

Report on
Sustainable Procurement in the Transportation Sector of
Bangladesh: Case Study on the Bangladesh Bridge Authority

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the degree of
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Declaration

It is hereby declared that

1. The internship report submitted is my/our own original work while completing degree at BRAC University.
2. The report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The report does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I/We have acknowledged all main sources of help.

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Subject: Submission of report on “*Sustainable Procurement in the Transportation Sector of Bangladesh: A Case Study on the Bangladesh Bridge Authority*”

Dear Sir

It is my great privilege to submit the report entitled “*Sustainable Procurement in the Transportation Sector of Bangladesh: A Case Study on the Bangladesh Bridge Authority*” This report has been prepared as a part obligation for completing the **Masters in Procurement and Supply Management** program at BRAC University.

The report reflects my sincere effort to analyze and present the findings comprehensively and clearly. I am truly grateful to have worked under your expert direction and respected guidance during the groundwork of this learning.

I have made all effort to confirm that the report maintains both academic integrity and practical relevance. I hope that the insides of this report will meet your expectations and satisfy the academic requirements of the program.

Sincerely

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Date: October, 2025

Non-Disclosure Agreement

This agreement is made and entered into by and between Bangladesh **Bridge Authority (BBA)** and **Md. Washim Ali**, a student of **BRAC University**, in connection with the preparation of the academic report named “*Sustainable Procurement in the Transportation Sector of Bangladesh: A Case Study on the Bangladesh Bridge Authority*”.

As an employee of the organization, I acknowledge that my role allows me access to certain internal and confidential information. I hereby agree to treat all such information through firm confidentiality and to use it only for academic and education drives related to this study.

I further undertake that no data, document or insight obtained from the Bangladesh Bridge Authority will be disclosed, copied or shared with any external person or entity without proper authorization from the organization. This commitment remains binding even after the completion of my academic work.

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Executive Summary

This report examines sustainable procurement practices in Bangladesh's transportation sector, focusing on the Bangladesh Bridge Authority (BBA). It combines stakeholder interviews, document analysis, and surveys to reveal that although awareness of sustainability and SDGs is high, actual implementation remains inconsistent. Social and ethical issues such as fair wages and gender equality are recognized but weakly enforced, while environmental efforts are mostly compliance-based. Economic factors like life-cycle costing are rarely applied. Key barriers include limited training, budget constraints, lack of clear guidelines, and weak monitoring. However, donor-funded projects have started integrating sustainability clauses, signaling positive change. The report recommends adopting a formal sustainable procurement policy aligned with the National SPP Policy 2023, strengthening institutional capacity, integrating sustainability into evaluations, and promoting SMEs and women-led businesses. Overall, BBA is in the early stages of sustainable procurement but holds strong potential to support Bangladesh's Vision 2041, Delta Plan 2100, and SDGs. Key challenges identified include insufficient training, insufficient budget allocations, lack of clear sustainability guidelines, limited supplier capacity, and weak monitoring mechanisms. Instead of these barriers, donor-funded projects have introduced sustainability clauses, creating momentum for change.

Keywords: Sustainable Procurement; Transportation Sector; Bangladesh Bridge Authority (BBA); Public Procurement Rules; Environmental Sustainability; Infrastructure Development

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List of Acronyms

Abbreviation	Full Form
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ADB	Asian Development Bank
APCC	Australian Procurement and Construction Council
BBA	Bangladesh Bridge Authority
BIGD	BRAC Institute of Governance and Development
BPPA	Bangladesh Public Procurement Authority (former CPTU)
BR	Bangladesh Railway
BRTC	Bangladesh Road Transport Corporation
CIPS	Chartered Institute of Procurement and Supply
CPTU	Central Procurement Technical Unit
DTCA	Dhaka Transport Coordination Authority
ECNEC	Executive Committee of the National Economic Council
EDCF	Economic Development Cooperation Fund
EIA	Environmental Impact Assessment
ESG	Environmental, Social, and Governance
FIDIC	Fédération Internationale Des Ingénieurs-Conseils
GDP	Gross Domestic Product
IMED	Implementation Monitoring and Evaluation Division
ISO	International Organization for Standardization
JICA	Japan International Cooperation Agency
KII	Key Informer Interview
LCC	Life Cycle Costing
LGED	Local Government Engineering Department
OTM	Open Tendering Method
PPA	Public Procurement Act (2006)
PPR	Public Procurement Rules (2008)
PPP	Public-Private Partnership

Abbreviation	Full Form
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QCBS	Quality and Cost-Based Selection
QBS	Quality-Based Selection
RFP	Request for Proposals
RHD	Roads and Highways Department
SDGs	Sustainable Development Goals
SMEs	Small and Medium Enterprises
SPP	Sustainable Public Procurement
STD	Standard Tender Document
TEC	Tender Evaluation Committee
TSTM	Two Stage Tendering Method
TCO	Total Cost of Ownership
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
VfM	Value for Money
WB	World Bank
WLCC	Whole Life Cycle Cost
WBE	Women-owned Business Enterprise

Chapter 1

Introduction and Background

1.1 Background

Sustainable procurement is commonly stated to as “Green Procurement,” epitomizes the combination of environmental, social and governance (ESG) considerations for procurement and supply chain practices. It promotes ethical and responsible decision-making, embedding sustainability into organizational operations. By balancing environmental protection, social responsibility and economic efficiency, sustainable procurement provides a framework for aligning procurement activities with stakeholder expectations and advancing long-term sustainable development objectives.

The sustainable procurement idea was first arisen in 1992 following the Rio Earth Summit, emphasizing the need to reduce negative environmental, social and economic impacts of goods and services throughout the life span.

The United Kingdom Administration recognized the Sustainable Procurement Task Force in 2005, defining sustainable procurement by means of a procedure in which organizations comply its desires for goods, services and works such process to delivers worth over the entire lifecycle, promoting the organization, economy and the civilization while minimizing environmental injury. This characterization adopted in international bodies such as the Australian Procurement and Construction Council (APCC) and the United Nations (UN). Bryde & Meehan (2010) further elaborated that managing social safeguard, ecological and commercial parts in stream line and goods collection are involve in the sustainable procurement.

Sustainable Procurement supports socially responsible purchasing practices, bring into line with legal requirements and reflects the impacts on communities and the environment while optimizing the use of products (goods), services and works. The transportation sector, as a critical driver of economic development, contribute major part in achieving sustainable development. In Bangladesh, rapidly growing transport sector contributes to national sustainability goals and initiatives by the government have strengthened the environmental, social and economic performance of organizations like the Bangladesh Bridge Authority (BBA).

1.2 Study Objectives

This study examines sustainable procurement performs within Bangladesh's transport sector. The primary objectives of the research are:

1. Examine the existing procurement processes in the transportation sector with a particular focus on the Bangladesh Bridge Authority.
2. Offer references to upgrade the sustainability of procurement practices in the transportation segment for Bangladesh Bridge Authority (BBA).

An integrated procedure, merging qualitative along with quantitative performances, has been applied in this study. The research aims to enhance understanding of sustainable procurement practices in Bangladesh and to deliver informed recommendations for the policymakers and relevant stakeholders along with practitioners aiming the goal of improving sustainable procurement processes within the Bangladesh Bridge Authority (BBA) and the broader transport sector who are involve in developing the large transport infrastructures.

1.3 Key Study Questions

Based on the objectives presented in the preceding section this study focuses on two primary research questions:

1. How effectively is sustainable procurement incorporated into the operations of the Bangladesh Bridge Authority within the transportation sector?
2. To what level are sustainable procurement does apply in the transportation area by Bangladesh Bridge Authority?

1.4 Scope of the Study

This study primarily concentrates on the public procurement practices within Bangladesh's transport sector. Examining the execution of sustainable procurement performs, this investigation specifically focuses on the Bangladesh Bridge Authority (BBA). Because this organization construct the large structures in the transport sector like- large bridge, elevated road, Tunnel and expressway etc.

Given the limited research on sustainable procurement within the transportation sector, it is important to investigate how financial resources are managed and how green initiatives can be effectively embedded into procurement processes.

Based on insights gathered from Key Informant Interviews (KIIs) and relevant reports, this study examines how organizations in the transport sector specially for large infrastructure integrate sustainable procurement into their operations and evaluates the effectiveness of these initiatives.

1.5 Research Methodology

To investigate the application and difficulties about practicing the procurement on sustainability in the transportation sector, this study adopts a qualitative case study methodology concentrating on the Bangladesh Bridge Authority (BBA). This study design as a case study is appropriate by allowing the thorough examination in processes, practices and organizational behavior in a real-life context.

1.5.1 Conceptual Framework of the study

A conceptual framework that takes part ideas from the Resource-Based View (RBV) and institution-based theory serves as the research's compasses.

The institution-based theory highlights that peripheral pressures such as government policies, donor (development partners) requirements and stakeholder expectations drive organizations toward sustainable procurement acceptance. Resource-Based View (RBV) highlights the importance of organizational resources and internal capabilities (skills, systems, expertise) in ensuring effective implementation of such practices.

Based on these perspectives, the conceptual model of this study is designed as follows:

- **Drivers** (policies, regulations, stakeholder pressure, organizational commitment) inspiration the adoption of sustainable procurement.
- **Barriers/Challenges** (budgetary constraints, lack of awareness, resistance to change, limited capacity) rational the extent of implementation.
- **Implementation of sustainable procurement practices** leads to upgraded Outcomes (environmental protection, social value creation, and economic efficiency).

The conceptual framework (model) of this study is shown below:

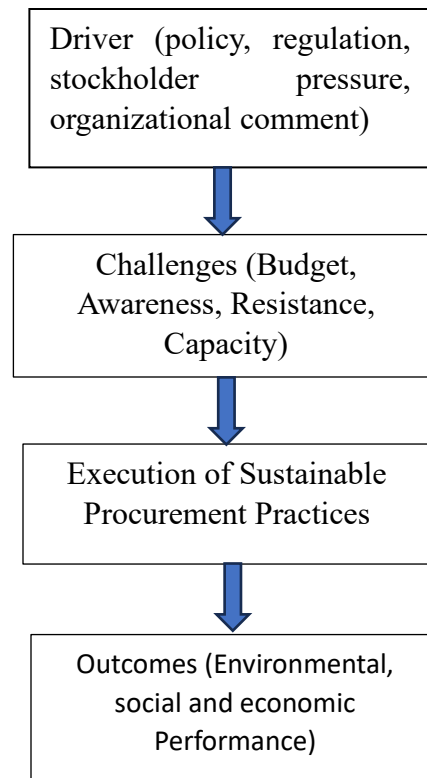


Figure 1: Conceptual framework of the study

This figure represents the conceptual model of this study, which illustrates relationship between key ideas. Drivers such as policies, regulations, stakeholder pressure and organizational commitment encourage the acceptance of sustainable procurement practices. Barriers and challenges—such as budgetary constraints, lack of awareness, resistance to change and limited institutional capacity—reasonable the extent to which these practices can be executed. Effective execution of sustainable procurement subsequently contributes to positive outcomes, including enhanced environmental performance, social value creation and economic efficiency. This model delivers the theoretical foundation for the research methodology and guides the collection and interpretation of data.

1.5.2 Research Design and Data Sources

The study pays a descriptive and exploratory design, aiming to describe current sustainable procurement practices and explore opportunities for improvement within BBA.

Data was collected from key stakeholders such as officials from the Bangladesh Bridge Authority, procurement experts and project directors through an online questionnaire. Additionally, an

optional questionnaire survey was distributed among procurement professionals to gather wider perceptions of sustainable procurement integration.

Secondary Data was gotten from the analysis of official documents such as procurement guidelines, project tender notices, e-GP records and sustainability reports. National procurement policies (e.g., PPA 2006, PPR 2008) and international frameworks (ISO 20400, UNEP guidelines) were also revised to understand the regulatory and strategic context influencing BBA's procurement practices.

1.5.3 Data Analysis

The study applies thematic analysis to identify recurring patterns, challenges and opportunities connected to sustainable procurement. Findings from interviews, documents and survey responses are triangulated to enhance validity and reliability.

Qualitative Analysis: Based on the perceptions of respondents, thematic patterns are designed to capture drivers, barriers and implementation experiences.

Quantitative Analysis (supportive): Limited survey responses are investigated and presented through graphs, pie charts and figures to complement the qualitative findings.

This cohesive methodology allows the research to make available an inclusive thoughtful insight of the drivers, challenges and effectiveness of sustainable procurement practices in BBA.

1.6 Limitation of this Report

While this study seeks out to afford valuable insights into sustainable procurement practices within the Bangladesh Bridge Authority, several limitations must be acknowledged:

- The study emphasizes solely on the Bangladesh Bridge Authority within the transportation sector. Therefore, the verdicts may not be generalizable to other government agencies or sectors in Bangladesh.
- Due to time and resource constraints, the number of interviews and survey responses will be limited.
- This may confine the depth and representativeness of primary data. Access to certain internal documents, procurement evaluations or detailed project

sustainability reports may be limited due to confidentiality, affecting the completeness of secondary data analysis.

- Interviewees may be unenthusiastic to discuss challenges or failures openly, leading to potential bias in primary data.
- The study is directed within a restricted academic timeframe, which may limit opportunities for longitudinal observations or follow-up interviews. Public procurement policies and practices in Bangladesh are evolving. Thus, the study mirrors a snapshot in time and may not capture ongoing reforms or future initiatives related to sustainable procurement.

Chapter 2

Review of Related Literature

2.1 Introduction

Sustainable procurement remains increasingly recognized vital approach to ensure that infrastructure and transport projects generate economic benefits as well as positive social and ecofriendly outcomes. This section analyses the pertinent literature on sustainable procurement, with a particular attention on the transportation sector. The review highlights what previous researchers have found, identifies gaps and places the objectives of the present study within this body of knowledge.

2.2 The Idea of Sustainable Procurement

As per previous research's, sustainable procurement refers to the process of obtaining works, goods and services, such a manner to ensuring value for money (VfM), delivers communal benefits and reduces eco-friendly harm (Qazi, 2022; OECD, 2021). Researchers emphasize the 03 supports such as economic, ecological and communal, that must stand well-adjusted in procurement decisions (Islam, 2024). In infrastructure projects, this often means integrating life-cycle costing, green materials and social responsibility into procurement processes (Schotanus et al., 2024).

2.3 Global Perspectives on Sustainable Procurement in Infrastructure and Transport

Studies in developed countries have shown that sustainable procurement policies can significantly reduce carbon emissions and enhance resource efficiency (Gupta and other co-authors in 2024; Javanpour and his co-authors, in 2025). For instance, Yap and his co-authors (2024) recognized critical barriers to green procurement acceptance in Malaysia's construction sector, including cost pressures and lack of supplier readiness. Similarly, Ferguson et al. (2025) highlighted the role of intermodal transportation in decarbonization, emphasizing that procurement choices inspiration transport mode selection and thus environmental performance.

However, most of these studies focus on established or upper-middle-income contexts, where institutional capacity, regulatory enforcement and supplier markets are comparatively mature.

2.4 Sustainable Procurement in Developing Countries

In developing contexts, researchers found that policy gaps, weak enforcement and limited supplier capabilities remain major challenges (Kuruneru, 2025). In Pakistan, Siddiqui et al. (2024) found that green procurement positively affects organizational performance, yet adoption is low due to financial limitations. In Kenya, Rotich et al. (2024) presented that transport strategies influence procurement performance but that sustainability considerations are rarely ordered over cost and speed.

These results suggest that while the concept of sustainable procurement is globally documented, its implementation in developing countries faces institutional and operational constraints.

2.5 Evidence from Bangladesh on sustainable procurement

Several studies have examined aspects of sustainable procurement in Bangladesh. The outlines are as follows:

- Islam (2024) studied green procurement in the garment sector, outcome that while some firms accepted eco-friendly practices, implementation was uneven due to lack of incentives and high initial costs.
- Khan et al. (2024) observed green supply chain practices and found significant potential to improve sustainability outcomes, but also highlighted low awareness and weak strategy support.
- ESCAP (2022) measured freight transport in Bangladesh, stressing the urgent need to shift towards more sustainable modes, but procurement practices were not directly addressed.
- Halder (2023) - A BRAC University study of LGED procurement shows LGED has accepted Environmental & Social Management Frameworks (ESMFs) in donor projects, with screening, mitigation measures, and community consultation processes. However, Halder reports that these safeguards are executed via project management rather than through procurement award criteria — contractors are designated on traditional grounds while sustainability is observed post-award. This documents a recurring “safeguards vs procurement” gap.

- Sabah (2024) specifically examine sustainable procurement in the transportation sector, focusing on RHD and Bangladesh Railway and found that sustainability criteria were rarely implemented in bidding or supplier evaluation.
- The World Bank (2023) assessed e-GP implementation in Bangladesh. While the platform heightened transparency, competition, and efficiency in procurement, it did not significantly address sustainability concerns. Environmental and social safeguards were largely absent from evaluation criteria, presenting that digitalization alone cannot confirm integration of sustainability in public procurement processes.
- LGED (2022) stated pilot initiatives promoting climate-resilient rural infrastructure. Procurement in selected projects familiarized sustainable materials such as recycled aggregates and eco-friendly designs for roads and markets. However, these practices remain isolated pilots. The absence of institutionalized frameworks prevents their scaling across LGED's wider procurement operations, limiting long-term sustainability impacts.
- Islam (2021) highlighted LGED's use of performance-based maintenance contracts under donor-funded rural road projects. These contracts connected payments to long-term road durability rather than lowest-cost construction, encouraging sustainability through life-cycle cost efficiency. However, such contracts are not yet mainstream in public procurement, reflecting partial policy support and implementation capacity.
- Siddiqui et al. (2024) studied green procurement adoption in Bangladesh's public institutions. Their findings display significant positive effects on organizational performance, including efficiency, reputation and compliance. Notwithstanding these benefits, adoption remains split. Sustainability is often treated as an optional add-on, rather than a standard feature of procurement practices in government organizations.
- The Switch-Asia (2021) study shows the evaluation of Bangladesh's sustainable public procurement readiness. It found procurement remains subjugated by lowest-cost selection criteria, with sustainability dimensions such as energy use, emissions, or labor standards frequently overlooked. Without stronger strategy frameworks and incentives, sustainability remains secondary, especially outside donor-driven projects or dedicated pilot initiatives.
- ADB (2023) analyzed RHD highway projects including environmental and social safeguard frameworks. Procurement guidelines required contractors to implement waste management, safety standards and ecological defense measures. Despite these efforts,

enforcement challenges persevere due to limited institutional capacity and monitoring holes. The study underlined the importance of building local capacity for effective sustainability integration.

- Kornev, M. (2014) shows in a research outline for green procurement of infrastructures that treats green procurement as a socio-technical system and recommends merging policy instruments (Governance and Procurement Policy mandates, buyer groups), life-cycle costing and supplier development to move infrastructure procurement beyond price competition.
- Lima, Farhana (2024), shows on their report about Evaluation of LGED sustainable procurement from risk and performance management viewpoint that the recent case study on LGED goods procurement displays that risk and performance management perspectives have underway to be considered. Some performance metrics include timeliness, quality, but environmental risk or supplier green capacity is hardly involved. The study suggests that totaling sustainability increases complexity and perceived risk, which procurement officers are confused to accept without incentives.
- Abdin, Md Jayanal (2022), in his study on improving Tendering and its assessment process improvement for Bangladesh Public Sectors sustainable procurement found that while many procurement officers felt they had the training to conduct procurement, there was little understanding of environmental, social and economic sustainability in tender documents. For example, about 50% respondents rarely use CO₂ reduction criteria, about 30% never consider alternative energies like solar or wind. Barriers: lack of policy framework, awareness, expertise.

These studies deliver valuable insights, but they also reveal that research on sustainable procurement in Bangladesh's bridge and expressway sector (where Bangladesh Bridge Authority operates) remains uncommon. Moreover, most studies remain descriptive rather than presenting empirical evidence.

2.6 Overview of Public Procurement in Bangladesh

Bangladesh Public Procurement Authority (BPPA), former name as "Central Procurement Technical (CPTU)" under the Implementation Monitoring and Evaluation Division (IMED) of the Ministry of Planning, is seriously working to integrate Sustainable Public Procurement (SPP) into

Bangladesh's procurement system. While there is not yet a separate national policy on sustainable procurement, it has entrenched sustainability principles into existing laws, rules and practices. Here is an outline of CPTU's policies and initiatives associated to Public Procurement on sustainable issue:

- The Public Procurement Act 2006 (PPA) and the Public Procurement Rules 2008 (PPR) serve as fundamental legal framework governing public procurement activities into Bangladesh.
- The e-GP system, settled and accomplished by BPPA, enhances transparency, efficiency, and paperless procurement- fundamentals of environmental sustainability. It permits real-time monitoring, reducing corruption and waste, and improves access for SMEs and local suppliers.
- They have facilitated training programs, workshops, and awareness campaign on green procurement and ethical supply chain practices. Collaborations with development partners (e.g., the World Bank) have facilitated institutional training on sustainable procurement principles.
- They have a continuing procurement reform strategy includes goals for aligning with international sustainability standards like ISO 20400. Ongoing efforts include emerging guidelines and standard bidding documents that incorporate environmental and social sustainability clauses.
- In 2023 BPPA has published a policy for Sustainable Public Procurement for Bangladesh.

2.7 Research Gap

From the studied literature, three main gaps emerge:

1. Sectoral Gap: While garments and general supply chains have been considered, sustainable procurement in the transportation infrastructure sector- especially bridges, expressways and tunnels- has not been sufficiently researched in Bangladesh.
2. Institutional Gap: Previous studies intensive on general challenges (policy, awareness), but rare have studied the role of specific government agencies like BBA in implementing sustainable procurement under the Public Procurement Act and donor-funded frameworks.

3. Empirical Gap: Most works are theoretical or case-based; there is a lack of survey-based empirical studies capturing perceptions of employees, contractors and donor agencies commonly supposed as developing partners on sustainable procurement practices in transport infrastructure.

2.8 Placement of the Present Study

Addressing the identified gaps, this investigation centers on sustainable procurement within Bangladesh's transportation sector, using the Bangladesh Bridge Authority as a case study. Unlike previous studies that either focused on garments or generalized supply chains, this study:

- Examines sustainable procurement specifically in large-scale infrastructure projects (bridges, expressways, tunnels).
- Collects primary data from BBA officials, contractors, development partners and donor-funded project employees to provide an evidence-based assessment.
- Analyzes how sustainable procurement practices align with national strategies (5-Year Plan, Delta Plan, Vision 2100) and global goals (SDGs).

Thus, this study not only contributes to academic knowledge but also offers practical recommendations for policy and institutional reform in Bangladesh's transport infrastructure sector.

2.9 Conclusion

The literature finds that sustainable procurement is globally documented as essential, yet in Bangladesh's transport infrastructure sector, its application remains underexplored. Previous research has emphasized challenges but not providing comprehensive, empirical evidence from key agencies like the BBA. This study fills that hole by investigating barriers, enablers and opportunities for sustainable procurement in Bangladesh Bridge Authority projects.

Chapter 3

Transport Sector and Sustainability Challenges in Bangladesh's Public Procurement

3.1 Introduction

The transportation segment in Bangladesh acting an important character in improving the economic growth, social development and regional integration. The rapid expansion of infrastructure carriages significant sustainability challenges, particularly in the context of environmental protection, social equity and economic efficiency. The Public Procurement Act 2006 (named as PPA 2006) and the Public Procurement Rules 2008 (named PPR 2008) of Bangladesh serve as the main regulatory framework for public sector procurement including the transport sector and play a vital role in embedding sustainability principles within infrastructure development initiatives.

This chapter inspects how the transport sector engages with the sustainability dimensions of public procurement in Bangladesh. It assesses the effectiveness and shortcomings of the existing PPR in promoting environmental and social sustainability also suggests strategies for implementing further inclusive and sustainable procurement practices.

3.2 Overview of SPP Policy 2023

To promote environmentally, socially and economically accountable procurement, the Government of Bangladesh has adopted the Sustainable Public Procurement (SPP) Policy 2023, developed by the Central Procurement Technical Unit (CPTU) under the Ministry of Planning. The policy promotes resilient development and green growth by embedding sustainability principles into the national procurement framework. Its purposes include strengthening the capacity of public sector organizations to meet sustainability goals and fostering more effective engagement with the supply chain.

The policy commands compliance with sustainability standards while upholding principles of accountability, transparency and fairness. It highlights the importance of Value for Money (VfM) by incorporating tools such as life-cycle costing (LCC) and prioritizing the most advantageous bidder rather than relying solely on the lowest price. Key terms like green procurement, sustainable products and LCC are well-defined to ensure consistency and understanding across procuring entities.

To promote inclusive and broad-based economic development, the policy encourages the active involvement of women-owned business enterprises (WBEs) and small and medium enterprises (SMEs) in procurement of public sectors. When these groups face challenges, procuring agencies are authorized to implement flexible, competitive bidding procedures and streamline tender documentation to reduce barriers to entry

To support comprehensive economic growth, the policy encourages the contribution of small and medium enterprises (SMEs) and women-owned business enterprises (WBEs) in public procurement. When these groups are complicated, procuring agencies are permitted to apply flexible, competitive bidding methods and simplify tender documentation to lower obstacle to entry.

Bangladesh's traditional procurement framework has not prioritized sustainability, but this new policy signals the adoption of more strategic and environmentally responsible practices. By considering sustainability criteria and the full life-cycle costs when procuring services, works and goods, the government is strategically shifting its public sector purchasing framework to become more environmentally and socially responsible.

3.3 The Transport Sector Landscape of Bangladesh

Bangladesh's transport network comprises roads, railways, inland waterways, maritime ports and civil aviation infrastructure. The road transport sub-sector, accomplished partly by agencies like - RHD, Local LGED, BBA etc., commands a significant portion of public investment. Major development projects such as expressways, flyovers, metro rail systems and tunnels are central to national connectivity and Vision 2041.

Although Bangladesh boasts one of the world's most extensive road networks, ranking 16th globally with approximately 370,000 km and possesses South Asia's second-highest road density

(behind India, ranking 13th worldwide), a significant challenge remains: only about 30% of these roads, totaling around 110,311 km, are paved. These roads are maintained by RHD mainly and the LGED. Among this the large transport infrastructure like Bridge, elevated expressway, tunnel etc. above more than 1.5 km are upheld by BBA.

According to data from the Bangladesh Railway (BR) website, they have a total length of 2955.53 kilometers and the rail system carried 63.99 million passengers while moving approximately 3.18 million metric tons of freight. Dhaka Metro Rail, the country's first, started in 2022, with further urban transit expansion underway.

Total 8 no of airport are in operation now in Bangladesh. Among them 3 international and 5 domestic purpose are in use. In 2023, Bangladesh's aviation sector experienced significant growth, with a total of approximately 17.4 million air passengers using the country's airports with an increment 23.4% increase from the previous year. This air transport controlled by Civil Aviation Authority, Bangladesh.

However, the transportation division also has a most important involvement to environmental degradation through greenhouse gas discharges, land use change and pollution. Social issues such as displacement, labor safety and accessibility also require attention. Integrating sustainability into transport procurement is vital for meeting both long-term national plans, like the Bangladesh Delta Plan 2100 and global commitments, including the SDGs, while continuing economic development. (The Daily star, newspaper)

Depending on the season, Bangladesh has approximately 3,600 to 6,000 kilometers of navigable waterways of which around 3,060 kilometers serve as principal shipping routes. According to UN-ESCAP (2022), nearly 76 million tons of cargo and 87.5 million passengers are transported through these inland waterways each year. Conversely, the World Bank (2023) estimated that the inland water transport network in Bangladesh handles around 194 million tons of shipment each year, which is considerably higher than the figure reported by UN-ESCAP. On behalf of the Bangladesh government, the Inland Water Transport Authority (BIWTA) holds the responsibility for managing, upkeep and regulator of all inland water transport and maneuverable channels.

3.3.1 Role of Bangladesh Bridge Authority in National Transportation Sector

The Bangladesh Bridge Authority (BBA) holds a significant position in enhancing the transportation infrastructure of the country, mainly by focusing on the construction, operation and maintenance of large-scale bridge, elevated expressways and tunnel projects. As an autonomous agency under the Ministry of Road Transport and Bridges, Bangladesh Bridge Authority (BBA) is entrusted with implementing large-scale infrastructure projects that are vital for strengthening national connectivity, promoting economic integration and promotion regional development. The Vision of this organization is “To establish an uninterrupted transport network across the country” with a mission of “Development of socio-economic conditions of the country by ensuring uninterrupted transport system through construction and maintenance of 1500 meters and above bridges, toll roads, tunnels, flyovers, expressways, elevated expressways, subways, causeways, ring roads etc.”

This organization has formed a visionary expectation of the population of the country within very short period by establishing a good transport network by constructing few but very important structures like- Padma Bridge, Jamuna bridge and create a great contribution in the economy of this country. This organization was originally founded in 1985 as the ‘Jamuna Multipurpose Bridge Authority (JMBA)’ under a government ordinance. Subsequently, following the publication of a gazette on 19 December 2007, it was renamed the Bangladesh Bridge Authority (BBA). At present, Bangladesh Bridge Authority functions as a statutory government entity employing a total of 386 officials. (source: website of BBA)

One of the most significant contributions of BBA is in linking different regions of the country through long-span bridges, expressways and tunnels. With the completion of the Jamuna Multipurpose Bridge in 1998, the eastern and western zones of the country were linked for the first time by road and rail, drastically reducing travel time, promoting trade and enhancing access to services. This success established the critical need for an agency like BBA dedicated to bridging the geographical divides of the nation. The assessed contribution is about 1.2% increase in GDP in the country.

BBA’s most iconic achievement to date is the Padma Multipurpose Bridge, inaugurated in 2022. This bridge alone has changed the socioeconomic landscape of southwestern part of Bangladesh by reducing travel times, increasing industrial growth, and facilitating better access to education,

healthcare and employment. Such infrastructure not only supports internal mobility, but also aligns with broader national goals like Vision 2041 and the Sustainable Development Goals (SDGs). GDP of Southwest Region of the country will rise by 35% (2.3% per year) and 1.4% of the whole country stated in the feasibility study report.

In addition to bridges, BBA has extended its role into the construction of expressways, elevated roads, and tunnels. Projects like the Dhaka Elevated Expressway and the Karnaphuli Tunnel under the Karnaphuli River in Chattogram represent BBA's move toward modern, multimodal urban transport solutions. These projects aim to decrease traffic congestion, improve travel safety and ensure efficient movement of goods and passengers, thus supporting both economic growth and environmental sustainability.

Another critical function of BBA is confirming long-term structural safety and sustainability through river training works, hydrological surveys and maintenance programs. BBA also collaborates with development partners like JICA, ADB, and China for technical and financial support in mega infrastructure projects. Furthermore, BBA's role consists of promoting public-private partnerships (PPP) in large-scale projects to enhance investment and operational efficiency.

BBA is also committed to sustainable development. It conducts feasibility studies, environmental impact assessments and social consultations before initiating any project. The authority ensures that its projects are aligned with the Bangladesh Delta Plan 2100, climate resilience objectives, and the other stated Plan of the country.

3.4 Sustainability in Public Procurement: Global Perspective

Civic procurement represents a significant part of global economic activity- accounting for 13–20% of GDP in many countries-and thus plays a significant contribution in driving sustainable growth. Countries around the world are increasingly implanting sustainability criteria in procurement guidelines. The European Union has mandated Green Public Procurement (GPP) as part of its Circular Economy Action Plan, requiring the inclusion of environmental criteria in tenders (European Commission, 2021). Similarly, countries like South Korea and Japan have long-standing frameworks integrating life-cycle costing and eco-labelling in procurement decisions (OECD, 2022).

In the United States, an Executive Orders mandate federal agencies to prioritize climate-friendly and energy-efficient products and services. Canada and Australia have combined social procurement goals to promote inclusion of Indigenous and minority-owned businesses in public contracting (World Bank, 2020).

3.5 Sustainability Issues in PPR 2008, Bangladesh

Bangladesh follows a decentralized public procurement framework that, although not explicitly defined in the Constitution, is administered by the Ministries of Finance and Planning under oversight of the Executive Committee of the National Economic Council (ECNEC), presided through the Prime Minister. Executing agencies follow specific rules (PPA 2006, PPR 2008) for procurement, while BPPA under IMED enhances transparency since 2002. e-GP, introduced in 2011, aims to decrease time, cost and increase the transparency. Foreign-funded projects follow to their guidelines alongside national ones, creating a dual-system approach.

Chapter 1 (article 1.2 and article 1.3 respectively) states 02 study objectives and 02 study queries. This article of this reports first study queries linked to choice of sustainable procurement in transportation segment and first study objective regarding sustainability linked matters over examine of sustainability linked mechanisms in BBA's prevailing procurement arrangement.

The PPA 2006 and PPR 2008 serve as the primary legal instruments governing public sector procurement in Bangladesh, including the transport sector. In certain cases, the procurement policies of the relevant organization, the Bangladesh government or the financing organization may as well be applied. Furthermore, Bangladesh Public Procurement Authority (BPPA) has formulated a series of Standard Bid Documents for goods and works, as well as Standard Requests for Proposals (SRFPs) for consultancy contracts. Those documents are custom-made toward align with the scale, complexity, and value of procurement packages. The PPR-2025 has very recently has published but its Standard Bid Documents and SRFPs did not published yet by BPPA, due to the time limitation this report did not explore it fully. But in this new there are more rules and regulations are established focusing the sustainability issues.

The following summary highlights the sustainability-related provisions covering the economic, social/ethical and environmental magnitudes that incorporated within PPR 2008 and STDs.

Sustainability issue on Economic:

1. Specifies methods of procurement and aggregation of goods packages, considering local market conditions, pricing trends and connected risks. (PPR 2008, Rule 15(2))
2. Consideration of prevailing industry conditions and expected rivalry when selecting procurement methods for works. (PPR 2008, Rule 15(7))
3. Technical specifications should be formulated based on performance or output requirements to promote fair and open competition. (PPR 2008, Rule 29(2))
4. Prohibits the use of brand names, trademarks, patents, specific countries of origin, or supplier names in technical specifications. (PPR 2008, Rule 29(3))

Sustainability issue on Social and Ethical

1. Promotes consideration of home-grown industry capacity, market situations, and competition levels when determining procurement methods. (PPR 2008, Rule 15(2))
2. Emphasizes assessing the capability of domestic contractors in selecting appropriate procurement approaches for works. (PPR 2008, Rule 15(7))
3. In tender documents allows domestic preference enabling local suppliers or contractors to remain competitive with international bidders. (PPR 2008, Rule 81(1)(e))
4. For ensuring professional well-being and protection of all labors on site are given as contractors responsibilities. (STD-PW3, GCC 27.2)
5. Regulates work schedules including work performed at night, on weekends or during public and religious holidays. (STD-PW3, GCC 28.1)
6. Requires contractors to comply with applicable labor laws governing employment conditions, health, safety, welfare, and workers' rights. (STD-PW3, GCC 29.1)
7. Obligates contractors to pay fair and timely wages, with penalties for any delay in payment. (STD-PW3, GCC 29.3)
8. Stipulates that technical specifications be developed in consultation with the end users or beneficiaries of the goods, works or services. (PPR 2008, Rule 29(5))

9. Prohibits the use of child employment according to national labour laws & international agreements. (STD-PW3, GCC 30.1)
10. Requires contractors to maintain adequate insurance coverage, including details of policy duration, value and deductibles. (STD-PW3, GCC 37.1)

Sustainability issue on Environment

1. Mandates that contractors adopt environmental protection measures at construction sites and mitigate any potential pollution-related damage. (STD-PW3, GCC 27.1)
2. Addresses requirements for workers' accommodation, clean water, sanitation and hygiene facilities to prevent disease outbreaks. (STD-PW3, GCC 29.2)

While Bangladesh's current procurement legal framework-incorporate in the PPA 2006 and PPR 2008. But, does not explicitly emphasize sustainability, especially environmental parts are not considering here. However, these measures remain split and limited in scope. To enhance sustainable procurement into transport area- which is essential toward incorporate well-defined and comprehensive sustainability standards within procurement policies, complemented by institutional capacity development, uniform guidelines and robust enforcement mechanisms.

3.6 Sustainability Gaps in PPR Related to the Transport Sector

The application of PPR in transport sector projects reveals several critical sustainability gaps:

a. Lack of Life-Cycle Costing

The PPR highlights upfront capital costs without sufficiently considering operation, maintenance and environmental externalities over the asset's life span.

b. Environmental Criteria in Tender Evaluation

Although environmental impact assessment (EIA) is legally mandatory for large infrastructure projects, but sustainability is not officially integrated into the procurement process (e.g., through scoring criteria or technical specifications).

c. Limited Use of Green Construction Standards

There is no compulsory requirement in the PPR for using green materials, technologies or construction practices, which are vital for reducing the carbon footprint of transport infrastructure.

d. Neglect of Social Inclusion and Labor Standards

Current procurement rules do not strongly impose provisions related to local employment, gender equity or occupational health and safety within transport contracts.

e. Inflexibility in Innovation

The rigid procurement approach limits innovation in design and execution-discouraging proposals that offer environmentally or socially superior alternatives, unless explicitly entreated in the bidding documents.

3.7 Progress and Emerging Initiatives

Despite the limitations, some progress has been made toward sustainable procurement in current years:

- Development Partner (Donor) funded projects (e.g., by ADB, JICA, World Bank) often include sustainability sections, pushing implementing agencies to accept best practices.
- The e-GP system has enhanced procurement transparency, abridged corruption & indirectly promoting sustainable governance.
- Experimental initiatives under the Green Public Procurement (GPP) framework have been initiated in selected ministries, although still in developing stages.
- In last May, 2025, the government has made some modification in the PPR law and include the “sustainability public procurement”, reverse auction etc. The integration of this policy represents an emerging step toward sustainable practices within the field of procurement.

Chapter 4

Sustainable Procurement in the Transport Sector: Case Study of BBA

4.1 Chapter Introduction

Global exertion to attain the Sustainable Development Goals (SDGs) require public purchasing to drive national social and environmental policies. In Bangladesh, where government infrastructure investment is key to economic expansion, the procurement practices of the Bangladesh Bridge Authority (BBA) are critical. Although BBA is governed by standard rules (PPA 2006, PPR 2008), these traditional frameworks emphasize accountability and lowest initial cost, largely overlooking specific sustainability requirements.

This division investigates the current state of sustainable procurement within BBA to identify gaps that hinder full sustainability integration. Survey data from BBA officials and their development partners reveal a significant implementation barrier: while sustainability awareness is high, practical application is weak. Social standards, such as ensuring fair wages, are inconsistently applied, and environmental efforts focus reactively on regulatory compliance rather than proactively using eco-friendly materials. Furthermore, the focus on the lowest initial bid undermines the use of Life-Cycle Costing (LCC) and long-term economic value. This is aligned with the study objectives and the questionnaires mentioned in Chapter 1.

Despite of knowing the importance of sustainability, BBA's procurement system lacks the necessary clear guidelines, structured training and institutional mechanisms required to successfully integrate these principles across all phases of its operations.

4.2 Institutional Procurement Practices in Bangladesh's Transport Sector

In Bangladesh, multiple key organizations contribute to the development and management of the country's transport infrastructure, including the Roads and Highways Department (RHD), Bangladesh Road Transport Authority (BRTA), Bangladesh Road Transport Corporation (BRTC), Dhaka Transport Coordination Authority (DTCA), Bangladesh Railway (BR), Bangladesh Bridge Authority (BBA) and the Local Government Engineering Department (LGED).

Each of these organizations has its own procurement unit responsible for managing procurement-related activities. Although the procurement sections such as that within the Bangladesh Bridge Authority are relatively small in size, they hold significant importance in ensuring the effective implementation of projects. However, in practice, these units often fail to function optimally due to internal organizational constraints and limitations within the institutional environment.

4.3 Procurement Methods Used in BBA

The Bangladesh Bridge Authority (BBA) carries out its procurement activities for goods, works, and services in accord with the requirements of the Public Procurement Rules (PPR) 2008, as required for public entities. In cases where projects are sponsored by international development agencies, BBA also follows specific procurement guidelines of those agencies. For large and complex projects, international competitive bidding is commonly used, often guided by procurement frameworks of the WB or the FIDIC standard.

The selection of procurement method hangs on the dimensions and category required, whether goods, works or services. BBA generally put on the following methods for the executions of Works and goods:

- I. Open Tendering Method (OTM)
- II. Limited Tendering Method (LTM)
- III. Direct Procurement Method (DPM)
- IV. Two-Stage Tendering Method (TSTM)
- V. Request for Quotation (RFQ)

For consultancy and other service-related procurements BBA follows these methods:

- I. Quality and Cost-Based Selection (QCBS)
- II. Quality-Based Selection (QBS)
- III. Least Cost Selection (LCS)
- IV. Fixed Budget Selection (FBS)
- V. Single Source Selection (SSS)

Overall, BBA's procurement practices are designed to ensure transparency, competitiveness, and compliance with both national regulations and international standards where applicable.

4.4 Electronic Government Procurement (e-GP)

The Electronic Government Procurement (e-GP) system in Bangladesh, a digital platform planned to restructure and store every phase of the public procurement procedure. Through this web-based interface, government entities and bidders utilize information and communication technologies (ICT) to execute procurement activities for goods and works, primarily within the scope of national tenders. However, the system holds significant potential for future expansion into worldwide procurement.

The e-GP framework integrates multiple modules-including national bidder registration, electronic tender submission and evaluation, contract and payment administration, workflow automation, performance monitoring, system security, complaint management and others. Continuous upgrades to the platform aim to meet evolving operational needs while reinforcing transparency, efficiency and accountability by minimizing manual handling and improving accessibility for all stakeholders.

The Bangladesh Bridge Authority (BBA) has implemented the e-GP system in its procurement activities, particularly for operation and maintenance-related tenders at the national level. Although international tendering is not yet incorporated within this system, its adoption has already enhanced procedural efficiency, reduced paperwork, and improved overall governance in procurement practices. In the coming years, BBA envisions extending the e-GP platform to support international tendering, thereby fostering greater competition among global bidders.

4.5 Tender Evaluation process

The Bangladesh Bridge Authority (BBA) conducts tender evaluations in line with the Public Procurement Rules (PPR) 2008 to confirm visibility and competitiveness. Tender Evaluation Committee (TEC) formed based on the type and scale of procurement, carries out both technical and financial assessments of bids. For complex projects, a Technical Sub-Committee (TSC) may assist in evaluating technical aspects. At present BBA practicing 3 evaluation committee and the following opening committee. The committee has divided into 2 committee, for goods and works, the tender which estimated value is less and more than 25 lac, on the other hand one separate committee for the evaluation of service tender.

Bids are first reviewed for technical compliance, after which only technically responsive tenders proceed to financial evaluation. The contract is given to the bottommost evaluated responsive competitors. In accordance with PPR provisions BBA prohibits any negotiation on unit rates for goods and works and services maintaining fairness & consistency throughout the evaluation process. According to the PPR for the service the negotiation with the winner bidder is keep mandatory to re-adjust the scope, ToR (Terms of Reference) etc.

4.6 Key Principles of Public Procurement Applicable to BBA

Procurement is one of the most critical functions in any public sector organization, as it includes the utilization of significant public resources. As a government organization, the Bangladesh Bridge Authority (BBA) is legally required to conduct its procurement activities in obedience with the PPA 2006 and the PPR 2008. Serving as the cornerstone of public procurement governance into Bangladesh, these laws are also binding on the Bangladesh Bridge Authority (BBA) in conducting its procurement functions. The key principles entrenched in the national procurement framework include:

- Transparency- ensuring openness in the procurement process through clear procedures, standard tendering documents and publication of notices.
- Accountability- holding procurement officials and decision-makers accountable for compliance with rules and ethical conduct.
- Value for Money- achieving the most beneficial balance of cost, quality and sustainability in the use of public funds.
- Fair Competition- providing equal opportunity for qualified tenderers and preventing restrictive practices.
- Efficiency- minimizing delays and confirming timely delivery of projects and services.
- Integrity - preventing corruption, conflicts of interest and unethical practices.

These principles, demonstrated in Figure 2, ensure that BBA's procurement system upholds good governance, reduces risks and promotes optimal utilization the national resources. These principles, when applied to sustainable procurement, establish the groundwork for integrating sustainable aspects into how BBA delivers its projects.



Figure 2: Key Principles of Public Procurement in BBA

4.7 Integration of Sustainability in BBA Policies

The foundational legal instruments governing public procurement in Bangladesh, the Public Procurement Act 2006 (PPA 2006) and the Public Procurement Rules 2008 (PPR 2008), primarily mandate transparency, accountability and efficiency across the transport sector. As a critical implementing agency Bangladesh Bridge Authority (BBA) operates strictly within this regulatory framework, but these traditional rules emphasize lowest initial cost, generally overlooking specific sustainability requirements. To meet the nation's long-term sustainable development goals, the procurement policy for this capital-intensive sector must evolve to establish criteria that actively embed environmental, social, and economic responsibility into project execution. While the government is pursuing broader initiatives to establish a formal Sustainable Procurement Policy (SPP), BBA currently lacks its own specific guidelines or performance metrics (KPIs).

Consequently, BBA's existing practice is limited to addressing minimum standards, such as ensuring Value for Money (VfM), prohibiting child labor and adhering to ISO accreditation. These current, fragmented efforts are insufficient to fully integrate sustainability, leaving a significant gap between BBA's immense purchasing power and the required systematic delivery of sustainable outcomes.

4.8 Data Analysis and Findings

This section details the analytical approach and presents the main results concerning the implementation of Sustainable Procurement within the Bangladesh Bridge Authority (BBA), converging on the three essential pillars: social, environmental and economic. The study was built upon data systematically collected through two tailored questionnaire surveys, administered to both Internal Stakeholders (BBA officials involved in decision-making) and External Stakeholders (contractors and consultants executing BBA projects).

The comprehensive questionnaires were structured across six primary sections—covering professional background, SDGs and sustainability awareness, detailed understanding of environmental, social/ethical and economic features also integration across the procurement life cycle. To generate a complete assessment of SP practices and existing barriers, analysis combined both quantitative methods (interpreting numerical data) and qualitative assessment (understanding respondent perceptions). The survey successfully gathered insights from 36 BBA officials and 31 external partners actively involved in large transport development projects. Each question was analyzed independently to ensure a full understanding of the matter with the comprehensive results of this analysis providing in the subsequent subsections.

4.8.1 Knowledge about SDGs and Sustainability

Purpose: This section assessed respondents' understanding of the SDGs and their perspective on the link between procurement and sustainability achievement. Since sustainable procurement directly relates to SDG 12 and indirectly to SDGs 9, 11 and 13, the attention was on whether both BBA officials and development partners recognize this linkage.

Findings: Among BBA employees, almost all (97.2%) complete awareness of SDGs and all agreed that procurement can contribute to their achievement. The goals most often cited as relevant

were Goal 9 (77.8%), Goal 11 (50%), Goal 13 (27.8%) and Goal 12 (19.4%). Development partners also showed strong awareness (90.3%) and unanimously specified their companies contribute to sustainability through BBA projects. However, 61.3% stated they had never received training on sustainable procurement. This study shows that while awareness levels are high, operationalizing SDG principles through procurement guidelines and training remains a challenge.

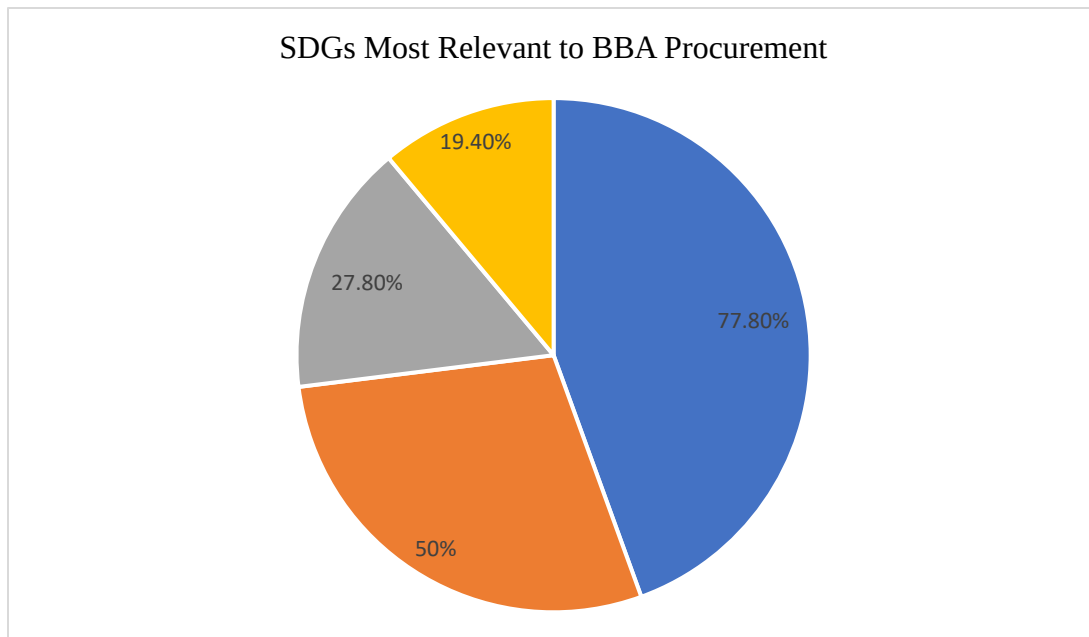


Figure 3: Overview of SDGs goal in sustainable procurement of BBA

4.8.2 Ethical/ Social Procurement Practices

Purpose: These questions examined whether procurement processes of BBA and its contractors consider labor rights, fair wages, gender equality, non-discrimination and support for local suppliers.

Findings: Among BBA officials, only 11.1% stated labor rights and fair wages are 'always' considered, while 88.9% said they are stated as 'sometimes.' Supplier evaluation for compliance with health and safety was stated by just 17.1% and gender equality considered by only 22.2%. Preference for local suppliers/SMEs was very low at 19.4%. In contrast, contractors stated stronger results: 100% confirmed prevention of child labor and safety measures and 93.5% encouraged gender equality. Yet, only 9.7% said that they 'always' ensure fair wages. These findings reveal gaps in enforcement consistency and highlight the need for stronger monitoring mechanisms.

Subsequent discussion covers the responses gathered from participants concerning the ethical/social components of sustainable procurement in their organizations.

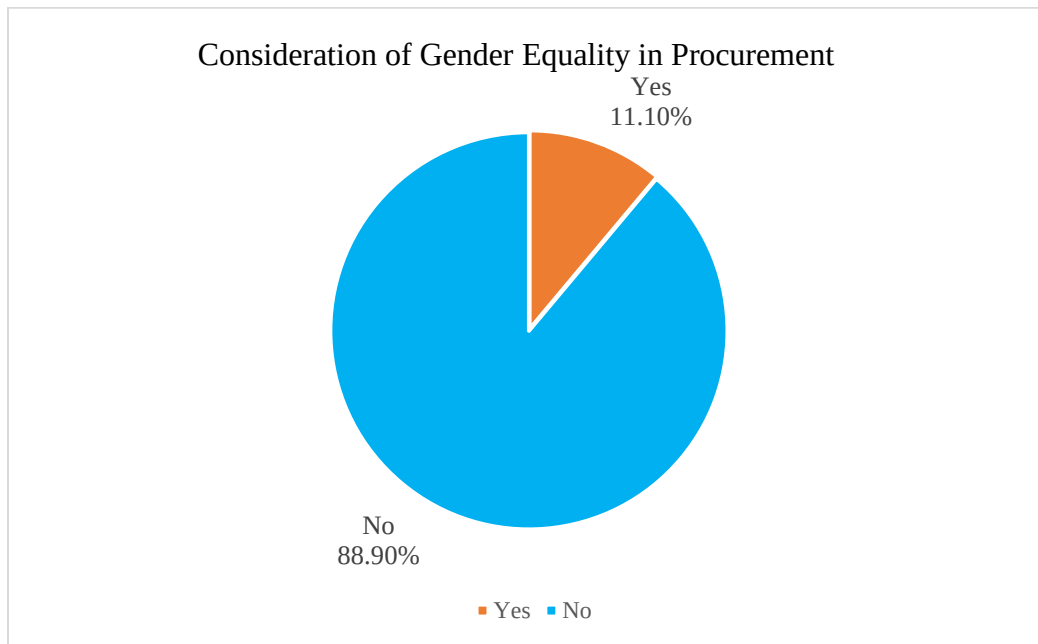


Figure 4: Female Labor Participation in BBA

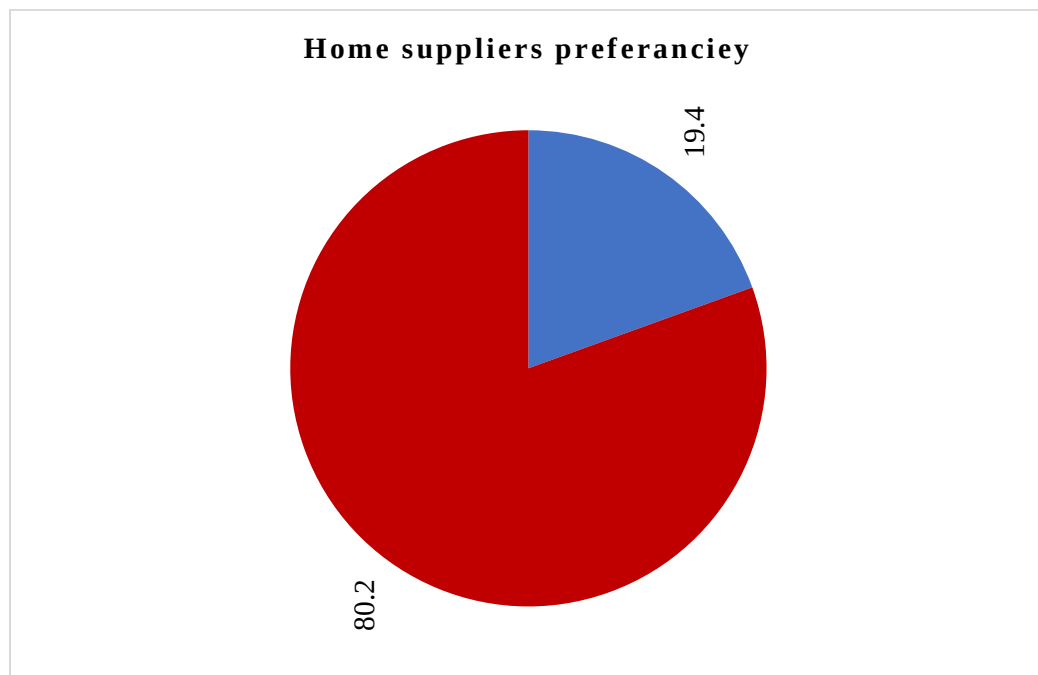


Figure 5: SMEs in the Organization (BBA)

4.8.3 Environmental Aspects of Procurement

Purpose: This section sought to understand the extent to which BBA and contractors incorporate environmental sustainability principles, such as eco-friendly materials, impact assessments and compliance with environmental regulations.

Findings: For BBA officials, 75% confirmed environmental standards are 'sometimes' included in tender documents, but only 8.3% informed encouragement for eco-friendly materials. 100% said impact assessments are conducted during planning and 94.4% noted supplier compliance with regulations. Contractors stated stronger compliance: 100% follow environmental guidelines, 93.5% implement waste and pollution control, but only 20% consistently usage eco-friendly materials. This highlights that environmental considerations are reactive (compliance-driven) rather than proactive.

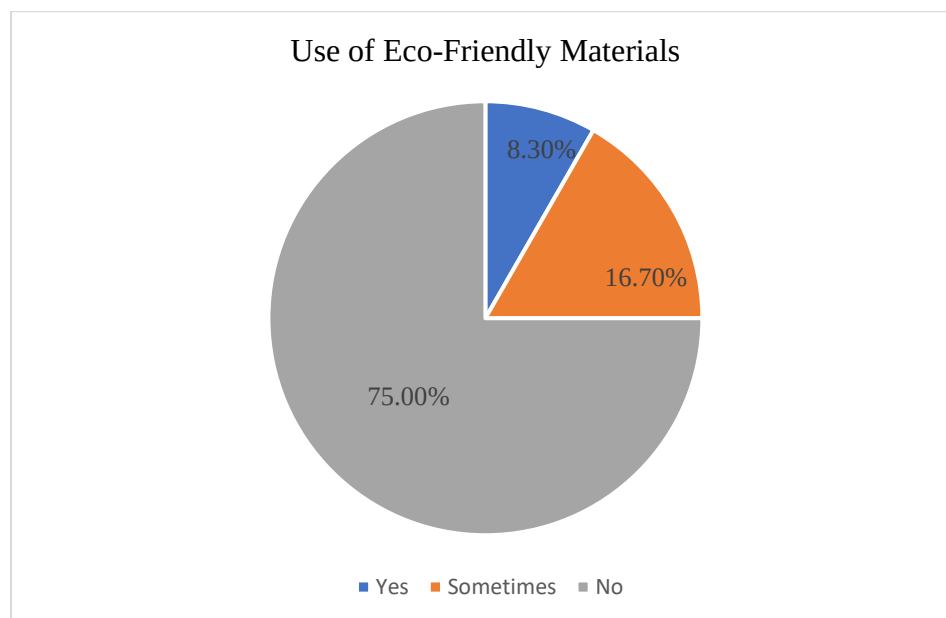


Figure 6: Eco-friendly materials use pattern in BBA

4.8.4 Economic Aspects of Procurement

Purpose: The purpose of this segment is to determine the extent to which BBA and contractors apply Total Cost of Ownership (TCO), life cycle costing (LLC) and resilience criteria over simply accepting the lowest bid.

Findings: Among BBA officials, 30.6% stated applying LCC, 11.1% reported not applied and 58.3% were unsure. 45.7% appreciated TCO over lowest price, while 54.3% still preferred lowest price. Yet, 94.4% confirmed the consideration of long-term impacts. Contractors described stronger integration: 96.8% always account for durability and maintenance, though 73.3% admitted cost-cutting pressures undermine sustainability. 87.1% said BBA does not encourage sustainable outcomes with higher upfront costs. These findings show misalignment between contractor intentions and BBA's procurement framework.

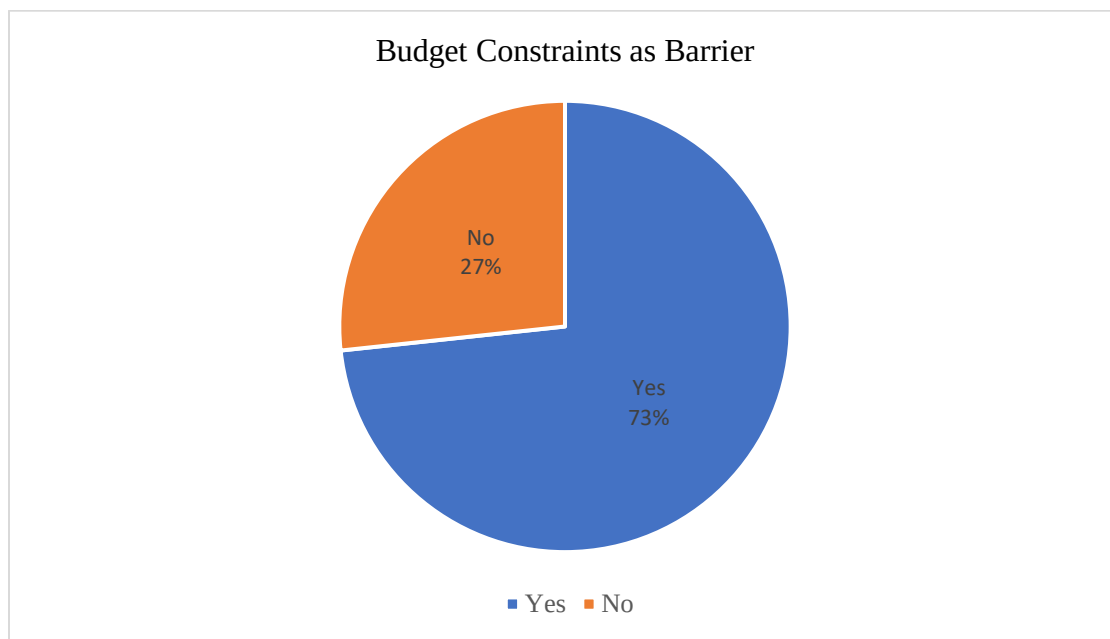


Figure 7: Consideration of Budget constrain barrier in BBA (development partners view)

4.8.5 Procurement Life Cycle Considerations

Purpose: This section inspected integration of sustainability across phases of procurement life cycle (planning, tendering, implementation and monitoring).

Findings: Half of BBA officials (50%) stated sustainability should be considered in all phases equally, while the other half highlighted planning. Only 44.1% confirmed sustainability criteria are comprised in tender evaluation, while 55.9% stated as not. 58.8% indicated suppliers receive orientation on sustainability requirements, while 41.2% said no. Post-procurement audits are inconsistent (50% yes, 50% no). These findings recommend institutional mechanisms are underdeveloped and sustainability indicators must be standardized across all phases.

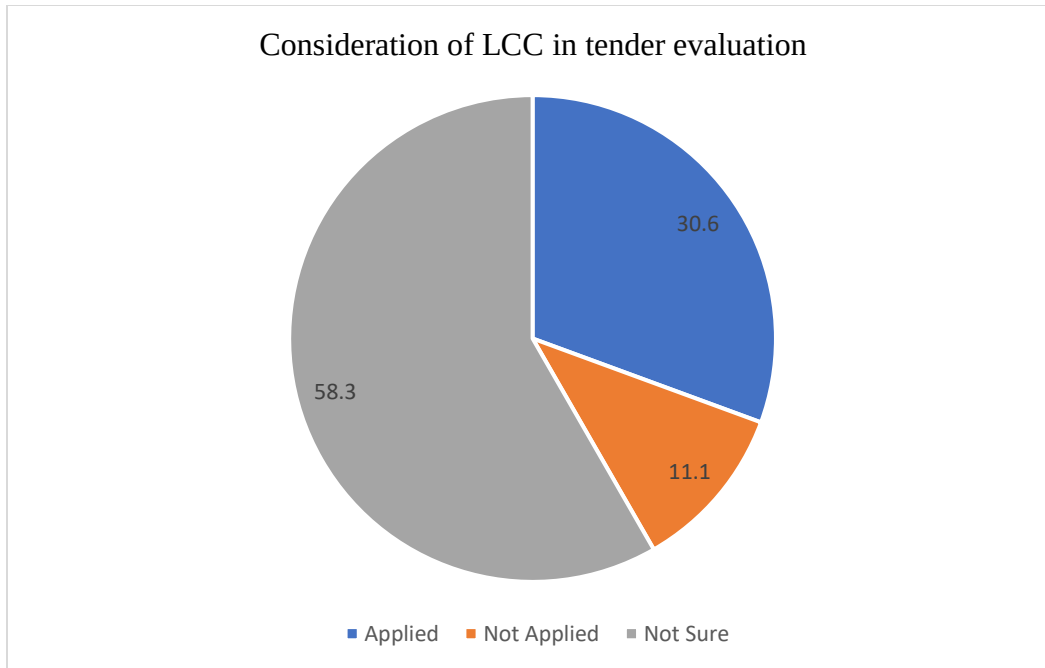


Figure 8: Consideration of material life cycle cost (LCC) in tender evaluation on BBA

4.8.6 Challenges and Suggestions from Stakeholders

The key challenges acknowledged by both BBA officials and development partners include:

- Lack of knowledge and training (69.4% of officials; 16.7% of contractors);
- Insufficient budget allocations (50% of officials; 63.3% of contractors);
- Limited supplier capacity to deliver sustainable outcomes (50% of officials;
- Lack of clear guidelines and sustainability indicators (47.2% of officials);
- Time constraints and political influence on project delivery (44.4% of officials; 53.3% of contractors).

Both groups highlighted the need for structured training (local and international), development of clear sustainable procurement guidelines, integration of sustainability criteria in tender evaluation and greater collaboration with international donors and technical experts.

4.9 Summary of the Analysis

The analysis of survey responses highlights both progress and challenges in embedding sustainability within BBA's procurement framework. Overall, awareness of the Sustainable

Development Goals (SDGs) is high among both BBA officials and development partners, especially in relation to infrastructure and urban development. However, interpreting this awareness into consistent practice remains gaps. Social and ethical dimensions such as labor rights, gender equality and local supplier support are acknowledged; but not systematically enforced in procurement decisions. Environmental considerations are mostly compliance-driven, with limited proactive implementation of eco-friendly materials or technologies. Economic sustainability is partly addressed through durability and maintenance concerns, but reliance on lowest-cost procurement undermines long-term value. Moreover, sustainability criteria are not consistently integrated throughout the procurement life cycle and training or orientation programs are limited. These findings emphasize the need for stronger institutional mechanisms, clearer guidelines and enhanced capacity building to operationalize sustainable procurement effectively.

Chapter 5

Conclusions and Recommendations

5.1 Chapter Introduction

This episode represents a concluding insights and key recommendations derived from the analysis of sustainable procurement practices within the Bangladesh Bridge Authority (BBA) specially for large infrastructure projects. The preceding chapter revealed that while awareness of sustainability concepts, particularly those linked to the Sustainable Development Goals (SDGs) is relatively high among BBA officials and development partners, the practical implementation of these principles remains limited. The findings emphasized that BBA's procurement framework continues to prioritize cost efficiency over long-term sustainability outcomes, with environmental and social considerations often addressed only as compliance measures rather than strategic objectives.

Moreover, the study identified several institutional and operational challenges, including inadequate training, limited supplier capacity, unclear sustainability guidelines, and insufficient integration of sustainability indicators across the procurement life cycle. These constraints hinder the effective translation of national policies, such as the Sustainable Public Procurement (SPP) Policy, into actionable practices.

Against this backdrop, the chapter outlines recommendations aimed at strengthening the integration of sustainability into BBA's procurement framework. These include the development of explicit sustainability criteria, enhancement of institutional capacity, promotion of life-cycle costing approaches, and stronger collaboration with development partners and suppliers. The recommendations are designed not only to improve procurement efficiency but also to ensure that BBA's operations contribute meaningfully to Bangladesh's broader goals of sustainable infrastructure development and responsible resource utilization.

5.2 Key Findings and Conclusions

This study focuses on two main objectives: exploring the opportunity of sustainable procurement within Bangladesh's transportation segment predominantly for the Bangladesh Bridge Authority (BBA) and assessing the extent to which sustainable procurement principles are applied in its

large-scale infrastructure projects. It aims to evaluate existing practices, identify challenges and highlight opportunities for enhancing sustainability integration in public procurement processes.

This study on sustainable procurement within the Bangladesh Bridge Authority (BBA) demonstrates both progress and critical gaps in embedding sustainability principles across procurement activities. The analysis of survey data exposes that while there is significant awareness of the Sustainable Development Goals (SDGs) among both internal and external stakeholders, actual implementation of sustainable practices is unpredictable and limited. Social and ethical considerations such as labor rights and fair wages are partially addressed, but gender equality and SME participation remain poor. Environmental practices are acknowledged; but not methodically imposed, with eco-friendly materials rarely prioritized. Economic aspects such as LLC and TCO are not established within BBA, despite recognition by the development partners.

The procurement approach adopted by development partners and contractors in Bangladesh largely remains cost-driven, with tender evaluations primarily emphasizing the lowest financial offer. Environmental and social dimensions are seldom integrated into the technical specifications and the application of life-cycle costing techniques is relatively rare. Furthermore, the Standard Bid documents circulated by the Bangladesh Public Procurement Authority (BPPA) lack explicit provisions to promote the participation of home-grown companies in nationwide competitive tendering processes, in spite of certain clauses within the PPR 2008, which discussed in Chapter 3, that circuitously address this concern. Conversely, international competitive bidding frameworks include a “domestic preference” clause, designed to encourage and facilitate the inclusion of local firms in large-scale projects. In BBA, for the large infrastructure’s development project, there are some directions from the international agencies like ADB, WB, Exim Bank of China, EDCF etc. To integrate the best practices about the sustainability as most of the project (about 95%) are funded by them. There is a good initiative has taken by BPPA, that they have already published a Sustainability Public Procurement guideline in 2023 and in this year the PPA has made some change and incorporate some sustainability KPIs. But, still now, as it is not entrenched in PPR and the standard document of tender documents published by BPPA. Which will incorporated soon mentioned by BPPA.

In the environmental sector some KPIs like Environmental Impact Assessment and Environmental Impact Management are trying to strictly follow. For the social sector good practices like

implementation of resettlement action Plan are firmly follow by BBA. But some relaxation tendencies are noticed in the practices about workers health safety related issues.

Overall, the findings indicate that sustainable procurement in BBA is at a promising stage, largely driven by donor requirements rather than internal policy frameworks. Budget constraints, lack of training, limited guidelines and weak supplier capacity are recurring barriers. However, the strong commitment of stakeholders to sustainability, as mirrored in their recommendations, offers a foundation for institutional improvements and capacity building. Integrating sustainability into procurement is critical for achieving national strategies (Sustainable Development Goals, Vision 2041 and Bangladesh Delta Plan 2100 etc.).

5.3 Policy and Practical Recommendations

Drawing from the study's results, the subsequent recommendations are proposed for enhancing and strengthening sustainable procurement practices within the Bangladesh Bridge Authority (BBA):

Policy and Institutional Framework: To be develop and implement a formal sustainable procurement policy associated with the national SPP Policy 2024, SDGs and international frameworks (ISO 20400). Integrate explicitly sustainability into tender evaluation criteria, rather than moving beyond lowest-cost selection.

Capacity Building: Implement organized and structured training programs for BBA officials and contractors, both locally and internationally on sustainable procurement practices, whole-life costing and green construction standards.

Environmental Integration: Mandate the inclusion of environmental criteria in tender documents, such as use of eco-friendly materials, energy efficiency and carbon reduction measures. Pilot projects should be introduced to test and scale innovative green procurement approaches.

Economic Considerations: Institutionalize whole-life costing and total ownership costing approaches for ensuring procurement decisions replicate long-term value rather than immediate savings. Budget distributions should include specific provisions for sustainable substitutions.

Social Inclusion: Strengthen requirements for labor rights, fair wages and occupational health and safety. Encourage the participation of SMEs, women-owned businesses and local suppliers by streamlining bidding processes and providing capacity-building provisions.

Monitoring and Accountability: Introduce post-procurement sustainability audits, assessments and supplier compliance monitoring. Develop a sustainability reporting framework to improve transparency and accountability.

Collaboration and Partnerships: Foster greater collaboration with international developing partners (donors), universities, and research institutions for knowledge sharing, innovation, and technical support in sustainable procurement.

Contribution of BPPA: There is a enormous role by the BPPA for the procurement sector in Bangladesh as they are responsible for articulating all the standard tender document for the public procurement sector. They are also the government official for the explementary authority for the procurement connected problems and they also formulated the rules and regulation in this sector. They should apprise all the standard tender document incorporating the sustainability related issue as mandatory.

By implementing these recommendations, BBA can evolution from ad-hoc sustainability practices to a structured and institutionalized procurement framework that not only supports national development priorities but also ensures continuing ecofriendly, communal and monetary resilience.

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Appendix A: Survey Questionnaire

This survey supports a master's thesis focused on analyzing the scope and application of sustainable procurement practices within the large transportation infrastructure development sector of Bangladesh. This research is a requirement for the Master in Procurement and Supply Management program at the BRAC Institute of Governance and Development, BRAC University.

Your honest input is greatly appreciated. Rest assured that all information you provide is strictly confidential and will be utilized only for academic research.

Sustainable Procurement Questionnaire – For Bangladesh Bridge Authority (BBA) Officials

Section 1: Personal and Organizational Data

1. Name (Voluntary): _____
2. Designation: _____
3. Sections within BBA: _____
4. Number of years working in public procurement:
 - ☐ Less than 3 years
 - ☐ 3–5 years
 - ☐ More than 5 years
5. Have you received any formal training on procurement?
 - ☐ Yes
 - ☐ No
6. Are you directly involved in procurement decision-making?
 - ☐ Yes
 - ☐ No
7. Type of procurement mostly dealt with:
 - ☐ Goods
 - ☐ Works

- ☐ Services
- ☐ Consultancy

Section 2: Knowledge of SDGs and Sustainability

- Are you aware of the Sustainable Development Goals (SDGs)?
 - ☐ Yes
 - ☐ No
- Do you think procurement can contribute to achieving SDGs?
 - ☐ Yes
 - ☐ No
- Which SDG goals are most relevant to BBA's procurement activities? (Select all if applicable)
 - ☐ Goal 9: Industry, Innovation, and Infrastructure
 - ☐ Goal 11: Sustainable Cities and Communities
 - ☐ Goal 12: Responsible Consumption and Production
 - ☐ Goal 13: Climate Action
 - ☐ Others (Specify): _____
- Has BBA integrated sustainability principles in procurement guidelines?
 - ☐ Yes
 - ☐ No
 - ☐ Not Sure

Section 3: Social and Ethical Aspects of Procurement

- Does BBA consider labor rights and fair wages while awarding contracts?
 - ☐ Always
 - ☐ Sometimes
 - ☐ Rarely
 - ☐ Never
- Are suppliers evaluated for compliance with health, safety, and working conditions?

- ☐ Yes
- ☐ No

14. Are gender equality and non-discrimination considered in procurement?

- ☐ Yes
- ☐ No
- ☐ Not Applicable

15. Are local suppliers or SMEs given any preference to ensure local economic development?

- ☐ Yes
- ☐ No

Section 4: Environmental Aspects of Procurement

16. Are environmental standards included in tender documents?

- ☐ Always
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

17. Does BBA encourage procurement of eco-friendly or energy-efficient products/materials?

- ☐ Yes
- ☐ No

18. Are environmental impact assessments considered during project planning?

- ☐ Yes
- ☐ No
- ☐ Not Sure

19. Are suppliers required to comply with environmental regulations?

- ☐ Yes
- ☐ No

Section 5: Economic Aspects of Procurement

20. Is life-cycle cost (LCC) considered while selecting goods, works, or services?

- ☐ Yes
- ☐ No
- ☐ Not Sure

21. Is Total Cost of Ownership (TCO) considered more important than just the lowest price?

- ☐ Yes
- ☐ No

22. Are long-term economic impacts such as maintenance costs and durability considered?

- ☐ Yes
- ☐ No

23. Are budget constraints a barrier to implementing sustainable procurement practices?

- ☐ Yes
- ☐ No

Section 6: Procurement Life Cycle and Practices

24. In which phase do you think sustainability should be considered most?

- ☐ Planning
- ☐ Tendering
- ☐ Contract implementation
- ☐ All phases equally

25. Are sustainability criteria clearly mentioned in BBA's tender evaluation process?

- ☐ Yes
- ☐ No

26. Are suppliers oriented or trained on BBA's sustainable procurement requirements?

- ☐ Yes
- ☐ No

27. What challenges do you face in implementing sustainable procurement? (Select all that apply)

- ☐ Lack of knowledge/training
- ☐ Insufficient budget
- ☐ Supplier limitations
- ☐ Lack of clear guidelines
- ☐ Time constraints
- ☐ Others: _____

28. Do BBA review the post procurement audit by the individual consultant every year?

☐ Yes

☐ No

29. What improvements would you suggest to make procurement more sustainable at BBA?

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Questionnaire for Development Partners (Contractor/Consultant Employees) Involved in BBA Projects

Section 1: Personal and Organizational Information

1. Name (Voluntary): _____
2. Designation: _____
3. Organization/Firm Name: _____
4. Number of years working with BBA projects:
 - ☐ Less than 3 years
 - ☐ 3–5 years
 - ☐ More than 5 years
5. Type of work involved:
 - ☐ Civil works
 - ☐ Supply of materials/goods
 - ☐ Service delivery
 - ☐ Other: _____

Section 2: Awareness on Sustainable Development Goals (SDGs)

6. Are you aware of the United Nations Sustainable Development Goals (SDGs)?
 - ☐ Yes
 - ☐ No
7. Do you think your company contributes to sustainability through BBA projects?
 - ☐ Yes
 - ☐ No
8. Has your company ever participated in training on sustainable procurement?
 - ☐ Yes
 - ☐ No

Section 3: Social and Ethical Practices

9. Does your company ensure fair wages and labor rights for workers?

- ☐ Always
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

10. Do you have policies or practices to prevent child labor and forced labor?

- ☐ Yes
- ☐ No

11. Are your workers provided with adequate safety gear and working conditions?

- ☐ Yes
- ☐ No

12. Is gender equality encouraged in your recruitment and work environment?

- ☐ Yes
- ☐ No

Section 4: Environmental Considerations

13. Are you required to follow environmental guidelines during construction or delivery?

- ☐ Yes
- ☐ No

14. Does your company implement any environmental management practices (e.g., waste reduction, pollution control)?

- ☐ Yes
- ☐ No

15. Are eco-friendly or energy-efficient materials used in your work for BBA?

- ☐ Yes
- ☐ No
- ☐ Sometimes

Section 5: Economic Aspects

16. Do you consider long-term durability and maintenance cost when proposing materials or services?

- ☐ Yes
- ☐ No

17. Are cost-cutting practices affecting quality or sustainability negatively?

- ☐ Yes
- ☐ No

18. Is your company encouraged by BBA to deliver more sustainable outcomes, even at a higher upfront cost?

- ☐ Yes
- ☐ No

Section 6: Feedback and Suggestions

19. What barriers do you face in delivering sustainable outcomes in BBA projects? (Select all that apply)

- ☐ Tight budget
- ☐ Lack of awareness
- ☐ No specific requirement in tender
- ☐ Time pressure

20. Would you participate in future sustainability training or workshops if arranged by BBA?

- ☐ Yes
- ☐ No

21. What support do you need from BBA to improve sustainable performance?

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