

Report
on

EVALUATION OF LGED SUSTAINABLE PROCUREMENT FROM
RISK AND PERFORMANCE MANAGEMENT PERSPECTIVE:
A CASE STUDY ON GOODS PROCURMENT

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An internship report submitted to the BIGD in partial fulfillment of the
requirements for the degree of
Masters in Procurement and Supply Management

BRAC Institute of Government and Development (BIGD)
BRAC University
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Declaration

It is hereby declared that

1. The report submitted is my /original work while completing my Degree at Brac University.
2. The report does not contain material previously published or written by a third party where this is appropriately cited through full and accurate referencing.
3. This report does not contain material that 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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Letter of Transmittal

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Subject: Submission of Report Titled ‘Evaluation of LGED Sustainable Procurement from Risk and Performance Management Perspective: A Case Study on Goods Procurement.’

Dear Sir,

I am obliged to submit my report on ‘Evaluation of LGED Sustainable Procurement from Risk and Performance Management Perspective; A Case Study on Goods Procurement.’ as a partial requirement to achieve the degree of Masters in Procurement and Supply Management. I am grateful to have the privilege of working under your dynamic supervision and guidance.

I have made numerous attempts to ensure that the report is completed concisely and comprehensively, including all necessary data and recommendations.

I believe that the report is going to meet the requirements.

Sincerely yours,

Farhana Lima
Student ID: 22382010
BRAC University
Date: June, 2024

Non-Discloser Agreement

This agreement is made and entered into by and between the Local Government Engineering Department and the undersigned student Farhana Lima at BRAC University. As I am currently working at the organization, I have access to the Organization's information that is confidential. I agree that I will keep all the information strictly confidential and will not share it with anyone outside of the organization.

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Executive Summary

The term "Sustainable Procurement" (SP) refers to a method of procurement that takes into account the social, environmental, and economic aspects of sustainability while also promoting good governance while preserving a healthy society and environmental constraints.

Evaluating sustainable procurement from risk and performance management perspectives is crucial for ensuring business practices' longevity. By identifying potential threats like resource scarcity and ethical concerns, businesses can mitigate these risks. This holistic approach enhances operational efficiency, aligns with corporate social responsibility objectives, and contributes to long-term organizational success.

The Local Government Engineering Department (LGED) is one of the largest public sector organizations in Bangladesh, entrusted with planning and carrying out rural, urban, and small-scale water resource infrastructure development work. It also handles large-scale procurement of goods, services, and works. A case study is conducted with LGED's officials addressing three aspects of sustainability to know the current scenario of sustainable procurement practice in the public sector in LGED from risk and performance management practices.

The study shows that officials have a moderate understanding of sustainability issues but lack preparedness to implement them in procurement processes. The LGED procurement system follows the lowest price approach, but lacks a mechanism to check environmental performance. A clear commitment from government and organizations is needed, along with adequate training for procuring entities, suppliers, and beneficiaries is necessary to increase knowledge for implementing sustainable procurement by reducing risk and ensuring sustainable related performance.

Advanced research needs to be conducted to get a deeper insight into the sustainability issue concerning public procurement.

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List of Acronyms

ADB	Asian Development Bank
Addl. CE	Additional Chief Engineer
AE	Assistant Engineer
BPPA	Bangladesh Public Procurement Authority
CIPS	Chartered Institute of Procurement and Supply
CTCRP	Climate Coastal Town Climate Resilience Project
DOFP	Delegation of Financial Power
DPM	Direct Procurement Method
e-GP	Electronic Government Procurement
ICT	Information and Communication Technology
IUGIP	Improving Urban Governance and Infrastructure Project
JICA	Japan International Cooperation Agency
LGED	Local Government Engineering Department
LTM	Limited Tendering Method
OSTETM	One Stage Two Envelop Tendering Method
OTM	Open Tendering Method
PPA	Public Procurement Act
PPR	Public Procurement Rule
QCBS	Quality and Cost-Based Selection
RCIP	Rural Connectivity Improvement Project
SE	Superintending Engineer
SME	Small and Medium Enterprise
STD	Standard Tender Document
Sr.AE	Senior Assistant Engineer
TSTM	Two-Stage Tendering Method
UDCGP	Urban Development and City Governance Project
VFM	Value for Money
WB	World Bank

Glossary

Procurement

Procurement is the process of acquiring goods, services, or works from an external source. It involves activities such as sourcing, purchasing, negotiation, and contract management.

Public procurement

Public procurement refers to the process by which government agencies, public bodies, or entities purchase goods, services, or works to fulfill their needs and deliver public services.

Sustainability

Sustainability refers to the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs. In the context of business and procurement, sustainability encompasses environmental, social, and economic considerations.

Whole-life-Costing

Whole-life costing (WLC) is a comprehensive approach to evaluating the total cost of owning, operating, and maintaining an asset over its entire life cycle. This concept is particularly relevant in procurement and asset management decisions, where the initial purchase price is just one component of the total cost of ownership.

Risk Management

Risk management is the process of identifying, assessing, and mitigating risks that could potentially impact the achievement of an organization's objectives.

Chapter 1

Introduction

1.1 Background

Sustainable procurement evaluation from a risk and performance management perspective involves identifying vulnerabilities, implementing mitigation measures, and setting sustainability goals. It enhances resilience to environmental and social risks, driving positive impacts on the planet and communities.

Public procurement plays a vital role in the progress of a nation, guided by principles of responsibility, impartial competition, openness, and fairness. Nevertheless, developing nations such as Bangladesh suffer from a deficiency in comprehending and executing sustainable procurement practices. Incorporating sustainability factors into procurement procedures helps strengthen the ability to withstand environmental and social hazards. Comprehensive training for all parties involved, such as the entities responsible for purchasing, the suppliers, and the recipients, is essential in order to minimize risk and guarantee long-term effectiveness.

1.2 Objectives

The main objective of the study is to evaluate the LGED's sustainable procurement practices and its opportunities and challenges. To simplify the study process, it is divided into two sub-objectives that lead to the final objective;

1. Determine whether LGED's Procurement process follows the three aspects (1. Economic aspect, 2. Social aspect, 3. Environmental aspect) of sustainable procurement.
2. To assess LGED's sustainable Goods procurement from Risk and Performance management perspective.

1.3 Research Questions

To achieve the main research purpose, it develops two research questions for the study, as follows:

1. At LGED, what is the level of conception and preparedness for sustainable concerns in public procurement among different-level officials?
2. What is the current level of practice of sustainable procurement in the Goods procurement process of the Local Government Engineering Department (LGED)?

1.4 Scope of the Study

This study focuses on Goods procurement in LGED, a large engineering organization responsible for 122 development projects annually. It examines sustainability practices in procurement operations and the preparedness of government officials involved. The study

aims to assess 15(Fifteen) officials through interviews and questionnaires, highlighting the importance of sustainability in LGED procurement.

1.5 Limitations

The major limitations of this study are time and data constraints. There is no such information bank available for Goods procurement at LGED. There have been very few similar research studies on this topic, it was also necessary to do sufficient research and analysis within a short time frame in order to establish a good technique to meet the research objectives.

1.6 Research Methodology

1.6.1 Source of Data:

To respond to the research questions for the paper, largely primary data and some secondary data have been used. Almost all primary data has been gathered through face-to-face interviews, with others obtained by telecommunication methods such as email, telephone, and so on.

Primary data have collected from the LGED project and field level officials (such as Executive Engineers, Senior Assistant Engineers and Assistant Engineers) by face-to-face interviews, telephone interviews and email responds.

Secondary data have been acquired primarily from the related websites, such as: Bangladesh Public Procurement Authority (BPPA), LGED, World Bank (WB), Asian Development Bank (ADB), etc. Related publications and journals were also consulted.

1.6.2 Research Approach:

Research should be categories broadly in two types. Those are as follows:

- Quantitative
- Qualitative

In this research, a qualitative methodology was used to determine the scope and practices of sustainability issues in the Goods procurement of LGEDs' units, projects and Districts level. The components of the research procedure are:

- The approach used to acquire information has been an interview survey.
- The topic on which information has been collected is LGED procurement officials' preparedness and sustainability practices in public procurement of goods at the projects, units, and fields levels.
- The information also has been gathered LGED procurement officials to find sustainability related risk identification and performance.

1.6.3 Data Collection Process:

A semi-structured questionnaire response data about sustainability practice in procurement process to identify preparedness level of practice, risk identification and performance in LGED's project, unit and field level.

1.6.4 Number of Samples:

At least 15 (Fifteen) numbers samples (questionnaire) have been collected from 15 (Fifteen) procurement officials from Executive Engineer's Office, Manikganj, Khulna, Narsingdi, Narayanganj, Barguna, LGED HQ five different units of Superintending Engineer's office like ICT, Urban Management, Quality control and Planning units, and Project Director office, RCIP, UDCGP, IUIGP, Program for Supporting Rural Bridges & CTCRP for last 02 financial years from 2022 to 2023.

1.7 Research Area:

The research area is LGED head quarter ICT, Urban Management, Quality control and Planning units, five ADB, WB and JICA funded projects like Rural Connectivity Improvement Project (RCIP), Urban Development and City Governance Project (UDCGP), Improving Urban Governance and Infrastructure Project (IUGIP), Program for Supporting Rural Bridges & Climate Coastal Town Climate Resilience Project (CTCRP) and five LGED's District Level offices like (Manikganj, Khulna, Narsingdi, Narayanganj, Barguna).

Chapter 2

Literature Review

This chapter covers the theoretical aspects of sustainability, sustainable procurement, sustainable procurement related risk and strategic performance of sustainable procurement. This article examines the historical evolution of sustainability and its impact on the environment, development, and procurement. Some topics related to sustainable procurement have also been discussed. This analysis examines the notion of sustainable procurement in the public sector, and its potential drivers and restraints. I researched several books, journals, magazines, and websites to gain in-depth understanding about sustainable goods procurement. The Public Procurement Act-2006 and Public Procurement Rules-2008 have been examined for their scope of sustainable goods procurement. Here I evaluated policy documents and newspaper stories to assess the issue's current exposure.

2.1 The Concept of Sustainability

Sustainability is a multifaceted approach to ensuring the well-being of present and future generations by harmonizing human activities with the environment. It includes economic prosperity, social equity, and cultural preservation. The Sustainable Procurement Guide defines sustainability as a long-term perspective, while the Brundtland commission's report 'Our Common Future' emphasizes development without jeopardizing future generations' needs. The concept of 'Triple Bottom Line' emphasizes measuring performance in all three categories.

Triple Bottom Line (TBL) can be variously expressed through 3P as Profit (economic performance), People (social sustainability), and Planet (Environmental sustainability). Sustainability involves the careful management of resources, minimizing waste, and promoting renewable energy sources to mitigate climate change impacts. Moreover, it emphasizes the importance of social justice, advocating for fair labor practices, inclusive governance, and equitable access to education and healthcare.

2.2 Concept of Sustainable Procurement

Sustainable procurement involves strategic purchasing of goods, works, and services that prioritize environmental, social, and economic sustainability throughout their lifecycle. It includes reducing carbon emissions, minimizing waste, promoting fair labor practices, and supporting local economies. Buyers must evaluate their purchases and operations' impact on the supply chain, considering labor standards and organizational reputation. The four main aims for sustainable procurement as following:

- To reduce the negative impact of goods, works, or services throughout their lifecycle and supply chain.
- To decrease the demand for nonrenewable resources.
- To make certain that fair contract payment terms and rates are implemented and respected, while also satisfying the minimal ethical, human rights, and employment requirements.

- To promote equal treatment and diversity within the organization along the supply chain.

Sustainable procurement encompasses three dimensions e.g. economic, environmental and social aspects of procurement.

Table 1: Procurement’s potential value-adding contributions in Three Aspects of sustainability.

Profit: Adding economic value	People: Adding social value	Planet: Adding environmental value
<ul style="list-style-type: none"> • Ensured value for money. • Effective assessments of investments and resource acquisition. • Cost management and budget control. • Value addition through sourcing efficiencies supplier engagement, and quality improvement. • Ethical trade to ensure the long-term financial viability of suppliers and supply marketplaces (sustainable price, timely payment). 	<ul style="list-style-type: none"> • Promote diversification in the purchasing team and among suppliers. • Tracking supplier practices in order to ensure compliance to human rights and labor norms (child labor, forced labor, workplace safety, equal opportunity, etc.). • Influence into the health and safety of products and services (design, specification, supplier quality management) • Competitive and trustworthy trading (fair pricing, ethical use of power, and ethical business practices) • Purchasing from local SMEs. 	<ul style="list-style-type: none"> • Contributed to the design and specification of green products and services. • Seeking Green Materials and Resources • Reducing resource waste throughout the sourcing process. • Managing logistics to reduce waste, pollution, GHG emissions, and environmental effect. • Adopt the 4R policy (Reduce, Re-think, Re-use, and Recycle).

Source: Sustainability in Supply Chain (2012)

2.3 The Potential Positive aspects of Sustainable Procurement

Milton Friedman and Elaine Sternberg argue that business's social obligation is to maximize profits for shareholders. While each organization, sector, and industry have unique sustainability drivers, sustainable procurement policies and practices can offer overall benefits.

- Competitive advantage
- Reputational Benefits
- Compliance
- Supplier engagement
- Workforce Commitment
- Cost Management and Efficiency
- Supply base Commitment
- Failure cost minimization
- Supply Continuity
- Innovation

2.4 Potential Drivers for Sustainable Procurement

Drivers are forces that put pressure on the development and implementation of sustainable procurement strategies. Values and awareness, accountability, stakeholder demands, resource scarcity, financial pressures, marketing and competitive pressures, government policy, legislation, and regulation, reputational risk/opportunity, frameworks and programs, and so on are all major drivers of the focus on sustainability. Drivers can be grouped into two groups. Internal drivers are primarily from the SWOT and Porter's Five Forces models, whereas external drivers are primarily from the STEEPLE model.

2.5 Constraints to Sustainable Procurement

Organizations face constraints in sustainable procurement, including cost, stakeholder attitudes, cultural barriers, macroeconomic barriers, and policy conflicts, which are primarily resistant to change, according to the UK's Sustainable Procurement National Action Plan. These constraints are as following-

- The challenge is characterized by a lack of leadership, ownership ambiguity, inefficient incentive structures, and contradictory messages to suppliers.
- Insufficient clarity, multiple priorities, and cross-government collaboration.
- Mandatory criteria are not properly prioritized or enforced.
- Failure to communicate future market trends and manage supply chain risks.
- Insufficient helpful data, relevant training, and accountability.
- A lack to apply whole life costing (WLC) criteria, as well as the inability to offset WLC savings against short-term budgetary constraints.
- Lack of KPI setting.
- Risk aversion.
- Resistance to innovation
- Ignorance of sustainability and doubts about its benefits.

2.6 Key Performance Indicators for Sustainable Procurement

A Key Performance Indicator (KPI) alerts you to key variables in a scenario, including performance and progress towards goals and targets. KPIs are explicit statements that define appropriate or desired performance in essential success aspects. They serve as a benchmark for measuring development and performance. KPIs should be relevant, clear, unambiguous, and easily measurable at the operational level.

2.7 Risk matrix for Sustainable Procurement

A risk matrix for sustainable procurement categorizes potential risks based on severity and likelihood, with high-impact risks being the highest priority for mitigation. This approach helps organizations prioritize actions aligning their procurement practices with sustainability principles while minimizing negative impacts. The British Standards Institution Sustainable Procurement Guide emphasizes buyers must purchase goods, works, and services effectively, with minimal risk, and consider the impact on the supply chain.

Chapter 3

Sustainable Goods Procurement in Bangladesh and LGED

This chapter focuses on current practices of sustainable goods procurement in Bangladesh and LGED. Bangladesh's public procurement law has sought to ensure transparency, accountability and fairness in government procurements. Public procurement involves acquisition through contracts of goods, works, or services required by governments.

3.1 Public Procurement of Bangladesh

Public procurement will be called sustainable procurement when it integrates the requirement, specification and criteria that are compatible and in favor of the protection the environment, of social progress and in support of economic development, namely by seeking resource efficiency and improving the quality of products and services and ultimately optimizing the cost.

The sustainability issues those are addressed in the current public procurement framework in Bangladesh. At present the public procurement in Bangladesh is regulated by two principal documents which are the Public Procurement Act, 2006 and the Public Procurement Rules, 2008. Besides these BPPA has prepared a number of Standard Tender Documents (STDs) for goods & works and Standard Request for Proposals (SRFPs) for services depending upon the size or volume of procurement.

3.2 Methods of Goods Procurement

The Public Procurement Rules (PPR) of 2008 provides many procurement methods, dividing them into national and international categories. For national procurement, the preferred method is the Open Tendering Method (OTM), which assures equal opportunity for all vendors, open competition, and sufficient advertising. Under specific conditions, alternate procurement procedures to the OTM are permitted. These methods must be justified both technically and economically.

These alternative methods for goods are-

- Limited Tendering Method (LTM)
- Two Stage Tendering Method (TSTM)
- Request for Quotation Method (RFQM) and
- Direct Procurement Method (DPM).
- One Stage Two Envelop Tendering Method (OSTETM).

3.3 Sustainable Issue in Goods Procurement According to PPR-2008

The Public procurement Rule (PPR-2008) the following article relevant to sustainable issue in goods procurement:

➤ [Rule 15(2), PPR-2008]

The Procuring Entity shall take into account the following when determining the method of Procurement and consolidating of Goods packages:

- (ch) capacity of local Suppliers to supply the required quantities;
- (cha) capacity of the national industry and quality of its products;

- (ja) market conditions and expected competition;
- (ta) Risks related to supply in the local and international markets.

➤ [Rule 29(5), PPR-2008]

Procuring Entities shall, where possible, prepare the specifications in close cooperation with the concerned user or beneficiary of the Goods or Works or Service.

➤ [Rule 83(1)(e), PPR-2008]

The Tender Document may allow for a domestic preference as defined in Schedule II. It to provide local manufacturers, Suppliers and Contractors with a price advantage over their international competitors for the purpose of promoting domestic products or industries.

3.4 Sustainable Procurement Activities in LGED

LGED, a public sector engineering organization, follows the Country Procurement System, guided by the Public Procurement Acts (PPA, 2006), Public Procurement Rules (PPR, 2008), and Electronic Government Procurement Guidelines, 2011. With over 800 procurement entities, including district Executive Engineers, Upazila Engineers, Project Directors, and unit heads, LGED has 11184 regular employees. Procurement is processed through the e-Government Procurement system, with most procurements processed through the national e-GP Portal. The annual procurement plan is prepared, approved, and published online, with proper publication in national dailies, e-GP Portal, LGED website, and Central Procurement Unit website.

LGED has already developed some important initiatives regarding sustainability issues described as follows:

- Effectives Trainings on Public Procurement, Contract Management, e-GP, e-CMS, FIDIC Documents on procurement, Capacity Development, Gender disparities etc. for the officials to prepare them for the procurement activities.
- Risk Management initiatives like introduce risk management guideline book, Training and Risk assessment to reduce the risks.
- Asset Management activities related to maximum use of current asset and further scopes for reuse, recycle and disposal.

Chapter 4

Findings and Analysis for this Study

This Chapter represents an analysis of data acquired through a questionnaire survey of respondents from different units, projects, and districts offices and provides detailed information from the survey. A semi-structured questionnaire was developed, with a number of questions covering not just the three pillars of sustainable procurement, but also information about the organization's goods purchase. There are four sections to the questionnaire. The questions in Part-A serve as a prerequisite for the respondents. Part-B discusses preparedness to practice sustainability in procurement activities. Part-C discusses the extent to which their jurisdiction's procurement procedure incorporates sustainable practices and Part-D contains risk and related questions. All the section questionnaires were finding the performance of LGED's Goods procurement on Sustainable perspective.

4.1 Part A: LGED's Procurement Practices in Different Level

From Part-A the collected data shows the percentages of procurement in LGED's different level. Figure 3 illustrates procurement of works, goods and services of LGED's Unit, Project and District level.

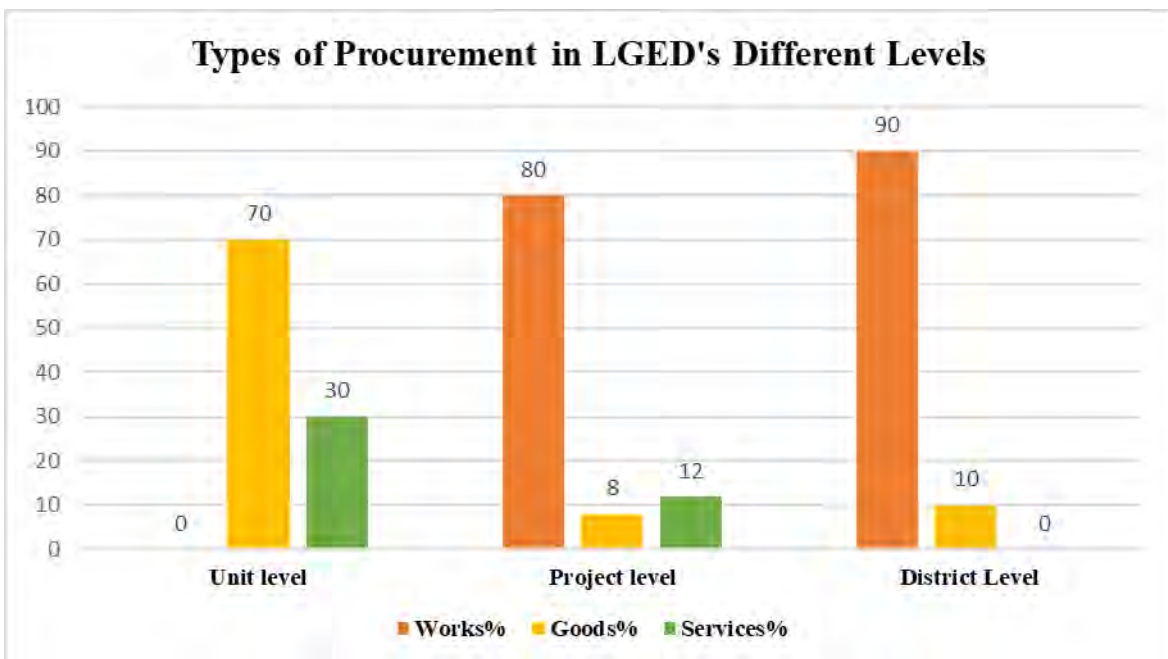


Figure 1: Different types of procurement in LGED's different level.

LGED's has different level officials who have vast experience in Procurement. There was total 15 samples collected from procurement professionals which consisted 07 Executive Engineers, 05 Senior Assistant Engineer, 03 Assistant Engineer from Units, Projects and District level in the sample.

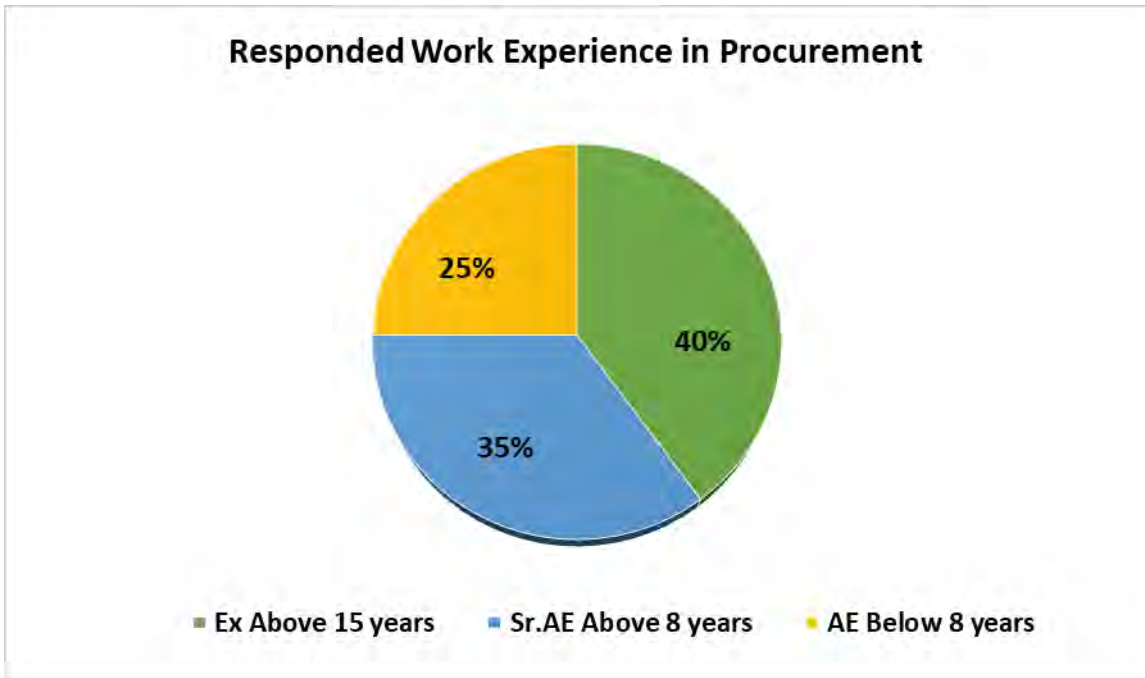


Figure 2: Work experience at the professional level of the respondents from LGED.

Every Year LGED has procured Works and Goods through e-GP system. Average works contacts in e-GP system are above 25000 nos and average Goods contracts in e-GP system are 66nos. Figure 5 illustrates financial year 2017-18 to 2022-23 approximately 6 years Goods contracts in e-GP system.

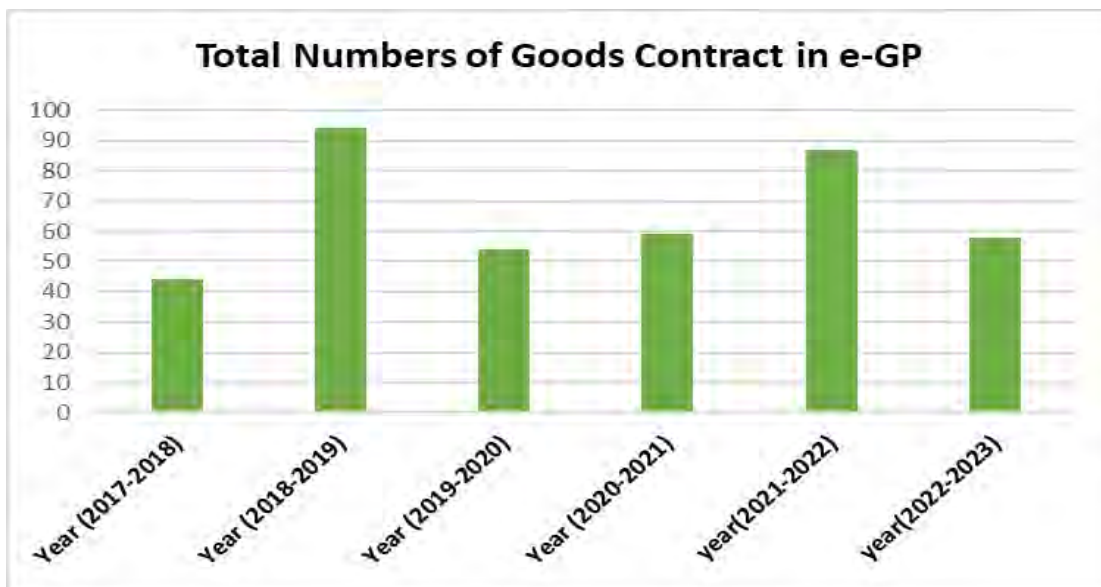


Figure 3: Financial year wise Goods Contract In e-GP system.

4.2 Part B: LGED's Readiness for Sustainable Goods Procurement.

In part B, a well-organized inquiry was posed to evaluate their level of preparedness in relation to sustainable purchasing of goods. The researchers made numerous significant discoveries on this issue. In order to successfully implement sustainable procurement at the unit, project, and district levels, it is necessary for them to receive enough training in this area. The stakeholders in Bangladesh have a reasonable comprehension of the importance of sustainability concerns in the public procurement process. This includes the economic, social, and environmental aspects of sustainability. The overall consensus is that PPA-06 and PPR-08 have moderately handled three crucial elements of sustainability in the procurement of commodities. LGED's schedule of rates also endeavors to integrate sustainability considerations, allowing them to implement sustainable purchasing in their workplace. The procurement standards of ABD, WB, and JICA partially address three aspects of sustainability in the acquisition of commodities.

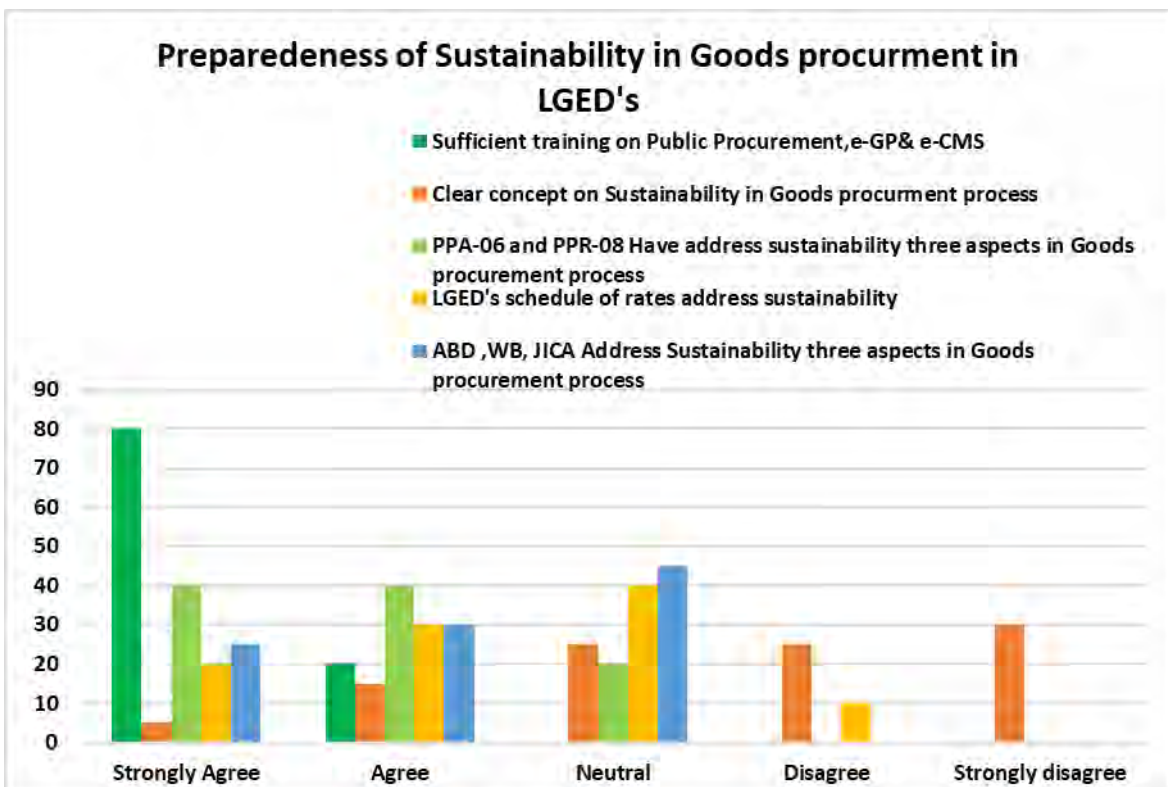


Figure 4: Respondent's feedback on the preparedness of sustainability in goods procurement.

4.3 Part C: Sustainability Practices in LGED's Goods Procurement

At Part- C and the third section of the questionnaire assessed the respondents' views on sustainability practices in procurement, which were categorized into three aspects.

First one was Economic aspects of sustainability. The respondents were queried about several aspects of the economic dimension of sustainable procurement. The figure 7 shows that 80 percent respondents strongly agree that:

- 1) Procurement demand should make more transparent through e-procurement.
- 2) The PPR and financial procedures should promote whole life costing in order to takes sustainability criteria into account rather than lowest price in all tender.
- 3) Procurement demand should make more transparent through e-procurement.

70 percent respondents Neutral in the following statements:

- 1) Suppliers' fair and viable margins should be ensured for achieving quality delivery and effective supply management.
- 2) Local economic development can be enhanced through procuring locally grown goods and to encourage first-tier contractors to make use of SME or small firms as their sub-contractors.

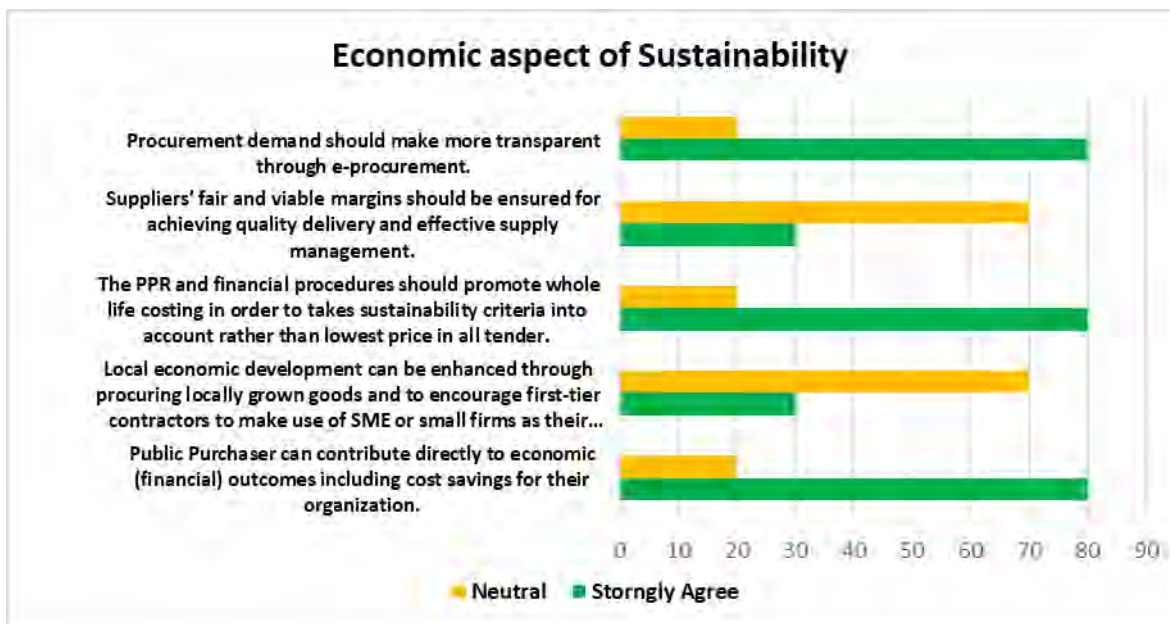


Figure 5: Economic aspect of Sustainability.

Second one is Environmental aspect of sustainability. Figure 8 illustrates that 80 percent Respondents were strongly agree with:

- 1) Climate change impacts (e.g. greenhouse gas emissions) associated with the production, distribution, use and disposal of the goods needs to be addressed through public procurement.
- 2) Key environmental issues such as energy use, water use and quality, hazardous waste, noise, impact on natural habitat etc. might be considered over the lifecycle of the goods
- 3) Public procurement should consider that purchase products should be durable, recyclable, reusable, and readily biodegradable, energy efficient, nontoxic and environment friendly.

However, 40 percent of the respondents had a neutral opinion regarding the promotion of "Sustainable Design" as a means to reduce future resource consumption and encourage the use of recycled content in goods production. Goods manufacture can promote sustainable design, which aims to decrease future resource consumption and utilize recycled elements.

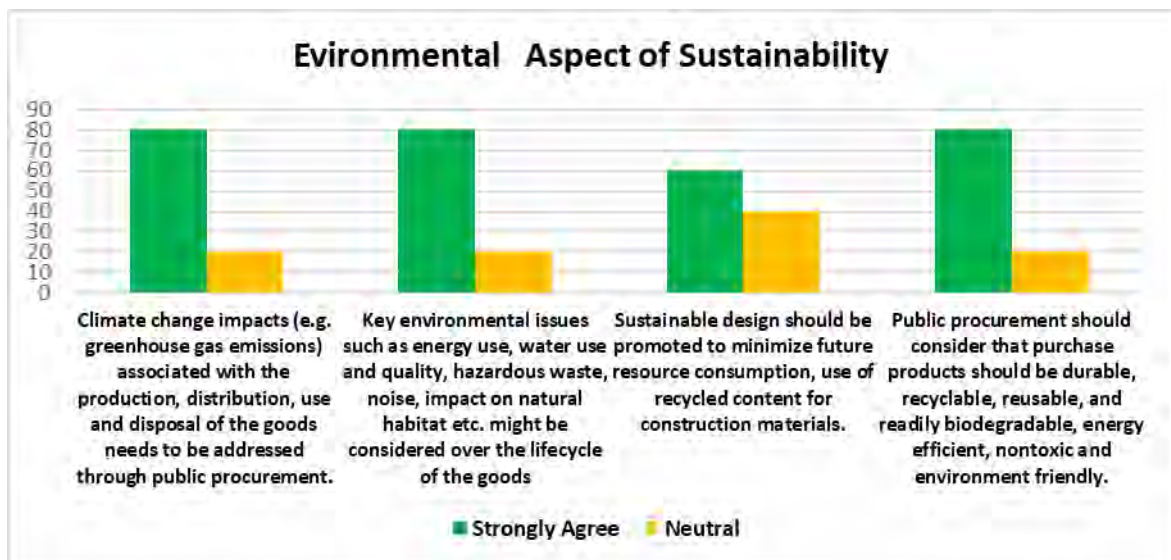


Figure 6: Environmental Aspect of Sustainability.

Third one is Social aspect of sustainability. The respondents were asked a number of questions about the social aspect of sustainable procurement. Figure 9 shows that:

- 1) 100 percent Respondents were strongly agreed that “Public procurement should ensure diversity and equality; encouraging a diverse base of suppliers (e.g. minority or under-represented suppliers).”
- 2) 70 percent respondents were neutral at this statement “Public sector purchaser should consider ‘greatest common good’ and give opportunity to contract with social enterprises and the voluntary sector for their capacity building. And 30 percent respondents were strongly agreed on that statement.
- 3) 90 percent people were strongly agreed at the statement “Public procurement should act as a mechanism of social inclusion support local sustainability – building and maintaining strong communities and enhancing wellbeing of local residents by generating local employment.” And 10 percent respondents were neutral on that statement.

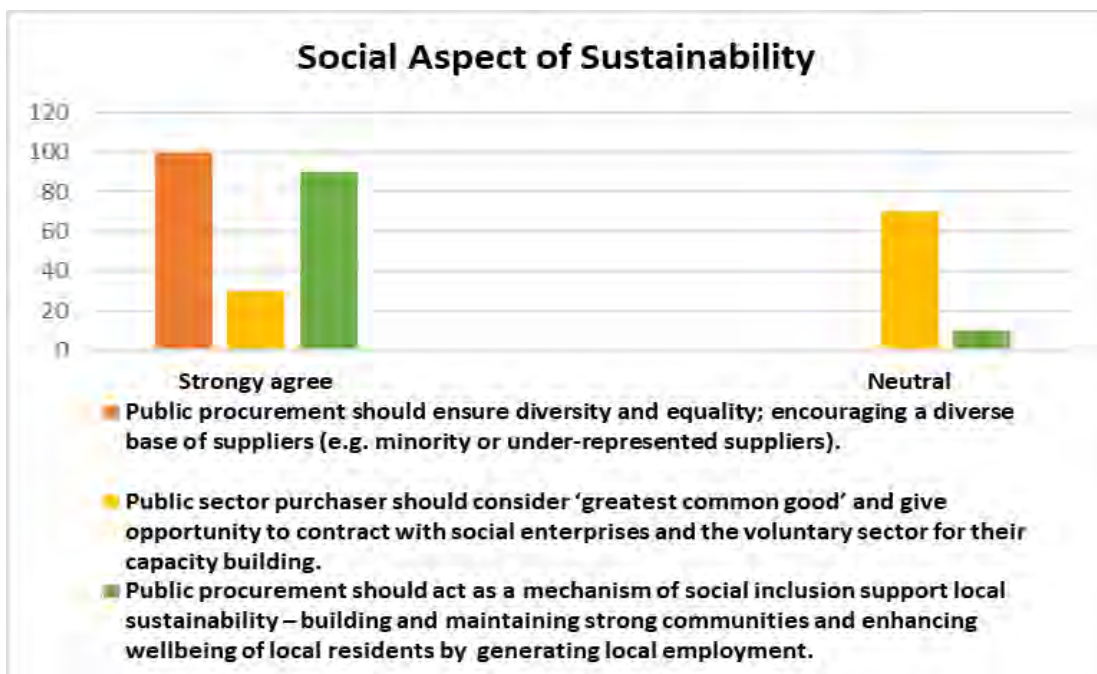


Figure 7: Social Aspect of Sustainability

4.4 Part D: Proposing LGED's Strategy for Sustainable Procurement of Goods Using a Risk Management Matrix and Key Performance Indicators (KPIs).

4.4.1 Risk Management Matrix for LGED's sustainable Goods Procurement

The identification of risks is a crucial aspect in sustainable procurement. The evaluation of sustainable goods procurement involves the identification and mitigation of risks related to environmental, social, and economic aspects. Studies indicate that integrating risk management strategies into procurement procedures improves the ability to withstand supply chain interruptions, regulatory non-compliance, and damage to reputation. Part-D included a specific inquiry aimed at determining the potential risks associated with procuring goods from a sustainable standpoint. A risk matrix has been developed for LGED's goods procurement based on sustainability criteria, as indicated by the questionnaire.

Table 2: Risk Management Matrix for Sustainable Procurement of Goods

Risk ID	Risk Description	Likelihood	Impact	Risk Level	Mitigation Strategy	Contingency Plan
R01	Suppliers unable to meet standards of sustainability.	Medium	High	High	Develop and implement a comprehensive supplier evaluation process that incorporates rigorous sustainability standards.	Identify alternative suppliers with better sustainability practices
R02	Non-compliance with environmental regulations by suppliers.	Low	High	Medium	Conduct regular audits and inspections of supplier facilities.	Develop contingency plans for sourcing from compliant suppliers if non-compliance is identified.
R03	Supply chain disruptions due to labor disputes or unethical labor practices.	High	High	High	Ensure suppliers adhere to labor standards and ethical labor practices through supplier code of conduct.	Diversify supplier base to reduce dependency on single sources. Require suppliers to provide detailed information on supply chain practices

Risk ID	Risk Description	Likelihood	Impact	Risk Level	Mitigation Strategy	Contingency Plan
R04	Poor product quality or performance due to unsustainable sourcing practices.	Medium	Medium	Medium	Enforce comprehensive quality control measures at each step of the procurement process.	Need to Supplier development and Training. Develop alternative sourcing options in case of quality issues.
R05	Fluctuations in the prices of goods obtained from sustainable sources.	Medium	Medium	Medium	Establish long-term contracts with suppliers to lock in prices or enhance Supplier and buyer collaboration or partnership and also sourcing alternative suppliers.	Utilize hedging strategies to mitigate price fluctuations.
R06	Absence adequate supplier transparency on supply chain processes.	High		High	Require suppliers to provide detailed information on supply chain practices and conduct regular audits.	Develop contingency plans for sourcing from more transparent suppliers.

4.4.2 The Key Performance Indicators (KPIs) for LGED's Sustainable Goods Procurement

KPI provides valuable insights into a scenario's performance, indicating progress towards goals and aiming, serving as benchmarks for evaluation in both qualitative and quantitative terms. LGED can be used the following KPIs to evaluate the effectiveness of sustainable risk management in goods contracts:

1. Supplier Compliance Rate:

- Percentage of suppliers meeting sustainability standards and regulatory requirements.
- Formula: $(\text{Number of compliant suppliers} / \text{Total number of suppliers}) * 100\%$

2. Sustainability Risk Identification Effectiveness:

- Percentage of identified sustainability risks within the goods procurement process.
- Formula: $(\text{Number of identified risks} / \text{Total number of potential risks}) * 100\%$

3. Supplier Performance Score:

- Composite score assessing suppliers' sustainability performance, quality, and reliability.
- Weighted average of performance metrics such as compliance, transparency, and quality.

4. Environmental Compliance Rate:

- Percentage of goods suppliers complying with environmental regulations.
- Formula: $(\text{Number of compliant suppliers} / \text{Total number of suppliers}) * 100\%$

5. Number of Supply Chain Disruptions Avoided:

- Count of supply chain disruptions prevented or mitigated through proactive risk management measures.

6. Cost of Non-Compliance

- Monetary value of fines, penalties, or losses incurred due to supplier non-compliance with sustainability standards.
- Formula: Total cost of non-compliance incidents.

Chapter 5

Conclusion and Recommendation

5.1 Conclusions

The chapter offers a thorough examination of the research conducted on non-economic elements in public procurement. It specifically addresses the research questions presented in Chapter One and draws conclusions based on the findings.

- a) Although there may be some lack of understanding or awareness of sustainability issues, most officials in Bangladesh acknowledge the significance of sustainable practices in public procurement. However, it is possible that their existing knowledge may not be adequate.
- b) The amount of readiness exhibited by LGED officials in incorporating sustainability into their procurement of Goods is inadequate. They need sufficient training in sustainable goods procurement, holding only a general awareness without a clear and comprehensive view of the numerous components of sustainability.
- c) A study on procurement experts found they strictly adhere to PPR-2008 requirements, including whole life costing, despite considering price as a significant factor in supplier selection, highlighting the importance of sustainability in procurement processes.
- d) Various programs can help individuals overcome challenges and obstacles, enhancing their chances of success.
- e) To achieve sustainability at unit, project, and field level; effective implementation and execution require official support from the highest levels of government, despite good awareness and preparedness.

5.2 Recommendations

- 5.2.1. Sustainable procurement, a comprehensive approach that considers social economic and environmental aspects, is a crucial aspect of modern procurement. Historically, green procurement exclusively emphasizing the ecological facets. It involves analyzing the necessity of products or services, considering environmental and social consequences, and promoting supplier accountability.
- 5.2.2. It is necessary to establish sustainable standards in the procurement process for LGED's goods procurement. This should apply not only to donor-funded projects but also to other projects.
- 5.2.3. Capacity development programs might be strengthened to increase awareness among suppliers and beneficiaries.
- 5.2.4. Strong support from top management is essential for officers to successfully adopt sustainability practices, especially with regards to policy, legal matters, and compliance.
- 5.2.5. Support should be given to initiatives aimed at promoting progress in sustainability.
- 5.2.6. Sustainable Public Procurement Policy of Bangladesh (SSP) in draft version should be implement in Goods procurement of LGED.
- 5.2.7. Chapter 4 discussed and developed Risk identification, Risk matrix and KPI's that should be implement in LGED's Goods procurement practices to evaluate it and improve it in a proper way.

Appendix- A

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Appendix -B

Questionnaire Section

Dear Sir,

This is a survey questionnaire for conducting research on **“Evaluation of LGED Sustainable Procurement from Risk and Performance Management Perspective: A Case Study on Goods Procurement”**. It is a prerequisite for me to complete the "Masters in Procurement and Supply Management (MPSM)" program at BRAC University's BRAC Institute of Governance and Development (BIGD). The researcher appreciates your sincere response to the questionnaire. The researcher assures that the information and comments you provide will remain confidential and be utilized solely for academic purposes.

Would you please manage some time to review the questions and provide responses based on what you understand and believe?

Thank you and Best Regards.

PART A: GENERAL INFORMATION & CONCEPTION

SUSTAINABILITY

1. **Name of Respondent:**
2. **Designation & Organization:**
3. **Age:**
4. **Gender:**
5. **Education level:**
6. **Years of Experiences in procurement activities:**
7. **Did you get training or familiar with the following concepts? (Please Tick mark)**
 - a. Public Procurement Yes/No
 - b. Sustainable Public Procurement..... Yes/No
 - c. Both a & b..... Yes/No
9. **Please mention type of procurement you are involved for your project? (Total 100%)**
 - a. Works.....%
 - b. Goods.....%
 - c. Services.....%

**10. Nature of Goods Procurement you are accounted for your Project/ work place:
(Total 100%)**

- a. Equipment..... %
- b. Computer and computer related accessories..... %
- c. Vehicle..... %
- d. Furniture..... %
- e. Software..... %
- f. Stationary..... %
- g. Electronics goods..... %
- h. other goods..... %

PART B: PREPAREDNESS ABOUT SUSTAINABILITY

11. Please indicate your degree of agreement for the following statements (Strongly agree = 5, Agree = 4, Neutral = 3, Disagree = 2, strongly disagree = 1)

Statement	Score (5 to 1)
a) Sustainable Procurement is A process whereby organizations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole-life basis in terms of generating benefits not only to the organization, but also to society and the economy, whilst minimizing damage to the environment.	

12. Name the key stakeholders of your Project?

.....

13. Please indicate your degree of agreement for the following statements (Strongly agree = 5, Agree = 4, Neutral = 3, Disagree = 2, strongly disagree = 1)

Statement	Score (5 to 1)
a) I have enough training on (Public procurement, e-GP and e-CMS) & I am capable to conduct Public Procurement activity in this project/in my work station.	
b) I have a clear conception on sustainability in procurement process properly.	
c) I consider that PPA-06 & PPR-08 have addressed sustainability three aspects, environmental, and social in Goods procurement process.	
d) I think that the itemized specification of LGED schedule of rates is addressing sustainability in procurement duly.	
e) I Consider that WB, ADB and JICA have address sustainability three aspects in Goods procurement process.	

PART C: SUSTAINABILITY PRACTICE IN PROCUREMENT

14. Which is the most important aspect you should take into account when considering your project's sustainability from the perspective of purchasing goods?

- a) Economic
- b) Environmental
- c) Social
- d) all of the above.

C1: ECONOMIC ASPECT OF SUSTAINABILITY

15. Indicate your degree of agreement with the following statements. (Strongly agree = 5; Agree=4; Neutral=3; Disagree=2; strongly disagree=1)

Statement	Score (5 to 1)
a) Public Purchaser can contribute directly to economic (financial) outcomes including cost savings for their organization.	
b) Local economic development can be enhanced through procuring locally grown goods and to encourage first-tier contractors to make use of SME or small firms as their sub-contractors.	
c) The PPR and financial procedures should promote whole life costing in order to takes sustainability criteria into account rather than lowest price in all tender.	
d) Suppliers' fair and viable margins should be ensured for achieving quality delivery and effective supply management.	
e) Procurement demand should make more transparent through E-procurement.	

C2: ENVIRONMENTAL ASPECT OF SUSTAINABILITY

16. Indicate your degree of agreement with the following statements. (Strongly agree = 5; Agree=4; Neutral=3; Disagree=2; strongly disagree=1)

Statement	Score (5 to 1)
a) Climate change impacts (e.g. greenhouse gas emissions) associated with the production, distribution, use and disposal of the goods needs to be addressed through public procurement.	
b) Key environmental issues such as energy use, water use and quality, hazardous waste, noise, impact on natural habitat etc. might be considered over the lifecycle of the goods.	
c) Sustainable design should be promoted to minimize future resource consumption, use of recycled content for construction materials.	
d) Public procurement should consider that purchase products should be durable, recyclable, reusable, and readily biodegradable, energy efficient, nontoxic and environment friendly.	

C3: SOCIAL ASPECTS OF SUSTAINABILITY

17. Indicate your degree of agreement with the following statements. (Strongly agree = 5; Agree=4; Neutral=3; Disagree=2; strongly disagree=1)

Statement	Score (5 to 1)
a) Public procurement should ensure diversity and equality; encouraging a diverse base of suppliers (e.g. minority or under-represented suppliers).	
b) Public sector purchaser should consider 'greatest common good' and give opportunity to contract with social enterprises and the voluntary sector for their capacity building.	
c) Public procurement should act as a mechanism of social inclusion support local sustainability – building and maintaining strong communities and enhancing wellbeing of local residents by generating local employment.	

PART D: SUSTAINABLE GOODS PROCUREMENT ASSOCIATED WITH RISK AND PERFORMANCE MANAGEMENT

18. Please mention appropriate answer of the following question. (Please tick mark appropriate one)

a) Do you researching the supplier's background and reviewing any available documentation related to their sustainability initiatives and looking for reports, certifications from reputable third-party organizations such as ISO 14001 (environmental management), Fair Trade, or LEED (Leadership in Energy and Environmental Design), and policies as evidence of their commitment to sustainability?	yes	Partial	No
b) Do you Developed a questionnaire to gather specific information about their sustainability practices and asked about their environmental management systems, use of renewable resources, waste management practices, and social responsibility initiatives?	yes	Partial	No
c) Do you conduct frequent site visits or audits to observe manufacturers operations firsthand and look for evidence of sustainable practices such as energy-efficient equipment, waste reduction measures, and compliance with environmental regulations?	yes	Partial	No
d) Does your office assess the transparency of their supply chain and determine if they have systems in place to trace the origin of materials and ensure ethical sourcing practices, such as avoiding conflict minerals or promoting fair	yes	Partial	No

labor practices?			
d) Does your office evaluate their performance metrics related to sustainability through key indicators such as carbon footprint, water usage, waste generation, and recycling rates and compare these metrics to industry benchmarks to gauge their performance?	yes	Partial	No
e) Does your office build strong relationships with suppliers based on trust and collaboration to encourage greater transparency between suppliers and procurement entities?	yes	Partial	No
f) Do you conduct regular risk assessments to identify potential risks and vulnerabilities within the supply chain, such as human rights violations, environmental degradation, and supply chain disruptions and also develop strategies and mitigation plans to address identified risks and prevent negative impacts?	yes	Partial	No
g) To identify relevant risks and prioritize actions, does the procurement process engage with key stakeholders, including suppliers, customers, employees, investors, NGOs, and local communities, to understand their concerns and perspectives on sustainability issues within the supply chain.	yes	Partial	No
h) Does the procuring entity clearly communicate sustainability expectations and requirements to suppliers through contracts, agreements, and supplier codes of conduct?	yes	Partial	No
i) In your office do the purchaser and supplier jointly address sustainability challenges and compliance with relevant regulations and standards?	yes	Partial	No
j) Do you implement corrective actions and remediation plans to address non-compliance issues, working collaboratively with suppliers to resolve issues and prevent recurrence?	yes	Partial	No

Thank you very much for your cordial co-operation.