



# Youth engagement in climate change mitigation and adaptation in Bangladesh: Perceptions, practices, barriers, and policy pathways toward SDG 2030

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Received Date: 03 April, 2026

Revised Date: 03 August, 2026

Accepted Date: 27 August, 2026

## ABSTRACT

**Background:** Climate change is a major challenge for Bangladesh, one of the countries most affected by it. Youth make up almost 60% of the population and play a key role in driving climate action and adaptation to meet the Sustainable Development Goals (SDGs) by 2030. This study looks at how young people view climate issues, their involvement, the barriers they face, and potential policy solutions in Bangladesh. **Methods:** Using a qualitative exploratory approach, data were collected through 40 in-depth interviews, focus group discussions, and interviews with NGO workers and climate activists in Dhaka, Sylhet, and Chattogram. We used reflexive thematic analysis to find common themes in youth awareness, climate action, and structural challenges. **Findings:** The results show that young people see climate change as a significant national threat. They actively take part in community initiatives like tree planting, waste management, and disaster response efforts. However, their involvement is limited in scale and mostly informal. Major hurdles include financial issues, lack of institutional support, insufficient climate education, and low representation in policy decisions. **Conclusion:** The study reveals a big gap between youth awareness of climate issues and their participation in climate governance. To harness the potential of young people and speed up progress towards SDG-13 and broader sustainable development in Bangladesh, the findings highlight the need to strengthen their role in climate policy, improve climate education, and create more green job opportunities. **Novelty/Originality of this article:** The study's principal novelty lies in advancing the concept of "bounded climate agency" integrating Youth Agency Theory, Participatory Governance, and Climate Justice to explain why, in a highly climate-exposed delta, youth engagement is channelled into adaptation-oriented, institutionally compliant action rather than protest, and how a culturally embedded norm of age-based deference operates as a distinctive governance constraint on youth voice in Bangladesh.

**KEYWORDS:** Bangladesh; climate change adaptation; climate change mitigation; sustainable development goals; youth engagement.

## 1. Introduction

The climate change is among the issues that define the 21st century and endanger human beings, ecosystems, and economies worldwide, as stated by the Intergovernmental Panel on Climate Change (IPCC, 2023). The effects of global warming are most severe in developing nations, whereby social vulnerability, geological predisposition, inadequate infrastructure, and economic reliance on climate-intensive lucrative sectors exert aggravation (IPCC, 2022). Bangladesh is one of the most vulnerable countries in the world

### Cite This Article:

Salam, M. F., Gope, S., & Akter, S. (2026). Youth engagement in climate change mitigation and adaptation in Bangladesh: Perceptions, practices, barriers, and policy pathways toward SDG 2030. *Green Governance: Exploring Politics, Social Justice, and the Environment*, 3(2), 122-141. <https://doi.org/10.61511/gg.v3i2.2026.3668>

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in terms of climate. It is also highly vulnerable to climate changes because of its low-lying deltaic terrain, its high population, and the frequent occurrence of cyclones, flooding, sea level rise, drought, and intrusion of saline water. Bangladesh is highly exposed to climate risks which is once again a fact based on the Global Climate Risk Index 2021 that ranked the country as one of the top 10 countries at highest risk due to extreme weather events that have occurred between 1998 and 2019 (Ishtiaque & Eakin, 2021; Eckstein et al., 2021). According to the latest environmental reviews, it is important to note that climate change is ceasing to be an issue in the future and is currently a reality that is redefining development trends, lifestyles, and recovery patterns in Bangladesh. Climate action urgency is also indicated by United Nations (UN) Sustainable Development Goals (SDGs) which is an international agenda that 193 nations have adopted to eliminate poverty, conserve the planet, as well as seek prosperity by the year 2030. A number of SDG goals are being directly affected by climate change - like goals on food security, access to water, decent work, resilient ecosystems and global partnerships. Adverse climate change affects SDG 2 (zero hunger) through effects on agricultural productivity; SDG 6 (clean water and sanitation) due to the effect on the hydrology programs; SDG 8 (decent work and economic growth) by endangering employment in climate-sensitive industries; SDG 13 (climate action) because this is the main climate obligation; SDG 14 (life below water), and SDG 15 (life on land) due to the loss of biodiversity; and SDG 17 (partnerships for the goals). In order that Bangladesh realizes the SDG 2030 agenda, the aspect of climate action should be at the centre of nation building measures.

Youth, in this case, become important sources of change. Youths constitute a majority population in Bangladesh - almost 60 percent of the population is below 30 years (World Bank, 2024). This youth bulge has its opportunities and challenges. On the one hand, youth can introduce novelty, dynamism, and innovative concepts that will help in speeding up climate mitigation and adaptation practices. On the other hand, they frequently encounter obstacles in the form of restricted exposure to quality climate education, restricted economic chances and a lack of participation in decision-making. Although youth activism and involvement in community-level climate projects can be transformative, little empirical knowledge has been in-depth coverage of the way youths view climate change, what influences or hinders their involvement in climate action, and how current policies enable or restrict youth involvement in climate governance. More recent demographic data corroborate this youth bulge: the median age is approximately 27 years, about 46% of the population is under 25, and young people aged 10–24 comprise roughly 28% of the total population, as stated by the United Nations Population Fund (UNFPA, 2024). Although government, non-governmental organizations, and international partners have engaged the mainstreaming of climate resilience, there are limited studies that have analyzed the perceptions of youth on climate resilience, barriers to participation, and whether the policy of the young population taking charge of climate action is relevant in Bangladesh. The bulk of studies about climate vulnerable situations in Bangladesh is about the effects on ecology, livelihoods, or even macro-level plans of adaptation, and often not at the intersection of youth sensibilities and policy preparedness. This disparity is further pronounced with the SDG agenda in which the voice of the youth do not always find a direct place in the policy evaluation or delivering models. The gap in the current research seeks to fill such gaps through examining the youth perceptions about climate change, determining the impediments and facilitating factors to young people engagement, and determining the alignment of policy with strategies of youth engagement applicable to the SDG realization by 2030.

The peculiarities of climate in Bangladesh are based on geographical position, climate, and socioeconomic problems. The nation is in a crossroad of three major riverine networks, namely, the Ganges, Brahmaputra, and Meghna, which constitute one of the biggest river deltas in the world. The majority of its territory is at a height that is below 10 meters above sea level, meaning that it is highly vulnerable to coastal floods, intrusion of saline water, and rise in the sea level (Sovacool, 2018). Climate models anticipate that the frequency of the extreme weather conditions including tropical cyclones and heavy rainfall will rise and

cause severe effects of devastating lives, infrastructure, agricultural systems, and economic productivity. Climate change has multidimensional effects in Bangladesh. Flooding and river erosion cause displacement of communities, crops, droughts in the north, degradation of freshwater supply and soil fertility in coastal belts, rising sea levels and salinity intrusion, and devastation caused by cyclones on housing, transport and livelihood. Human Development Report (2022) noted that in Bangladesh, economic damages of the climatic disasters amount to billions of dollars per year and aggravates poverty and disparity (United Nations Development Programme, 2022). Moreover, vulnerable groups- especially the rural women, low-income families and informal sector laborers who have a low safety net- are disproportionately impacted due to climate change. These ecosystem interferences are highly related to developmental performance. Climate shocks decrease agricultural outputs endangering SDG 2 (ending hunger). Salinity and unpredictable rainfall impact SDG 6 (water access) as both of them are threats to clean drinking water and sanitation. The SDG 8 (decent work) is subordinated in the event of climate-based risks that cause loss of jobs in agriculture and fishing that sets the large portions of the youth generation. SDG 13 (climate action) is categorical that there should be swift actions to prevent, mitigate the effects of climate change. SDG 14 and SDG 15 are focused on marine and land ecosystem that are left under pressure by climate change. Lastly, SDG 17 emphasizes that multi-stakeholder partnerships, such as youth involvement, are required to make the goals that are interconnected a reality. Such a complicated situation means that SDG targets at 2030 require significant technical adjustment on the one hand, and a more representative approach to social subpopulations, in particular, young people, who will bear the full impact of climate change in the long run. Nonetheless, it is still remarkable how little is known about the perception of climate change and the effects thereof on climate action that can be contributed by the young generation and allow tightening of policy interventions aimed at developing a resilient and sustainable future.

The young people do not only benefit by climatic policy; they can be the key players in solution making. Youths introduce new thinking on innovation, technology and community mobilization that can speed up the climate mitigation and pathways of adaptation. Youths worldwide have also launched climate movements, renewable energy campaigns, waste control movements, and environmental education. In Bangladesh youth-led organizations have participated on afforestation efforts, youth climate organizations at schools, young oriented sensitizations promoting sustainable activities, the manner in which young people are ready and able to take part in climate acts. Nevertheless, the use of youth engaged is unofficial, short-lived, and structural. These obstacles encompass feelings of restricted access to climate science education, financial deprivation, absence of a platform where young people can voice their opinions institutionally and cultural norms discouraging youth leadership in decision making in the society. According to the research, youth might be almost perfectly knowledgeable about the issues related to climate; however, many of them do not believe that there is anything they can do to make a meaningful impact or influence the policy (Thew, 2018). In addition, structural obstacles influence the translation of awareness to the future climate action, especially where the spaces of youth involvement are not formalized in the processes of climate governance.

The perception of youths about climate risks, the way they conceptualize mitigation strategies, adaptation priorities, and all the factors basic to the implementation of interventions that empower youths as stakeholders in climate governance can be understood by appreciating how youths view climate risks. Nonetheless, comparatively few studies explore the perceptions of youths in a particular context of climate vulnerability policy environment in Bangladesh. It is a major gap in the literature especially when it is compared to the SDG framework which focuses on inclusive involvement and multi-sectoral method of sustainable development. The SDG 2030 agenda provides a comprehensive platform of dealing with climate change and implementing development initiatives. SDG 13 (Climate Action) specifically aims at taking immediate measures to tackle climate change and its effects by enhancing resilience, adaptive capacity, climate education, and promotion of climate measures in the country policies. Attainment of SDG 13 also underpins progress

on interconnected goals. In particular, it supports zero hunger (SDG 2) through climate-resilient agriculture and improved water management, clean water and sanitation (SDG 6) through watershed protection, decent work and economic growth (SDG 8) through green skills and jobs, life below water (SDG 14) and life on land (SDG 15) through ecosystem conservation, and partnerships for the goals (SDG 17) through multi-stakeholder collaboration that meaningfully includes youth.

Such interlinkages indicate that climate action does not exist as an objective, but as an initiator of wider outcomes of sustainable development. Nevertheless, to achieve such linkages is possible not only through technical interventions, but also embrasive systems of governing such aspects, which incorporate youth views into the policy-making, implementation, and control stages. Although the youth are relevant in the climate action and SDGs achievement, current studies reveal that there are gaps in the perception of youth-led climate action, barriers, and relevance of the policies in Bangladesh. Majority of the works was concentrating on macro climate adaptation policies, ecological intervention or the resilience of communities, and there was little emphasis on the youths as primary variables of analysis. When young people are referred to, it is more of a narrative than an analytical discussion and does not look at how young people view climate change and what makes them prefer some types of participation instead of other types, and the reasons as to why they cannot be involved in more serious policy making. Also, national climate policies and SDG implementation plans do not have all institutionalized youth engagement mechanisms. Although some efforts are in place (like youth climate forums, schools' environmental clubs and awareness campaigns), the efforts are usually outside the official policy framework or they are not connected to national priorities on climate and SDG indicators. This is a break between the policy-relevant engagement of the youth and the ability of youth-centered policymaking to influence long-term adjustment and mitigation orientations.

The study is both important scholarly and in practice. It adds to the literature by creating an empirical evidence on the environmental perception of climate change in youth and the limitations and facilitators of such participation in climate action as a part of the climate vulnerability of Bangladesh. Notably, the paper also examines the collaboration or lack of collaboration between climate policies in place and the youth engagement strategies and the SDG goals, in general. This study provides policies, educationists, civil societies and development partners with clues on how to improve the efforts of youth in managing climate by identifying how the youth aspire and the policies fail to meet their needs. Finally, the study will help to promote a policy recommendation that will empower youth inclusion, intergenerational equity, and accelerate SDG realization by 2030. To analyze the perceptions of youth on climate change and its consequences, discover obstacles and facilitators of youth involvement in climate action, and dwell on policy solutions that could increase youth involvement according to SDG 2030 pathways. Thus, the study aims to address four research questions: What is the situation of awareness and perception about climate change among the youth of Bangladesh? What are the barriers and enablers for involvement of youth in climate change mitigation and adaptation? How climate policy interacts with strategy of involving youth in implementation of SDGs? What are the recommendations for enhancing youth participation in climate governance and SDGs implementation? These objectives are tackled by five guiding questions to understand how youth view climate change and its effects in Bangladesh, what mitigation and adaptation actions they take, what barriers prevent them from participating, how youth-led engagement can support the SDG 2030 agenda and what policy measures could best increase their engagement.

The interest of the youth to contribute to mitigation and adaptation to changing climatic conditions has become a critical topic in the contemporary research of the world. The youth has also been beginning to be seen not just as people who have been affected by impact of climate change but also as those who can be used as agents of change to bring out sustainable directions. The researchers have postulated that youth engagement contributes to resilience in the community, innovation, and climate education networks (Thew, 2018;

Kolleck & Schuster, 2022). A questionnaire survey operation carried out in twenty countries by Neas et al., (2022) revealed that youth in most countries are highly aware and concerned about climate risks, yet their participation in climate issues exhibits a great discrepancy in connection with their access to education, socioeconomic status, and knowledge on the environment. In the developed world, youth climate activism has emerged in the form of organized movements, online activity, and advocacy tools, including internationally famous Fridays for Future strikes (Cologna et al., 2021). In less developed countries, on contrary, youth activities are aimed at community-based adaptation efforts, youth weather clubs, and local awareness campaigns that combine the input of indigenous knowledge and sustainable ways of doing things (Vogel et al., 2022). Young people around the world are engaged in both mitigation measures (tree planting, converting to renewable energy, and encouraging sustainable consumption), and adaptation measures (including community disaster preparedness trainings, water conservation, and producing climate-resistant agriculture). In Kenya and the Philippines, the youth groups have co-planned local climatic adaptation plans with village councils in enhancing early warning systems and green employment opportunities to young individuals (Haynes & Tanner, 2015). In spite of these cases, the studies over and over again indicate that humans are underrepresented in formulated climate governance frameworks. Although the number of participants at grassroots is high, there is still little opportunity to engage in meaningful means of affecting institutional or national policymaking, which opens a gap between local action and formal influence (Thew et al., 2021).

A close connection can be made between youth-led climate action and United Nations Sustainable Development Goals (SDGs) where climate action is one of the goals (SDG 13) and where several others can be found. Youth groups have shown the potential of supporting inclusive climate education, campaigning, and practical interventions that can advance such SDG targets as zero hunger (SDG 2), clean water and sanitation (SDG 6), decent work and economic growth (SDG 8), life below water (SDG 14), life on land (SDG 15), and partnerships for the goals (SDG 17). As a case example, the smallholder farming communities have improved their food security and minimized vulnerability through the youth-led climate education and sustainable agriculture projects (Khatun & Logan, 2026). Youth led water and sanitation campaigns have helped in better watershed management and community infrastructural resilience in South Asia and Sub-Saharan Africa (Khatun & Logan, 2024). Moreover, solar technology startups, eco-tourism ventures, and waste recycling projects by youth people, as green enterprises, have provided jobs not only to combat climate and economic targets but equally address economic and development challenges. The young volunteers are also actively involved in marine and land conservation work and contribute to the restoration of biodiversity and the protection of the ecosystem (Kruesopon & Kruesopon, 2025). Transnational youth networks go beyond what local actors can provide in collaboration with civil society groups, universities, and governmental agencies, and contribute to cross-sectoral projects in line with SDG 17 (Marquardt et al., 2024). The Chilean examples of youth-led mangrove restoration projects show that these projects can be useful both in enhancing the resilience of coastal areas and in training youth in the development of eco-enterprises. School-based youth climate clubs in Bangladesh can effectively connect educational programs with real-world activities, including garbage management and water preservation, and thus assist in national SDG pathways (Sarker & Mahmud, 2026). Regardless of these successful outcomes, researchers highlight the fact that youth climate action tends to be disconnected, insufficiently funded, and has no formal policy framework that would provide greater sustainability and scalability (Kolleck, & Schuster 2022; Khatun & Logan, 2024).

Studies have depicted several impediments, which restrain the youth to engage in climate action, encompassing structural, social, policy, and resource levels. Limitations in access to high quality climate education, especially within rural and marginalized groups, have the potential to inhibit the ability of young people to participate effectively in the process of mitigation and adaptation (Neas et al., 2022). Additional limiting factors to the youth leadership opportunities are social and cultural titles and hierarchies associated with

age. Young women in patriarchal environments frequently have a multiplied restriction on social interaction as well as mentorship and the usage of networks (Jalal et al., 2021). There are also policy and institutional obstacles, where national climatic policies may indicate that it should involve young people, yet the procedures to do so are not explicitly established in the policy sources, funds, and accountability measures (Ahmed, 2020). Lastly, there are resource constraints which are problematic. Most projects by youth organizations operate on the minimum-to-no standing with regard to funding, technical training or equipment, as well as restricting the capacity of such projects to scale and become sustainable (Vogel et al., 2022). Taken together, these obstacles demonstrate that young people cannot regularly experience the transformation between awareness and inspiration and long-lasting and policy-relevant climate action. In addition to the environmental-education literature, there is political-science scholarship on youth political participation that provides a more focused explanation of the reasons why grassroots engagement does not necessarily result in institutional influence. Youth representation in global climate governance, even when it is formally in place, is often limited to a consultative, symbolic, or youth-washing position, with critics stating that young people do not have a say in decision-making (Marquardt et al., 2024). Usefully, O'Brien et al. (2018) distinguish between dutiful dissent (which operates within existing institutions) and disruptive dissent (which challenges these institutions), and dangerous dissent (which voices systemic alternatives). This typology offers a good explanation for why youth agency is frequently directed toward adaptation, rather than contestation, of existing institutions. More generally, Sloam et al. (2022) claim that environmental activism is changing the nature of youth involvement in democracy, but the marginalization of young people in policy-making institutions, lack of youth representation in quotas, and unequal access to resources still reduces their formal role in decision-making. Interpreted through this lens, the Bangladeshi evidence confirms the subsequent arguments in the study regarding bounded climate agency and tokenistic engagement with an existing political theory.

The case of Bangladesh is a good example of such problems and also shows the critical lack of knowledge. Climate change is an issue that Bangladesh is extremely susceptible to because of the deltaic topography, the large human population, and the heavy reliance on climate-dependent activities (Sovacool, 2018). There remains a lack of in-depth examination of the role of youth within the Bangladesh Climate Change Strategy and Action Plan (BCCSAP), which sets out the country's nationwide adaptation and mitigation framework. The current literature is more about biophysical effects, livelihoods, and macro adaptation approaches including embankment buildings, cyclone shelters, and flood early warning system, as stated by United Nations Development Programme (UNDP, 2022). Recent studies on the theme of youth, including the studies by Khatun & Logan (2026), show that young people are not only aware and eager to act on the issue of climate change: there exist reasons not to be involved in the formal decision-making processes. Likewise, Sarker & Mahmud (2026) address school-based climate clubs and prove that education could influence attitudes but concludes that there are still few opportunities to make policies. These studies however are quite local, descriptive, and do not have analytical frameworks that are detailed to correlate the perceptions of the youth, barriers to participation, and policy congruity to the implementation of SDGs. Secondly, few studies conduct themselves with an interdisciplinary approach combining the views of youth agency, participatory governance, and climate justice in order to comprehend the dynamic interaction between youth to carry out climate action in Bangladesh. This disparity is especially critical due to the fact that the youth population also makes almost 60% of the national population, and their involvement in climate decision-making may compromise the implementation of SDG 13 and other targets by 2030 (World Bank, 2024).

The theoretical frameworks can be helpful in analyzing young people participation in climate action. The youth agency theory focuses on the ability of young people to act and shape social structures and the importance of knowledge, access to resources, and opportunities of action to enable youth to influence the results of environmental behavior (Phiri & Nalwamba, 2025). The participatory governance theory reiterates that it is

essential to incorporate various stakeholders that include the youth into the process of policy making to bring in sustainable policy results (Fung, 2020). Lastly, the climate justice approach draws attention to the moral aspects of climate action, which are fair responsibility, impact, and participation, especially of those who take the fewest actions towards climate change and are the most impacted by its effects, like youth (Menton et al., 2020; Rahman & Rahman, 2020). These frameworks combined can give an analytical framework to study both the abilities and limitations of youth climate engagement in Bangladesh. Finally, the literature indicates that there is increasing appreciation of the importance of young people in climate mitigation and adaptation, not only at the global level, but also in Bangladesh. Youth-led efforts can help the SDG targets progress in various sectors, but this must overcome a plethora of structural, social, policy, and resource limitations. Studies in Bangladesh are also scarce and few studies have been conducted to explore the intersectional relationship between youth perception, barriers and policy relevance in national SDG and climate policy framework. The needs of these gaps can be covered with the help of theoretical approaches to the concept of youth agency, participatory governance, and climate justice. This research attempts to address this knowledge gap through a systematic investigation on the issues of youth perception of climate change, the perceived barriers to participation, and the policy considerations to increase youth participation as per SDG 2030 pathways.

## 2. Methods

This research is qualitative in nature as it is an exploratory research study to examine the youth participation in mitigation and adaptation efforts towards climate change in Bangladesh. The qualitative approach is suitable since the study is to understand the depth of perception and experiences of youth, as well as realities of the environment, which cannot be sufficiently explained by quantitative-only measures. The exploratory design is the one that will allow the study to recognize the new themes surrounding the youth practices, barriers, and policy pathways towards the SDGs realization in 2030. Multi-site design was employed to provide the contextual diversity of the key cities and semi-urban locations, such as Dhaka, Sylhet, and Chattogram with dissimilar youth climate planning and threats of the environment.

The sample of the population involves young individuals between the age of 15-30 years' old which is known to be the generally acceptable definition of youth in the development and policy literature. Purposive sampling coupled with maximum variation sampling was used so that it is representative in the respect of gender, education level, urban or rural living and participation in non-government organization (NGO) and non-NGO climate initiatives. This sampling design is appropriate to the aim of the research of the study to capture different youth experiences and views. The sample consists of about 40 youth to be interviewed due to the in-depth interviews and 3 key informants, including NGO practitioners, climate activists, and policy interested parties, allowing one to triangulate and compare results.

Triangulation of data was undertaken to enhance research rigour by analysing data across multiple qualitative sources. Interviews were conducted in the form of semi-structured interviews, which were the main sources of primary data to be able to be flexible in their discovery of the perceptions of the participants regarding climate change, youth-led actions fighting climate changes, knowledge about SDGs, perceived obstacles, and possible policy recommendations. Focus group discussions were also employed to explore the contexts of shared stories and peer interaction with regard to the youth climate engagement. Conceptualization of policy reports, publications of the non-governmental organizations, and youth climate programs helped in providing a relevant context and data triangulation. The interview guide was designed in a way that it contained four thematic blocks; climate perceptions, climate actions, SDG awareness, barriers and challenges and policy recommendations, thus it was in line with the research objectives.

Reflexive thematic analysis of Virginia Braun & Victoria Clarke (2006) was the following stage in the data analysis. The choice of this method is based on the idea that it provides systematic identification, interpretation, and constructions of themes and takes into account the reflexivity of the researcher. The analysis procedure entailed familiarization of the data, coding, creating preliminary themes, editing and modifying themes, and depicting interpretive accounts. The qualitative data management software ATLAS.ti were utilized to code, write memos and develop themes in order to enhance the transparency and organization of the analysis. Data familiarization, systematic coding, initial themes, revisiting themes, defining themes and interpretative write up were conducted following the six phases described by Braun & Clarke (2006, 2021); reflexivity was used as an analytic tool and not as a lens for bias.

It should be noted the figures below are not the result of a separate quantitative survey, but rather a reflection of the apparent tensions between a reflexive-thematic design and the frequency figures reported. Instead, they report the number of participants out of 40 that were coded with a code (e.g., how many participants had any number of entries related to the activity of planting trees in their transcripts). The counts are reported descriptively to illustrate the themes that were present and how they were distributed in the sample, and to complement rather than replace or statistically summarise the interpretive thematic analysis. Table 1 presents the profile of the sample, describing the maximum-variation sampling by city, age group, gender, education and by NGO affiliation.

Table 1. Percentages are rounded; each attribute sums to the full sample of 40 participants

| Attribute         | Category                                      | n          | %              |
|-------------------|-----------------------------------------------|------------|----------------|
| City              | Dhaka, Sylhet, Chattogram                     | 14, 13, 13 | 35; 32.5; 32.5 |
| Age group (years) | 15-19, 20-24, 25-30                           | 8, 18, 14  | 20; 45; 35     |
| Gender            | Male, female                                  | 22, 18     | 55; 45         |
| Education         | Secondary, higher secondary, higher secondary | 5, 9, 18   | 12.5; 22.5; 45 |
| NGO affiliation   | NGO-affiliated, non-affiliated                | 17, 23     | 42.5; 57.5     |

Ethics was a major concern during the research. The informed consent forms were given to participants to describe the purpose of the study and the fact that they could withdraw at any point within the study willingly. The anonymity was provided by pseudonyms, all information was confidential and safely stored. Particular consideration was made to the youth who were below 18 years and consent of their guardian is necessary in case of youth. These ethical procedures make the research credible and trustworthy and guard the rights of the participants. Altogether, these methodological decisions are directly valid in terms of the research objectives as they allow addressing the topic of the perceived reality, practice, barriers, and policy directions of youth involvement in climate change issues in Bangladesh in a comprehensive manner. The qualitative multi-site design, the mixed approach of sampling, the triangulated data collection, and the reflexive thematic analysis are all related to the depth, rigor and relevance in providing policy-dependent understandings and knowledge with regard to SDG 2030.

### 3. Results and Discussion

#### 3.1 Findings overview

This paper identified the involvement of youth in climate change mitigation and adaptation in Bangladesh with regard to perceptions, practices, SDGs contribution, and constraints in urban and semi-urban settings of Sylhet, Dhaka, and Chattagram. Using 40 deep interviews, two focus group discussions and three main informant interviews of NGO

practitioners, climate activists and policy people, the results outline patterned themes that arise out of the information without the heavy interpretation. As explained in the Methods, the distributions reported in Figures 1–6 are frequency counts derived from the coding of interview and focus-group transcripts (the number of the 40 participants to whom each code applied). They are read here descriptively and are interpreted alongside participants' accounts rather than as standalone statistics.

### 3.2 Youth perceptions of climate change



Fig. 1. Youth perception of climate change

Figure 1 illustrates overall perceptions of climate change among the respondents (N = 40). The data show that 85% (34 participants) identified climate change as a major national threat. In contrast, 15% (6 participants) considered it important but secondary to other national concerns such as economic instability and unemployment. No respondent dismissed climate change as irrelevant. Interpretively, this near-universal recognition indicates that climate change has become part of young people's everyday risk consciousness rather than an abstract or future concern; participants routinely narrated personal encounters with heat, flooding, and cyclones as evidence.

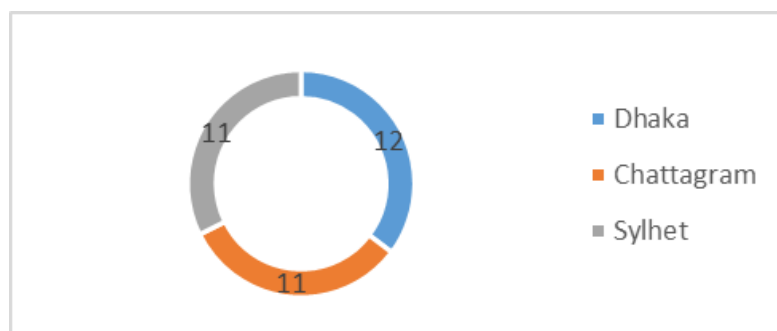


Fig. 2. City-wise major threat perception

Figure 2 presents city-wise distribution of respondents who identified climate change as a major threat. Dhaka recorded the highest number (12), followed by Sylhet (11) and Chattagram (11). The variation across cities is minimal, indicating a relatively consistent perception of climate risk across the three urban contexts. Qualitative responses align with the graphical trends. Many participants described climate change as visible and immediate. Heatwaves, flooding, and cyclonic events were frequently referenced. Overall, the figures demonstrate strong recognition of climate change severity among youth respondents. This immediacy was captured vividly in respondents' own words, as one participant recounted:

*"Last year our neighbourhood flooded twice in three months. I remember wading through knee-deep water just to get to my tuition classes, watching my books get ruined. It's not something I read about anymore — it's something that happens to me."*

### 3.3 Youth-led climate mitigation and adaptation actions

Figure 3 displays the types of climate-related activities reported by participants. Tree plantation emerged as the most frequently reported action (18 mentions). Flood response volunteering followed closely (15 mentions). Waste management initiatives were reported by 12 participants, and social media advocacy by 10 participants. Notably, 12 respondents indicated no active participation in climate-related activities within the last year. Beyond the counts, the qualitative material suggests that youth gravitate toward visible, community-embedded actions, tree-planting and flood-response volunteering, because these offer tangible, socially sanctioned ways to act within existing structures, whereas advocacy aimed at policy change was described as remote and inaccessible.



Fig. 3. Climate-related activities reported by participants

The graphical distribution shows that environmental engagement is present but not universal. A majority (28 out of 40) reported involvement in at least one activity, while a significant minority remain inactive. Participants described engagement in both mitigation (tree plantation, waste reduction) and adaptation (flood response, disaster awareness). The figure demonstrates that practical and community-based actions, particularly tree plantation and flood response, dominate youth engagement patterns. This sense of personal exposure rather than abstract awareness recurred across interviews, as illustrated below:

*"I joined a tree-planting drive with some friends near our school. It didn't need money or permission from anyone — we just showed up with saplings. Flood response felt too big for me to organize, but planting trees was something I could actually do."*

### 3.4 SDG awareness and contribution

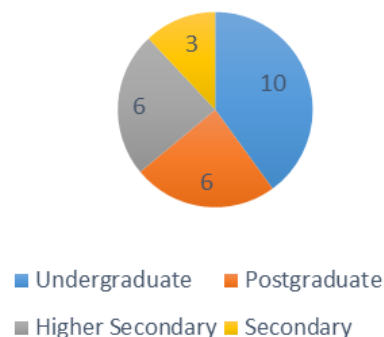


Fig. 4. Awareness by education level

Figure 4 illustrates awareness of SDG 13 (climate action) across education levels. Undergraduate respondents show the highest level of awareness (10 participants), followed

by higher secondary (6) and postgraduate (6). Secondary-level respondents demonstrate comparatively lower awareness (3 participants). The chart indicates that SDG familiarity increases with educational attainment. While 25 respondents overall were aware of SDG 13, awareness is unevenly distributed. Although formal SDG literacy varies, many participants were aware regardless of education. The unevenness of SDG literacy is analytically important: familiarity with global frameworks tracked educational access, implying that formal SDG discourse may itself be a gatekeeping resource that advantages university-level youth while excluding others who are nonetheless environmentally engaged. Level expressed concern about environmental sustainability. The figure demonstrates that knowledge of global development frameworks is more common among university-level youth compared to those at secondary level. This pattern of direct, first-hand exposure is exemplified in the following testimonies:

*"We studied the SDGs in one of our courses, so I know SDG 13 is about climate action, and how it connects to things like SDG 6 and SDG 2."* (Undergraduate participant)

*"I don't know what SDG means, but I know the river near us is drying up more every year, and that's not right. Somebody should be doing something."* (Secondary-level participant)

### 3.5 Barriers and challenges to youth engagement

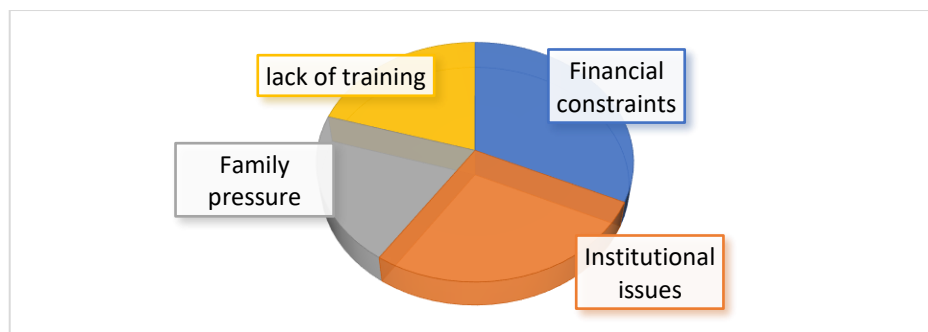


Fig. 5. Reported barriers to youth engagement

Figure 5 presents reported barriers to youth participation in climate initiatives. Financial constraints were the most frequently cited challenge (22 mentions). Institutional issues, such as lack of coordination or official support, were reported 19 times. Family pressure and lack of training were each mentioned 14 times. The clustering of financial and institutional constraints ahead of skill-related ones indicates that the principal obstacles are structural rather than motivational; participants described interest and willingness that could not be sustained without funding or an institutional home. The graphical data reveal that structural barriers (financial and institutional) outweigh personal or skill-related constraints. Financial limitation stands out as the most prominent challenge affecting youth engagement. Participants reported difficulties sustaining activities without funding or institutional backing. The figure clearly demonstrates that while youth interest exists, structural limitations restrict broader or long-term participation.

Table 2. Sense of personal exposure rather than abstract awareness recurred across interviews

| Barrier               | Manifestation in the data                                     | Corresponding youth practice/adaptation                     |
|-----------------------|---------------------------------------------------------------|-------------------------------------------------------------|
| Financial constraints | Inability to sustain activities without funding (22 mentions) | Low-cost, volunteer-based tree-planting and clean-up drives |

|                           |                                                        |                                                                    |
|---------------------------|--------------------------------------------------------|--------------------------------------------------------------------|
| Institutional constraints | Lack of coordination or official support (19 mentions) | Reliance on NGO and school platforms rather than government bodies |
| Socio-cultural pressure   | Family pressure and age-based deference (14 mentions)  | Participation negotiated around study and household duties         |
| Training/education gap    | Lack of training (14 mentions)                         | Peer learning and social-media advocacy to build skills            |

This sense of personal exposure rather than abstract awareness recurred across interviews, as illustrated below:

*"We started a small waste-collection drive in our area, but after a few months we couldn't keep buying bins and gloves ourselves. We asked a local office for support, but nobody got back to us, so it just stopped."*

### 3.6 City-wise participation differences

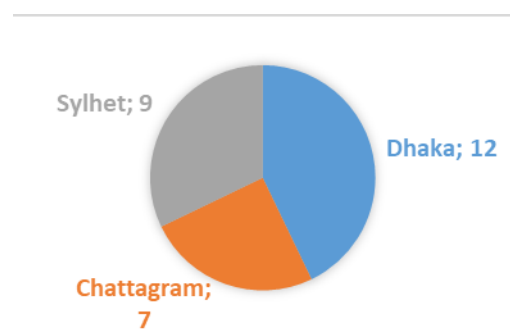


Fig. 6. Active youth participation by city

Figure 6 illustrates active participation rates by city. Dhaka recorded the highest number of active participants (12), followed by Sylhet (9) and Chattogram (7). The graph shows moderate variation in engagement levels. While participation exists in all three cities, Dhaka demonstrates comparatively stronger involvement in climate-related activities. When viewed alongside previous figures, this chart suggests that although perception of climate risk is relatively consistent across cities (Figure 2), active participation differs somewhat by location. Across all figures, several empirical patterns emerge. First, climate change is widely recognized as a serious national concern (Figure 1), with minimal variation across cities (Figure 2). Second, a majority of youth are engaged in practical mitigation or adaptation activities, with tree plantation and flood response being most common (Figure 3). Third, SDG awareness increases with education level (Figure 4). Fourth, financial and institutional constraints represent the primary barriers to sustained engagement (Figure 5). Finally, participation rates vary moderately by city, with Dhaka showing comparatively higher engagement (Figure 6). The findings presented here are drawn directly from graphical distributions and reported responses, focusing strictly on observable patterns rather than explanatory interpretation. Variation between locations was also noted directly by respondents:

*"In Dhaka there always seems to be some NGO running a program you can join. Here in Chattogram, we mostly organize things ourselves among friends — there's less support, so fewer people stay involved for long."*

### 3.7 Discussion

The results prove a structurally significant trend: the issue of climatic change is recognized by the younger generation in Dhaka, Sylhet, and Chattogram as a significant

national threat overwhelmingly, and most of the youth are involved in some form of either mitigation or adapting activity. Nonetheless, there is still an unbalanced and resource-limited and ill institutionalized participation. These two aspects: high awareness and structurally constrained participation have direct effects on the SDG 2030 path of Bangladesh. Although young people demonstrate normative congruence with the focus of climate action (especially SDG 13), the situation with them is that their participation is primarily at localized and voluntary levels but not in formal governing frameworks. As a result, transformative opportunities of youth agency have not yet been fully implemented on national SDG implementation pathways.

The Perceptions of the Youth and the Agency Dynamics: The Youth Agency Theory is such that the conceptualization of the youth is based on the idea that they are reflexive actors, who are able to make sense of both the structural conditions and mobilize strategic responses (Evans, 2007). The fact that nearly everyone agrees on the issue of climate change as a serious national threat is a sign that there is not just awareness but also political awareness. Climate risks were defined by the youth respondents as visible, direct and personified by their experiences of heatwave, floods, and cyclones. This image resonates with what O'Brien et al. (2018) describe as the issue of climate subjectivity in which people internalize the environmental risks towards the socio-political image of themselves.

Nonetheless, the agency is dynamic and structuralized in power relationships. The youth may exercise cognitive and moral agency, that is, be risk-aware and take action, but their structural agency is limited. The fact that no youth abstain in their views on the relevance of climate indicates that the generations have changed when it comes to environmental awareness. However, recognition is not a policy impact. Interviews show low levels of access to local planning forums, low involvement in official climate adaptation plans and low level of control in the distribution of resources. Youth in Bangladesh, therefore, represent what can be theorised as a bounded climate agency: in the same way as they are able to organize community-based responses; they do not have institutional bargaining power to influence the macro-level climate governance. This disparity highlights a failure of structure between the opportunity structures of youth capacity and governance.

### *3.8 Youth leading actions and SDG pathway*

Efforts by young people, which were identified in this paper, overlap with several SDGs besides SDG 13. Nevertheless, the degree to which these steps make a material contribution to SDG pathways is an issue that needs to be reviewed critically. SDG 2 (zero hunger): The indirect benefit of tree planting and minor agricultural involvement to the food system resilience is experienced especially in flood-rendered regions. However, these are only sporadic activities that are not integrated with national policies to make agriculture resilient to the impacts of climate change. This is anything symbolic until institutionalized in larger food security structures. Goal number 6 SDG (clean water and sanitation): Water conservation is postulated through waste and river-vanishing campaigns. However, these endeavours are not coordinated with municipal water authorities, hence ineffective. SDG 8 (decent work and economic growth): Only a limited group of the respondents related environmental involvement to green entrepreneurship. This is a pointer of growing awareness of climate-compatible economic ways. Nonetheless, the overwhelming volunteerism implies that young green jobs have not been overinvested in.

SDG 14 (life below water) and SDG 15 (life on land): The most visible type of participation of youths is through tree plantation drives and ecosystem awareness campaigns. Whereas they can be implemented together with conservation goals in the land settings as well as in the sea, their ecological influence is pegged on continuity, monitoring and scientific integration-aspects that are currently restricted. To achieve goals through partnerships, government, citizens, and entrepreneurs engage with each other through meaningful dialogue, mutual agreements, and shared actions. Despite the existence of partnerships with NGOs and universities, there is a weak form of partnership with

government institutions. Youth involvements are mostly consultative, as opposed to decision making. Generally, youth involvement reveals normative SDG consistency and is not vertically incorporated into policy. The measures add up to SDG pathways, being project-based, localised and lack institutionalization. In the absence of the scaling processes, their cumulative national SDG 2030 targets would be minimal.

### *3.9 Climate justice and participatory governance structural constraints*

Participatory Governance theory underlines the participation inclusion and deliberation authority as well as the resource accessibility (Fung, 2015). Systemic presence of financial and institutional participatory deficits is portended by the prevalence of these barriers. The involvement of young people is usually self-funded, volunteer-based and reliant upon occasional NGO assistance. The most evident obstacle is the financial constraints which are manifestation of the inequalities in access to climate resources in the structure. It encounters the stratification in terms of participation between the urban and middle-class youth. This replicates social inequalities instead of democratic movement of climate. An institutional paradox of youth being both rhetorically and structurally marginalized is reflected in institutional constraints such as a lack of coordination and official support whereas youth are symbolically treated as agents of change but not structurally instrumental in policy. In the case of Arnstein (1969), participation is seen to map out between window dressing activities such as tokenism and consultation instead of partnership. In terms of Climate Justice, this normatively exclusionary. Bangladesh is a country that causes little emissions in the world yet it experiences disproportionate effects of climate. Nationally, young people, to whom the effects of adaptation planning would be long-term, do not have much say in the adaptation planning. This is perceived as intergenerational injustice and asymmetry of governance (Menton et al., 2020). Sociocultural restrictions are also demonstrated by family pressure and absence of training. Climate action is competing with economic survival needs, especially on the lower income households. As a result, the structural vulnerability preconditions the participation instead of motivation only.

This is a culturally specific governance constraint that needs to be highlighted in the context of the sociocultural barrier. The norm of age-based deference was repeatedly expressed in material terms as well as through a norm of deferring to the older person/elder or official, that is, by not speaking assertively before them. Analytically, this norm works as an independent mechanism of exclusion, as financial or institutional barriers, in the Bangladeshi context, influence the sense of entitlement to intervene in planning forums. Adopting this norm will make the analysis relevant to Green Governance and differentiate it from other comparator jurisdictions where youth marginalization is possibly more the product of bureaucratic or financial controls than intergenerational cultural norms. The Bangladeshi results corroborate and further clarify existing trends in the Global South literature. As with similar areas, there is a high level of awareness at the grassroots and lesser formal influence. The results can be compared with the larger research framework by the Global South that has shown a great awareness of youth climate and the lack of institutions. Indian, Kenyan, and Filipino studies are no exception and report high community-level engagement but limited formal involvement (Rousell & Cutter-Mackenzie-Knowles, 2020). Nonetheless, the case of Bangladesh portrays especially high adaptation-focused involvement, that is, flood response volunteering, though this is caused by the fact that this country is highly vulnerable to weather conditions. The Bangladeshi youth activity does not seem as much protest-oriented as youth activism in selected regions of Latin America and Europe. This trend helps to prove the thesis that vulnerability to climate determines the stylistic variants of youth activism. In situations where exposure is direct and substantial, engagement depends more on adapting to a situation rather than making an aggressive campaign. However, the institutional limitation found here reflect trends throughout the Global South, indicating the institution-wide governance narrowing as opposed to national failure.

The Bangladeshi model is most commonly described as 'dutiful dissent action' that operates within current institutions and norms, and is not disruptive or dangerous like the dissent typically seen in certain areas of Latin America and Europe (O'Brien et al., 2018). This is likely to be caused by two conditions. The immediacy and severity of climate exposure in the delta pays off in the short- and medium-term for tangible adaptation climate response volunteering, tree planting, in contrast to confrontational campaigning, whose pay-off is diffuse and delayed; the short- and medium-term survival-oriented household cannot easily bear the opportunity costs of confrontational campaigning. Second, the opportunities for contentious youth politics in the institutional and cultural contexts are limited: there are only consultative channels, and age deference discussed earlier encourages agency to serve the youth rather than challenge them, echoing the tokenism identified by Marquardt et al. (2024). This adaptation focus thus does not reflect political apathy, but is rather a rational, structurally induced reaction to high levels of vulnerability in a situation of low political opportunity, which turns the descriptive gap between awareness and participation into a substantive analytical statement on the impacts of climate exposure on the nature of youth participation.

### *3.10 Potential versus institutional reality*

The major analytical conflict that arises as a result of this research is the conflict between the potential of young people and the institutional reality. The youths have high rates of awareness, desire to act, and SDG compatibility. But scaling and sustainability is not facilitated by structural barriers. With the current governance systems, it is likely that the development of SDG 2030 targets with the use of the current modes of youth engagement would be unlikely. Although community-based programs lead to a sense of resilience and awareness, these do not replace the institutional change in the system. A structural transformation is therefore required to make youth engagement consequential for SDG pathways: institutionalising youth representation within climate-policy bodies, establishing dedicated youth climate-innovation funds, embedding youth-generated data in municipal adaptation planning, and targeting capacity-building at marginalised youth. Without such reforms, participation risks remaining performative, visible but structurally marginal.

The study also makes a theoretical contribution by providing a grounded account of youth climate agency in Bangladesh's highly climate-exposed delta. It extends the youth-agency literature by showing how motivational capacity and institutional constraint coexist, and by theorizing this tension as bounded climate agency. The paper offers qualitative evidence based on regional comparisons in the three large urban settings in Bangladesh; it presents the aspect of convergence of perceptions as well as divergence of participation. It adds empirical insight to the existing knowledge of youth climate action within an immensely climate sensitive global south context. The research conceptualizes youth engagement as the idea of a constrained climate agency by combining the Youth Agency Theory with such models as Participatory Governance and Climate Justice. This framework contributes to the contradiction between motivational ability and institutional limitation, and the theoretical discussions at the forefront in regards to the issue of youth political involvement in climate governance.

The results provide practicable avenues of integrating the youth in the SDG agenda of Bangladesh. The reforms at the institutional level, especially participatory quota, funding systems, and alliances, are necessary in shifting young people as peripheral players to structural players. It is important that policymakers rethink youth as a participant and not as a beneficiary or even a volunteer in climate adaptation and mitigation. A system to formalize the youth participation in planning structures of the Union Parishad, cities, and national climatic councils would create more legitimacy and innovation. Researchers should conduct future studies on longitudinal patterns of youth-led initiatives to gauge scales of the programs and sustainability. Structural and contextual determinants of youth participation in South America might be clear to comparative South Asian studies. Justice aspects would also be better understood through the intersectional analysis of the gender, class, and rural-

urban polarizations. To sum up, young people in Bangladesh have a strong transformational potential in the promotion of climate mitigation and adaptation according to SDG 2030. However, this possibility is structurally locked. As important as closing the divide between youth agency and institutional architecture is a democratic obligation it is also a strategic requirement of sustainable climate governance.

### *3.11 Recommendations*

The following institutionally anchored recommendations are grounded on evidence from above and Bangladesh's SDG 2030 agenda and Paris Agreement commitments to involve youth in a meaningful way in the planning and delivery of climate action, rather than in a symbolic capacity. Institutionalising youth voice: National and city/district climate councils under the Ministry of Environment, Forest and Climate Change should be established with a clear mandate, voting power and reporting structure for youth and be deliberately inclusive of the voices of youth from rural areas, especially young women. A stand-alone youth climate fund: Financial constraints to sustained engagement can be overcome by establishing a youth window in the Bangladesh Climate Change Trust Fund, with simplified application procedures, mentoring, clear and outcome-driven selection criteria, and a mixture of public, corporate-responsibility and international climate finance. The education for climate and green skills: Cross-cutting climate content should be mainstreamed in school, college and technical and vocational curricula and universities should facilitate Climate Action Labs, which connect applied research to municipal adaptation, with SDG 4 and SDG 13.

Coordinating at multiple levels and digital participation: Youth platforms that link youth groups, youth organizations, with the business and local government, and digital forums and participatory budgeting can connect local action with national policy and engage youth in distant places. Entrepreneurship & Green jobs: Linking participation to livelihoods, through targeted incentives, concessional finance and co-designed youth climate enterprise by the Ministry of Youth and Sports and private sector, should be supported for the youth climate enterprises in renewable energy, climate-smart agriculture, waste-to-energy and eco-tourism. Inclusion of local government & climate justice: Youth budget initiatives that emphasise accountability, including equity-and gender-responsive budgeting, and embedding of Youth Climate Committees in both Union and City Corporation structures, with community monitoring, and priority budget allocations to the most exposed and marginalised youth would boost accountability and contribute to SDG 11. These measures collectively transform youth from being merely beneficiaries to being structural actors in climate governance, supported by clear indicators and transparent interdepartmental action.

## **4. Conclusions**

This research deepens insight into how young people in Bangladesh engage with efforts to reduce and adjust to climate change, placing their views, activities, and obstacles alongside the UN's 2030 Sustainable Development Goals. Results show that youths see global warming not just as an environmental issue but a pressing barrier to progress - prompting them to act via education campaigns, grassroots organizing, or small-scale local projects. Such involvement highlights how youthful initiative can shape real-world strategies for sustainable, climate-aware growth. Even so, the analysis highlights ongoing structural and institutional challenges - scarce funding, poor policy integration, fragmented stakeholder collaboration, alongside minimal access to climate-related education and skills development. These obstacles limit how effectively young people can drive change, exposing weaknesses in current governance and execution systems.

For this reason, embedding youth involvement formally into national and local climate strategies becomes critical; enhancing cooperation across age groups also matters greatly. Expanding support structures along with dedicated financing helps connect youth-led

efforts directly to tangible progress toward Sustainable Development Goals. Down the road, studies might stretch into more climate-exposed towns and countryside areas across Bangladesh for richer comparisons. Tracking changes over years could reveal how young people's involvement shifts through time. Numbers-based methods may add weight to stories gathered from interviews and fieldwork. Combining different ways of gathering data, spread across several locations, helps clarify how youth efforts fit within broader sustainability goals leading up to 2030.

### **Acknowledgement**

The authors would like to thank Green Voice (An Environmental Youth Organization, SUST Chapter) and SUST Research Centre, Shahjalal University of Science & Technology, Sylhet-3114, Bangladesh for their generous support throughout the research.

### **Author Contribution**

The authors were solely responsible for the conceptualization, methodology, data collection, data analysis, interpretation of results, drafting of the manuscript, critical revision of the content, and approval of the final version of the manuscript.

### **Funding**

This research received no external funding.

### **Ethical Review Board Statement**

Not available.

### **Informed Consent Statement**

Not available.

### **Data Availability Statement**

Not available.

### **Conflicts of Interest**

The authors declare no conflict of interest.

### **Declaration of Generative AI Use**

During the preparation of this work, the authors used Grammarly to assist in improving grammar, clarity, and academic tone of the manuscript. After using this tool, the authors reviewed and edited the content as needed and took full responsibility for the content of the publication.

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