

# **INTEGRATING CLIMATE FINANCE AND ACCOUNTING FOR SUSTAINABLE DEVELOPMENT: A QUALITATIVE STUDY IN BANGLADESH**

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**Keywords***Climate Finance**Climate Accounting**Green Finance**Sustainability**Risk Disclosure***ABSTRACT**

*This study investigates the understanding, reporting, and mobilization of climate finance by financial institutions and businesses in Bangladesh, analyzing the interplay between accounting and climate finance. Bangladesh has a significant deficiency in integrating climate-related risks into corporate accounting practices, notwithstanding the gravity of the issue and global commitments to rectify it. This study aims to bridge the existing gap by examining how modern financial disclosures, particularly in the context of climate finance, can facilitate sustainable development. The research employs documentary analysis of corporate reports, financial statements, and policy documents to demonstrate that despite increasing awareness of climate finance, its effective utilization is obstructed by challenges such as data constraints, insufficient technical expertise, and inadequate policy enforcement. The findings underscore the imperative for standardized accounting principles, innovative tools such as carbon accounting and green bonds, and enhanced regulatory frameworks to foster transparency and stimulate investment. This study contributes to both academic literature and practical policy by asserting that the integration of*

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*climate finance into accounting practices is essential for Bangladesh's transition to a low-carbon, climate-resilient economy. The study suggests stronger disclosure requirements, capacity training, and the use of new technologies to boost climate financing flows and make sure they are in line with sustainable development goals. To validate these findings and enhance methodologies for integrating climate financing into international accounting standards, subsequent research should investigate cross-national comparisons.*

## 1 INTRODUCTION

Climate change is one of the most important problems facing humanity today. It threatens ecosystems, businesses, and cultures. Droughts, heat waves, more floods and cyclones, and rising temperatures are already making farming less productive, damaging infrastructure, and raising health care costs. Bangladesh is a low-lying deltaic country that is especially vulnerable to bad weather and rising sea levels. Climate change is a direct threat to sustainable development in the country. In response, climate finance, or money raised to help people adapt to and lessen the effects of climate change, has grown quickly. However, research indicates a substantial gap between the expenses associated with adaptation and mitigation and the funding that is accessible, particularly evident in developing countries. Weikmans, R. (2023) and Dai, (2025) revealed that the US, Australia, Canada, Italy, and Spain are some of the most important countries that have not met the US\$100 billion annual goal for climate finance set by the UN Framework Convention on Climate Change. This goal was only met in 2022, two years late (Pauw et al., 2024). If the adaptation financing gap is not closed, the costs of loss and damage will go up. Researchers also find that climate finance increases the value added by agriculture and the amount of power produced, but global flows are still only a small part of what is needed to reach climate goals (Fang et al., 2025). Zhao and Xing (2024) stated that investors, regulators, and society as a whole need to see proof of how climate-related risks affect financial performance and sustainability results. This is why climate financing needs accounting and disclosure methods. A lot of business financial statements still treat the effects of climate change as things that do not directly affect cash flows, assets, and liabilities. According to empirical studies (Habib et al., 2025), more than 70% of

companies that emit a lot of greenhouse gases and their auditors do not fully include climate-related risks in their financial statements. This mismatch hurts the integrity of climate funding because financiers cannot accurately assess exposure or price risks. So, adding climate-related risks and opportunities to accounting systems is just as important as getting more money to make up the difference between climate financing and accounting.

This study investigates the interplay between climate financing and accounting in Bangladesh. The study seeks to pinpoint barriers to the implementation of climate finance and opportunities for enhancement by examining the perceptions and disclosures of climate-related risks by businesses and financial institutions. Bangladesh needs to make sure that the money it gets for adaptation and mitigation is used wisely and transparently in order to help the country move to a low-carbon, climate-resilient economy.

## 2 LITERATURE REVIEW

### 2.1 Climate finance: concept and evolution

Climate financing is the term for money that helps people adapt to and deal with climate change. It includes investments in renewable energy, energy efficiency, sustainable agriculture, resilient infrastructure, and other projects that help the environment (Pathania and Bose, 2014). Research shows that the costs of adapting to and reducing climate change are much higher than the money that is available to pay for them. This funding gap affects developing countries the most (Pauw et al., 2024). The adaptation financial deficit is still getting bigger, and it took two years longer than planned for the UN climate negotiations to reach their goal of US\$100 billion a year (Toetzke, Stünzi and Egli, 2022). These patterns show how important it is to have creative ways

to get money and strong systems of accountability.

From initial discussions regarding financing commitments (Cadman, 2014) to empirical assessments of the effectiveness of diverse instruments and governance frameworks, pace in climate finance has evolved. Fang et al. (2025) utilize a database of projects from the Organization for Economic Co-operation and Development covering 98 countries, revealing that climate finance enhances agricultural value added and electricity production, with minimal impact on water withdrawals. Habib et al. (2025) show how environmental decentralization and green finance can greatly help sustainable development by looking at panel data from 44 OECD countries. Wu (2024) examines five hundred Chinese companies and discovers that resource consumption and workforce size adversely affect the sustainable development index, whereas carbon accounting and green finance positively influence it. Overall, these studies show that climate financing can improve socioeconomic outcomes, but how well it works depends on things like governance, decentralization, and other policies that work with it.

## ***2.2 Climate accounting and disclosure standards***

Accounting for climate change involves measuring, recording and reporting the impacts of climate-related risks and opportunities on financial performance and sustainability outcomes. Scholars argue that effective disclosure should integrate governance, strategy, risk management and metrics, enabling users of financial statements to assess how climate factors influence cash flows, access to finance and the cost of capital. However, empirical evidence indicates that implementation remains uneven. For instance, a review of high-emitting companies finds that more than seventy per cent of firms and their auditors do not fully account for climate-related risks in financial statements (Habib et al., 2025). This gap stems from limited guidance, insufficient data and technical expertise. Harmonised disclosure frameworks, clear methodologies and capacity-building initiatives are therefore needed to ensure comparability and to support informed investment decisions.

## ***2.3 Role of green finance instruments***

Green investment funds, loans linked to sustainability, and green bonds are all examples of green finance products that help private capital go to projects that are good for the environment (Moinuddin & Olsen, 2024).

Research shows that green bonds can lower financing costs and show that a company is committed to sustainability, even though market depth is still limited in poor countries. Habib et al. (2025) say that environmental decentralization and green financing work together to help OECD countries grow in a way that is good for the environment. Li and Wu (2025) assert that business model innovation and green finance enhance sustainability indices in emerging nations; however, poverty and restricted access to power may hinder development. Dai (2025) says that while economic growth has a negative effect, ESG investing raises the Green Growth Index in Southeast Asia by 0.56% for every 1% increase in environmental investment.

## ***2.4 Carbon and greenhouse-gas accounting***

Carbon accounting is necessary to figure out how much emissions are funded and whether or not climate goals are being met. Research indicates that the integration of green finance and carbon accounting can improve a company's sustainability performance (Sun, Liu & Guo 2025). Effects of green finance and digital transformation on enhancing corporate ESG performance (Friede, Busch & Bassen (2015). Research indicates that governance frameworks and institutional architecture significantly influence the efficacy of climate funding (Bhandary, 2024 and Steffen & Michaelowa, 2022). Many developing countries still have problems with data restrictions and the lack of local emissions variables Cai and Lontzek, 2019). However, using standardized methods to measure and report funded emissions can make things more open and easier to compare.

## ***2.5 Climate risk measurement and financial stability***

To keep your money safe, you need to look at climate risks. Mandel, Battiston, and Monasterolo (2025) and Battiston et al (2017) use the CLIMACRED-PHYS model in their research to look at how floods, storms, and wildfires affect a group of securities. The research underscores the transboundary transmission of climate risks and demonstrates that financial leverage exacerbates direct economic losses. More and more, national regulatory bodies are adding climate-risk assessment to their prudential supervision (Monasterolo, 2020). They do this by looking at vulnerabilities through scenario analysis and stress testing.

## 2.6 Technology and innovation

Emerging technology offers novel approaches for quantifying and managing climate-related risks. Artificial intelligence and machine learning can look at a lot of financial and weather data to predict what will happen and find investment opportunities. Big data analytics let you keep an eye on emissions and risk exposure in real time, and blockchain technology can make climate finance more open by giving you unchangeable records of transactions. Secondary sources in this study showed that digital platforms could be used to collect climate data, automate carbon accounting, and verify offsets.

## 2.7 Implications for emerging economies and Bangladesh

Developing countries face unique challenges in mobilising climate finance and implementing accounting standards. Bangladesh is one of the most climate-vulnerable countries yet receives limited international climate finance relative to its needs. Barriers include inadequate data infrastructure, limited technical capacity, policy uncertainty and constrained fiscal space. Nevertheless, Bangladesh has enacted national policies such as the Bangladesh Climate Change Strategy and Action Plan and the National Adaptation Plan. Green bond guidelines and sustainable finance policies have been issued by the Bangladesh Bank, and the Securities and Exchange Commission has mandated sustainability reporting for listed companies. Understanding how these initiatives intersect with global accounting standards forms an important part of this study.

## 2.8 Research Problem Description

Developing countries have a hard time following accounting rules and getting climate money. Bangladesh is one of the country's most at risk from climate change, but it does not get nearly as much international climate finance as it should. Some of the problems are not having enough data infrastructure, not having enough technical know-how, not having clear policies, and not having enough money. But Bangladesh has taken national steps like the Bangladesh Climate Change Strategy and Action Plan and the National Adaptation Plan. The Bangladesh Bank has put out rules for green bonds and sustainable financing policies, and the

Securities and Exchange Commission has made it mandatory for listed companies to report on their sustainability. Understanding how these activities relate to international accounting standards is a key part of this research.

## 2.9 Objective of the study

The primary objective of this research is to analyze the integration of climate financing into accounting and disclosure practices to foster sustainable development in Bangladesh. The study aims to examine how improved accounting practices and technological advancements facilitate the mobilization of climate finance for adaptation and mitigation, alongside the challenges organizations face in quantifying and disclosing climate-related risks.

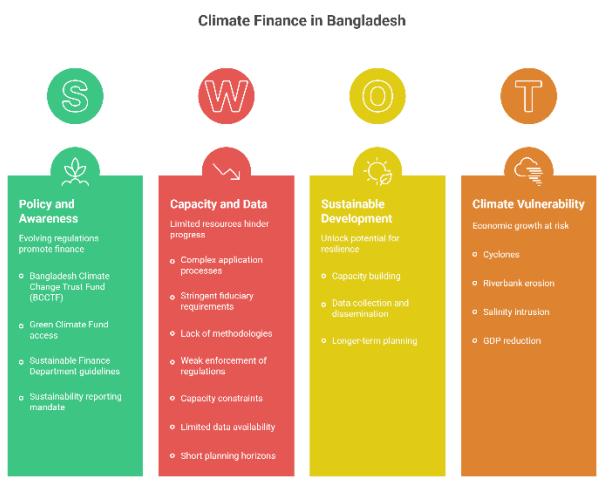
## 2.10 Specific research objectives

- i. To explore the flow of climate funding that is currently going to Bangladesh and see how well the ways that information is currently shared compare to new global sustainability reporting guidelines.
- ii. To identify prospective facilitators—such as digital technologies, green bonds, and carbon accounting instruments—that could enhance the mobilization and transparency of climate finance. To learn how banks, businesses, and regulators in Bangladesh see and use climate-related risks and opportunities in their accounting systems.

## 3 METHODOLOGY

This research exclusively utilizes secondary data and adopts a qualitative framework. The documentary analysis utilized corporate financial statements, sustainability reports, policy documents, academic articles, and international standards related to climate finance and accounting. We chose these publications because they show how businesses, banks, international organizations, and regulators feel about things. Content analysis was used to find recurring themes, patterns, and conflicts in the data sources. The study circumvents the biases inherent in the collection of new data by utilizing documentary evidence rather than primary interviews, thereby aligning with contemporary understanding and reporting methodologies.

Figure 2: Climate Finance Impacts Developing Nations



### 3.1 Contextual Analysis

Bangladesh's economy has grown a lot in the last 20 years, but its vulnerability to climate change puts hard-won gains at risk. The country often has storms, saltwater intrusion, and riverbank erosion. The World Bank says that if things keep going the way they are, climate change could cause Bangladesh's GDP to drop by as much as 6.7% by 2050 (Volz, 2018). National governments know that climate finance is important, but it has been hard to get the money. The Green Climate Fund and the Bangladesh Climate Change Trust Fund (BCCTF) have both given money to adaptation programs, but there is still not enough money. Secondary sources say that it is hard to get foreign funds because the application process is complicated and there are strict fiduciary standards. In addition, reports say that banks do not have ways to figure out how much climate-related risk they are exposed to, which makes it hard to defend funding for adaptation projects.

The rules are changing. The Bangladesh Bank's Sustainable Finance Department has set rules that require banks to report on environmental and social risks and put at least 5% of their loan portfolios into green projects. The Bangladesh Securities and Exchange Commission requires listed companies to file sustainability reports, but this requirement is not being followed. Many companies saw sustainability reporting as a way to meet requirements rather than as a way to make decisions, which worried people who were not directly involved. Capacity constraints, insufficient data, and limited planning horizons impede the broader implementation of climate finance and accounting methodologies.

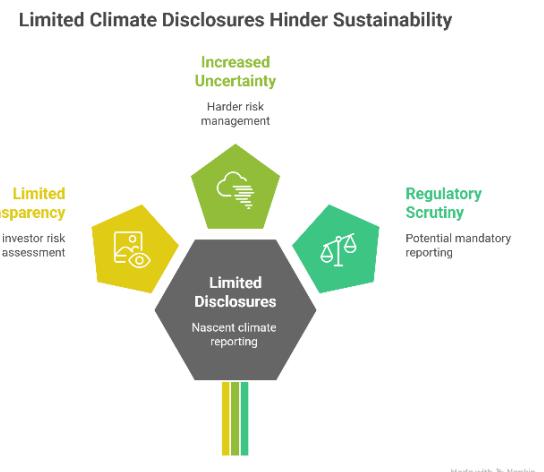
## 4 FINDINGS

The qualitative analysis revealed multiple topics. First, banks and other financial institutions in Bangladesh are becoming more aware of climate financing, but they still do not understand it very well. Secondary sources say that most organizations know that climate finance is used to pay for projects that help people adapt to and deal with climate change, but they do not know much about things like climate funds, blended financing, or green bonds. Documentary evidence suggests that there is limited awareness of global climate finance commitments, and corporate social responsibility initiatives are often conflated with climate funding.

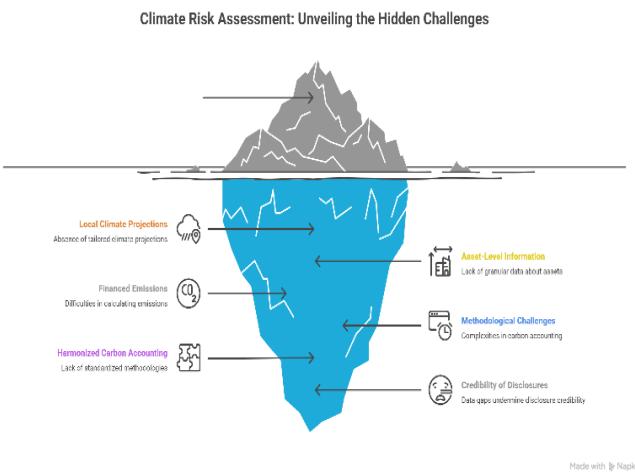
Second, disclosures about climate change are still very new. Some banks and businesses do talk about climate risks in their sustainability reports, but they almost never include these risks in their financial statements. A lot of organizations did not know about new climate-related disclosure frameworks. Companies that were familiar with these kinds of frameworks thought they were hard to use and expensive to put into place because there was not enough information on emissions, physical risk exposure, and supply chain effects. Only two of the organizations in the sample had tried to make their reports fit with global sustainability standards. Both of them were subsidiaries of multinational companies.

Third, it is hard to measure climate risk because of problems with methods and limited data. Secondary sources pointed out that there are not any reliable local

Figure 3: Limited Climate Disclosures Hinder Sustainability



**Figure 4: Climate Risk Assessment: Unveiling the Hidden Challenges**



climate forecasts or asset-level data that can be used to model physical risks. It is difficult for banks and other financial institutions to figure out financed emissions because they do not have access to national greenhouse gas inventories or sectoral emissions data. Instead, they often use generic emission factors from global databases that do not accurately reflect local conditions. Also, these gaps in data make it harder for people to join unified carbon accounting programs and make disclosures less trustworthy.

Fourth, more and more people are using technical solutions. Reports say that blockchain, AI, and machine learning could make it easier to collect and check data. Auditors talked about using blockchain to keep track of carbon credits and make sure that green bond proceeds are clear. Banks said they were interested in using AI-based credit rating models that take climate risk into

account. But the lack of qualified staff and high costs are making it hard for people to use it.

Fifth, Bangladesh still gets only a small amount of climate finance that is spread out. An analysis of secondary data shows that most of the USD 2.5 billion in climate money that Bangladesh got between 2015 and 2022 went toward adaptation. Secondary sources say that international donors focus on big infrastructure projects, which leaves small and medium-sized businesses and community-based adaptation without enough money. Domestic capital markets have not yet set up a pipeline of eco-friendly projects that can attract investment.

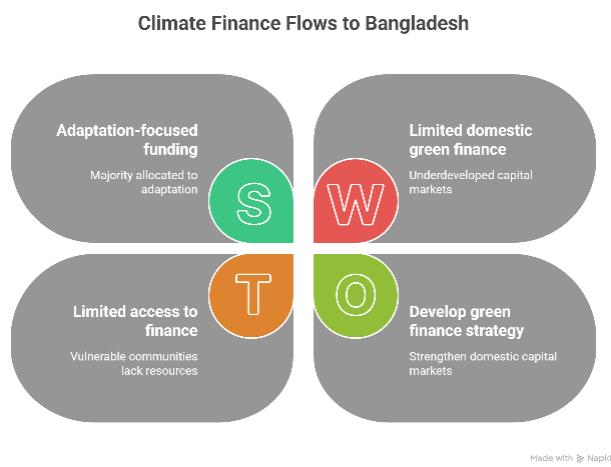
Lastly, the way an organization is run and its culture affect how climate financing is used. Organizations that had clear rules about how to run their businesses and strong support from their leaders for sustainability were more likely to test climate risk assessments and green finance tools. Businesses that cared more about making money in the short term, on the other hand, saw climate actions as a burden. The reports stressed the need for capacity building and incentives to change people's minds.

## 5 DISCUSSION

The results show that there is a pattern of differences between local implementation and international climate financing promises. Even though Bangladesh is very vulnerable and there are international commitments, climate financing flows are very small. This is in line with other research that shows that global climate finance is only a small part of what is needed to reach climate goals (Pauw et al., 2024). Global trends indicate that the majority of corporations and auditors have not fully integrated climate risks into financial statements, as evidenced by the slow uptake of climate-related disclosures. So, the analysis shows how important it is to make sure that accounting practices are in line with climate financing goals.

Combining research on accounting and climate finance has theoretical implications. Accounting pace prioritizes measurement and transparency, whereas prior research on climate financing often concentrates on monitoring flows and evaluating impacts. This study demonstrates that comprehending the impact of climate financing on organizational behavior necessitates the integration of diverse perspectives. The lack of data and standardized

**Figure 5: Climate Finance Flows to Bangladesh**

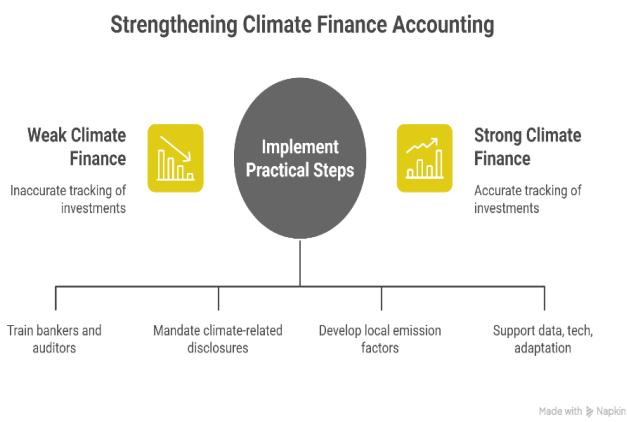


methods that companies have found supports calls for standardized disclosure frameworks and carbon accounting procedures. The findings align with those of Fang et al. (2025) and Habib et al. (2025), who underscore that the impacts of climate funding vary according to the sector and context.

In real life, the study shows that Bangladeshi institutions need a lot of help to learn how to use climate finance accounting. Bankers and auditors should learn how to use digital tools, measure emissions, and assess climate risk in their training programs. Regulators can act as a catalyst by requiring climate-related disclosures that follow international sustainability standards and giving advice that is specific to local conditions. The government, academia, and industry must work together to come up with local emission factors and climate scenarios. The report also says that international climate funds should be used to support small-scale adaptation projects, data infrastructure, and technology adoption, in addition to big infrastructure projects.

The results also show how the split between adaptation

**Figure 6: Climate Finance Impacts Developing Nations**



and mitigation programs affects how climate funding flows. Mitigation projects, such as renewable energy plants, generate attractive cash flows for investors (Bhatnagar and Sharma, 2022). Conversely, adaptation initiatives, including coastal embankments or community-level resilience projects, yield diffuse social benefits that are challenging to monetize. Secondary sources say that these kinds of projects will keep getting little funding unless there are strong accounting frameworks in place to look at the pros and cons of adaptation. These observations align with the assertions of Habib et al. (2025), who argue that decentralized green finance frameworks are crucial for enhancing

local government authority and ensuring that funds are directed to the communities most in need.

Another implication is about corporate strategy. Secondary sources say that climate change is rarely taken into account when making capital budgets and strategic plans. Climate issues are usually more about reputational risk than operational or financial effects. This backs up what Fang et al. (2025) found: climate finance can boost productivity in agriculture and energy, but it needs to fit with the goals and incentives of the organization. To make climate finance more common, companies need to tie executive pay to sustainability measures, change the hurdle rates for green projects, and include climate scenarios in their risk management processes. One

The research concludes by emphasizing the transformative potential of digital technologies. Reports say that blockchain, AI, and machine learning can make transactions cheaper, make it easier to track funds, and add climate data to financial systems. However, adoption needs technical know-how, data standardization, and clear rules. Without strong government support and training for employees, digital tools may only be used in pilot projects and not spread throughout the financial sector.

## 6 RECOMMENDATIONS

- Mandate climate-related disclosures:** The Bangladesh Securities and Exchange Commission and the Bangladesh Bank should make it mandatory for all listed companies and financial institutions to adopt climate-related disclosure policies that adhere to established international sustainability standards. To make the change easier, regulators should give guidance that is specific to each sector and allow for staggered implementation.
- Develop national data infrastructure:** The Bangladesh Bank and the Bangladesh Securities and Exchange Commission should make it mandatory for all listed companies and financial institutions to follow international sustainability standards when it comes to climate-related disclosures. Regulators should give guidelines that are specific to each industry and let companies adopt the change in stages to make it easier.

- iii. **Adopt harmonised greenhouse-gas accounting:** The Bangladesh Bank and the Bangladesh Securities and Exchange Commission should require all listed companies and financial institutions to follow international sustainability standards when it comes to climate-related disclosures. Regulators should make rules that are specific to each industry and let companies make the change in stages to make it easier.
- iv. **Foster technological innovation:** The government and businesses should promote the use of blockchain, data analytics, and AI in climate financing. Grants, tax breaks, and regulatory sandboxes can help pilot projects that use blockchain to make things more open and AI to assess climate risk.
- v. **Expand green finance instruments:** Banks ought to develop locally tailored blended finance products, sustainability-linked loans, and frameworks for green bonds. Regulators should speed up the approval process and give investors tools to lower their risk in order to attract private investment.
- vi. **Strengthen capacity and awareness:** Professional groups like the Institute of Chartered Accountants of Bangladesh should teach accounting and climate finance in their classes and continuing education programs. Campaigns to raise public awareness can help people understand how climate finance can help them.
- vii. **Promote inclusive finance:** Climate finance should be available to small and medium-sized businesses and community-based projects. Development partners can help with technical issues, and microfinance groups can make green microcredit products.
- viii. **Enhance governance and accountability:** Climate change should be a part of corporate governance frameworks. Boards should have members who know a lot about sustainability, and pay should be in line with climate goals.

## 7 CONCLUSION

This study examines the integration of climate finance into accounting practices in Bangladesh, focusing on the perspectives of businesses and financial institutions regarding the perception, disclosure, and fundraising for climate-related initiatives. The study aimed to analyze the challenges of integrating climate finance into corporate accounting and to identify potential enablers for enhanced transparency and fund mobilization. The research shows that even though more people are learning about climate finance, it is still hard to use climate-related disclosures in financial reports because of big problems like not having enough data, not having enough technical skills, and not enforcing laws strictly enough. The study emphasizes the need for standardized accounting standards, the use of innovative products such as green bonds, and improved regulatory frameworks to enhance the integration of climate financing with accounting processes. By giving ideas on how Bangladesh could better connect its climate financing efforts with international sustainability standards, it adds to discussions in both academia and practice. This study also highlights the potential of advanced technologies such as blockchain and artificial intelligence (AI) to mitigate data limitations and enhance the transparency of climate finance. The study does, however, point out that the data and the analysis have some limits. This means that future studies may look at how climate hazards affect other developing countries and how they can be measured. The results show how important it is for the government, businesses, and schools to work together to get rid of current problems and make it easier for climate funds to go toward sustainable development. To help Bangladesh move toward a future that is low in carbon and able to withstand climate change, this study stresses how important it is to close the gap between climate finance and accounting.

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