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## Vulnerability of Women and Climate Change in Coastal Bangladesh

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### Abstract

This paper focuses on providing a comprehensive scenario of women's vulnerabilities based on the effects of climate change in Bangladesh. To address the problem, this study focuses on the nature of suffering and how they have tried to mitigate it. This study followed the purposive sampling method of a total of sixty respondents from the Satkhira district. Primary data were collected through a structured questionnaire, survey, and observation method. Besides these, secondary sources of national and international levels have been used in this study. This study found that sanitation problems of women and young girls as well as the lack of pure drinking water are common during the disaster time in the study area. In the context of a patriarchal society like Bangladesh, women are compelled to be submissive and obey the decision of male members due to prevalent social and cultural norms and conditions. As a result, most of the time, even when problem arise, women do not take any decision about whether they would stay at their home or seek shelter. The study uses an exploratory approach, and it will provide an insight into different sorts of sufferings as well as the detrimental effects of such natural disasters. It will also provide a better understanding and intensity of the problem. Although innumerable studies of climate change and its effects have been published, underlying scenarios are not properly focused on. Therefore, it would obviously help for further study as well as policymaking.

**Keywords:** Climate change, women's vulnerabilities, coastal area, natural disaster, patriarchal society

## **Introduction**

The coastal areas around the world are at great risk due to climate change. Continent Asia accounted for one-third of global disasters related to weather, climate, and water, of which around half of the total deaths and one-third of economic losses occurred from 1970 to 2019. According to Oxford Languages, vulnerability refers to the quality or state of being exposed to the possibility of being attacked or harmed, either physically or emotionally. Vulnerability is more likely related to gender, class, caste, and ethnicity. As individuals are not affected equally by a natural disaster, certain groups are more vulnerable to natural disasters, which include people who are not getting equal opportunities to access resources, social amenities as well as fewer capabilities. Naturally, women are more vulnerable, particularly in poor countries like Bangladesh, because they play multiple roles in family life such as food producers, water and fuel collectors as well as caregivers for their loved ones. Most of the women in the study area depend on natural resources for their livelihood. As a result, frequent natural hazards resulting from climate change makes the life of women more vulnerable. Dependence on natural resources is the major cause of women's vulnerabilities as climate change is not gender-neutral. Lack of safety, amid the flooding, landslides and cyclones, makes them more at risk in their life. Consequently, traditional food collection and production have become more uncertain due to climate change (Ministry of Environment and Forests). The result of climate change has differentiated developed countries from developing countries as well as increases the gap between males and females in the developing parts of the world (Tanny & Rahman, 2016). Moreover, Women's position in society is not determined by their personal ability but rather it is determined by social institutions, ethnicity, and gender identity (Nielsen and Reenberg (2010) cited in Ferdous and Mallick (2019)). Gender characteristics and patriarchal norms act as a social barrier which makes it a more difficult situation for a woman even in an extreme event. This is because they have no power to make any decision whether they would take any sheltered place or any other things during the disaster time. After all, the characteristics of vulnerability are determined by physical, social, economic, and environmental factors or processes which increase the susceptibility of an individual, a community, assets, or systems to the impacts of hazards (UNDRR Terminology, 2017).

Bangladesh is also the most disaster-prone country as it stands next to the Bay of Bengal. The frequent natural disaster causes immense suffering to the people as well as barriers to the sustainable development of this area. According to the World Metrological Organization (WMO) and UN Office for

Disaster Risk Reduction, Bangladesh is the most tropical cyclone-prone country due to its geographical position. The hilly and coastal areas are more susceptible compared to other regions. The effects of climate change make the situation worst (Manusher Jonno Foundation). In the global context, Bangladesh is the most vulnerable country related to climate change impact (IUCN). In addition, globally, precipitation pattern has become more erratic and intense due to climate change. However, this reality is particularly true in Bangladesh. Stronger rainfall, as well as the melting of the Himalayan glaciers which is caused by the rising temperature, makes the country more prone to devastating river erosions and floods. According to International Displacement Monitoring Center, during the past decade, around 7,000,000 Bangladeshis were displaced every year due to natural disasters. This number surges yearly due to powerful cyclones, such as cyclone Sidr in 2007, Aila in 2009, Roanu in 2016, Bulbul in 2019, Amphan in 2020, and cyclone Yaas in 2021— all of these bring momentous devastation by claiming lives. Such a kind of stronger cyclone is becoming more common due to climate change, and Bangladesh is still facing the same tragedy yearly due to its geographic position.

### **Objectives**

The major objective of this study is to present the women's vulnerabilities due to climate change. Particularly, the study aims to accomplish the following objectives:

- To explore the sufferings of the women in the coastal area;
- To assess the effects of climate change in the coastal area;
- To identify the pattern of women's vulnerabilities in the coastal region.

### **Theoretical Framework and Conceptual Definition**

A review of relevant feminists' theories, such as Nature vs Culture, Second Sex, Habitus, Muted group, Purity and Danger, was done in this study. Among these, the study emphasized Nature vs culture because of the befitting nature of all parts of the study.

### **Nature vs Culture**

Sherry Ortner (1972) suggested that women are closer to nature. In her writings "Is Female to Male as Nature is to Culture", she acknowledges the universality of female subordination. The reason women are closer to nature can be summarized in three ways. Firstly, a women's body and its functions are more involved with the species' life which places her closer to nature. Secondly, a women's body and its functions place her in social roles that are considered to be at a secondary position in the cultural process. Lastly, a

woman's social roles give her a different psychic structure which is seen as being closer to nature.

### **Conceptual Definition**

**Climate Change:** Long-term transformation in temperature and weather patterns is known as climate change. This transformation in weather patterns may occur in a natural way due to the solar circle. Around 1800, burning fossil fuels such as coal and oil and gas are the main primary sources of climate change which is driven by humans.

Greenhouse gas emitted from fossil fuels act as a castanet around the globe, causing temperatures to rise. Methane from garbage and carbon dioxide from deforestation increase greenhouse gas which causes climate change (UN).

**Women Vulnerabilities:** According to European Institute for gender equality, vulnerable groups are often used as disadvantaged groups. Vulnerabilities of women are an inherent feature due to their gender roles and attitudes resulting in disadvantages for women including violence. Women's vulnerability can be classified into five categories: such as Biomedical, Social & cultural, economic, legal & political, and educational vulnerability (Development Education).

**Coastal Area:** According to Wikipedia, "the coast also known as the coastline or seashore is defined as the area where land meets the ocean or as a line that forms the boundary between land and the ocean or a lake." The main characteristics of the coastal zone in Bangladesh are very high tides and frequent cyclone that emerges from the Bay of Bengal. People in this area remain under threat and are more vulnerable as well as relatively poor due to climate change compared to other parts of Bangladesh.

### **Background of the Study**

According to the United Nations, from 1970 to 2019 in Asia, a total of 3454 disasters were counted and around 31% of disasters accounted for global perspectives. Moreover, the region losses half of the total deaths in the world and experiences nearly one-third of economic losses due to natural disasters in terms of weather, water, and climates-related disaster. In addition to this, 72% of lives were lost by storms and 57% of economics to floods (UN news, 2021).

According to the World Metrological Organization (WMO provisional report, 2021) during the last decades' extreme weather, conflicts as well as economic recession have dramatically increased causing hunger and lack of food security. Extreme weather has altered the rainfall seasons resulting in disruption of livelihoods and agricultural production throughout the world. Climate change has impacted people's lives in many ways. For example,

displacement across the world has hit a number of people least equipped to recover and adapt.

UN Women, women in the coastal areas, are commonly dependent on natural resources for caring for their families and communities but the effects of climate change dictated their daily activities, particularly access to clean and safe water, food, and fuel collection. During the disaster, more women and children even die than men due to many reasons: such as lack of mobility for women and inability to swim, etc. Moreover, lack of secured shelter lead to increase harassment which induced them to not seek space in cyclone shelters.

At the time of disaster, women's health remains at great risk. Due to lack of toilets, women and young girls often suffer urinary tract infections. Besides this, they are exposed to violence within and outside the homes as male members lose their jobs and frequently use slang language and torture female members as well as dependent ones (Alam et al., 2008).

The southern part of Bangladesh is the highest disaster-prone area as it is close to the Bay of Bengal. Frequent cyclones, tidal surges, floods, waterlogging, and land subsidence are very common and this makes the lives of people in this area more vulnerable. Everybody is affected by climate change as it is not gender-neutral. However, it reflects the gender disparity in terms of vulnerability and coping capabilities during the time of disaster (UNDP, 2007).

At the time of the disaster, women and children are often faced with more risk even resulting to death compared to men. This is attributed to various reasons, such as not being willing to leave their home, mother's protective instincts, and wearing sarees (traditional clothes) which hinders them from swimming, etc. (Hague & Blair, 1992).

### **Literature Review**

#### **Women's Vulnerable due to Climate Change in the Coastal Area of Bangladesh (2019)**

The study showed that familial roles and responsibilities make a woman more vulnerable in the time of disaster. It also identified that women are mostly affected by various types of waterborne disasters as well as skin diseases. Moreover, cyclone shelters are not favorable for women and young girls. In addition, lack of pure drinking water and medical facilities are common during and post-disaster time (Hasan & Shovon, 2019).

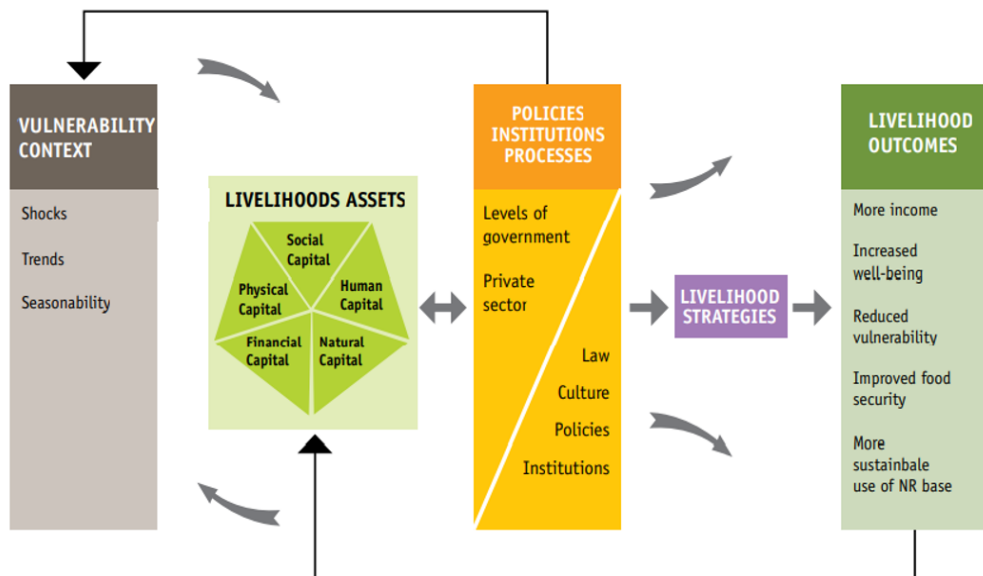
#### **The Impact of Natural Disaster on Women: A Case Study from Bangladesh (2016)**

More than 75% of women and young girls are vulnerable to natural disasters. The study also shows that women hardly receive emergency

messages and necessary measures because they are not permitted to participate in public places. Even if they receive the information, the head of the family or male member takes the decision whether they will be transferred into the cyclone shelter or not. Bangladesh Institute of Social Research Trust conducted a study in the Borguna district. Massive damage to coastal areas as well as infrastructure is common in Bangladesh. Among 64 districts, 19 of the districts are faced with several types of disasters.

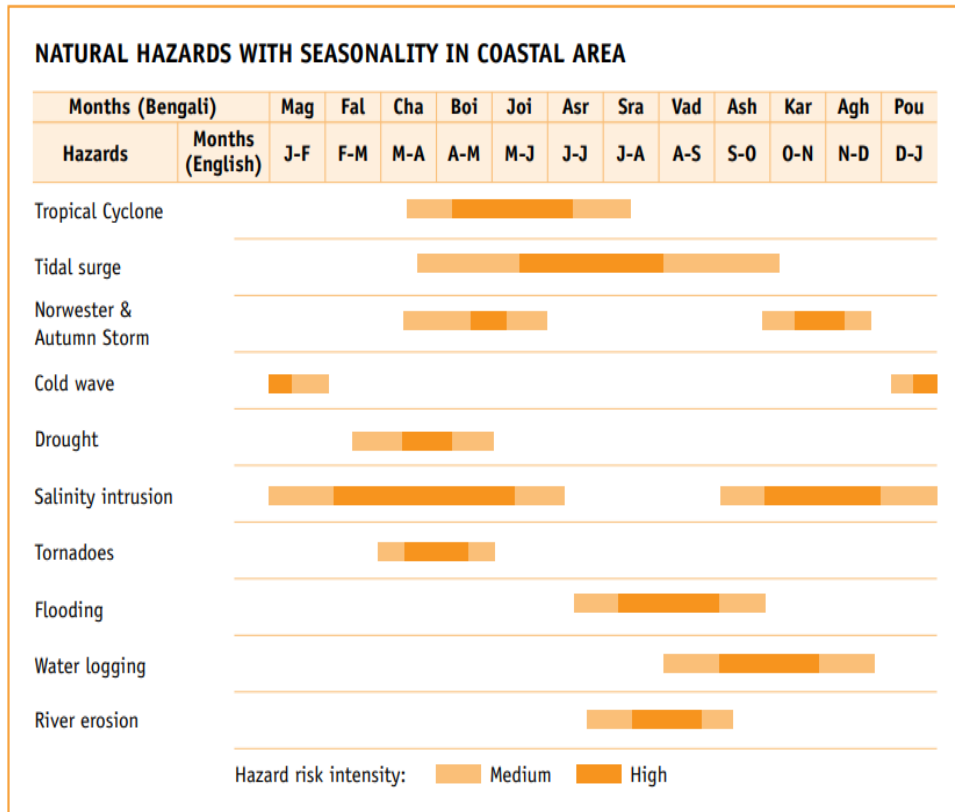
**Climate Change Vulnerabilities of Women in Bangladesh:** The study analyzed that women are more vulnerable to the effects of climate change, particularly in developing countries like Bangladesh, due to their gender. It also showed the root causes of gender discrimination which act as driving forces to the risk of climate change such as ownership, political affiliation, labor force participation, etc. In addition, the study identified that the major barrier of women to suffering from climate change includes not getting opportunities to access resources and other parts of the social elements (Tanny & Rahman, 2016).

**Climate Change Impacts and Adaptation Assessment in Bangladesh:** This study analyzed the impacts of climate change in Bangladesh such as tropical cyclones, storm surges, coastal erosion, and backwater effects. It also showed the data of 199 years and discussed both qualitative and quantitative formats. In addition, it also shows the chances of increased cyclones as well as resulting in lying in the southern part of Bangladesh (Anwar Ali, 1999).



**Figure 1.** Sustainable Livelihoods framework (DFID’s Sustainable Livelihood Framework, Collected from UN WOMEN)

Figure 1 clearly shows the perspectives of vulnerability and livelihoods assets. It also explains the strategies and outcomes of livelihood patterns. The chart above is also useful for a logical explanation of reducing vulnerabilities due to disasters as well as climate change impacts.



**Figure 2.** Seasonality Hazards in Coastal Area (Hazards seasonality developed through the PRA session, collected from UNWOMEN)

Figure 2 shows the seasonal vulnerability of people in the coastal area. In terms of intensity, people are highly affected by tropical cyclones and tidal surges from the month of April to August. Cold wave affects them from December to January and Tornadoes from March to May. It also explains that they face salinity intrusion between February to May and late September to October. Besides this, the people encountered flooding and waterlogging from July to early September and from September to October respectively. River erosion is another problem that commonly occurs in the month of July to August.



## Methods and Data Collection

Considering the nature of the topic, this study focuses on the existing literature as well as national and international document. Moreover, in order to achieve the objectives, this study follows the purposive sampling method of a total of sixty respondents in the coastal area at Shaymnagar thana in the Satkhira district. Shaymnagar thana was selected here as a study area because it stands next to the Sundarbans and Bay of Bengal as well as one of the most disaster-prone areas in Bangladesh. Primary data were collected through a structured questionnaire, survey, and observation method. Collected data were analyzed carefully using SPSS statistical tools version 20.

## Findings and Data Analysis

**Table 1.** Age-wise distribution of the respondents

Age range	Frequency	Percentage
15 – 25	17	28.33
25 - 35	11	18.33
35 - 45	10	16.67
45 - 55	15	25
55 - above	7	11.67
Total	60	100

Source: Fieldwork, 2021

Table 1 shows the age-wise distribution of the female respondents. Among the total respondents, the highest of 28.33% are in the 15-25 age range. The second highest age bracket is 45-55, with 25% of total respondents. The third and fourth levels of the age group are respectively 25-35 and 35-45. The rest of the respondents are 11.67%, which belongs to 55 and above age bracket.

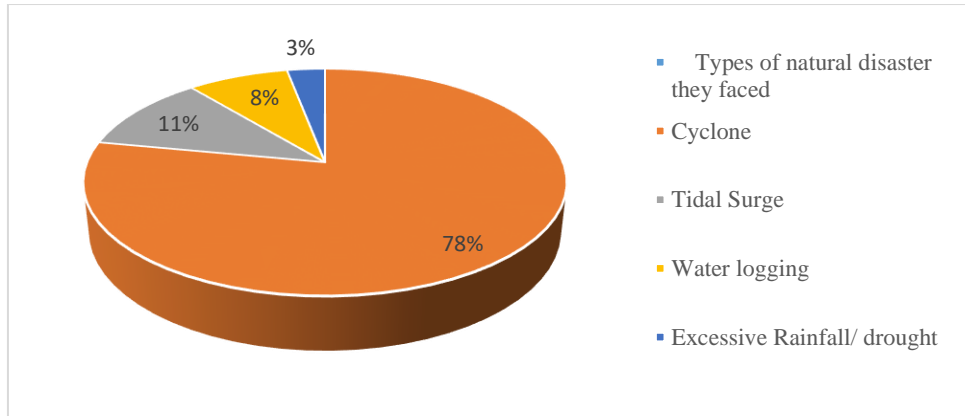
**Table 2.** Occupation of the respondents

Occupation	Frequency	Percentage
Housewife	22	36.67
Work in fish firms	9	15
Work in the field	13	21.67
Unmarried young girls	6	10
Work in another house	10	16.66
Total	60	100

Source: Fieldwork, 2021

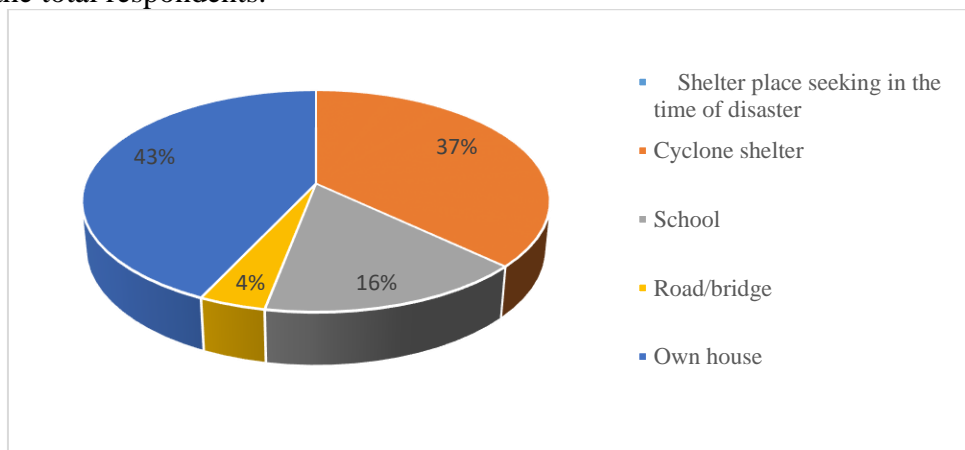
Table 2 shows the occupation of the respondents. The highest percentage of respondents 36.67% (22) are housewives. The second highest respondents 21.67% (13) work in the field as day laborers. 16.66% and 15% of the respondents work in other house and in fish firms respectively to meet their needs. 10% (6) of the whole respondents were unmarried young girls.





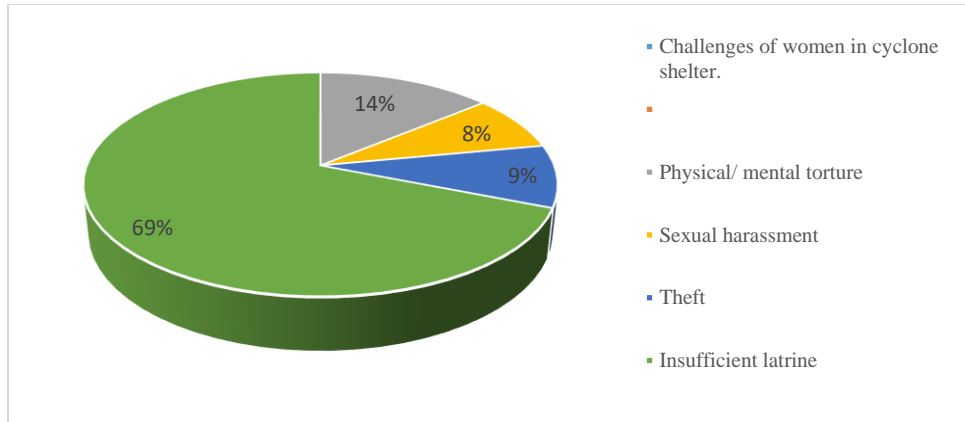
**Figure 3.** Types of natural disasters they faced  
Source: Fieldwork,2021

Figure 3 shows that 78% of the respondents mostly suffer the effects of cyclones, and 11% of people in the coastal area face the effects of tidal surges. Waterlogging is another problem in this area which has affected 8% of people. Excessive rainfall or drought in certain years has also affected 3% of the total respondents.



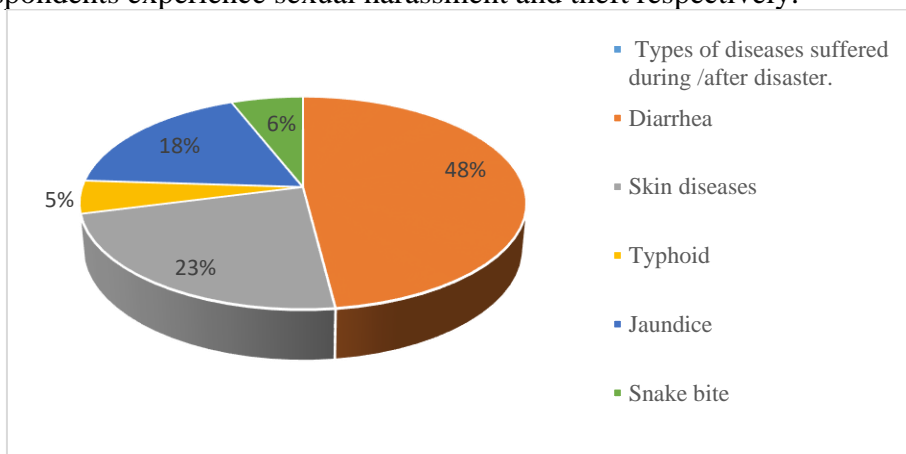
**Figure 4.** Shelter place seeking at the time of disaster  
Source: Fieldwork, 2021

Figure 4 shows that 43% of the respondents don't seek any cyclone shelter, but they rather stay in their own houses. 37% and 16% of the respondents seek shelter in cyclone shelters and schools respectively. Only 4% of respondents take shelter on the bridge or roadsides.



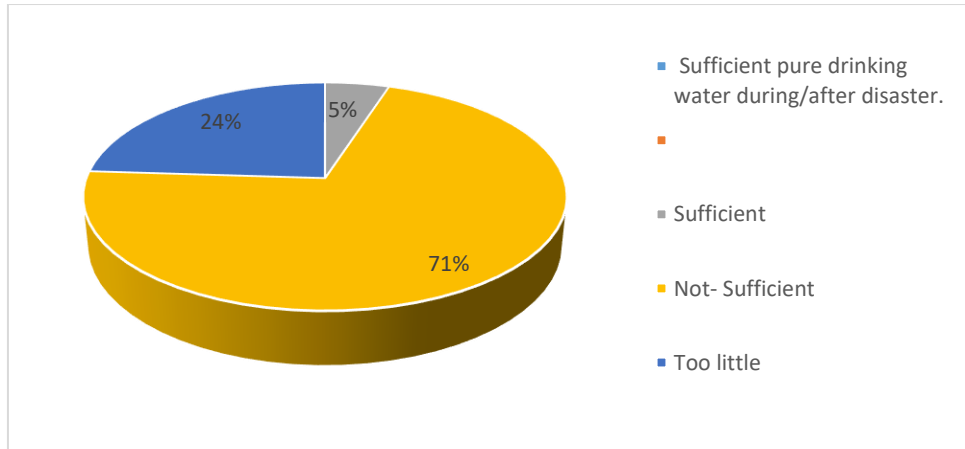
**Figure 5.** Challenges of women in a cyclone shelter  
Source: Fieldwork, 2021

Figure 5 show that a major part of 69% of the respondents faces challenges due to insufficient latrine. 14% of women and young girls face mental and sometimes physical torture. Among them, 8% and 9% of respondents experience sexual harassment and theft respectively.



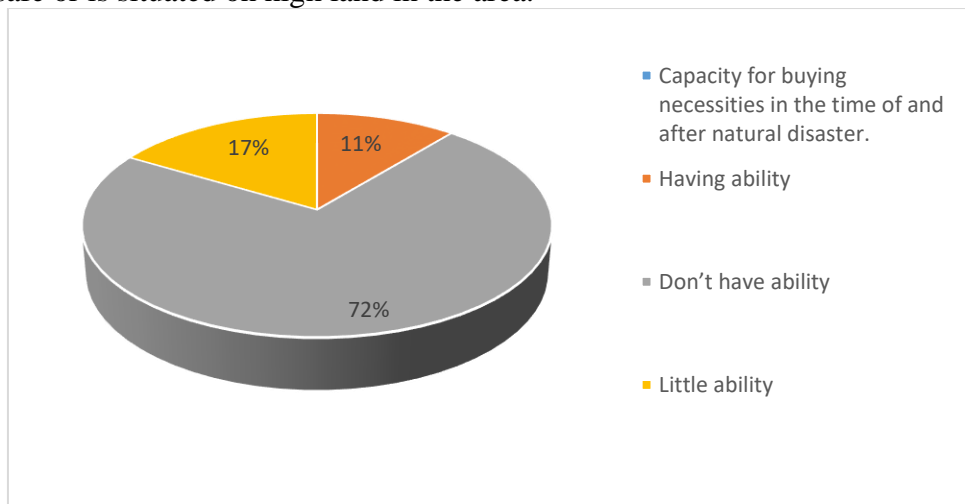
**Figure 6.** Types of diseases suffered during /after the disaster  
Source: Fieldwork, 2021

Figure 6 show that 48% of the respondents suffer from diarrhea diseases and 23% are affected by skin diseases. The third highest 18% of the respondents stated that they experience jaundice during and after the natural disaster. Also, 5% and 6% of respondents identified their experience of typhoid and snake bite respectively.



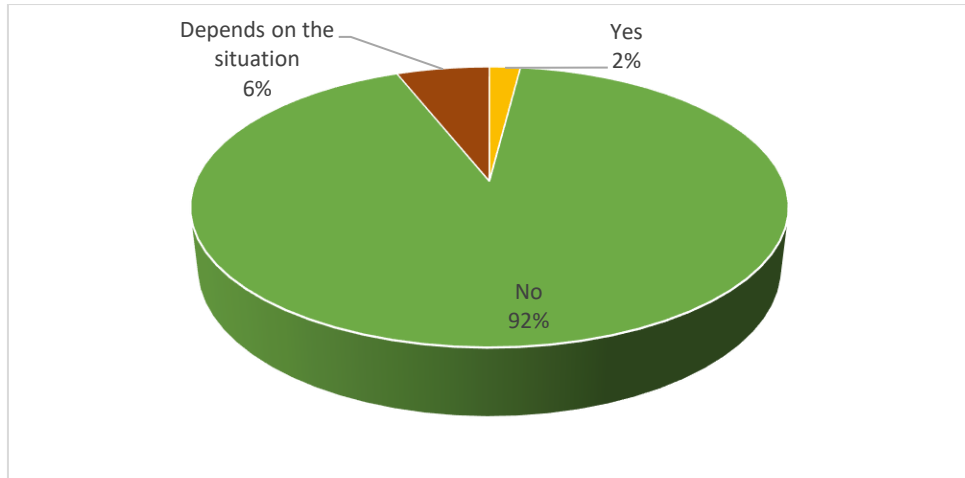
**Figure 7.** Sufficient pure drinking water during/after the disaster  
Source: Fieldwork, 2021

Figure 7 show that a major portion, 71% of the respondents, stated that they do not get sufficient pure drinking water during or after the disaster. Among them, 24% stated that they get pure drinking water or too little of the amount due to waterlogging or flood. Only 5% of the respondents answered that they get necessary pure drinking water as their house is comparatively safe or is situated on high land in the area.



**Figure 8.** Capacity for buying necessities at the time of and after a natural disaster  
Source: Fieldwork, 2021

Figure 8 explores that around one-third of the respondents do not have the ability to buy necessities at the time or after a natural disaster due to several reasons, while 11% have the ability to buy necessities. Another 17% of the respondents stated that they have so little ability to buy their daily goods.



**Figure 9.** Taking decisions at the time of emergency  
Source: Fieldwork, 2021

Figure 9 shows the reality of taking decisions in times of emergency, and 92% of women stated that male members of the family take decisions at the time of crisis due to social-cultural norms. Only 2% of respondents answered they can take decisions after discussing with the male member of the family. The rest of the women stated that taking decisions during the disaster depends on the situation and intensity of the incidents.

### **Conclusion and Discussion**

It is evident from the study that more than three-fourths of people suffer from the effects of cyclones. 43% of affected respondents do not seek cyclone shelter due to a variety of reasons. In this regard, a major part of the respondents expressed their dissatisfaction with the environment as well as safety for women in the cyclone shelter. A large number of respondents stated that a major challenge in the shelter center is insufficient latrine which causes health problems, particularly for women. Around 50% of the respondents suffered from diarrhea and nearly one-third from skin-related diseases. It is a matter of concern that a major part of the respondents suffers a lack of pure drinking water for their necessary uses.

More importantly, it can be noted that except for a few, almost all of the respondents stated that they have no right to take any decision at the time of emergency due to socio-cultural trends. In Bangladesh, women are having limited access to resources such as physical, human, social, and natural for example decision making, land, training, education, etc. Thus, all these things make a man capable of adaptation which is worst in the coastal area (Soussan & Anjan, 2002) as cited in Rabiul Islam.

According to feminist perspectives, vulnerability is neither an innate phenomenon nor derived from any dimensions, i.e., rurality and femininity. They argued that it is rooted in our cultural process and pattern of power relations which makes some groups more disadvantaged than others. Unequal power practices and subordinate positions make some particular groups more vulnerable to risk and disaster compared to others. Climate change impacts in multiple ways but how much impact on both male and female depends on the social relations between men and women. Moreover, it is important how these relations shape the responsibilities in production and reproduction systems as well as the decision-making process which determines the vulnerabilities of both men and women in different ways. Since women are more vulnerable to climate change, they are also disadvantaged in the adaptation process. In traditional societies like Bangladesh, women and children are more likely to be the vulnerable groups for many reasons. Natural disaster increases the chances of vulnerability in many folds. Hence, some socially and culturally constructed ideas make them more vulnerable groups because they are bound to perform their socially-determined roles. According to Sherry Ortner, women seem closer to nature in the context of their social responsibilities and the subordinate position; they suffer from gender division of labor which falls on them in a dangerous situation even in a time of disaster. Also, they do not have the liberty in making decisions to migrate or some other aspects (World Bank, 2005). Women in Bangladesh are more victims of different types of violence as well as natural disaster, particularly in the coastal areas. Since women makes up half of the total population in this country, they need to be taken care of by the government and other agencies so that these vulnerable groups can mitigate their situations and survive for a better life. Therefore, Bangladesh should emphasize women's voices in the climate change adaptation policies and should as well introduce an awareness program related to climate change that impacts the life of women.

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