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### RESEARCH ARTICLE

#### AN EXPLORATORY STUDY ON THE YOUTH OF BANGLADESH TO UNDERSTAND THEIR ROLE IN ACHIEVING SDG TARGET 13.1 DISASTER RESILIENCE

Asif Amer  
Mastul Foundation.

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#### Abstract

Climate change continues to be a global concern because of associated natural disasters and potential destructions and deaths of many. However, this concern has led to the development of the Sustainable Development Goals (SDGs) to reduce climate hazards and disasters by 2030. One of the SDGs is disaster resilience, which is about mitigating the risk and increasing preparedness to handle any disaster with minimal casualties. Particularly, the committee on environmental and climate change sustainability has introduced the SDG target 13.1 that handles the resilience concept. The purpose of this research paper was to explore the role of Bangladesh youths in achieving target 13.1. The researcher adopted a literature review to collect earlier scholars' findings on the topic. In addition, qualitative research entailing in-depth interviews and focus group discussions were conducted. The findings revealed that youths play a vital role in the achievement of SDGs, particularly target 13.1. Furthermore, Bangladesh has put commendable efforts to engage youth toward SDG achievement. The efforts are not exhaustive, thus, the research concluded with a recommendation that Bangladesh should expand youth engagement programs toward disaster resilience.

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#### Introduction:-

The climate and environmental changes that are affecting the globe negatively have led to the establishment of the Sustainable Development Goals (SDGs) to avert potential natural disasters. SDGs are also referred to as the Global Goals. All the United Nations (UN) Member States (including Bangladesh) adopted SDGs in 2015 to safeguard the planet, eradicate poverty, and attain prosperity and peace by 2030 (UNDP, 2021). SDG 13 is for ensuring that countries combat climate change and associated effects substantially. For this research paper, Goal 13.1 is of interest. UNISDR (2018) describes it as "Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries" (p. 1). The subsection of this target narrows the scope to mortality rate and missing individuals per 100,000 populations because of disasters (UNISDR, 2018). Hence, exploring the disaster resilience of Bangladesh and the role of the youths in SDG target 13.1 will help to understand the goal from a practical perspective.

The critical point of environmental challenges reached its peak in the 21st century and has continued to escalate over the years resulting in disturbance of the ozone layer, conservation interruptions, global warming, increased pollution, and deforestation, extinction of animal and plant species, and radioactive contamination (Petrović et al.,

2017). With the condition of the environment, no matter how technologically the world is advanced, potential natural disasters are risks. Experts have explained that typhoons, climate changes, earthquakes, droughts, and floods cause 94% of natural disasters (Petrović et al., 2017). Natural disasters are proof that the population conflicts with the planet's natural resources. The impacts of these disasters are dire to people, society, and the globe. Hence, the target of disaster risk containment is a subject of interest. Existing literature is not conclusive on the issue because the world is dynamic and change is a constant phenomenon to contest at all times. Therefore, this exploratory study is significant because it adds to existing knowledge with a twist of SDG in Asia, particularly Bangladesh.

Disaster resilience or risk mitigation is a contentious matter concerning sustainable development (SD). Mitigating disaster risk and increasing resilience in various SD sectors requires a collaboration of various agencies, groups, and stakeholders to accelerate the attainment of the target SDG (IISD, 2021). In this case, disaster resilience and risk reduction link to target 13.1. The government and people affected by climate change, including youths, should take part in its management and mitigation. The engagement could be directly or through interest organizations and groups, such as the government, its counterparts, and potential partners (Haarsaker, 2020). For this study, youths and youth organizations in Bangladesh are the individuals or groups of interest.

It is important that a government integrate climate, risk, hazards, and disaster concepts in state curriculums to engage and rally youths for responsible risk control and harnessing resilience via a learning environment. For this study, Bangladesh is a government of interest because of its youthful population. According to ADB and Plan International UK (2018), Asia and the Pacific population consist of over 50 percent, approximately 2.2 billion individuals who are below 30 years while the world's population is averagely 60% youthful (ADB & Plan International UK, 2018). With this youthful population, Bangladesh must engage the youth in disaster resilience practices to attain Goal 13 and target 13.1 by 2030.

Understanding the roles of young people toward the achievement of the SDGs is important because it gives insights into the subject from a vital part of the population. Studies have shown that young people are contributing significantly towards the SDGs in different ways (ADB & Plan International UK, 2018). They help deliver programs attuned to specific needs and targets of sustainability. The capability of this group networking, seeking out partnerships, and building alliances is crucial for SDGs achievement (ADB & Plan International UK, 2018). The capability of the youths in the achievement of target 3.1 is evidence; however, the extent to which Bangladesh youths engage in SDG has limited literature; thus, this study will be completing a research and knowledge gap.

### **Aim and Objective:-**

The study aims to explore and understand the role of the youths of Bangladesh in achieving SDG target 13.1-disaster resilience. The objective is to conduct a qualitative study to collect in-depth information on young Bangladeshis participation in disaster resilience practices aligned to SDG 13.1.

### **Specific Objectives**

1. To determine specifications and requirements of SDG target 13.1-disaster resilience
2. To identify the input and efforts put by the Bangladesh government toward the achievement of SDG target 13.1
3. To establish the roles of young Bangladeshis toward the achievement of disaster resilience in Bangladesh

### **Literature Review:-**

The literature review is an essential part of a research paper because it gives insights into a topic from other scholars' perspectives. Empirical findings are important for identifying research gaps and establishing validity for research. For this study, empirical understanding of the roles of the Bangladesh government and youths toward SDG target 13.1 is essential for reliability assessment of the qualitative data collected through interviews and focus groups. Furthermore, empirical findings help to formulate research questions and justify the selection of study area and population. Selecting youths of Bangladesh was influenced by available data that has revealed the existence of SDG programs and the youthful population of the country.

According to ADB and Plan International UK (2018), "Asia and the Pacific has 2.2 billion individuals under the age of 30 and 60% of the global youth population, making it the most youthful region in the world" (p. 15). The survey also revealed that youths constitute approximately 50% of the total populace. However, some nations' youth population exceeds 50% (ADB & Plan International UK, 2018). Experts continue to explain that regional efforts are

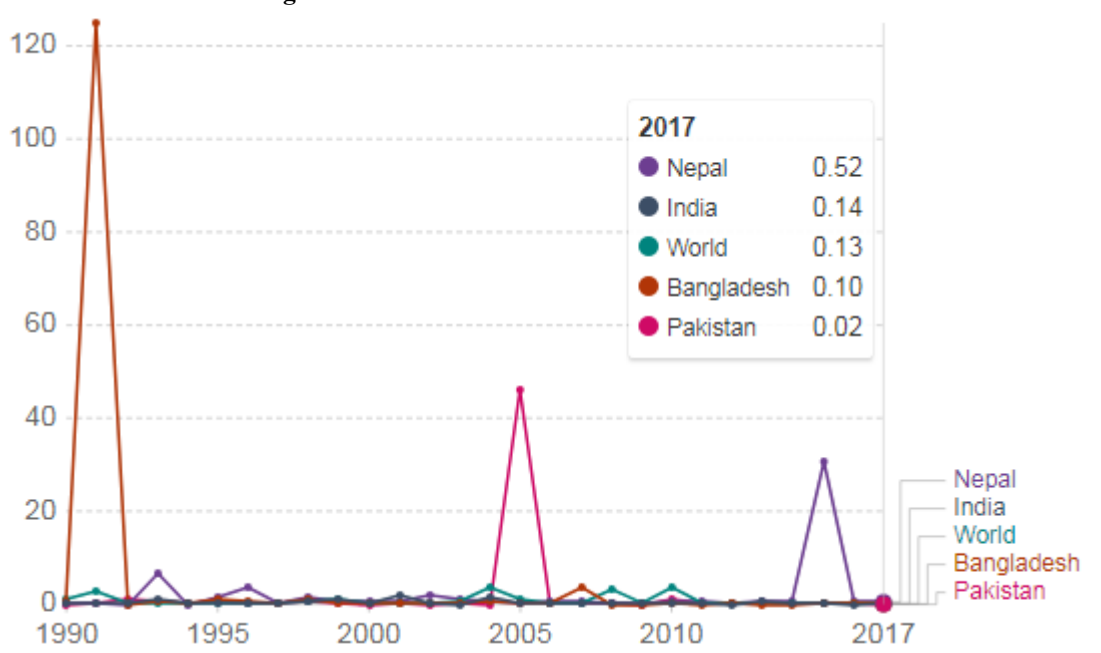
required to build environments favorable to youth engagement in SDG through empowerment, education, and other approaches. The section builds comprehensive content from relevant research done previously to give the study objectives some viable information on the subject of discussion.

According to the United Nations (2020), the climate crisis remains a controversial issue and concern for the global community while countries are not making a full commitment toward the reversal. Experts reported that 2019 was the second warmest for the period running from 2010. Due to high temperatures, droughts, massive wildfires, hurricanes, floods, and other disasters were recorded across the continent. However, despite the radical decrease concerning human activities due to restrictions caused by the COVID-19 pandemic (United Nations, 2020). The catastrophic consequences of climate challenges will have a worse outcome than the prevailing pandemic. Therefore, the businesses and governments should be lessons opportunities based on transitions concerning the provision of the Paris Agreement to refine disaster resilience practices (United Nations, 2020). Climate change is a potential risk for various disasters and the management of stipulated measures.

### **SDG Target 13.1 Disaster Resilience**

Disaster resilience is essential for mitigating the adverse effects of climate changes as stipulated in SDG 13. The target SDG 13.1 is specific to disaster risk reduction. Based on this target, some global targets have been derived by the SDG stakeholders. According to UNISDR (2018), the 13.1 target is to reduce death rates associated with global disaster by lowering the average cases per 100,000 mortalities between 2020 and 2030. In addition, the aim is to considerably reduce the number of individuals affected by disasters across the world by lowering the figure between 2020 and 2030. The reduction is projected to contribute substantially to SD and foster health, environmental, social, and economic resilience (UNISDR, 2018). These perspectives extend to climate change adaptation, urban resilience, and poverty eradication. ADB and Plan International UK (2018) report findings from a survey conducted in Jakarta, Indonesia about the SDG 13.1. The survey participants were 150 youth ambassadors and 21 youth facilitators (ADB & Plan International UK, 2018). The study investigated the involvement of the youths in strengthening disaster resilience through community-oriented practices among the poor within the city. The findings emphasized engaging the national government, local, families, youths, and community for a better outcome. The identified ambassadors acquired extensive training on disaster resilience, risks mapping, and contingency planning. They are expected to connect and interact with at-risk populations, local officials, peers, and families on risk reduction and preparedness for disasters (ADB & Plan International UK, 2018). Natural disasters have displaced many persons over the years. Internally displaced individuals are persons forced to vacate their residences or habitual places because of a disaster but have not sought refuge from another country (Ritchie & Mistry, 2018). Displaced persons and death rates are fundamental concerns addressed by the SDG 13.1 target.

Figure 1 presents a chart showing the death rate trends over the years and the affected countries. The chart shows that Bangladesh had a 0.1 rate of death from all-natural disasters between 1990 and 2017. The rate implies that approximately 10,000 Bangladeshis have lost their lives due to natural disasters (Ritchie & Mistry, 2018). Even though the rate has reduced over the years, the impact is still devastating and must be addressed.

**Figure 1:- 1990 to 2017 Death Rates from Disasters.**

Source: Ritchie and Mispy (2018).

However, since 2019, the death rate from natural disasters has changed drastically and continues to put unprecedented stress on 2030 SDG objectives, particularly target 13.1. Nonetheless, the concern and changes caused by the current disaster are beyond the scope of this study. COVID-19 has led to an extraordinary economic, health, and social disaster threatening the lives of many people across the globe (United Nations, 2020). The death toll has continued to increase across the globe with almost no nation saved, including Bangladesh. Health systems, livelihoods, and workforce are negatively affected; erasing the considerable progress attained since the 2030 SDGs were enacted (United Nations, 2020). The current global disaster is affecting the progress of statistics on SDGs since field data compilation is immensely disrupted.

### Bangladesh SDG Roles

In Bangladesh, climate change continues to affect many people because of the affected infrastructure, livelihood, and agriculture. The “Bangladesh Delta Plan 2100” (BDP 2100) offers the mobilization of resources undertaken to foster effective mitigation and adaptive strategies for climate change (GED, 2020). The government offers the controlling framework leading to private sector compliance with the guidelines. Bangladesh has the role of development partners (DPs) to foster rules that concerning the procedure to embrace socioeconomic transformations. On the other hand, the NGOs also play a momentous responsibility in executing the SDGs operating to mitigate the adverse consequences of climate conversion (GED, 2020). The geographical position of Bangladesh makes it prone to many natural disasters.

Bangladesh’s terrain, topography, population density, and socioeconomic setting make the country highly susceptible to extreme temperature, intensified floods, and droughts (GED, 2020). The Bangladesh Disaster-associated data in 2015 revealed that approximately 13% of families and 12.65% population reside in disaster-prone regions. In 2014, Bangladeshis affected by the disaster were 12,881 per 100,000 individuals (GED, 2020). The BDP 2100 proposes that “with the intensification of climate change and another delta related environmental risks, the total loss would be the highest in the river estuary, but in terms of the magnitude of the loss, the coastal area would be affected more relative to its economic size due to the climate change impact” (GED, 2020, p. 177). The disasters are increasing with the strengthening of worldwide climate or warming; hence, the country faces a daunting task of reducing the number of individuals affected by calamities to 1,500 per 100,000 people in 2030 (GED, 2020). Table 1 shows that by 2019, Bangladesh recorded a higher number of affected persons and death compared to 2018, the year when 2030 SDGs were stipulated.

**Table 1:-** Damages and Deaths due to Disasters.

Year	Affected person per 100,000	Death per 100,000
2016	12881	0.2045
2017	7656	0.4427
2018	22	0.2375
2019	4318	0.316

**Source:** GED (2020)

According to GED (2018), Bangladesh is one of the countries with established groundworks for SDGs' implementation. SDG 13 target implementation has led to a reduction in the number of deaths associated with natural disasters. By 2018, the figures stood at 21,881 with a forecast of 6500 in 2020 and 1500 by 2030 (GED, 2018). Based on the positive trends in disaster management in Bangladesh, experts assert that the achievement of the target will be possible by the stipulated time. Ministry of Disaster Management and Relief (MoDMR) drafted Disaster Risk Reduction Strategies (DRRS) of the country between 2016 and 2020 based on the Sendai model that helped to achieve desired outcomes (GED, 2018). The climate change context of the country is lauded as well prepared because of the many strategies, actions, and plans for environmental sustainability. Based on Bangladesh Climate Change Trust Fund (BCCTF), the country has used over 2700 crores of taka for over eight years in climate transformation strategies. Furthermore, Bangladesh Delta Plan 2100 was created essentially to handle climate change side effects and guarantee water availability (GED, 2018). The findings reveal that the Bangladesh government's roles in disaster management are substantive.

ADB and Plan International UK (2018) assert that development agencies, governments, and private organizations acknowledge the role of young people towards the achievement of SDGs. For instance, the report reveals that "Asia and the Pacific include over 700 million 15–24 year-olds whose needs, skills and ambitions hold unprecedented potential for economic, social, and environmental progress" (p. 1). The quote supports the assertion that young people have strong roles in developing and delivering development priorities of the country (ADB & Plan International UK, 2018). Bangladesh government supports the SDGs agendas and programs. Prime Minister demonstrated her obligations and devotion towards the SD in the country (Munir, 2019). To demonstrate her commitment, the Prime Minister of Bangladesh created an Inter-Ministerial Committee for SDGs Execution.

The Committee is comprised of top officials from various ministries and agencies to coordinate SDGs implementation and supervision. The SDGs Affairs principal coordinator was created to head the Committee (Munir, 2019). Furthermore, GED is the secretariat for coordinating all the policies, implementations, monitoring, and reporting of SDGs' progress. For SDG 13, disaster risk reduction is incorporated into the project scheme, implementation procedure, and budgetary allocations. Over "500-meter-wide green belt" has been developed and safeguarded along the coast (Munir, 2019). According to Islam (2020), governments are often in the frontline to deal with the consequences of climate change. However, for any government to be successful, they need to strengthen the capability of handling climate challenges and disasters. Fortunately, the Bangladesh government has embraced noteworthy steps over the last ten years for constructing institutional structures from state to unions or agencies for operational and methodical disaster controls. The Standing Orders on Disaster (SOD) is one of the guidebooks used by this country for better synchronization across the level (Islam, 2020). In addition, the coordination with the local leaders has presented an effective platform to combat disaster menace using a bottom-up strategy.

The Bangladesh government mandates Union Disaster Management Committee (UDMC) to operate as the rural calamity control entity and it plays a vital role in mitigation, preparedness, post-disaster recovery, and emergency response (Islam, 2020). UDMC guarantee that people are sensitized and prepared for taking mitigation actions to reduce the consequences of any natural disaster. The union also takes part in the analysis of the associated hazards, risks, and vulnerability levels of any community in case of a disaster. Regrettably, most of the vulnerable local people do not have access to UDMC's decisions and deliberations. The local people do not have sufficient information about the UDMC role, functioning, and mandates. Individuals leading and managing UDMC are not disaster management professionals; however, the SOD guides them in managing and coordinating mitigation efforts. Furthermore, the political leadership of the community is not at the helm of this union (Islam, 2020). The union is

one area where the government can engage and involve the youth to play a critical role in SDG target 13.1 implementations.

### **Bangladesh Youth SDG Roles**

The United Nations Department of Economic and Social Affairs (UN DESA) prepared youth and the 2030 SD agenda to examine the supportive responsibility of the SDG agenda and youth development inputs. The report offers insights into the responsibility of young women and men in SD in line with the 2030 SDG objectives (UN DESA, 2018). Bangladesh's government continues to play a critical role in minimizing the suffering of its population from crises and natural catastrophic phenomena. The government uses both soft and hard approaches from capacity building, shelter erections, and embankments to enhanced volunteers' networks for early warnings, management during disasters, and post-crisis rehabilitation (GED, 2020). The country is a party to the Paris Climate Agreement and receives grants and funds for enforcing the capacity of dealing with climate change. The agreement recognizes the input of youth in facilitating the SDG agenda. Women, youths, and marginalized communities are called upon to increase the capacity of dealing with climate change challenges (GED, 2020). Particularly, target 13b emphasizes the significance of developing cooperation with these groups during disaster management (Shine, 2017). The youths are considered a vital part of disaster management because of their energy and availability.

Engaging the youths in the SDGs implementation has received strong support because of associated benefits toward the achievement of targets. For example, in Bangladesh, "Mishti, 18, is part of Plan International's Girl Power Project in Bangladesh working to develop and empower self-dependent young women" (ADB & Plan International UK, 2018, p.5). She is instrumental in educating others about the importance of preparedness and disaster management. The peers and other groups are encouraged to join the drive because of her motivation and resilience. Mills et al. (2017) explain that promoting mechanisms for advancing efficient climate change strategies entails coordination and cooperation of various stakeholders. Rahman (2020) considers the inclusion of the youths in disaster management as a vital containment measure. Many of the developed nations and developing states receive support on capacity building for disaster management because climate change is a global menace needing joint efforts of all the stakeholders (Mills et al., 2017). Youths are stakeholders of any country's management and resilience.

The UN DESA (2018) asserts that the active engagement of young people in SD efforts is core to the attainment of the SDGs and the development of a stable society. They increase the capacity of any country to avert the worst consequences and challenges SD plans and strategies for priority and better management of climate change, conflict, unemployment, and other problems (UN DESA, 2018). Whereas all the SDGs are vital to youth development, the realization of targets under climate change targets has reiterated the significance of engaging the youth in target 13.1 achievements. Issues associated with other SD Goals relate to human actions on climate change and environmental factors (UN DESA, 2018). Bangladesh has programs that encourage youth engagement in climate change, particularly through volunteers and part-time programs.

### **Methodologies and Materials:-**

The research involves a field study to collect in-depth information from the youth of Bangladesh on their roles in climate change, particularly addressing the issues surrounding SDG target 13.1-disaster resilience. The study was timely because the world is going through a pandemic, a natural disaster, that has affected all and increased the death rate of the population. On the other hand, the COVID-19 pandemic's containment measures restricted this field study to virtual interactions with the participants.

### **Research Method:-**

A qualitative approach was selected as the best-fit methodology for this study because of its exploratory principles and conceptual framework. According to Hameed (2020), qualitative research methods are naturalistic, phenomenological, case study, and ethnographic approaches sometimes referred to as "storytelling" approaches. They are grounded theory and textual analysis methods that allow for the collection of in-depth information based on the views and opinions of the participants. The sampling methods are convenience, purposive, snowball, and theoretical (Hameed, 2020). For this study, the purposive sampling method was used to select the participants of interviews and focus group discussion (FGD) because it helps the researcher to select a convenient target population.

The data collection of qualitative study entails observations, semi-structured interviews, open-ended in-depth interviews, structured interviews, focus group interviews, records, notes, and archived documents (Mohajan, 2018; Hameed, 2020). The researcher adopted in-depth interviews and focus group interviews because they fit the study objective and fit virtual platforms. On the other hand, data analysis of qualitative methods is verbatim transcription, content analysis, and thematic (textual) analysis (Hameed, 2020). Out of these data analysis approaches, the researcher adopted thematic analysis, which allowed the collection of vital concepts and the creation of themes for in-depth analysis of the results. Transferability of the results, the trustworthiness of the approaches, conformability with empirical findings, and credibility of materials for data collection test the reliability of the study (Shaw & Satalkar, 2018; Hameed, 2020). The identified method was chosen because the researcher needed to create pictures of reality.

Qualitative methods assess human behaviors, preserve chronological flow, sustain textual validity, and offer in-depth information (Hameed, 2020). It has gained prominence in recent times because of the increasing dissatisfaction with the quantitative approach and the refinements of naturalistic techniques (Rahman, 2017; Hameed, 2020). It is a type of social action based on the opinion and interpretation of people and applicable in making sense of the experiences and the social reality. Qualitative researchers concentrate on people's experiences, opinions, and meaning approach from the concept of participants. Its purpose is to explore and interpret phenomena or concepts methodologically form the opinions of participants and create a new theory or concept. Questions being raised determine the choice of qualitative methodology (Rahman, 2017; Mohajan, 2018). It is inductive; thus, a researcher explores insights and meanings in a given condition (Tuffour, 2017). Qualitative data analysis is an art depending on intuition rather than established processes. However, textual analysis is commonly used for the recognition and interpretation of text signs for themes generations (Hameed, 2020). The methods have a drawback because the collection and presentation of data to give desired themes and images are not well defined.

### **Sample Population**

Selecting participants of a given field study is important because they determine the validity of the findings or responses received. However, the sample size is important to give meaning and generalizability or transferability to the findings. Selecting an appropriate sample size in a naturalistic study is a part of theoretical discussion and practical ambiguity (Vasileiou et al., 2018). The sample size concepts, tools, and principles have been established for facilitating researchers' justification and acceptability of the selected size of the target population as a sign that the matter institutes a significant marker of the quality. Nonetheless, the study reveals that sample size adequacy documentation is frequently pitiable across many study fields (Vasileiou et al., 2018). Data relevant to population numbers are collected using a qualitative analytic approach. Experts explain that sample size justifications for any health-related study are limited; however, a small sample size is adequate for interviews due to the in-depth nature of data collected. Sample size inadequacy threatens the generalizability and validity of findings (Vasileiou et al., 2018). The researcher adopted a moderate sample size of 36 for the interviews (20) and FGD (16) because qualitative principles consider this sample size sufficient for the generalizability of the findings.

The sample population comes from 20 in-depth interviews of young people from 3 disaster-prone areas in Bangladesh, namely Gaibandha, Sunamganj, and Faridpur. These are some of the top flood-affected areas of Bangladesh, located in three different zones of Bangladesh; north, east and south of Bangladesh. In addition, two FGD studies each containing eight young people from these locations were conducted.

### **Materials:-**

#### **In-depth Interviews**

The researcher used in-depth interviews and focus group discussions as research tools.

In-depth interviews with up to 20 youths from Bangladesh disaster-prone areas were conducted. Five open-ended questions were disseminated to participants before the virtual interview session. In-depth interviews are time-consuming because they involve direct communication with interviewees and sometimes control of time is not on the interviewer's end (Macfarlan, 2020; Roller, 2020). Therefore, five research questions were deemed fit for the session of 15 minutes. Interviews need the establishment of a rapport with participants, give room for follow-up questions, focuses on non-verbal clues, and require fewer participants for concentration and pertinent insights (Macfarlan, 2020). The following template provides the instrument that was used during the interviews. The guide consisted of parts A and B for social-demographic information and interview questions, respectively. The first part is essential for establishing the credibility of the participants based on age. The study was about youthful

**Interview Guide****Part A: Demographic Details**

- 1.1 **Age:** 15 to 19 years  20 to 30 years   
 1.2 **Gender:** Male  Female   
 1.3 **Location (Tick):** Gaibandha  Sunamganj  Faridpur

**Part B: Interview Questions**

- In your opinion, would you say you are adequately engaged by your local authority disaster management to help alleviate the worse consequences of a natural disaster in your area?
- Youth of Bangladesh plays a vital role in the achievement of the Sustainable Development Goal, Target 13.1- disaster resilience. Do you agree?  
Yes \_\_\_\_\_ No \_\_\_\_\_  
Elaborate
- In your opinion, does the Union Disaster Management Committee (UDMC) of your local authority engage the youth in sensitizing about disaster resilience? Briefly explain why this is the case.
- In a shortlist, what are the roles of the youths in achieving disaster resilience in your region?
- Would you say that young women and men play a critical role in helping to reduce death rates during a natural disaster?  
Yes \_\_\_\_\_ No \_\_\_\_\_  
Elaborate

**FGD**

The researcher engaged in a focus group discussion with 16 youths from Bangladesh's disaster-prone area to understand their opinions on disaster resilience.

Focus group research design consisted of two groups of youths answering two questions concerning youth engagement in disaster management and resilience. Researchers apply different approaches for FGD with guidelines based on their intuition and availability of resources (Sørensen et al., 2021). The FGD is beneficial when exploring data on variations to assess the arguments and interpretations for informed decisions. The FGD design is created through a collective approach and both parties agree upon the process (Sørensen et al., 2021). The researcher and participants agreed on using Skype and Zoom for the virtual discussion and the session was agreed to last for 20 minutes. Each participant had five minutes to give their views and responses to the questions. The design was constructed in close discussion with members to align the objectives and resources for the fruition of the study. All members agreed on the virtual approach because the current COVID-19 pandemic does not allow socializing. The online format was successful because of advanced technology that allows individuals to video call using their smartphones.

The FGD study was organized to handle the following research questions:

- Is there a need for the youths of Bangladesh to take part in climate change mitigation measures for disaster resilience outcome and achievement of the 2030 Sustainable Development Goal 13?
- Which functions or roles do youths play in disaster management procedures that could yield a resilience outcome and reduce death rates because of natural disasters?

**Results:-**

The result section presents the outcome of the in-depth interviews and FGD study. It was important to assess the composition of the participants to ascertain the credibility of selected populations and the validity of the instruments used. Table 2 presents a composition of the interviewees who participated in in-depth interviews and FGD studies. It reveals that more participants were between 20 and 30 years of age at 60% and 63% for in-depth interviews and FGD, respectively. However, based on age compositions, all the participants met the youthfulness requirement of the study. On gender, the male composition was higher than female at 55% to 45% and 62% to 38% for in-depth interviews and focus group discussion, respectively.

**Table 2:-** Participants Composition based on Age and Gender.

Age	In-depth Interviews		FGD	
	Frequency	Percentage	Frequencies	Percentage
15 - 19	8	40%	6	38%

20 - 30	12	60%	10	63%
<b>Total</b>	<b>20</b>	<b>100%</b>	<b>16</b>	<b>100%</b>
<b>Gender</b>	<b>Frequency</b>	<b>Percentage</b>	<b>Frequencies</b>	<b>Percentage</b>
Male	11	55%	10	62%
Females	9	45%	6	38%
<b>Total</b>	<b>20</b>	<b>100%</b>	<b>16</b>	<b>100%</b>

Figure 2 presents a graphical representation of age and gender compositions for the in-depth interviewees.

**Figure 2:-** Age and Gender Composition for the In-Depth Interviewees.

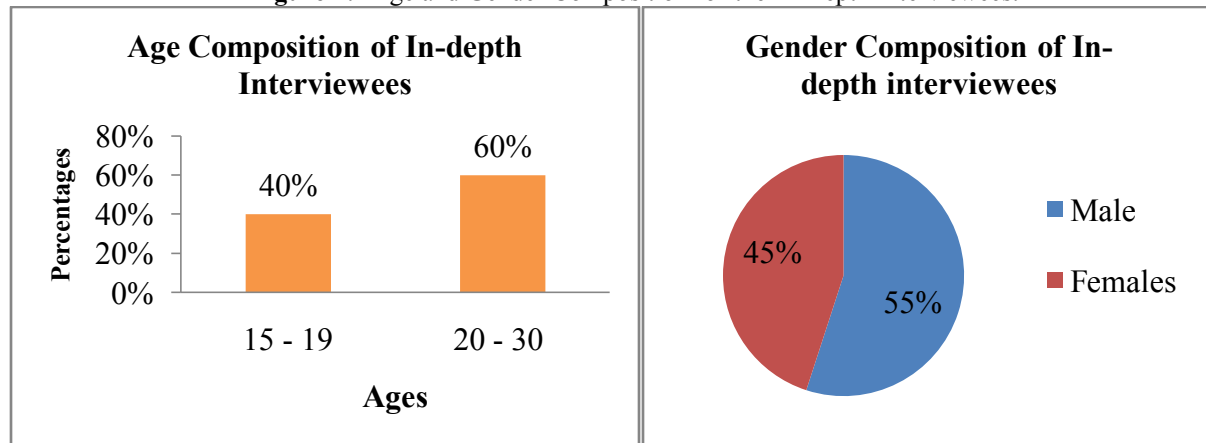
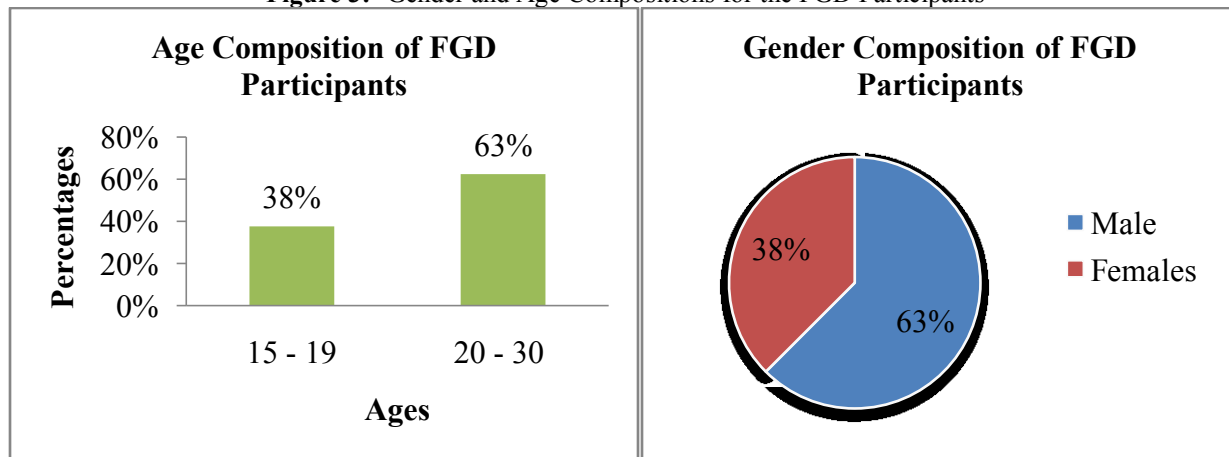


Figure 3 depicts a chart display of gender and age compositions for the FGD participants of the study.

**Figure 3:-** Gender and Age Compositions for the FGD Participants



**In-depth Interviews Results**

Table 3 presents a thematic or textual outcome or analysis of the interview responses. The theme for each question reveals a positive trend or the benefits of engaging youth in Bangladesh disaster resilience programs to reduce the death rates during calamities. Most of the interviewees agreed that they have been engaged in disaster resilience programs by the local author, union, or government agencies to help reduce the adverse consequences of natural disasters. They are largely recruited under the voluntarism programs and work under the supervision of disaster management experts. The results conclude with an affirmative theme that youths play a critical role in the achievement of the SDG 13.1 target.

**Table 3:-** In-depth Interviews Results.

Question	Common Answers	Theme
Question 1	Yes (18), the disaster committee engages the	Bangladesh engaged youths in disaster

	youths through voluntarism programs to during disaster No(2) never called for any disaster management program	resilience programs.
Question 2	Yes (18) No (2)	Youth actively participate toward the achievement of SDG target 13.1
Question 3	UDMC recruits youth within locality during disasters	Government engages youths through union for disaster resilience
Question 4	Education, volunteer for evaluation purposes, distribution of amenities, helping emergency team to carry incapacitated victims, post recovery practices	Actively engage in disaster resilience activities
Question 5	Yes, help to reduce the worst consequences of disaster	Youth are critical stakeholders of SDG target 13.1

### FGD Results

1. Is there a need for the youths of Bangladesh to take part in climate change mitigation measures for disaster resilience outcome and achievement of the 2030 Sustainable Development Goal 13?

The eight youths who engaged in the focus discussion on the youth involvement in climate change mitigation and achievement of SDG target 13, had a common answer but presented in varied versions. They all acknowledge the need for the government to engage youths in disaster management. An overarching point was that youths are agile and energize to help with physical or manual activities during disaster management or post-restoration activities. They also reiterated that most of the youths are unemployed; thus, such engagement helps to gain some skills that could be used for job acquisition in the future. The interviewees agreed that the network scale of the youths is so robust that when utilized effectively for sensitization and preparation of disaster management, then the achievement of SDG 13 is likely to be realized.

2. Which functions or roles do youths play in disaster management procedures that could yield a resilience outcome and reduce death rates because of natural disasters?

The second group discussed the functions of the youths toward disaster resilience. Most of their responses confirmed what the first group had provided. They reiterated that the agility and youthfulness of the young people make them viable for almost all the activities needed to manage a disaster situation. However, they also acknowledge that lack of skills and professionalism in disaster management necessitates supervision of their activities. The quick response of the youth to evaluate the affected individuals is essential for minimizing the death rates in natural disasters.

### Discussion:-

Interview-based qualitative studies and literature review were conducted to explore the role of Bangladesh youths in disaster resilience and achievement of SDG target 13. The empirical findings and primary findings corroborate that youths play a critical role in climate change management and disaster resilience. Therefore, they are essential stakeholders for the achievement of SDG target 13.1 by 2030 globally and in Bangladesh. Bangladesh youths who participated in the interviews agreed to acknowledge the efforts the government is putting to engage them in disaster resilience programs to reduce the adverse effects of natural disasters. This primary finding corroborates what earlier researchers had found concerning youth engagement. In Bangladesh, Mishti who was 18 years old in 2018 is still a youth playing a critical role in empowering young women in various capacities (ADB & Plan International UK, 2018). Disaster management voluntarism is one of the various capacities that Mishti is encouraging among the peers. Shine (2017) emphasizes that target 13b of SDG encourages youths engagement toward the achievement of the goal. Furthermore, the Bangladesh government uses volunteers' networks or programs for disaster management, early warnings, and post-disaster recovery (GED, 2020). The majority of the volunteers are the youths who constitute over 50% of the Bangladesh population and are mostly unemployed.

In conclusion, the study has revealed that the youths play a vital role toward the achievement of SDG target 13.1 because they are energetic for required activities and available because of high unemployment rates. Therefore, engagement in disaster resilience programs whether in voluntarism programs or through other arrangements allows them to be productive and useful to the community for better futures. The youths constitute a huge percentage of the population and have better networks than the adults who are preoccupied with their professions and family obligations.

### Recommendation:-

The study has established the roles of young Bangladeshis in disaster resilience and reduction of mortality rates during calamities. However, the level of youth engagement in climate change management and disaster control programs is still not well defined. Therefore, the recommendation to the Bangladesh government is to put more effort into youth involvement in climate change discussions and activities. A possible way is by instituting national recruitment programs that cut across the region and give the youth a priority.

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