34%) and 221 females (49.66%) across 123 households, underscoring its demographic importance. Male-headed households constitute the majority, accounting for 86% (105 households), while female-headed households represent 14% (18 households). This pattern reflects traditional societal norms in which men are typically viewed as the primary providers. However, the notable presence of female-headed households indicates a shifting social dynamic, with an increasing number of women assuming leadership roles within their families. This change may be influenced by factors such as migration, widowhood, and evolving economic and social circumstances.



Household sizes in Diganta Colony vary considerably, with an average of 3.6 persons per household. Male-headed households continue to dominate, comprising 86% (105 households), while female-headed households represent 14% (18 households). Small households of 1 to 3 members are the most common, accounting for 50.81% (62 households), followed by medium-sized households of 4 to 6 members at 43.55% (54 households). Large households with seven or more members are relatively rare, making up only 5.65% (7 households), with the largest household recorded at 11 members, including both nuclear and extended family members. This distribution reflects a trend toward smaller family units, possibly driven by urbanization, evolving family dynamics, and economic pressures that shape household composition and living arrangements.

2.1.2 Socio-Economic Indicators

Household income and expenditure

Findings from a detailed house-to-house enumeration reveal that the average monthly household income in Diganta Colony is BDT 13,786 (USD 114.21), while the average monthly household expenditure is BDT 13,024 (USD 107). The majority of households earn between BDT 5,000 and 10,000 per month, and their monthly expenditures generally fall within the same range, indicating financial instability with little to no capacity for savings.

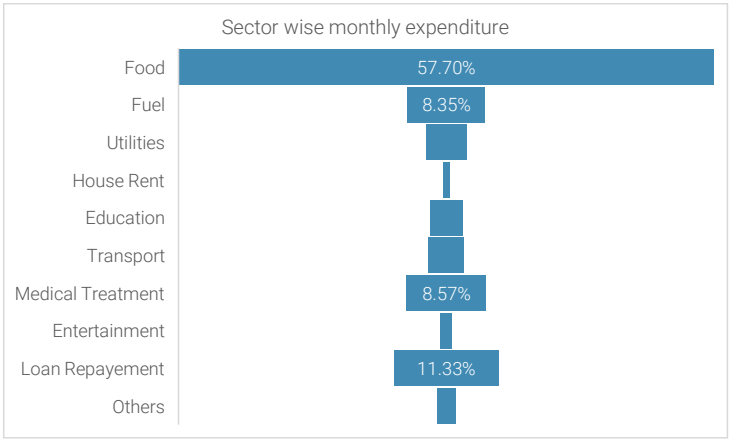
Monthly household Income (BDT)	Percentage
<5,000	4.03%

5,001-10,000	48.39%
10,001-15,000	21.77%
15,001-20,000	14.52%
20,001-30,000	9.68%
Above 30,000	1.61%
Grand Total	100.00%

Approximately 91.94% of households have moderate to high monthly expenditures, ranging from BDT 5,001 to 20,000. However, economic disparities persist; 3.23% of households have low monthly expenditures (below BDT 5,000) and limited financial resources, while others experience moderate to high financial stability. Addressing these challenges requires targeted poverty alleviation programs, enhanced livelihood opportunities, and policies aimed at reducing economic inequality. Improving financial stability and access to resources will contribute to the overall well-being of the community and reduce vulnerability.

Monthly household expenditure (BDT)	Percentage
<5,000	3.23%
5,001-10,000	50.81%
10,001-15,000	29.84%
15,001-20,000	11.29%
20,001-30,000	4.03%
Above 30,000	0.81%
Grand Total	100.00%

An analysis of sectoral expenditure reveals that the largest share of monthly household spending is on food (57.71%). A significant portion (11.33%) is allocated to loan repayments, highlighting financial instability and over-reliance on credit. Households also spend 8.57% of their income on medical treatment, reflecting prevalent health concerns in Diganta Colony.



Household savings and loan

The average monthly household savings in Diganta Colony is only BDT 565.04 (USD 4.68), reflecting significant financial instability among residents. To cope with rising costs, 41% of households have taken loans from local microfinance institutions, cooperatives, or NGOs. Meanwhile, only 18% of households currently access social protection schemes such as allowances for widows, the elderly, freedom fighters, and persons with disabilities.

Monthly household savings (BDT)	Percentage
<5,000	92.31%
5,001-10,000	7.69%
Grand Total	100.00%

Among the 41% of households with loans, the average loan amount is substantial—BDT 51,372 (USD 425.59)—with an average monthly installment of BDT 2,747 (USD 22.76).

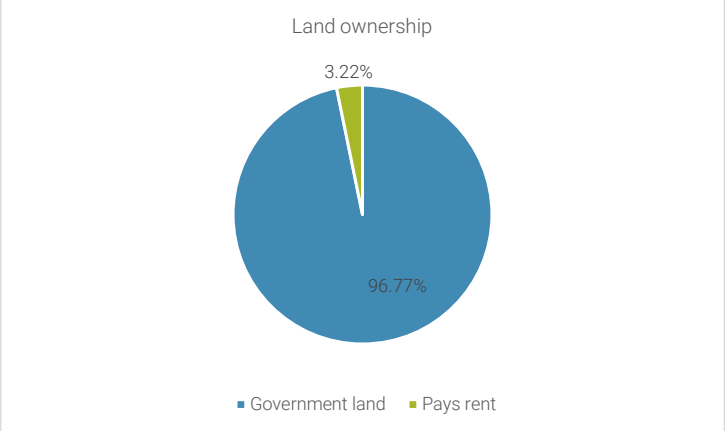
Total loaned amount (BDT)	Percentage
<5,000	3.92%
5,001-10,000	1.96%
10,001-15,000	0%
15,001-20,000	13.73%
20,001-30,000	25.49%
Above 30,000	54.90%
Grand Total	100.00%

Analysis of loan utilization shows that the largest share (25.17%) of borrowed funds is invested in new or existing businesses, with 18.89% used for purchasing rickshaws or vans—indicating a shift towards non-agricultural livelihoods. Significant portions of loaned money are allocated to home repairs (14.99%) and toilet repairs (12.57%), highlighting the financial pressures imposed by climate vulnerabilities. Additionally, 9.14% of loan funds are used to repay other debts, underscoring a concerning cycle of indebtedness among residents of this informal settlement.

2.2 Settlement Patterns

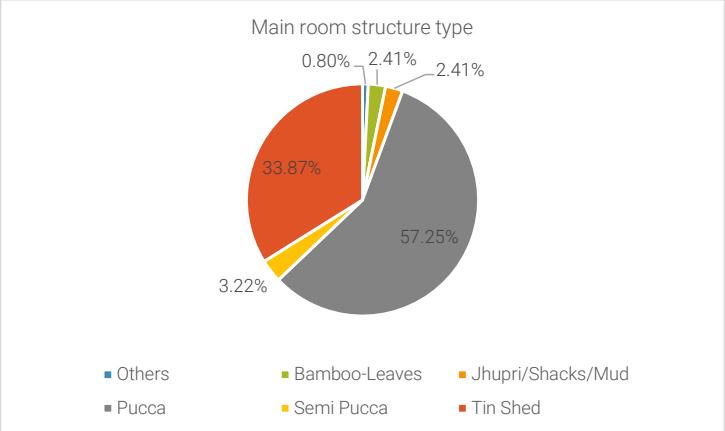
2.2.1 Access to Land

The initial residents of Diganta Colony settled on land owned by the Port Authority, placing the community at a continual risk of eviction. According to enumeration data, 96.77% of households continue to reside on Port Authority land without paying rent, living under the constant threat of displacement. Meanwhile, 3.23% of respondents pay an average monthly rent of BDT 983 (USD 8.02). This precarious tenure situation adds to the vulnerability of a population already facing deteriorating housing conditions due to lack of maintenance and environmental challenges.

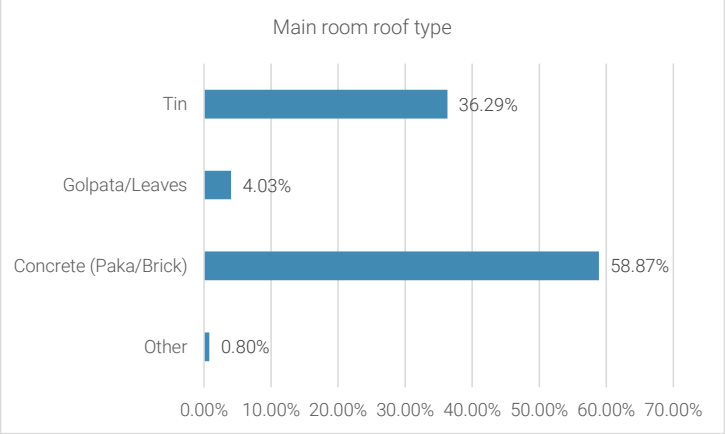


2.2.2 Housing Types and Conditions

Enumeration data reveals that households in the settlement have an average of 2.1 rooms, with an average household size of 3.6 persons. This indicates a high level of congestion, as many families must manage limited living space, which can result in overcrowding and reduced privacy. Furthermore, the reliance on shared resources among households places additional strain on available amenities, potentially affecting overall living conditions and quality of life. Addressing housing adequacy and improving access to essential services are critical steps toward alleviating these challenges and enhancing residents' well-being.



Housing conditions in Diganta Colony remain critically poor. Data revealed that although the majority (57.26%) are pucca (permanent structures), they are in extremely poor condition due to lack of maintenance and continuous exposure to salinity. The Port Authority has officially designated the colony as a 'risk zone' and deemed it 'dangerous for living.' Despite this, no action has been taken by the Authority to renovate the existing housing or relocate residents to safer accommodations. While some families have left the colony to settle elsewhere, many remain without this option. Additionally, 33.87% of homes are tin-shaded, which become unbearably hot during summer and heatwaves, effectively turning these dwellings into virtual ovens.



Regarding the roofing materials of the main rooms, 58.87% of households have concrete roofs, while 36.29% have tin roofs. Approximately 4.03% of households have roofs made from golpata and other leaves, which are fragile and highly susceptible to being blown away during cyclones.

Compounding the challenges, 62.9% of primary rooms are in only moderate condition, constructed with poor-quality materials that urgently require refurbishment. Additionally, 35.48% of homes are dilapidated, posing significant safety and health risks. These harsh living conditions disproportionately affect women and children, who spend the most time indoors—often near open cooking stoves—where trapped heat and poor ventilation exacerbate discomfort, dehydration, and exposure to heat-related illnesses. Only 1.61% of homes are in good condition, underscoring the urgent need for safe, climate-resilient housing in this vulnerable community.

2.2.3 Energy

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Electricity supply and access

Field data indicates that 98.39% of households rely on electricity as their primary source of lighting and power, while only 1.61% use kerosene lamps. This demonstrates significant progress in electrification within the settlement. However, electricity distribution remains inefficient and unreliable. Many households experience frequent power outages or lack access to a stable connection, limiting their ability to operate essential appliances and lighting. This inconsistency not only affects daily life but also impedes economic activities, particularly small businesses that depend on a stable power supply.

Cooking energy

Firewood is the primary cooking fuel for 78.8% of households in Diganta Colony. Its widespread use is driven by affordability, accessibility, and cultural familiarity, especially within informal settlements. However, reliance on firewood raises significant environmental concerns, such as deforestation, and health risks due to prolonged exposure to smoke and indoor air pollution. Liquefied Petroleum Gas (LPG) is the second most common cooking fuel, used by 19.4% of households. Its popularity is increasing due to its efficiency, cleanliness, and government efforts to promote cleaner cooking options. Nonetheless, the high cost of LPG and the initial investment required for stoves and cylinders remain significant barriers for many low-income families. A small proportion (0.8%) of households use grass, herbs, or bark as cooking fuel.

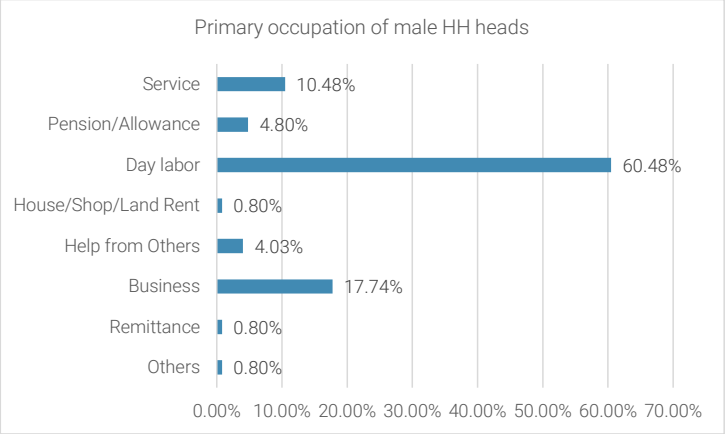
Main source of cooking energy	Households (%)
Firewood	78.8%
Liquefied petroleum gas (LPG)	19.4%
Grass/herbs/bark	0.8%
Grand Total	100.00%

2.3 Livelihood Systems and Vulnerabilities

2.3.1 Primary Livelihoods

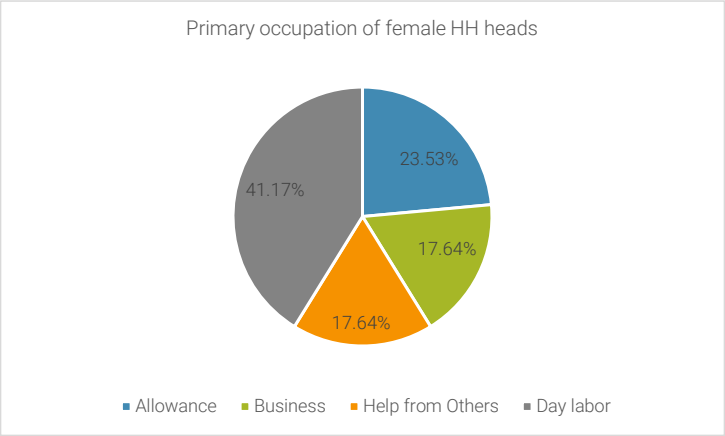
Male headed households

Analysis of the enumeration data indicates that the majority of respondents (60.48%) are engaged in day labor as their primary occupation. Other significant occupations include running small businesses, such as grocery stores (17.74%), and private service jobs (10.48%). Since 86% of households are headed by male members, these figures primarily reflect the occupations of male household heads.



Female headed households

Primary data reveals similarities in the occupations of male and female household heads within Diganta Colony. Like their male counterparts, the majority of female household heads (41.18%) work as day laborers, while 17.65% operate their own small businesses. However, a notable 23.53% rely solely on allowances, and 17.65% depend on financial support from others, highlighting the economic vulnerability faced by female-headed households.



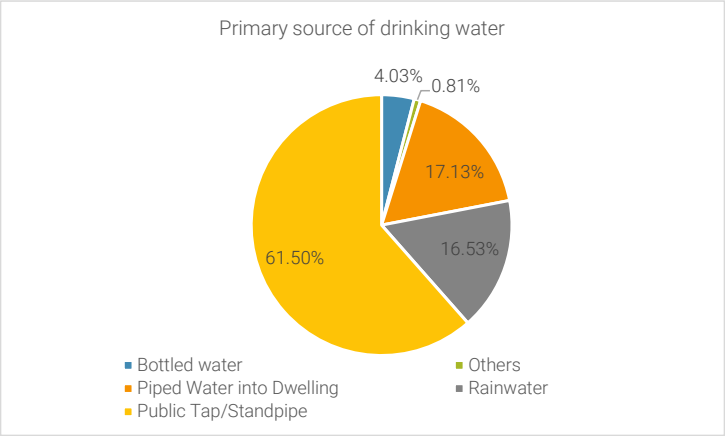
2.4 Infrastructure and Services Baseline (WASH, Housing, Roads, Drainage, Energy, Health)

2.4.1 Water

Access to and supply of drinking water

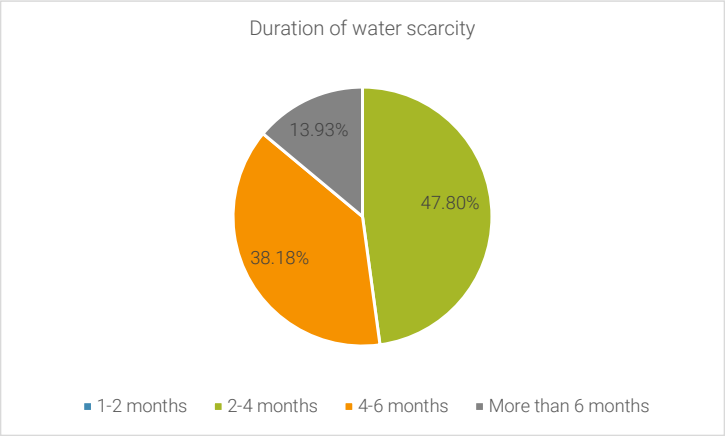
Water scarcity is the most acute climate-induced challenge facing Diganta Colony. The enumeration data reveal that the primary source of drinking water for households in Diganta Colony is public taps provided by the municipality, with 61.50% of residents relying directly on them. The community has only two water taps that serve as the main source of drinking water. Women typically collect water twice a day, often standing in long queues for hours. Poor maintenance, low water pressure, and unhygienic surroundings further complicate water collection. On average, the taps are located 95 meters from households, and it takes approximately 49 minutes to collect water—making this a physically exhausting and time-consuming task.

Only 17.13% of households have direct access to the main municipal water supply. Given the limited number of public taps, which are frequently unreliable and insufficient to meet the community's needs, many families depend on neighbors with private connections for water access. This informal sharing arrangement sometimes leads to social tensions within the community.



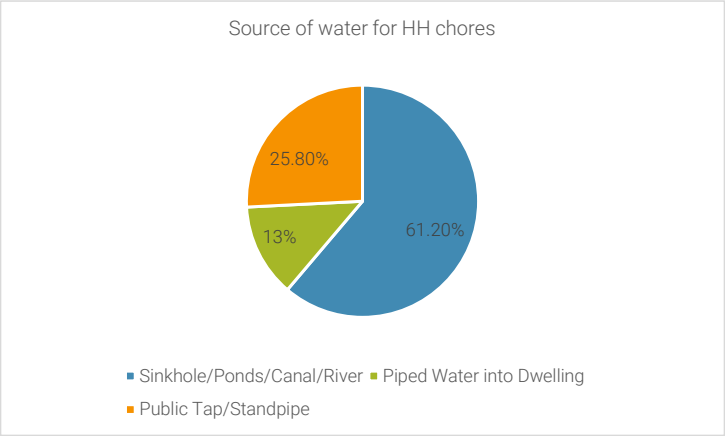
A significant portion of the population (16.53%) relies on alternative water sources such as rainwater. Rainwater is collected either in tanks provided by NGOs or purchased using loaned funds, as well as in smaller containers like pots and pitchers. For the remainder of the community, municipal water supply remains the sole source.

During the dry season, which lasts nearly six months, the municipal water supply is significantly reduced due to low water pressure. Consequently, residents of Diganta Colony face water scarcity for approximately half the year and often have no alternative but to consume saline surface water from nearby ponds, exposing them to health risks.



Access to and supply of water for household chores

For other household chores such as cooking and cleaning, the majority of households (61.2%) rely on surface water sourced from ponds, canals, or rivers, which are predominantly saline. This reliance poses significant health risks to the community, particularly affecting women. As a result, waterborne diseases and skin conditions are common during the dry season. Additionally, women experience various reproductive health issues throughout the year, exacerbated by poor water quality and sanitation conditions.



2.4.2 Sanitation

In Mongla Municipality, the majority of households rely on toilets with ring slabs but without water seals as their primary means of human waste disposal. This dependence is even more pronounced in Diganta Colony, where 73.39% of households use such toilets. Only 22.58% of households have ring slab toilets equipped with water seals. The widespread use of ring slab toilets without water seals can be attributed to their affordability, ease of construction, and low maintenance costs compared to modern sanitation systems. However, these toilets expose users to harmful gases, foul odors, and disease-carrying insects, significantly increasing the risk of infections such as diarrhea, cholera, and respiratory illnesses. This unhygienic setup can also contaminate water sources, endanger children, and discourage toilet use, ultimately promoting open defecation and exacerbating public health risks.

Approximately 4.03% of the population still uses hanging toilets, which lack any containment system such as pits, tanks, or sealed facilities. This allows human waste to seep directly into surrounding soil and water, contaminating nearby ponds, rivers, and shallow tube wells with harmful pathogens. The result is increased outbreaks of waterborne diseases such as cholera, typhoid, and hepatitis, as well as environmental degradation.

Type of toilet	Percentage of Households
Ring slab without water seal	73.39%
Ring slab with water seal	22.58%
Hanging toilet	4.03%
Grand Total	100.00%

A significant portion of households (approximately 36.66%) share sanitation facilities with multiple families, highlighting the prevalence of communal sanitation. Among these households, 75% report having to wait to use the toilets, with an average wait time of 8.7 minutes. However, reliance on shared latrines raises concerns about hygiene, overcrowding, and the overall quality of sanitation services. Poorly maintained shared toilets contribute to the spread of diseases, create unpleasant living conditions, and cause environmental pollution—especially in densely populated informal settlements like Diganta Colony.

2.4.3 Solid Waste Management

Household waste storage and disposal

Solid waste management remains a critical challenge in urban informal settlements across Bangladesh, directly impacting public health and the environment. Data from Diganta Colony reveals that 49.19% of households store waste in plastic bags, which are often discarded in open areas, drains, or streets due to the absence of formal collection systems. Another 43.55% of households stack waste in designated places; however, these piles are frequently washed away during rains, clogging drains, causing waterlogging, and creating breeding grounds for mosquitoes and other disease vectors. Only 7.26% of households use garbage bins or drums, indicating very limited access to safe waste storage facilities.

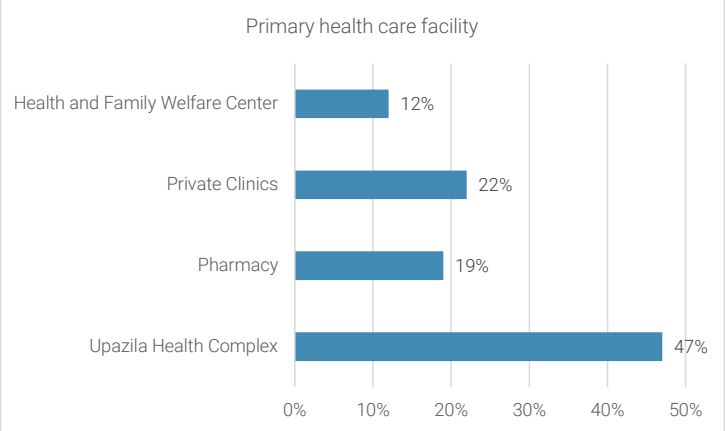
Household level solid waste storage facility	Percentage of households
Collected in plastic bags	49.19%
Stacked in a specific place	43.55%
Garbage bin/drum	7.26%
Grand Total	100.00%

Regarding waste disposal, 29.03% of households dispose of waste directly into nearby water bodies, while 28.23% throw it in open spaces or roads. Additionally, 38.71% dump waste into holes, and 3.28% discard waste directly into drains. These unsafe practices underscore the severe lack of formal waste management infrastructure in Diganta Colony, allowing large volumes of waste—especially plastic—to enter the drainage system unchecked.

Solid waste disposal method	Percentage of households
Throwing in nearby water bodies	29.03%
Dumbing in holes	38.71%
Throwing in open spaces/road	28.23%
Throwing in drains	3.28%
Grand Total	100.00%

2.4.4 Health

Health care data from Diganta Colony indicates that 47% of residents rely on the Upazila Health Complex, which is often located outside the settlement and difficult to access promptly during emergencies or floods. Approximately 22% of residents seek care at private clinics, while 19% depend on pharmacies, which may provide quicker access but are often unaffordable or unregulated. Additionally, nearly 12% utilize local Health and Family Welfare Centers or homeopathic treatments, reflecting a reliance on facilities that may lack the capacity to manage severe or waterborne illnesses effectively.



In Diganta Colony, only 13.71% of residents live within 100 meters of a health care facility, and just 3.23% reside between 101 and 500 meters away. The vast majority—79.84%—live between 501 and 1,000 meters from the nearest facility, while another 3.23% are located more than one kilometer away. In a densely populated informal settlement, these distances pose significant barriers to timely healthcare access, particularly during heavy rainfall or waterlogging when poorly maintained roads and clogged drains slow travel, making it unsafe and costly. For vulnerable groups such as the elderly, women, and children requiring urgent care, even a brief delay can have serious consequences. Limited transportation options, unsafe walking paths, and the lack of nearby primary health services exacerbate these challenges, highlighting how inadequate spatial distribution of facilities intensifies health vulnerabilities in the community.

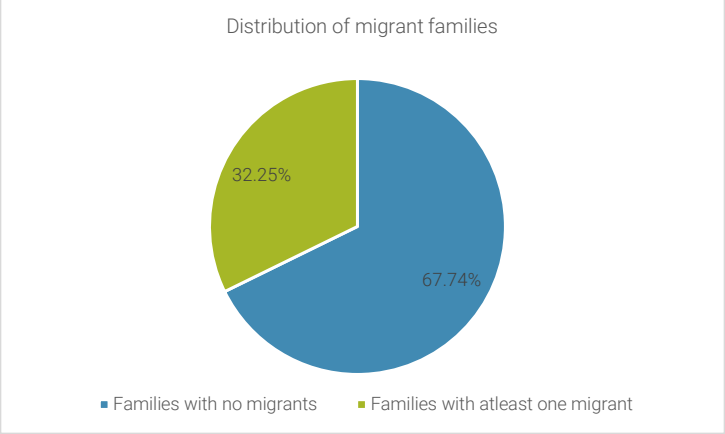
2.4.5 Drainage Systems

There is only one drainage network connected to a section of the community. However, even this is largely nonfunctional due to lack of maintenance and open disposal of solid waste, despite there being garbage disposal points provided by the Municipality free of cost.

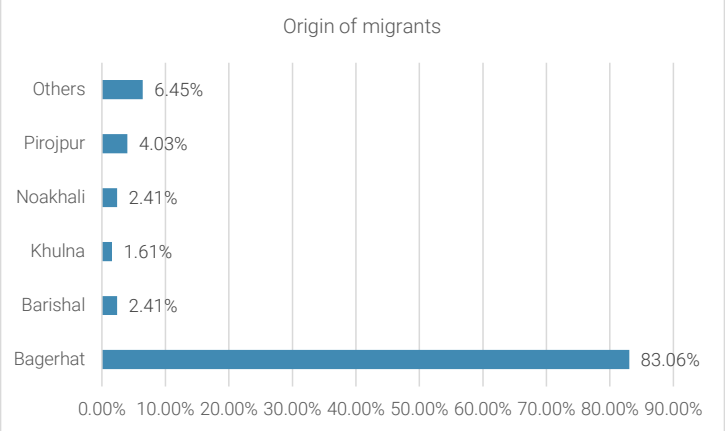
2.5 Migration

2.5.1 Patterns of Migration

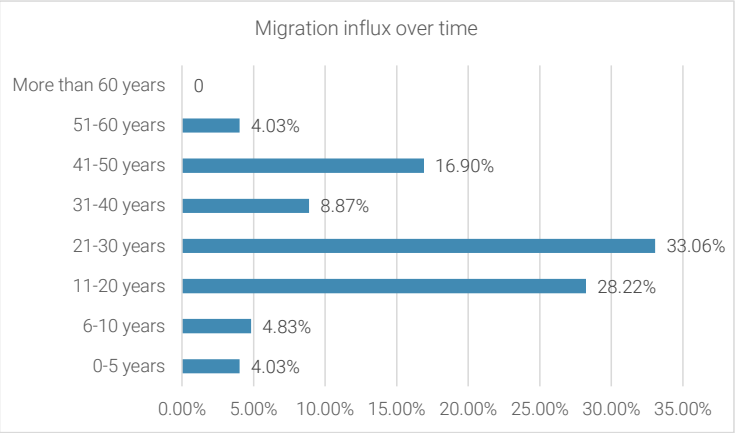
According to the collected data, 32.26% of households (40 households) have at least one member who migrated into the area, while 67.74% (83 households) consist entirely of members born within Diganta Colony. This reflects a significant rate of migration, primarily driven by employment opportunities and business-related activities.



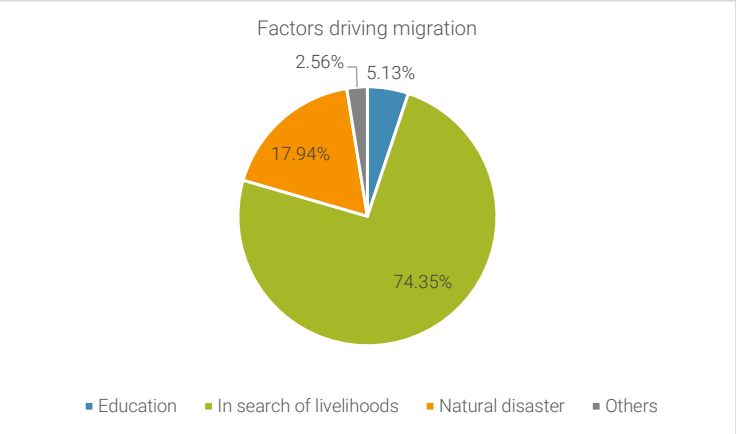
2.5.2 Trends of Migration



Data indicates that the majority of residents (83.06%) migrated to Diganta Colony in Mongla Municipality from other upazilas/thanas within Bagerhat district, including rural areas of Mongla upazila, Morrelganj, and Sharankhola—three of the most climate-vulnerable upazilas in Bangladesh. Additionally, a notable portion of residents (4.03%) migrated from Pirojpur district, located to the east of Bagerhat. The highest influx occurred between 1992 and 2001, during which 26.70% of current residents relocated to Diganta Colony.



2.5.3 Factors affecting Migration



The primary pull factor attracting migrants to Mongla Municipality is the availability of livelihood opportunities, while the push factors at their places of origin are predominantly natural disasters. This suggests that Mongla serves as an economic hub for individuals displaced by environmental hazards who are seeking to rebuild their livelihoods. The data also indicates that a significant proportion of migrants are young people, driven by the need for employment and economic independence—a trend consistent with broader patterns of urban migration among youth.

When asked about the root causes of livelihood loss in their places of origin, 74.7% of respondents attributed it to climatic hazards such as cyclones, storm surges, and river erosion. The continuous influx of new residents is already placing pressure on housing, public services, and infrastructure, highlighting the urgent need for improved urban planning to accommodate population growth. Consequently, demand for affordable housing, commercial spaces, transportation, and social amenities is expected to increase as migration continues.

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3. COMMUNITY CLIMATE RISK ASSESSMENT & VULNERABILITY ANALYSIS

3.1 Community perception about climate change

Using the methodology outlined in chapter three, Diganta Colony has been ranked as the 15th most vulnerable informal settlement within Mongla Municipality. The most frequently faced climatic hazards, identified by the residents in Diganta Colony include increased water salinity, cyclones and storm surges, high tide, erratic and excessive rainfall, and rising temperatures—each exacerbating existing socioeconomic and infrastructural vulnerabilities.

According to the household enumeration data, nearly two-thirds of residents (62.9%) report that they or their families have directly faced the impacts of climate change, reflecting a substantial but not universal awareness of its effects. Salinity intrusion is a notable concern, with 66.1% observing increases in water and soil salinity over the past 20–30 years—posing risks to building foundations, contaminating drinking water, and reducing the productivity of small household gardens. A strong majority (85.5%) believe temperatures have risen, and 84.7% feel winters have grown shorter, aligning with broader warming trends along coastal Bangladesh.

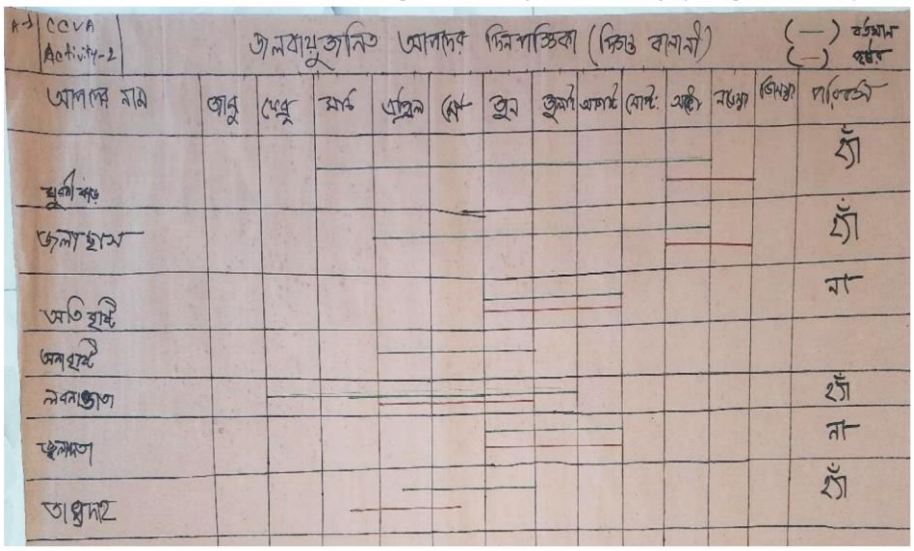
Rainfall changes are perceived even more sharply—88.7% believe rains have become heavier and more erratic, a shift that, in Diganta's low-lying, poorly drained environment, heightens the risk of waterlogging and localized flooding. Seasonal disruption is also recognized, though less unanimously than in other settlements: only 38.1% feel Bangladesh still experiences six distinct seasons. Together, these perceptions point to a community already contending with climate-related stresses that compound existing infrastructure, water, and sanitation vulnerabilities, underscoring the need for locally grounded adaptation strategies.

Perception about climate change	Yes	No	Do not feel any change
Have you/your family ever faced impacts of climate change	62.9%	37.9%	
Has water and soil salinity increased in the last 20-30 years?	66.13%	33.06%	0.81%
Has the temperature risen in the last 20-30 years?	85.48%	2.42%	12.10%
Has rainfall become more frequent and intense than what it was 20-30 years ago?	88.71%	8.87%	2.42%
Do you feel six distinct seasons in Bangladesh like what it was 20-30 years ago?	38.10%	61.9%	0.81%
Is winter getting shorter?	84.68%	5.65%	9.68%

3.2 Changing hazard patterns

During the community risk profiling exercise (described in chapter 3 section 4.3) community perceptions of changing patterns of hazards were further cross checked. A hazard calendar exercise conducted by the Community Adaptation Committee (CAC) revealed evolving trends over the past two decades (see Table)

Climate Hazard	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Changes
Salinity													Yes
Cyclone & high tide													Yes
Rising temperature													Yes
Heavy rainfall													Yes
Legend	Historical trend Current trend												



Over the last two decades, the frequency and intensity of key climate hazards impacting Diganta Colony have shifted noticeably, intensifying vulnerability:

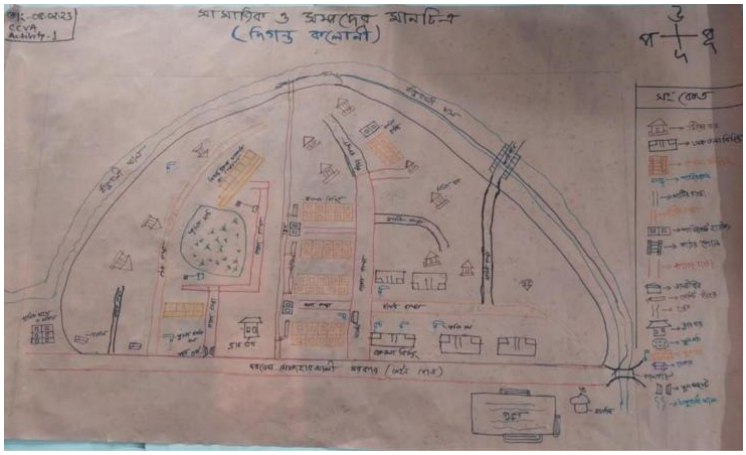
- **Salinity:** Once confined primarily to March and May during the dry season, elevated salinity levels now persist even through July due to reduced and irregular rainfall. This prolonged salinity period severely limits access to fresh water, affecting drinking water security and health.
- **Cyclones and High Tides:** Historically concentrated between October and November, cyclones now strike the area at least twice annually. The recent events have been recorded anytime between April to October with the most extreme ones happening between April-June, extending the period of heightened risk and increasing damage to housing, infrastructure, and livelihoods.
- **Rising Temperatures:** Heatwaves and hot spells have expanded from a shorter May–June window to a longer March–June period, with notably higher peak temperatures. This exacerbates health risks, reduces labor productivity, and strains water resources.

- **Heavy Rainfall:** Rainfall patterns have become more erratic and less predictable. Intense, short-duration storms now occur beyond the traditional monsoon months of June and July, often continuing through September. This increases flooding, drainage overload, and sanitation failures.

These shifting hazard dynamics complicate traditional coping mechanisms and highlight the urgent need for adaptive, flexible strategies tailored to evolving climate realities specially by addressing water security during dry months, storm resilience in pre-monsoon periods, and flood management during the monsoon, to reduce risk and vulnerability effectively.

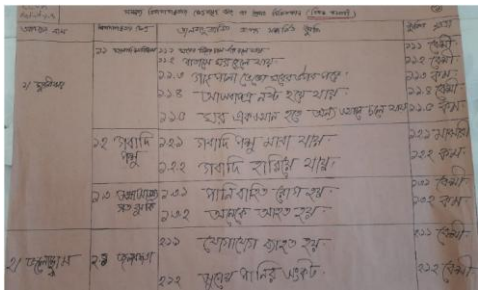
3.3 Climate vulnerability analysis by sector

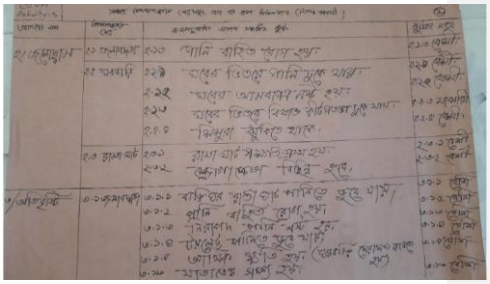
Based on comprehensive hazard identification and trend analysis, the community's vulnerability to climate change impacts was assessed across key sectors. The frequency, intensity, and shifting patterns of climatic hazards—such as salinity, cyclones, high tides, rising temperatures, and heavy rainfall—were analyzed to determine their effects on water, health, housing, road networks, drainage, sanitation, livelihoods, and livestock. The level of impact on each sector was evaluated to prioritize adaptation needs.



Climatic Hazards	Vulnerable Sector	Impacts	Level of Impact
Salinity	Water	Shortage of fresh drinking water as salinity increases in supply water during dry season	High
		Shortage of water for cooking and other household chores	High
	Health	Increase in water borne diseases, skin diseases and reproductive health related issues among women	High
Cyclone	Housing	Damage to housing structures and assets	Medium
	Road network	Damage due to falling trees on roads	Medium
	Livestock	Lack of safe space for livestock	Medium
High tide	Road network	Roads submerge, disrupting communication	High
	Housing	Housing structures get submerged and damaged	Medium
	Drainage	Drainage clogging and prolonged waterlogging	High
Rising temperature	Livelihoods	Loss of productivity during extreme hot days	Medium
	Health	Increase in air borne and water borne diseases	High
Heavy rainfall	Sanitation	Toilets destroyed, wastewater contaminates nearby ponds	High

Climatic Hazards	Vulnerable Sector	Impacts	Level of Impact
	Road network	Damage to roads and disrupted movement	High
	Drainage	Drainage clogging and prolonged waterlogging	High
	Housing	Housing structures get submerged	Medium





3.3.1 Salinity

- **Water:** Rising salinity during the prolonged dry season (now stretching from February to May) causes a severe shortage of fresh drinking water. Nearly 62% of households depend on municipal water taps, which suffer from low pressure and irregular supply. With only two municipal taps serving the entire colony and limited rainwater harvesting options, residents often resort to using saline pond or river water for drinking and cooking, risking health and well-being. This scarcity directly threatens daily water needs, highlighting a **high** level of impact.
- **Health:** Increased consumption and use of saline or contaminated water have resulted in a high prevalence of waterborne diseases, skin conditions, and reproductive health issues among women. Access to healthcare is limited, with nearly 80% of residents living over 500 meters from facilities and facing difficult travel on poor roads, especially during floods. Medical expenses average 8.57% of household budgets, and many families rely on loans—about 15% of borrowed money goes toward health costs—highlighting the financial strain caused by climate-related health risks.Given that health facilities are located far from the colony and access is difficult, this elevates health vulnerability to **high**.

3.3.2 Cyclone

Cyclones cause moderate damage to housing and infrastructure, with fallen trees blocking roads and damaging properties. Livestock protection is also challenged by limited safe spaces. Although structural damage is not extreme, repeated cyclone events gradually weaken housing and disrupt livelihoods, warranting a **medium vulnerability** rating.

- **Housing**: Cyclones have become more frequent and intense in recent years, causing repeated damage to housing structures—especially the poorly maintained pucca buildings and vulnerable tin-shaded homes that make up about 34% of the colony. Although damage is often **moderate,** the ongoing cumulative effect increases risk to residents. The ongoing damage weakens foundations and roofs, threatening the safety of residents. The financial strain is significant: around 15% of loaned money is spent on home and toilet repairs, reflecting the economic pressure on families to maintain and rebuild their homes after cyclone impacts. Many households, with limited savings and low incomes, struggle to afford adequate repairs, increasing long-term vulnerability.
- **Road Network**: Cyclone winds uproot large trees, blocking roads and disrupting movement. The colony's kutcha and brick roads are vulnerable to such damage, limiting access for emergencies and daily activities, thus a **medium** impact.

- **Livestock**: Limited space and inadequate shelter expose livestock to cyclone hazards, affecting household livelihoods dependent on these assets, contributing to **medium** vulnerability.

3.3.3 High Tides

- **Road Network:** Seasonal high tides submerge roads, cutting off communication and access in this densely populated settlement. The largely nonfunctional drainage due to clogging with solid waste (49% stored in plastic bags, 44% stacked openly) prevents water from receding, causing prolonged disruption. The impact is assessed as **high**.
- **Housing:** Flooding during high tides damages housing structures, particularly those near the riverbanks or with poor drainage, resulting in a **medium** impact.
- **Drainage:** Drainage networks are frequently clogged with unmanaged solid waste and debris, becoming ineffective during high tides and heavy rains, causing severe waterlogging. This raises vulnerability to a **high** level.

3.3.4 Rising Temperatures

- **Livelihoods:** Longer heatwaves (now Mar–June) reduce productivity for the majority engaged in day labor (60%) and small businesses (18%). Economic instability is reflected in low average monthly incomes (BDT 13,786) and minimal savings (BDT 565), limiting resilience. The economic strain is rated **medium**.
- **Health:** Higher temperatures contribute to increased incidence of both airborne and waterborne diseases, compounding existing health challenges linked to poor water and sanitation in a community where 41% take loans partly for medical costs. Limited, distant healthcare access worsens impacts.. The community's limited healthcare access worsens outcomes, leading to a **high** health impact.

3.3.5 Heavy Rainfall

- **Sanitation**: Heavy rains damage toilets—73% use ring slabs without water seals—leading to contamination of ponds used for household chores and increased disease risk. Shared toilets (37% of households) worsen hygiene conditions due to overcrowding and wait times causing **high** vulnerability.
- **Road Network:** Flooding damages the predominantly kutcha roads, disrupting movement and access, particularly during monsoon months that now extend into September or October, making the impact **high**.
- **Drainage:** Drainage systems, already inadequate and clogged by waste, fail to drain rainwater, causing prolonged waterlogging that affects housing and daily activities—another **high** impact area.
- Housing: Flooding weakens housing, particularly tin structures (34% of households), increasing vulnerability of large families (up to 11 members in some households) living in cramped, congested conditions, causing **medium** vulnerability.

4. PEOPLE'S ADAPTATION PLAN OF DIGANTA COLONY

Following the identification of climate vulnerabilities in the community through household enumeration data and participatory risk and vulnerability analysis, a locally led process was undertaken to identify potential adaptation solutions. These solutions were prioritized based on the urgency of need and the available resources of the Municipality.

As water has been identified as the most vulnerable sector, two of the top three community-prioritized adaptation solutions focus on reducing water scarcity:
i) Provision of a 50,000-liter water tank at the community level; and
ii) Repair and restoration of existing water tanks.

Repair and restoration of the colony building emerged as the next most important intervention. However, communities highlighted the need for technical assistance to assess the requirements and prepare a realistic budget. Relocation was also strongly suggested by residents as an alternative, reflecting the deep-seated concerns over long-term climate risks.

A detailed list of sector-specific priority interventions, responsible execution entities, anticipated implementation challenges, strategies to overcome these challenges, and approximate community-perceived budgets is presented below.

Vulnerable Sector	Vulnerability	Solutions and Interventions	Priority	Implementation Challenges	Mitigation strategies	Implementers	Operation and Maintenance	Proposed timeframe for implementation	Approx. Budget (BDT/USD)
Water	Lack of safe drinking water Lack of safe water for daily household chores	Provision of 50,000 litre community water tank for rainwater storage	1st	1. Finding space within communities 2. Convincing the Municipality 3. Lack of funds;	1. Negotiate with HH heads and land owners 2. Secure Municipality's permission 3. Engage govt. agencies/NGOs/development partners for funds	Department of Public Health Engineering, local NGOs	Community	Dry season (Dec-Mar)	1705600 Approx. USD 14 k
		Renovating the existing water reservoir	3rd						1025000 Approx. USD 8.4 k
Sanitation	Toilets damaged and wastewater contaminating ponds	Construction of 5 units of hygienic toilets on raised plinths.	4th	1. Lack of fund 2. Often less prioritized by community members over other pressing issues	1. Encourage community savings 2. Mobilize collective NGO contributions.	Individual families	Individual families	Dry season (Dec-Mar)	2100000 (for 5 toilets) Approx. USD 17.2 k
Housing	Housing structures submerged/damaged during cyclones & storm surges	Repair and renovation of existing structures	2nd	1. Lack of technical knowledge; 2. Shortage of space 3. Lack of durable construction materials	1. Provide technical training 2. Negotiate with Municipality for construction materials	Individual families with support from the Municipality	Individual families	Dry season (Dec-Mar)	To be estimated after thorough needs assessment

Vulnerable Sector	Vulnerability	Solutions and Interventions	Priority	Implementation Challenges	Mitigation strategies	Implementers	Operation and Maintenance	Proposed timeframe for implementation	Approx. Budget (BDT/USD)
Drainage	Clogging of drains and prolonged waterlogging	Construction/improvement of drainage system (50m)	5th	1. Possible eviction of communities from the selected site for the drain construction 2. Lack of Funds	1. Compensation for affected HHs 2. Secure Municipal development funds. 3. Leverage govt./NGO support	Local Government Engineering Department, Municipality, Communities	Community, Municipality	Dry season (Dec-Mar)	305700 (for 50 meter drain) Approx. USD 2.5 k
		Re-excavation of existing canals	7th						11355 (for one meter; exact cost to be estimated based on the size of the canal) Approx. USD 0.9 k
Road network	The road are submerged in water and damaged during cyclones, storm surges and heavy rainfall	Construction of elevated roads	6th	1. Possible eviction of communities from the selected site for the road/drain construction 2. Lack of Funds	1. Compensation for affected HHs 2. Secure Municipal development funds. 3. Leverage govt./NGO support	Local Government Engineering Department (LGED), Municipality, Communities	Communities, Municipality	Dry season (Dec-Mar)	212500 (for 50 meter road) Approx. USD 1.7 k
Total (BDT)									**53,60,155**
Total (USD)									**44,116**

5. IMPLEMENTATION OF PRIORITY ADAPTATION SOLUTIONS

Once the adaptation plan was finalized, the CAC members engaged in negotiations with the Municipality, ward councilors, and the project facilitation team to fast-track the implementation of top-priority solutions aimed at ensuring year-round water security for the community. Recognizing the vulnerability of Diganta Colony, the Mayor and ward councilors requested support from tGCA and BRAC for the installation of a community-level 50,000-litre rainwater storage tank.

With available funds, GCA and BRAC agreed to support the installation. The primary challenge, however, was identifying a suitable location for such a large tank. After evaluating the neighborhood, the CAC members proposed using the premises of the primary school within the colony. Considering space constraints, the school management committee approved the installation of a slightly smaller, 40,000-litre tank through a formal resolution. GCA and BRAC invested USD 5,400 to carry out the installation.

Work commenced in May 2023 under the supervision of a community-led implementation committee. The school roof was designated as the catchment area, allowing rainwater to be filtered and stored in the tank. By June 2023, the system was fully operational, providing the community with reliable water supply through the dry season from December 2023 to March 2024.

To ensure equitable use and maintenance, a five-member water distribution committee was established. These members, as authorized signatories, opened a dedicated bank account to collect nominal contributions from households (BDT 100–200, or USD 1–2 per household) to fund ongoing maintenance and ensure the system's sustainability.

Annexes

- Maps (climate risk maps, infrastructure, land use)
- Workshop reports
- Stakeholder matrix
- Data tools used (e.g., GEE outputs, VRA matrix)
- Draft policies or bylaws proposed
- Gender and youth inclusion strategies