

Report On

**SCOPE AND PRACTICES OF SUSTAINABLE PROCUREMENT IN
EDUCATION ENGINEERING DEPARTMENT (EED), BANGLADESH:
A CASE STUDY ON
SIRAJGANJ DISTRICT**

By

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

BRAC Institute of Government and Development (BIGD)
Brac University
September, 2024

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Declaration

I hereby declare that:

1. The internship report submitted is my own original work completed during my degree program at BRAC University.
2. The report does not include any material previously published or written by a third party, except where such material is properly cited with full and accurate references.
3. The report has not been accepted or submitted for any other degree or diploma at any university or institution.
4. I have acknowledged all primary sources of assistance in the completion of this report.

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Letter of Transmittal

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Subject: Submission of Report titled “Scope and Practices of Sustainable Procurement in EED, Bangladesh: A Case Study on Sirajganj District”

Dear Sir,

I am pleased to submit my report titled “Scope and Practices of Sustainable Procurement in the Education Engineering Department (EED), Bangladesh: A Case Study on Sirajganj District” as part of the requirements for the Master of Science degree in Procurement and Supply Chain Management. This report presents an analysis of sustainability practices throughout various phases of the procurement process.

During the preparation of this report, I have gained significant insights and applied the knowledge and skills learned during my studies. I have made every effort to incorporate relevant data collected from procurement professionals at the EED, with a specific focus on public procurement practices in Sirajganj District. The aim of this report is to present well-researched and comprehensive information to provide a thorough understanding of the subject.

I trust that this report meets the required standards and offers valuable insights from an organizational perspective. I hope the research, methodology, and findings will be useful in advancing the understanding of sustainable procurement practices. I am deeply grateful for your guidance and supervision throughout this process.

I look forward to your feedback and hope the report meets your expectations.

Sincerely,

Md. Habibur Rahman
Student ID 22282027
BIGD, BRAC University
Date: September 20, 2024

Non-Disclosure Agreement

This Non-Disclosure Agreement (the "Agreement") is made and entered into between the Education Engineering Department (EED) and the undersigned student, Md. Habibur Rahman, a student at BRAC University. As part of my engagement with the organization, I acknowledge that I may have access to confidential and proprietary information belonging to the Education Engineering Department.

I hereby agree to maintain the confidentiality of all such information and undertake not to disclose, share, or use it for any purpose outside of the organization without prior written consent from the Education Engineering Department.

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Acknowledgements

First and foremost, I would like to express my sincere gratitude to ALLAH for granting me the strength and ability to successfully complete this dissertation.

I am deeply thankful to my academic supervisor, Md Hasan Maksud Chowdhury, Assistant Professor at BRAC Business School, BRAC University, for his constant motivation, insightful guidance, and patient supervision throughout the course of this research. His support has been invaluable to the completion of this work.

I also owe my heartfelt thanks to my workplace supervisor, Mr. Samir Kumar Rajapk Das, Superintending Engineer at EED, for his unwavering support and guidance during the course of this report.

Additionally, I am grateful to the BRAC Institute of Governance and Development, BRAC University, for providing the necessary facilities and cooperation that facilitated this study.

A special thanks to the officers and staff of EED, Sirajganj District, for their assistance in data collection and providing the relevant information for this report.

Finally, I would like to express my deepest appreciation to my family members and well-wishers for their constant encouragement, inspiration, and support throughout the entire research process. Their belief in me was a constant source of motivation.

Executive Summary

Sustainable Public Procurement (SPP) is a process in which governments strive to achieve a balanced approach to the three pillars of sustainable development—economic, social, and environmental—while procuring goods, services, or works throughout the project lifecycle. In Bangladesh, the Education Engineering Department (EED) is one of the largest public sector organizations responsible for planning and implementing educational infrastructure development programs. As a major procurer of goods, works, and services, EED operates on a large scale.

This case study focuses on the procurement practices of EED at the district level, specifically in Sirajganj District, addressing the three pillars of sustainability. The study aims to assess the current state of procurement practices, identify opportunities, and highlight barriers to integrating sustainability into public sector procurement. Interviews with EED officials revealed that while the preparedness of field-level professionals is generally satisfactory, various challenges hinder the effective implementation of sustainable procurement practices. The findings suggest that for sustainable development to be realized at the district level, a clear and formal commitment from both the central government and district-level authorities is essential. Such a commitment should be communicated through proper channels to ensure alignment and accountability. In addition, raising awareness among contractors, local leaders, and community beneficiaries regarding public procurement processes is critical to easing the transition towards sustainable procurement.

The study also identifies several key barriers to sustainable procurement, including financial constraints, difficulties in land acquisition, and bureaucratic hurdles. Addressing these obstacles could create a more conducive environment for adopting sustainability in procurement practices at the field level. Furthermore, additional research is needed to gain deeper insights into the sustainability challenges associated with public procurement at the district level.

In conclusion, sustainability should be treated as a strategic priority in public procurement. To successfully integrate sustainability into field-level procurement, a well-structured plan, skilled personnel, a supportive organizational culture, and a shift in mind set are required.

Keywords: Sustainability, Procurement, Preparedness, Opportunities, Barriers, Beneficiaries.

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List of Acronyms

Addl.CE	Additional Chief Engineer
AE	Assistant Engineer
CE	Chief Engineer
CIPS	Chartered Institute of Procurement and supply
CPTU	Central Procurement Technical Unit
DPM	Direct Procurement Method
EGP	Electronic Government Procurement
EE	Executive Engineer
EMS	Environmental Management System
GCC	General Conditions of Contracts
ICT	Information and communication Technology
IT	Information Technology
IWRM	Integrated Water Resources Management
KPI	Key Performance Indicators
LGED	Local Government Engineering Department
LTM	Limited Tendering Method
MLSS	Member of Lower Subordinate Staff
OSTETM	One Stage Two Envelop Tendering Method
OTM	Open Tendering Method PPA Public Procurement Act
PPR	Public Procurement Rule
PEC	Proposal Evaluation Committee
SAE	Sub-Assistant Engineer
SE	Superintending Engineer
SP	Sustainable Procurement
SPP	Sustainable Public Procurement
STD	Standard Tender Document
SRFPs	Standard Request for Proposals
TSTM	Two Stage Tendering Method
TEC	Tender Evaluation Committee
UK	United Kingdom
WLC	Whole Life Costing

Glossary

Procurement	Procurement is the method of discovering and agreeing to terms and purchasing goods, services, or other works from an external source, often with the use of a tendering or competitive bidding process.
Public procurement	When a government agency buys goods or services through the procurement by utilizing public money, it is referred to as public procurement.
Whole-life-Costing	Whole-life cost is the total cost of ownership over the life of an asset that takes account of the cost of a product or service over its life, from determining the need for it through to its eventual disposal.
Sustainability	Sustainability means meeting our own needs without compromising the ability of future generations to meet their own needs. It is a societal goal that broadly aims for humans to safely co-exist on planet Earth over a long time.

Sustainable procurement

In order to provide value for money, government departments must use sustainable procurement practices to satisfy their needs for goods, services, works, and utilities. It tackles the life cycle principles of fairness for sustainable development, resulting in larger societies and a sustainable environment across time and space. The requirement for sustainable environmental performance in the construction industry has led to the adoption of well-established policies like green public procurement (GPP). "A process whereby public authorities seek to procure goods, services, and works with a reduced environmental impact throughout their life cycle when compared to goods, services, and works with the same primary function that would otherwise be procured(SCM) & revenue budget through different ministries.

CHAPTER - 01

1.0 Introduction/Back ground of the Study

Sustainability refers to the ability of an activity or process to be sustained or continued at a consistent level over time. In today's context, it emphasizes the importance of ensuring that current actions do not undermine the well-being or quality of life in the future. Sustainable procurement (SP) is a procurement strategy that incorporates the principles of sustainable development, such as fostering a fair and healthy society, operating within environmental boundaries, and promoting strong governance.

The Chartered Institute of Procurement and Supply (CIPS) defines sustainable procurement as a process by which organizations meet their needs for goods, services, works, and utilities in a manner that delivers value for money over the entire life cycle of the product or service. This approach not only benefits the organization but also positively impacts society and the economy, while minimizing environmental harm.

Through sustainable procurement, organizations leverage their purchasing power to send a market signal in favor of sustainability. The choice of goods, works, and services is based on three main aspects:

Economic Aspects: Securing value for money, effective investment appraisal, capital purchasing, cost management, budgetary control, added value, ethical trading, sustainable pricing, ethical tendering, and timely payments.

Environmental Aspects: Green procurement, considering the environmental impacts of products or services throughout their entire lifecycle.

Social Aspects: Social factors that encompass human rights, labor conditions, health and well-being, access to social resources, quality of life, fair and ethical trading practices, and community welfare.

Public procurement primarily involves the responsible spending of taxpayer money on goods, services, and works for the benefit of the citizens and taxpayers of a country. It is guided by four key principles: transparency, accountability, equity, and fair competition for all tenderers.

Sustainability is a growing global concern, with nations around the world striving to incorporate sustainability into every procurement process. However, it is unfortunate that awareness and the implementation of sustainable procurement practices remain relatively low in many developing countries, including Bangladesh. Despite the increasing emphasis on environmental considerations in procurement, significant challenges remain in effectively adopting sustainable practices within the public sector in these regions.

1.1 Objectives of the Research

The primary objective of this research is to gain a deeper understanding of how environmental, social, and economic considerations can be integrated and promoted through public procurement. This study will also explore the possibilities and challenges associated with incorporating sustainability criteria into the public procurement process. Specifically, the research aims to identify the opportunities and barriers to adopting sustainability practices at the field level within the Education Engineering Department (EED). A key goal of the study is to assess the level of preparedness of EED officials in Sirajganj District regarding the incorporation of sustainability into their public procurement processes. This includes evaluating their understanding of sustainability issues and assessing the current level of sustainability practices implemented within their procurement activities. To make the study more manageable, the main objective is divided into followings sub-objectives:

1. **To examine the current scope of sustainable procurement practices** implemented by the EED in Sirajganj.
2. **To assess the effectiveness and challenges** faced by EED in implementing sustainable procurement in this district.
3. **To identify the social, environmental, and economic impacts** of sustainable procurement in the context of EED in Sirajganj.
4. **To recommend strategies** for improving sustainable procurement practices in this sector.

1.2 Research Questions

To achieve the main objective of the research, the study is guided by following research questions:

What is the level of the current scope of sustainable procurement practices implemented by the EED in Sirajganj?

What is the effectiveness and challenges faced by EED in implementing sustainable procurement in this district?

What is impacts on sustainable procurement regarding the social, environmental, and economic aspect in the context of EED in Sirajganj?

What is recommendation strategies for improving sustainable procurement practices in this sector.in the context of EED in Sirajganj?

This paper is centred around these two key research questions and aims to address them through appropriate methodologies.

1.3 Scope of the Study

The primary focus of this case study is on public sector procurement, specifically within the Education Engineering Department (EED) of Bangladesh, with a particular emphasis on the Sirajganj District. The study aims to assess the preparedness of EED officials and the extent of sustainability practices in the public procurement process at the field level.

Data for this research was gathered through interviews with EED officials from Sirajganj District using a detailed questionnaire. The study concentrates on public procurement activities within the Education Engineering Department, which is one of the largest public sector engineering agencies in Bangladesh. EED implements over 50 development projects annually related to the infrastructure of educational institutions, which forms a significant portion of the country's public procurement activities. These projects involve procurement management, monitoring, and the implementation of e-GP systems.

Although research on sustainability practices in field-level procurement activities at EED is limited, understanding the preparedness and current state of sustainability practices is crucial. Therefore, the scope of this study is confined to assessing the sustainability practices of at least 12 government officials involved in public procurement in Sirajganj District over the past three financial years (2020-2023).

1.4 Limitations

Several limitations exist in the context of this study:

Time Constraint

One of the main limitations is the time constraint. Due to limited time, the study focuses solely on Sirajganj District. Expanding the research to cover multiple districts or the entire country would provide a more comprehensive understanding of sustainable procurement practices in EED at the national level.

Limited Access to Data

The data collected for this study is limited to responses from only 10 officials involved in procurement activities over the last three financial years. Although efforts were made to obtain real-time and accurate responses through interviews, the sample size and time frame could have been broader to improve the depth and generalizability of the findings.

Lack of Previous Studies

There is a scarcity of prior research on sustainable procurement within the context of EED, which made it challenging to establish a well-defined methodology within the limited time frame. This lack of precedent meant that the study required more in-depth exploration and analysis to develop a relevant and effective research framework.

CHAPTER 02

LITERATURE REVIEW

2.0 Introduction

This chapter provides an overview of the theoretical concepts surrounding sustainability, sustainable development, and sustainable procurement. It explores the chronological emergence of sustainability and its interconnections with the environment, development, and procurement practices. The chapter also covers key concepts relevant to sustainable procurement, offering a comprehensive review of existing literature.

The research begins with a critical examination of the concept of sustainable development, the role of sustainable procurement in the public sector, and the various potential drivers and constraints of implementing sustainability within procurement practices. Key references for this study include books, journals, publications, and websites to gain an in-depth understanding of sustainable procurement. Furthermore, the **Public Procurement Act-2006** and **Public Procurement Rules-2008** play a significant role in this study, as the public procurement system in Bangladesh is strongly regulated by these frameworks. In addition, policy documents and newspaper articles are reviewed to examine the current discourse surrounding sustainable procurement in the country.

2.1 The Emerging Concept of Sustainability

Sustainability refers to the capacity of an activity or process to be sustained over time at a consistent level. In its modern context, it focuses on ensuring that current actions do not undermine the ability of future generations to meet their own needs or harm the quality of life. The Sustainable Procurement Guide (BIP, 2003) by the British Standards Institution defines sustainability as a long-term approach to decision-making, ensuring that fulfilling present needs does not limit future generations' ability to meet their needs.

The concept of sustainability first gained widespread attention in 1972 at the United Nations Conference on the Human Environment. During this time, growing concerns about the environmental consequences of industrial development, including deforestation, pollution, and the use of toxic pesticides, sparked global dialogue. The conference became a platform for debating whether economic development or environmental protection should be prioritized.

Following this, major environmental disasters such as the Exxon Valdez oil spill and the Chernobyl nuclear disaster intensified both public and political awareness of environmental issues. Simultaneously, social justice movements, particularly the struggle against apartheid in South Africa, also attracted global attention, further broadening the scope of sustainability discussions.

Through continued dialogue, the United Nations recognized the vital link between economic development and environmental protection. Economic development plays a crucial role in improving living standards, enhancing working conditions, and promoting investments in environmental conservation. However, attempts to improve human well-being at the expense of the environment would ultimately be detrimental, as resource depletion, environmental degradation, and pollution would undermine the quality of life and future prospects for upcoming generations.

In response, the UN established a think tank, chaired by Gro Harlem Brundtland, tasked with developing strategies for achieving sustained economic growth without compromising environmental integrity. The 1987 Brundtland Commission report, *Our Common Future*, defined sustainable development as:

"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

This definition was later refined by the 1992 Rio Declaration on Environment and Development, which expanded the concept to include social justice and human rights issues such as peace, poverty, child labor, women's rights, and the rights of indigenous communities. The three pillars of sustainability—economic, environmental, and social—were established, creating a comprehensive approach to development that has since been widely adopted.

In 1997, John Elkington introduced the "Triple Bottom Line" (TBL), emphasizing the need for nations and organizations to assess their performance across three dimensions: economic, environmental, and social. This evolved into the "3Ps" framework—Profit, People, and Planet—capturing the core principles of sustainability.

In recent years, these three sustainability dimensions have been incorporated into various frameworks for business ethics and corporate social responsibility (CSR). These frameworks now address a broader range of issues, including corporate governance, fair trade, labor relations, diversity, transparency, and emerging environmental challenges such as climate change, renewable energy, pollution, and genetic modification.

The **Triple Bottom Line (TBL)** framework, often expressed through 3Ps (Profit, People, Planet) or 3Es (Economics, Environment, and Equity), has become a widely recognized tool for assessing sustainability. It can also be viewed through the lens of **Resources** (the wise use and management of economic and natural resources) and **Respect** (for people and other living beings).

The introduction of the **Triple Bottom Line (TBL)** concept in 1997 underscored the importance of organizations measuring their performance in these three areas (economic, environmental, and social). The TBL approach highlights the idea that businesses and governments must balance these dimensions to achieve true sustainability, ensuring that their actions today do not compromise the well-being of future generations.



Figure-1: Triple Bottom Line

People: This dimension focuses on the social aspects of sustainability, emphasizing fairness, justice, and societal well-being. It involves ensuring that business practices benefit society at large, covering areas such as labor practices, human rights, community engagement, and the well-being of stakeholders. Companies that prioritize the "People" aspect of the **Triple Bottom Line (TBL)** invest in their workforce, support local communities, and promote social development, contributing to broader social equity.

Planet: This dimension addresses environmental sustainability, focusing on the protection and preservation of natural resources and ecosystems. It includes efforts to reduce pollution, conserve energy, manage waste, promote biodiversity, and combat climate change. Businesses that prioritize the "Planet" aspect of TBL adopt eco-friendly practices, implement sustainable resource management, and work toward minimizing their environmental impact through cleaner operations and technologies.

Profit: This dimension represents the economic sustainability of an organization, ensuring that it remains financially viable in the long term. It involves generating profits while considering the needs of all stakeholders—including shareholders, employees, customers, and the wider community. Companies focusing on the "Profit" aspect of TBL aim for economic success through ethical, transparent, and sustainable business practices that benefit both the organization and society.

The **TBL framework** encourages organizations to look beyond short-term financial gains and evaluate the broader impacts of their actions on society and the environment. It emphasizes that economic success should not come at the expense of social or environmental well-being. This holistic approach to decision-making advocates for a balance among economic, social, and environmental considerations, ensuring long-term value creation for all stakeholders and the planet.

2.2 The Concept of Sustainable Development

Sustainable development is defined as development that satisfies present needs without jeopardizing the ability of future generations to meet their own needs. The concept gained widespread attention during the 1972 United Nations Conference on the Human Environment, where growing concerns about the environmental impacts of industrial development—such as deforestation, pollution, and the use of toxic pesticides—were raised. This led to a debate on whether economic growth should take priority over environmental protection.

Subsequent environmental disasters, such as the Chernobyl nuclear accident and major oil spills, underscored the critical need to balance industrial development with environmental conservation. At the same time, social injustices—particularly issues like apartheid in South Africa—highlighted the importance of ensuring that development is both inclusive and equitable.

Through ongoing discussions, world leaders recognized that economic development and environmental protection are interconnected. While economic growth is vital for improving living standards and supporting environmental conservation, unchecked growth can harm the environment and undermine the well-being of future generations.

In 1987, the Brundtland Commission introduced the concept of sustainable development in its report *Our Common Future*, defining it as:

"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

The 1992 Earth Summit in Rio de Janeiro further refined this concept by incorporating social justice issues, such as poverty, child labor, gender inequality, and peace, into the framework for sustainable development. These discussions solidified the understanding that sustainable development must address economic, environmental, and social dimensions.

2.3 The Concept of Sustainable Consumption and Production

Sustainable Consumption and Production (SCP) involves ensuring that both the demand for goods and services (consumption) and their supply (production) are sustainable in terms of economic, environmental, and social factors. For an industrialized society to be sustainable, it

must work toward achieving sustainability in both consumption (demand-side processes) and production (supply-side processes).

Production encompasses a wide range of activities involved in turning raw materials and resources into finished goods and services. These activities include product and service design, procurement and supply, logistics, resource consumption, manufacturing, waste management, technology management, and human resource management. Each of these processes can have negative environmental and social impacts, and the goal is to minimize these impacts.

Some key sustainability concerns in the production process include:

Minimizing environmental pollution and degradation

Managing waste from production, packaging, and disposal

Reducing greenhouse gas emissions and carbon footprints

Minimizing the use of non-renewable resources

Designing environmentally friendly products

Implementing clean production technologies

Reducing the negative impacts on local communities and social infrastructures

Ensuring ethical labor practices and responsible treatment of workers

Building sustainable production capacity

Sustainable consumption is closely tied to sustainable production, as producers are also consumers of materials, labor, and products. Sustainable production practices contribute to sustainable consumption by reducing resource consumption and supporting recycling and responsible end-of-life disposal.

Some examples of sustainable consumption practices include:

Purchasing energy-efficient equipment and appliances

Reducing unnecessary transportation, fuel usage, and carbon emissions

Buying re-usable, recyclable, or biodegradable products

Opting for local, seasonal products

Compensating for carbon emissions through carbon offsetting

Choosing ethically sourced and produced goods

Supporting local, small, and diverse suppliers

Reducing overall consumption of resources

In this framework, sustainable production and consumption are interconnected, as sustainable practices in both areas work together to reduce environmental impacts and support long-term social and economic well-being.

2.4 The Concept of Sustainable Procurement

Sustainable Procurement, as defined by the Chartered Institute of Procurement and Supply (CIPS), 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, generating benefits not only for the organization but also for society and the economy, while minimizing damage to the environment." This definition highlights that sustainable procurement considers economic, environmental, and social criteria in the procurement process. It underscores the importance of making purchasing decisions that balance long-term value with positive impacts on all stakeholders, including the environment and society.

The UK Sustainable Procurement Task Force, which coined the term "Sustainable Procurement" in its report *Procuring the Future*, shares a similar definition. According to this body, sustainable procurement is about meeting the needs of organizations in a way that provides long-term value, benefits to society, and economic growth, while minimizing harm to the environment.

In essence, sustainable procurement is an approach that integrates economic, environmental, and social sustainability into the procurement decision-making process. To ensure this, organizations must address the following key questions:

Does the procurement process meet the current needs of the organization and its stakeholders without compromising the ability to meet future needs?

Does procurement protect or enhance the economic security of the organization without causing negative environmental or social impacts?

Does procurement align with the organization's corporate social responsibility (CSR) values and comply with international ethical standards?

The British Standards Institution (BSI) Sustainable Procurement Guide further emphasizes that purchasing goods, works, and services efficiently with minimal risk, and achieving the best possible value, should remain central to the buyer's role. However, it also stresses that buyers must consider the broader impacts of their procurement decisions on the supply chain. For example, while reducing lead times and purchase costs may seem like good business

strategies, they should not come at the expense of labor standards further down the supply chain, or risk harming the organization's reputation due to exploitation.

The Sustainable Procurement Guide outlines four primary goals for sustainable procurement:

Minimize Negative Impacts: Reduce the environmental, social, and economic impacts of goods, works, or services throughout their lifecycle and across the entire supply chain.

Reduce Demand for Non-Renewable Resources: Limit the use of resources that cannot be replenished, promoting the use of sustainable and renewable materials.

Ensure Fair Contract Terms: Guarantee that fair contract prices and terms are applied, respecting at least the minimum ethical, human rights, and employment standards in procurement agreements.

Promote Diversity and Equality: Support diversity and equality within the organization and across the supply chain, ensuring inclusive practices and opportunities for all.

2.4.1: Procurement's Potential Value-Adding Contributions to Sustainability

This table (to be inserted in the study) would highlight the specific value-added contributions of procurement in each area of sustainability. For instance, in the economic area, procurement can contribute to cost savings and value creation, while in the environmental area, it can reduce resource consumption and carbon emissions. In the social domain, procurement can promote fairness, ethical practices, and community engagement.

In conclusion, sustainable procurement is about making informed and responsible purchasing decisions that ensure long-term positive impacts, not just for the organization but for society and the environment as well. By integrating sustainability into procurement processes, organizations can contribute to the broader goals of sustainable development while meeting their operational needs.

Table 2.4.1- Three Aspects of Sustainability

Profit: adding economic value	- Securing Value for money. - Effective investment appraisal and capital purchasing - Cost management and budgetary control. - Added value through sourcing efficiencies, supplier involvement, and quality improvement - Ethical trading to support the long-term financial viability of suppliers and supply markets (sustainable pricing, payment on time).
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Planet: adding environmental value	- Input to design & specification of green product & services - Sourcing of green material & resources - Reducing waste of resources throughout the sourcing cycle. - Managing logistics to minimize waste, pollution, GHG emission & environmental impact. - Support 4R policy (Reduce, Re-think, Re-use, Recycle)
People: adding social value	- Encouraging diversity in the purchasing team & among suppliers. - Monitoring supplier practices to ensure observance of human right & labour standards (child labour, force labour, workplace safety, equal opportunity etc.) - Input to health & safety of products & services (design, specification, supplier quality management) - Fair & ethical trading (fair pricing, ethical use of power, ethical business practice) - Sourcing from local SME.

Source: Sustainability in Supply Chain (2012)

2.5 Potential Benefits of Sustainable Procurement

Milton Friedman and Elaine Sternberg famously argued that the primary responsibility of businesses is to maximize profit for shareholders. However, when sustainability is prioritized in procurement, it can have profound benefits for society. Buyers hold significant influence over both what is produced and how it is made, as they set the specifications for the products they purchase. Each time a buyer makes a purchasing decision, they are effectively "voting" for the business practices of the manufacturer. If buyers purchase from companies that exploit workers or harm the environment, they indirectly encourage these unethical and unsustainable practices to continue. This must be avoided.

Given that governments often possess substantial purchasing power, they have a unique opportunity to support companies that produce sustainable products. Therefore, public procurement must take sustainability into account, ensuring that development goals are achieved while minimizing harm to society and the environment. Sustainable procurement offers long-term benefits in economic, social, and environmental terms, including:

Compliance with Laws and Regulations: Adhering to legal and regulatory frameworks that impose social and environmental responsibilities, which can result in reputational, financial, and operational benefits for the organization.

Value for Money: Ensuring that procurement decisions are based on the total lifecycle cost of products, which leads to better long-term value and cost savings.

Improved Ethical Standards: Encouraging suppliers and contractors to adhere to higher ethical standards, fostering responsibility and transparency across the supply chain.

Better Working Conditions: Promoting improvements in labor standards, such as health and safety, fair wages, and compliance with employment laws.

Support for Disadvantaged Groups: Promoting local suppliers and supporting niche markets, which can improve the social and economic standing of disadvantaged groups.

Reduction in Emissions and Waste: Implementing practices that minimize harmful emissions and reduce waste generation in the delivery of goods, services, and works.

Improved Environmental Quality: Contributing to the preservation of air, water, and soil quality through the adoption of sustainable procurement practices.

Additional benefits include:

Minimized Business Risk: Sustainable procurement helps reduce risks associated with environmental and social impacts, which are discussed in more detail later.

Cost Savings: Adopting a whole-life costing approach, which includes reducing resource use, reusing and recycling materials, and decreasing landfill waste.

Enhanced Corporate Image: Demonstrating the company's commitment to sustainability improves its reputation and strengthens its competitive position in the marketplace.

Securing Supply Chains: Ensuring a stable supply of goods and services, particularly in light of increasing environmental legislation and sustainable sourcing requirements.

Improved Resource Efficiency: Optimizing the use of resources to reduce waste and enhance operational efficiency.

Through sustainable procurement, organizations can not only achieve their immediate goals but also contribute positively to broader social, environmental, and economic outcomes.

2.6 Potential Drivers for Sustainable Procurement

As we have already discussed, the growing emphasis on sustainability is driven by various factors, including increased awareness of the negative impacts of global supply chains, heightened public and political pressure for corporate accountability, and the recognition of

the risks associated with unsustainable practices. These drivers create a push for organizations to develop and implement sustainable procurement strategies. The key drivers for sustainability include values and awareness, accountability, stakeholder pressures, resource scarcity, financial considerations, marketing and competitive pressures, government policies and regulations, reputational risks and opportunities, and frameworks and initiatives.

Drivers can be categorized into internal and external factors:

Internal Drivers of Sustainability:

Corporate Vision and Strategy: Alignment of sustainability goals with the organization's broader mission, vision, and objectives, ensuring that sustainability is integrated into procurement decisions.

Internal Stakeholder Demand: The increasing demand for sustainable practices from internal stakeholders, such as employees, managers, investors, and supply chain partners.

Senior Management Support: Visionary leadership from senior management, with champions for sustainability who drive the integration of sustainability in procurement processes.

Business Case for Sustainability: The development of a strong business case that demonstrates the long-term financial and operational benefits of sustainable procurement.

Corporate Social Responsibility (CSR) Policies: Established CSR objectives that promote sustainable practices, encouraging the organization to adopt more responsible procurement strategies.

Accountability and Performance Management: Mechanisms that ensure sustainability goals are met, with regular performance evaluations and progress tracking.

Risk Management: Robust processes for managing risks related to reputational damage, supply chain disruptions, and environmental impacts resulting from unsustainable practices.

Resource Availability: Sufficient resources (e.g., skilled labor, finance, and capacity) to implement sustainable procurement practices and the ability to innovate and manage supply chains effectively.

External Drivers of Sustainability:

Socio-Cultural Drivers: Social attitudes and values that increase pressure from the media, labor unions, consumers, and the general public for companies to adopt sustainable practices and respect social justice.

Technological Drivers: Innovations in sustainable technologies, including new products, materials, and processes, along with increasing market adoption of these technologies.

Conversely, the exposure of unsustainable technologies and practices, such as resource waste, further drives the need for change.

Environmental Drivers: Concerns around the depletion of natural resources, rising energy costs, climate change, biodiversity loss, pollution, and the increasing importance of environmental management standards. National and international agreements and targets, such as the Paris Agreement, also drive sustainable practices.

Economic Drivers: Increasing competition, economic pressure, and changes in market demand (e.g., the shift from unsustainable to sustainable products and services) are influencing the adoption of sustainable procurement. Factors like labor costs, tax regimes, and exchange rates also play a role.

Political Drivers: Government policies, international trade organizations' rules, environmental regulations, incentives and penalties, and the role of governments as buyers and employers all impact procurement decisions.

Legal Drivers: Legislation and regulatory frameworks, both at the national and international levels, require companies to adhere to sustainability standards. This includes laws related to waste management, pollution, emissions, human rights, and consumer protection.

Ethical Drivers: Ethical considerations, such as corporate governance, fair trade practices, human and labor rights, and adherence to industry codes of ethics, are increasing the pressure on organizations to engage in sustainable procurement.

2.7 Key Issues to Consider in Sustainable Procurement

The UK Sustainable Procurement Task Force adopted the CIPS concept of sustainable procurement, which emphasizes the importance of integrating sustainability into the procurement process. According to the task force, sustainable procurement involves acquiring goods, services, works, and utilities in a way that maximizes value for money over the lifecycle of the products while benefiting society, the economy, and minimizing environmental harm.

Some critical issues to consider in sustainable procurement include:

Human Rights: Ensuring that human rights are respected throughout the supply chain.

Legal Compliance: Ensuring compliance with local, national, and international laws.

Labor Laws: Adhering to international labor standards, such as those outlined by the International Labour Organization (ILO).

Child Labor: Preventing the use of child labor in the supply chain.

Quality and Diversity: Ensuring quality standards are met and promoting diversity among suppliers.

Staff Well-being: Ensuring the sustainable well-being of all employees and personnel, including health and safety standards.

Disciplinary Practices: Implementing clear disciplinary procedures to maintain ethical conduct in the organization.

Freedom of Association: Ensuring that workers have the freedom to associate and organize without fear of retaliation.

2.7 Basic issues to be considered of Sustainable Procurement

The UK Sustainable Procurement Task force put out the CIPS concept of sustainable procurement. According to the taskforce, sustainable procurement is a method by which organizations or departments satisfy their needs for goods, services, works, and utilities in a way that maximizes value for money over the course of their entire life, benefiting not only the organizations but also society and the economy while minimizing environmental harm^[5]. Thus it is a strategy that considers the sustainability of the economy, environment and social systems while making purchasing decisions.

Ensuring human rights.

Compliance with local,national and international laws.

Compliance with labour laws(ILO).

Avoidance to child labour.

Ensure to quality and diversity.

Sustainable well-being of all staff and personnel.

Maintain disciplinary actions.

Give freedom of different association such as labour,officers and other levels.



Fig-2: Basic of Sustainable public procurement

Overall, the concept of sustainability, as encapsulated by the Triple Bottom Line or 3Ps, encourages a holistic approach to decision-making, where economic, social, and environmental considerations are balanced for the long-term benefit of all stakeholders and the planet.

2.8 Potential Benefits of Sustainable Procurement

Milton Friedman and Elaine Sternberg famously argued that the primary responsibility of business is to maximize profit, ensuring returns for shareholders. However, if sustainability is incorporated into procurement, society stands to benefit significantly. Buyers wield considerable power over what is produced and how it is made, as they determine the specifications of the products they purchase. Essentially, every purchase decision is a "vote" for the production practices of the supplier. When buyers choose products from companies that are ethically irresponsible—such as those that exploit workers or harm the environment—they are inadvertently encouraging these unsustainable practices to persist. This must be avoided.

Given the significant purchasing power of governments, they have a unique opportunity to support companies that produce sustainable products. Public procurement, therefore, must take sustainability into account to ensure that development objectives are met while minimizing harm to both society and the environment. The long-term benefits of sustainable procurement are evident across economic, social, and environmental dimensions:

Compliance with Laws and Regulations: Adhering to social and environmental regulations provides organizations with reputational, financial, and operational benefits.

Whole-Life Value for Money: By considering the total lifecycle cost of products, sustainable procurement ensures better long-term value and savings.

Improvement of Supplier Ethics: Sustainable procurement promotes ethical behavior by encouraging suppliers and contractors to take responsibility for their actions.

Enhanced Working Conditions: By prioritizing suppliers that uphold labor standards, including health and safety, fair wages, and minimum labor standards, procurement contributes to better working conditions.

Support for Disadvantaged Groups: Favoring local suppliers and niche markets helps improve the economic conditions of disadvantaged groups, particularly within the local economy.

Reduction of Harmful Emissions and Waste: Sustainable procurement minimizes emissions and waste generation through the delivery of goods and services, promoting environmental responsibility.

Improvement of Environmental Quality: Sustainable procurement practices contribute to the betterment of air, water, and soil quality, supporting overall environmental health.

Additional benefits of sustainable procurement include:

Minimizing Business Risk: Sustainable procurement helps mitigate environmental, social, and operational risks, as discussed in more detail later.

Cost Savings: By adopting a whole-life costing approach, organizations can save money through reduced resource use, increased reuse, recycling, and reduced waste sent to landfills.

Enhanced Corporate Reputation: Demonstrating a commitment to sustainability strengthens the organization's image, adding value to its brand and attracting like-minded stakeholders.

Securing Supply Chains: Sustainable procurement ensures a steady supply of goods and services in compliance with increasingly stringent environmental legislation.

Resource Efficiency: Reducing waste and improving resource use efficiency are central to sustainable procurement, which contributes to more efficient business operations.

By embedding sustainability in procurement practices, organizations can not only meet immediate goals but also contribute to broader, long-term societal, environmental, and economic benefits.

2.9 Barriers to Sustainable Procurement

Barriers to sustainable procurement are factors that hinder progress toward adopting sustainable practices. These barriers are often rooted in resistance to change and may arise from various sources, including cost concerns, stakeholder attitudes, cultural obstacles, macroeconomic factors, and policy conflicts. The UK's Sustainable Procurement National Action Plan highlights several key internal barriers that public sector organizations face in implementing sustainable procurement:

1. **Lack of Leadership and Commitment:** Insufficient leadership, unclear ownership of responsibilities, poor incentive structures, and mixed messages sent to suppliers can undermine sustainability efforts.
2. **Lack of Clarity and Cross-Government Coordination:** The proliferation of priorities, lack of clarity on goals, and insufficient buy-in from various government departments can hinder the effectiveness of sustainable procurement initiatives.
3. **Failure to Prioritize and Enforce Standards:** A lack of mandatory standards or inadequate enforcement of sustainability guidelines can result in inconsistent application of sustainability principles.
4. **Failure to Signal Market Trends:** Not adequately signaling future sustainability trends or risks to suppliers can create uncertainty, reducing their willingness to invest in sustainable practices.
5. **Lack of Information and Training:** A lack of accessible information, training programs, and accountability structures can make it difficult for procurement teams to implement sustainable practices effectively.
6. **Ignorance of Sustainability or Misunderstanding of Its Benefits:** A lack of awareness or skepticism regarding the benefits of sustainability can lead to resistance within organizations.
7. **Failure to Apply Whole-Life Costing:** When organizations fail to apply whole-life costing (WLC) principles, they may overlook the long-term savings that could arise from sustainable procurement. Short-term budget constraints can also prevent the adoption of WLC practices.
8. **Resistance to Innovation:** Procurement teams may be hesitant to embrace innovative supplier solutions or technologies that could improve sustainability but require an initial investment.

9. **Risk Aversion:** A fear of delivering poor value to taxpayers or stakeholders may lead to hesitation in adopting sustainable procurement practices that seem more costly or unproven.

2.9 Key Performance Indicators for Sustainable Procurement

Key Performance Indicators (KPIs) are essential metrics that help organizations track progress toward achieving sustainability goals. These indicators provide insights into performance and highlight areas requiring attention. KPIs for sustainable procurement are clear, measurable, and directly relevant to an organization's sustainability objectives. They should be specific, easy to understand, and capable of consistent measurement at the operational level.

Some key attributes of KPIs include:

- **Clarity:** KPIs should be unambiguous, clearly defining what is to be measured and how it aligns with the sustainability goals.
- **Relevance:** KPIs must be directly relevant to the organization's sustainability objectives and procurement processes.
- **Measurability:** KPIs should be measurable and capable of consistent tracking over time to gauge performance and progress.

Below is an example of **Table 2.9.1**, which highlights potential KPIs for sustainable procurement, helping organizations assess how effectively they are meeting sustainability targets in procurement activities.

Table 2.9.1- KPIs for Sustainable Procurement

Sustainability areas	KPIs for sustainability from Procurement perspective
Economic Sustainability	• Cost (procurement costs as a percentage of spend) or cost savings (annual cost savings as a percentage of spend) • Productivity (cost per procurement cycle, time taken per procurement cycle) • Supplier leverage (percentage of suppliers providing 80% or more of his annual spend) • Customer satisfaction (percentage of deliveries received on time in full)

Environmental Sustainability	• Percentage reduction in energy & water consumption. • Percentage reduction in GHG emissions. • Percentage reduction in supplier's water and energy usage. • Percentage purchase of recycled materials. • Volume of waste to landfill (buyer and supplier). • Percentage of spend with suppliers who report on environmental impacts, or operate Environmental Management System (EMS).
Social and Ethical Sustainability	• Diversity and equal opportunity among procurement staff. • Training/ development opportunity. • Compliance with workplace law and standards, ethical sourcing and trading standards/ objectives. • Reduction in health and safety incidents, grievance proceedings etc. • Supplier diversity (number of women-owned, minority owned, small suppliers). • Percentage supply chain monitored and managed for compliance. • Supply chain compliance (e.g. year on year reduction in incidents of non-compliance).

Source: Sustainability in Supply Chain

2.10 Sustainability Considerations in Specification

The key sustainability considerations during the need identification and specification stage can be categorized into economic, social, ethical, and environmental factors. These considerations ensure that procurement decisions are aligned with sustainability objectives, promoting long-term benefits for organizations, society, and the environment.

Economic Considerations:

- **Is there a genuine business need** for the product or service? Can this need be fulfilled with fewer resources, lower costs, or more efficient processes?
- **Can the need be met in a way** that improves operational efficiency or leverages emerging technologies effectively?
- **Will the item support or enhance** the end product or service, improving beneficiary satisfaction?

Social and Ethical Considerations:

- **Does the specification exclude small or diverse suppliers** unfairly, or does it encourage inclusivity in the supply chain?
- **Does the specification promote ethical and fair trade practices**, ensuring that human rights, labor standards, and worker health and safety are upheld throughout the supply chain?
- **Does the item** contribute positively or negatively to the social responsibility of the end product or service, considering its production and consumption?
- **Are alternative, more socially responsible solutions available** that could better address these social aims?

Environmental Considerations:

- **Does the specification require minimum environmental performance standards** in terms of the product or service?
- **Does it encourage the development of environmental management systems** and sustainability practices within the supply chain?
- **Have the life cycle impacts** of the product been considered in the specification, ensuring long-term environmental sustainability?

2.11 Sustainable Pricing and Payment

Sustainable pricing is closely tied to social and economic sustainability. Pricing strategies that focus solely on minimizing costs can lead to squeezed profit margins for suppliers, disproportionately affecting the most vulnerable workers in the supply chain, often resulting in inadequate wages and poor working conditions. A sustainable price for both buyers and suppliers should be structured as follows:

Sustainable Price for the Buyer (Purchasing Price):

- **Affordable for the purchaser**, allowing them to control production costs and generate a reasonable profit.
- **Fair and reasonable**, representing value for money considering the full package of benefits received.
- **Competitive**, providing a cost or quality advantage over competitors, thus enabling the buyer to compete effectively in the market.
- **Supports the security and sustainability of the supply chain**, ensuring suppliers can pay living wages, maintain good working conditions, and invest in sustainability improvements.

Sustainable Price for the Supplier (Sales Price):

- **Market-driven**, meaning it is a price that the market or buyer is willing to pay.
- **Competitive**, allowing the seller to win business against other suppliers.
- **Sufficient to cover costs and generate a healthy profit**, enabling the supplier to sustain their business, pay living wages, maintain good working conditions, and invest in long-term sustainability improvements.

A sustainable pricing model ensures that both buyers and suppliers are incentivized to support the broader social, economic, and environmental sustainability goals of their respective industries.

2.12 Sustainability and Public Procurement

Environmental issues have been a global concern for decades, but the scope of focus has broadened to include sustainability as a key priority. While many developed countries have integrated sustainable procurement practices into their public sector, awareness and implementation remain comparatively low in developing nations.

Public procurement refers to how government organizations spend taxpayers' money on goods, services, and works. It is guided by the principles of **transparency**, **accountability**, and **value for money**. Since the government is often the largest buyer in any country, it has the power to influence the private sector's behavior through its purchasing decisions.

The public has a particular interest in ensuring that procurement processes are sustainable, as the government is accountable for using public funds effectively to maximize societal benefits. This shift is driven by growing public pressure for greater corporate responsibility and sustainability in government spending. As a result, sustainable procurement is often seen as a **public sector initiative** but is slowly gaining traction in the private sector due to increasing legal, regulatory, and commercial pressures.

In essence, sustainable procurement introduces a new dimension for procurement professionals, who traditionally focused on price, quality, and time. Through sustainable procurement, organizations are not only addressing their own needs but also considering the broader impact on society, the environment, and the economy. Public procurement, representing a significant portion of national economies, serves as a powerful policy tool to drive **positive change**. It can encourage the development of **innovative and sustainable products**, stimulate local economies, and promote responsible production practices that benefit society at large.

By integrating sustainability into public procurement, governments can lead by example and use their purchasing power to foster long-term societal benefits, including innovation, environmental protection, and social equity.

2.13 Framework for Developing a Sustainability Policy

A straightforward process for developing a sustainability policy can be outlined in the following steps:

- **Define the vision** for sustainable procurement and how it aligns with the organization's overall sustainability and CSR strategies, if applicable.
- **Identify and prioritize key issues** and processes to focus on initially. This should align with the organization's mission, vision, and strategies, as well as critical success factors for procurement and relevant sustainability issues and trends.
- **Identify opportunities for improvement** in priority areas based on risk assessments, benchmarking, supply chain analysis, and gap analysis.
- **Assess available resources** for implementing improvements, including information systems, management frameworks, budget constraints, and the capabilities of human resources.
- **Define the key principles** of sustainable procurement, outlining the procurement function's values and commitments regarding economic, social, and environmental sustainability. These should be aligned with corporate sustainability and CSR objectives.
- **Set measurable objectives and targets** for improving the identified priority areas, ensuring realistic timelines, budget estimates, and systems for tracking progress and reviews.
- **Clarify roles and responsibilities** for communicating, implementing, operating, monitoring, and reviewing the policy.
- **Consult on the draft policy** and obtain approval for the final version.
- **Resource the policy** by planning staff and supplier training, communication strategies, tools, procedures, and other resources to support effective policy deployment.
- **Document, launch, and integrate the policy** into the organization, ensuring adherence and ongoing management responsibilities are shared among employees, suppliers, and contractors.

- **Establish ongoing management and review processes** to evaluate stakeholder acceptance, track implementation progress, assess the effectiveness of the policy, and ensure its continued relevance.

2.14 Stakeholder Mapping and Consultation

Stakeholder ‘mapping’ is a tool for categorizing and prioritizing stakeholders in a project or supply chain, and identifying strategies to manage them. This is likely to be important in a responsible purchasing programme where stakeholder consultation and influencing is a key practice. The most used tool for stakeholder mapping is Aubery L Mendelow’s power/interest matrix:

POWER	Low	A Minimal effort	B Keep informed
	High	C Keep satisfied	A Key players
		Low	High
		INTEREST	

Figure 3- Mendelow’s power/Interest matrix

The Mendelow Matrix is a tool used to prioritize stakeholders based on two key factors: (a) their power to influence the organization and its plans, and (b) their level of interest or motivation to do so. This prioritization can significantly support sustainable procurement in several ways:

- **Identifying key stakeholders** whose needs and expectations will define sustainable value and influence the organization’s sustainability agenda. This may include groups such as environmentally conscious consumers, influential NGOs, and government entities.
- **Recognizing stakeholders** whose interests are most impacted by organizational decisions or actions, creating potential moral or legal obligations for the organization. For example, communities affected by environmental harm or the reduction of services may fall into this category.

- **Determining stakeholders** who need to be informed, consulted, or actively involved in the design and implementation of sustainable procurement policies and programs, as identified through the quadrants of the Mendelow matrix.
- **Prioritizing stakeholder interests** to ensure resources are used effectively and not spread too thinly, avoiding the economic unsustainability of attempting to address all concerns equally.

A sustainable procurement policy must be comprehensive, feasible, and supported by key stakeholders to ensure its successful implementation and withstand scrutiny from a wide array of interested parties. To achieve this, it is essential to consider the varying needs, perspectives, and contributions of different groups. A multi-disciplinary approach to consultation is recommended, including strategies such as briefing and consultation meetings, circulation of draft policy documents, and one-on-one presentations to key stakeholders.

Procurement departments play a pivotal role in consulting with suppliers. Understanding suppliers' definitions of ethical and sustainable practices, and ensuring the organization's expectations are seen as fair and feasible by suppliers, is crucial. It is also important to assess whether key suppliers will be willing to meet these new policy requirements.

Consultation at the policy development stage is critical, as different stakeholder groups may have conflicting objectives and interests. If these conflicts are not addressed early on, they could lead to difficulties during implementation and hinder stakeholder buy-in. For instance, some suppliers who lack sustainable capabilities may lose contracts under the new policy, which could raise concerns, particularly among small, local, or diverse suppliers.

Additionally, stakeholders may present valuable insights on feasibility, alternative priorities, or ideas that could help shape the policy. Addressing these concerns proactively can not only enhance the quality of policy decisions but also improve their acceptance and foster stronger stakeholder support for the policy.

CHAPTER -03

PUBLIC PROCUREMENT OF BANGLADESH AND EED

3.0 Introduction

This chapter provides an overview of public procurement, including its historical background and evolution. It presents the current public procurement landscape in Bangladesh, incorporating the legal framework that governs procurement processes, along with the key principles and features guiding procurement practices today. According to the Public Procurement Act, 2006 (PPA 2006), the term 'procurement' refers to "the purchasing or hiring of goods, or the acquisition of goods through purchasing and hiring, and the execution of works and performance of services by any contractual means." Broadly, public procurement can be defined as the purchasing, hiring, or obtaining of goods, services, or works by the public sector through various contractual arrangements. Government procurement, or public procurement, specifically involves the acquisition of goods, services, or construction projects on behalf of public authorities, such as government agencies.

Governments globally are responsible for providing essential services such as healthcare, education, and infrastructure to the public. To meet these needs, governments must purchase goods, services, and works from the open market. Public procurement, therefore, holds both economic and political significance. Despite its importance, it has often been overlooked by researchers and policymakers, who tend to view it merely as an administrative task. Public procurement encompasses a wide range of items, from simple goods or services (e.g., stationery or cleaning) to large-scale infrastructure projects, such as road construction, power stations, and airports.

Public procurement differs significantly from private sector procurement. While the purpose of procurement in the private sector is primarily to maximize commercial profit, public sector procurement is more complex. It involves considerations of economic development, national welfare, integrity, accountability, and the broader national interest. Unlike private procurement, which focuses on efficiency and cost-effectiveness for profit, public procurement must also address ethical standards and ensure transparency and fairness.

3.1 History of Procurement

Procurement is an ancient practice, yet it has historically received little attention from historians, particularly compared to other professions with the same name. The evolution of procurement can be traced back over 5,000 years, beginning with the rise of trade. As organizations and bureaucratic structures developed, procurement policies and practices emerged, often driven by the need for standardized procedures, transparency, and accountability in both the private and public sectors.

In earlier times, purchasing was primarily seen as a clerical function. However, during World War I and II, the role of procurement became more prominent as the demand for raw materials, supplies, and services to sustain military operations grew. Over time, procurement evolved from a clerical task to a more managerial function, driven by refined techniques and a growing pool of trained professionals.

With the establishment of major public bodies and international organizations, such as the United Nations, the World Bank, and the World Trade Organization (WTO), procurement gained recognition as a specialized field. A pivotal moment in the history of procurement came in September 1983, when Harvard Business Review published a groundbreaking article by Peter Kraljic on purchasing strategy. This article is widely regarded as the turning point in the transformation of procurement from a tactical function to a strategic business discipline. As procurement became increasingly integrated into corporate strategy, its status grew, and Chief Procurement Officers (CPOs) emerged as key business leaders with broader, strategic responsibilities within organizations.

3.2 History of Public Procurement in Bangladesh

The history of public procurement in Bangladesh can be traced back to the colonial era under British rule and later during the period of Pakistani governance. The public procurement system initially relied on the *Compilation of General Financial Rules* (CGFR), which was first issued during British rule. This document was slightly revised in 1951 under Pakistani rule and reissued in 1994 and again in June 1999 with minimal changes. The CGFR outlines broad principles for government contracts, leaving individual departments to create their own detailed rules and procedures. It also refers to the *Manual of Office Procedure (Purchase)*, compiled by the Department of Supply and Inspection in the 1930s, which serves as a guide

for purchasing goods. However, both the CGFR and the manual have not been significantly updated over time.

In addition to the CGFR, the CGFR also makes reference to the *Economic Relations Division (ERD) Guidelines* issued in 1992, which were modeled on the World Bank's procurement guidelines for projects funded by external donors. Since Bangladesh's independence in 1971, public procurement has been significantly influenced by international development organizations such as the World Bank and the Asian Development Bank, as much of the country's public procurement has been externally funded. In some cases, individual departments, autonomous boards, and public enterprises have developed their own procurement procedures or manuals to guide their activities.

However, the public procurement system in Bangladesh has faced several challenges. The *Country Procurement Assessment Report*, prepared by the World Bank in 2002, highlighted several shortcomings in the system, including inadequate advertisement, short bidding periods, poor specifications, lack of transparency in selection criteria, arbitrary contract awards, one-sided contract documents, negotiation with all bidders, and irregularities such as rebidding without adequate justification. Additionally, issues of corruption and undue external influence were also noted as pervasive problems.

In response to these issues, in August 1998, the World Bank Country Director urged the government to streamline the procurement process to make it more efficient and effective. As part of ongoing efforts to address these concerns, the government began implementing a series of reforms aimed at strengthening the public procurement system. These reforms culminated in the formulation of the *Public Procurement Regulations (PPR)* in 2003, which established a unified procurement process. The PPR, 2003 was further supplemented by the *Public Procurement Processing and Approval Procedures (PPPA)*, a revised *Delegation of Financial Powers (DoFP)*, and various *Standard Tender Documents (STDs)* and *Standard Request for Proposal (SRFP)* documents to guide the procurement of goods, works, and services.

To provide a stronger legal framework, the *Public Procurement Act, 2006 (PPA, 2006)* was enacted by the Parliament of Bangladesh. This Act was followed by the issuance of the *Public Procurement Rules, 2008 (PPR, 2008)*, which replaced the earlier *Public Procurement Regulations, 2003*.

Public procurement in Bangladesh is decentralized, with various ministries and departments managing procurement functions from the national level down to the district and Upazila (sub-district) levels, all in compliance with the PPR, 2008. The Central Procurement Technical Unit (CPTU) develops the Standard Tender Documents and Standard Request for Proposals used throughout the country. At the central level, procurement is limited to essential items such as food grains, printing, and stationery. However, major government departments such as the *Education Engineering Department (EED)*, *Local Government Engineering Department (LGED)*, *Roads and Highways Department (RHD)*, *Health Engineering Department (HED)*, *Department of Public Health Engineering (DPHE)*, *Bangladesh Railway*, and *Telephone and Telegraph Board (T&T Board)* handle a significant volume of procurement across the country, from central to local offices.

In addition to ministries and departments, state-owned corporations also engage in large-scale procurement activities. Leading procurement agencies within these corporations include *Bangladesh Chemical Industries Corporation (BCIC)*, *Bangladesh Petroleum Corporation (BPC)*, *Bangladesh Securities and Exchange Commission (BSEC)*, *Bangladesh Agricultural Development Corporation (BADC)*, *Power Development Board (PDB)*, *Bangladesh Water Development Board (BWDB)*, and *Bangladesh Jute Mills Corporation (BJMC)*. These organizations play a critical role in the execution of public procurement in Bangladesh.

3.3 Legal Framework of Public Procurement in Bangladesh

The 2002 *Country Procurement Assessment Report (CPAR)* by the World Bank outlined several recommendations to strengthen the legal framework of public procurement in Bangladesh. Key recommendations included the creation of a Central Procurement Policy Unit (CPTU) to oversee procurement policy, rules, procedures, and standard bidding and contract documents; the issuance of Public Procurement Rules and Procedures applicable across all ministries and public bodies; the development of standard bidding and contract documents; and a review of delegation powers and approval processes.

In response to these recommendations, the Government of Bangladesh established the *Central Procurement Technical Unit (CPTU)* under the *Implementation Monitoring and Evaluation Division (IMED)* of the Ministry of Planning in 2002. The CPTU has been

responsible for maintaining procurement rules, developing standard documents, and overseeing the public procurement system.

The legal framework for public procurement in Bangladesh is primarily based on two key instruments: the *Public Procurement Act, 2006* (PPA, 2006) and the *Public Procurement Rules, 2008* (PPR, 2008). In addition, the CPTU has developed the *Standard Tender Documents* (STDs) for goods and works and the *Standard Request for Proposals* (SRFPs) for services. The PPA, 2006 emphasizes transparency, accountability, equal treatment, and fair competition, ensuring that public procurement is conducted in a manner that promotes integrity, value for money, and non-discrimination.

3.4 Methods of Public Procurement in Bangladesh

The *Public Procurement Rules, 2008* (PPR, 2008) outlines several procurement methods, categorizing them into national and international classes. For national procurement, the preferred method is the *Open Tendering Method* (OTM), which ensures equal opportunity, competition, and proper advertisement. However, alternative methods can be used under specific conditions, which must be justified on technical or economic grounds. These methods for goods and works include:

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

For consulting services, various selection methods are prescribed, including:

- *Quality and Cost-Based Selection* (QCBS)
- *Fixed Budget Selection* (FBS)
- *Least Cost Selection* (LCS)
- *Single Source Selection* (SSS)
- *Community Service Organization Selection* (CSOS)
- *Individual Consultant Selection* (ICS)

- *Selection Based on Consultant's Qualifications (SBCQ)*
- *Design Contest Selection (DCS)*

Each alternative method has specific conditions for its application. For example, LTM can be used when suppliers are limited, or when time and cost factors justify its use. TSTM is applicable for complex or large projects, especially when complete technical specifications cannot be prepared in one stage. RFQM is used for low-value, easily available goods, but its use is strictly controlled to avoid misuse. DPM is allowed in cases of sole suppliers, urgent needs, or patent issues.

For international procurement, the same methods apply, with modifications to maintain international standards, including the specification of international norms and provisions for alternative dispute resolution in contracts.

3.5 Sustainability in Public Procurement

This section explores how sustainability issues are integrated into the public procurement framework in Bangladesh. Currently, public procurement in the country is governed by two main documents: the *Public Procurement Act, 2006* and the *Public Procurement Rules, 2008*. In addition, the *Central Procurement Technical Unit (CPTU)* has developed various *Standard Tender Documents (STDs)* for goods and works, as well as *Standard Request for Proposals (SRFPs)* for services, tailored to the size and scope of procurement activities.

Table 3.5.1 outlines the sustainability factors incorporated into the public procurement documents. These factors reflect the commitment to promoting environmentally, socially, and economically sustainable practices in government procurement processes.

Table 3.5.1- Sustainability addressed in Public Procurement.

Area of Performance	Article relevant to sustainable issue.
Economic Sustainability	³/₄ [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: (c) availability of the relevant Goods in the local market; (d) quality, sources and brand of the Goods available in the local market; (e) price levels of the designated Goods; (k) Risks related to supply in the local and international markets. ³/₄ [Rule 15(7), PPR-2008] In the case of determining the method of Procurement for Works, the Procuring Entity shall consider the following: (b) the prevalent conditions of the contracting industry; (c) capacity of local Contractors; (d) expected competition; ³/₄ [Rule 29(2), PPR-2008] Technical Specifications prepared by Procuring Entities shall, where appropriate, be- (a) expressed in terms of performance or output requirements, rather than specifications linked directly to design or descriptive characteristics which may tend to limit competition; ³/₄ [Rule 29(3), PPR-2008] There shall be no reference, in technical specification of Goods, to a particular trade mark or trade name, patent, design or type, named country of origin, producer or service supplier.
Environmental Sustainability	³/₄ [GCC 27.1, STD-PW3] The Contractor shall throughout the execution and completion of the Works and the remedying of any defects therein: (a) take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of the

	Contractor methods of operation. ³/₄ [GCC 29.2, STD-PW3] The Contractor, in particular, shall provide proper accommodation to his or her laborers' and arrange proper water supply, conservancy and sanitation arrangements at the site for all necessary hygienic requirements and for the prevention of epidemics in accordance with relevant regulations, rules and orders of the government.
Social/Ethical Sustainability	³/₄ [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: (f) capacity of local Suppliers to supply the required quantities; (g) capacity of the national industry and quality of its products; (h) market conditions and expected competition; ⌚ [Rule 15(7), PPR- 2008] In the case of determining the method of Procurement for works, the Procuring Entity shall consider the following: – (c) capacity of local Contractors; ⌚ [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. I to provide local manufacturers, Suppliers and Contractors with a price advantage over their international competitors for the purpose of promoting domestic products or industries. ⌚ [GCC 27.1, STD-PW3] The Contractor shall throughout the execution and completion of the Works and the remedying of any defects therein: (a) take all reasonable steps to safeguard the health and safety of all workers working on the Site and other persons entitled to be on it, and to

	keep the Site in an orderly state;
	³/₄ [GCC 28.1, STD-PW3] The Contractor shall not perform any work on the Site on the weekly holidays, or during the night or outside the normal working hours, or on any religious or public holiday, without the prior written approval of the Project Manager. 🕒 [GCC 29.1, STD-PW3] The Contractor shall comply with all the relevant labour Laws applicable to the Contractor's personnel relating to their employment, health, safety, welfare, immigration and shall allow them all their legal rights. 🕒 [GCC 29.3, STD-PW3] The Contractor, further in particular, shall pay reasonable wages to his or her labourers, and pay them in time. In the event of delay in payment the Procuring Entity may affect payments to the labourers and recover the cost from the contractor. 🕒 [GCC 30.1, STD-PW3] The Contractor shall not employ any child to perform any work that is economically exploitative, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development in compliance with the applicable labor laws and other relevant treaties ratified by the government. 🕒 [GCC 37.1, STD-PW3] The Contractor shall provide, in the joint names of the Procuring Entity and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles specified in the PCC for the following events which are due to the Contractor's risks: (d) Personal injury or death.

Source: Public Procurement Rules 2008

3.6 Education Engineering Department (EED) and Its Central Level Procurement Activities:

The Education Engineering Department (EED) is one of the largest public sector organizations in Bangladesh, responsible for the planning and implementation of

infrastructure development programs for rural and urban educational institutions. EED works closely with local stakeholders, ensuring community participation and a bottom-up approach in all stages of project implementation. Its broad objectives are to enhance the socio-economic conditions of the country through infrastructure development at the local level, alongside building the capacity of stakeholders, a goal closely aligned with sustainable development principles.

EED promotes the use of labor-based technology to create local employment opportunities and utilizes locally sourced materials in construction and maintenance, optimizing project costs while maintaining the required quality standards. This approach not only supports economic sustainability but also contributes to social development by involving local communities.

EED is headed by a Chief Engineer and is supported by a team of senior staff, including an Additional Chief Engineer (Civil), a Director of Administration and Finance, Deputy Directors of Administration and Finance, Superintending Engineers, Executive Engineers, and Assistant Engineers, with a total workforce of over 5,600 employees spread across the country. The Chief Engineer serves as the administrative and technical head of the department, as well as the Technical Advisor to the Government of Bangladesh.

The department is highly decentralized, with 99% of its staff deployed at the district and Upazila (sub-district) levels. EED operates through nine regional circles, each led by a Superintending Engineer and staffed with Executive Engineers, Assistant Engineers, and Sub-Assistant Engineers. This decentralized structure enables EED to efficiently manage the large-scale infrastructure projects it undertakes across both rural and urban areas.

To ensure effective project execution and client satisfaction, EED has established several specialized units, including:

- Administration Unit
- Planning Unit
- Design Unit
- Training Unit
- ICT Unit
- Quality Control Unit
- Monitoring and Evaluation Unit
- Maintenance Unit
- Procurement Unit

EED's contributions span the entire range of physical and social infrastructure development, directly impacting national development, security, and international relations. The department's operations extend throughout the country, including remote and challenging terrains.

Key functions of EED include:

- Development and maintenance of educational infrastructure in rural and urban areas.
- Preparation of planning maps, technical specifications, and manuals.
- Human Resource Development (HRD) programs for EED staff and other stakeholders.

Given the scale of its operations, the procurement of goods, services, and works is a critical component of EED's functions. To manage the substantial volume of procurement activities, EED has a dedicated and well-established *Procurement Unit*.

The Procurement Unit is headed by a Superintending Engineer, supported by an Executive Engineer and three Assistant Engineers. Prior to the enactment of the *Public Procurement Act, 2006* (PPA, 2006), procurement activities were governed by general contract law, which lacked the specificity required for large public procurement projects. With the introduction of the PPA, 2006, and the *Public Procurement Regulations, 2003* (PPR, 2003), procurement procedures became more structured, transparent, and efficient.

In response to these regulatory changes, EED established a separate *Procurement Unit* at its headquarters in January 2015 to adapt to the evolving procurement environment. This unit plays a crucial role in ensuring compliance with the PPA-2006 and PPR-2008, as well as in facilitating the smooth implementation of procurement activities.

The main functions of the Procurement Unit include:

- Coordinating and communicating with the *Central Procurement Technical Unit* (CPTU).
- Appointing focal persons within EED to ensure compliance with procurement rules and regulations.
- Establishing and managing an *e-GP/PROMIS* cell to monitor e-GP activities and provide necessary support for successful implementation.

- Developing and approving the Annual Procurement Plan (APP) for both offline and e-GP tenders.
- Reviewing and approving tenders for e-GP projects.
- Managing the enlistment of tenderers under the *Limited Tendering Method* (LTM).
- Forming *Technical Evaluation Committees* (TEC) and *Procurement Evaluation Committees* (PEC) for offline tenders and e-GP tenders at various financial thresholds.
- Offering technical advice on procurement matters for other local government institutions when requested.
- Organizing training sessions on PPA-2006 and PPR-2008 for EED officials, conducted in collaboration with the *Engineering Staff College of Bangladesh* (ESCB) and the *Bangladesh Institute of Management* (BIM).

The establishment of the Procurement Unit and the ongoing efforts to streamline procurement processes have significantly improved EED's ability to manage its extensive procurement needs, ensuring greater transparency, accountability, and efficiency in the execution of public works projects.

3.7 EED and Its District-Level Procurement Activities

In addition to its headquarters, the Education Engineering Department (EED) operates a network of nine circle offices, 65 district offices, and 491 Upazila (sub-district) offices. Each circle office is led by a Superintending Engineer (SE), while the district offices are headed by an Executive Engineer (XEN), and the Upazila offices are managed by Sub-Assistant Engineers (SAE). In each district office, the Executive Engineer (XEN) is supported by three Assistant Engineers (Civil), one Assistant Engineer (Electrical), and 11 Sub-Assistant Engineers (Civil), along with one Sub-Assistant Engineer (Electrical). In total, each district office employs 24 staff members.

At the district level, the Executive Engineer (XEN) typically functions as the Procuring Entity (PE). The procurement process begins with the Executive Engineer receiving requests to prepare detailed schemes, including specifications and cost estimates for program works, such as repair and maintenance of government and non-government educational institutions. To prepare these schemes, the Executive Engineer assigns an Assistant Engineer (AE) and a

Sub-Assistant Engineer (SAE) to visit the proposed sites of the institutions. The Sub-Assistant Engineer collects data from the site and prepares a specification (Bill of Quantities, BoQ) using the updated rate schedule from the Public Works Department (PWD).

Once the specification or estimation is ready, the Assistant Engineer reviews it for accuracy and approves it. If necessary, the Assistant Engineer may revise the document. The approved estimation is then sent to the Executive Engineer (XEN) for further processing. Afterward, the Executive Engineer submits it to the concerned Superintending Engineer (SE) for approval. Once the SE approves, the Executive Engineer proceeds with initiating the tendering process for the project.

As the Procuring Entity, the Executive Engineer (XEN) is authorized to call tenders for all projects and programs at the district level. The district office follows a structured process for tendering, which includes the formation of a Tender Opening Committee (TOC) and a Tender Evaluation Committee (TEC).

The Tender Opening Committee (TOC) is chaired by the Executive Engineer (XEN), with the Assistant Engineer-1 (AE-1) serving as the committee's member secretary. Additionally, one external member from another government engineering department is included in the committee. Similarly, the members of the Tender Evaluation Committee (TEC) mirror those of the TOC.

The roles and responsibilities of the Executive Engineer in the procurement process at the district level are as follows:

- Act as the Procuring Entity for public procurement activities within the district.
- Prepare detailed schemes for new projects or analyze business needs for ongoing projects.
- Develop specifications for procurement items, including technical requirements and cost estimates.
- Chair the Tender Opening Committee (TOC) to ensure proper and transparent opening of tenders.
- Chair the Tender Evaluation Committee (TEC) to evaluate tender submissions and select the best-suited contractors.

- Oversee payments for completed contracts, ensuring compliance with the terms outlined in the tender documents.

The district-level procurement activities, led by the Executive Engineer, are crucial for ensuring that the EED's infrastructure development projects are executed efficiently, transparently, and in compliance with regulatory standards.

CHAPTER -04

RESEARCH METHODOLOGY

4.0 Introduction

Research can be broadly defined as the process of gathering data, information, and facts to advance knowledge. Godwin Colibao describes it as "any gathering of data, information, and facts for the advancement of knowledge." John W. Creswell offers a similar definition, explaining research as "a process of steps used to collect and analyze information to increase our understanding of a topic or issue." This process generally involves three key stages: formulating a question, collecting data to answer that question, and presenting the findings. In more formal terms, research is a systematic and rigorous inquiry aimed at discovering new information or relationships, or at expanding or verifying existing knowledge for a specific purpose. The primary goals of research include:

- Gaining a deeper understanding of phenomena and generating new insights.
- Accurately describing the characteristics of individuals, situations, or groups.
- Discovering truths and uncovering facts about a topic.
- Identifying new patterns or generalizations from existing data.
- Reassessing old conclusions with new data.
- Drawing meaningful conclusions from the same dataset.
- Resolving contradictions or inconsistencies within a particular area of study.

Research methodology refers to the set of tools, techniques, and approaches employed to conduct scientifically structured research. Research is inherently a cyclical process, starting with a problem or an unresolved question in the researcher's mind. The next step in this process is to define the problem clearly, providing a foundation for the investigation to proceed.

4.1 Research Area with Sample Design

4.1.1 Research Context:

This research focuses on investigating the scope and practices of **sustainable procurement** in the **Education Engineering Department (EED)** of Bangladesh. Specifically, the study explores how sustainable procurement practices are implemented within the context of the **Sirajganj District**, aiming to evaluate whether these practices contribute to environmental, social, and economic sustainability. It also seeks to identify the challenges faced by EED in the procurement process and suggests improvements to integrate sustainable practices more effectively.

4.1.2 Research Field Area

Sirajganj District in the Division of Rajshahi, Bangladesh that is divided into 09 (Nine) Upazila: Sirajganj Sadar, Kazipur, Kamakhond, Rayganj, Tarash, Belkuchi, Ullapara, Shahajadpur, Chowhali. EED office at this District are consisted of 21 employees, headed by one Executive Engineer and supported by Assistant Engineer (Civil)-1 at office; Assistant Engineer (Civil)-2 at field; Assistant Engineer (Civil)-3 at field; Assistant Engineer (Electrical); 02 (Two) Sub-Assistant Engineer(Civil); 01 (One) Sub-Assistant Engineer(Electrical), one Accountant, one Account Assistant, one Computer operator, one upper division assistant, Two data entry operator, Two office assistant cum computer operator, one Cash Sharker, two office Sohayok, one Guard. Near about 300 contractors works in Sirajganj distrist. An Average of 100 crore tk procurement activities are happened from executive engineer's PE office at every financial year,

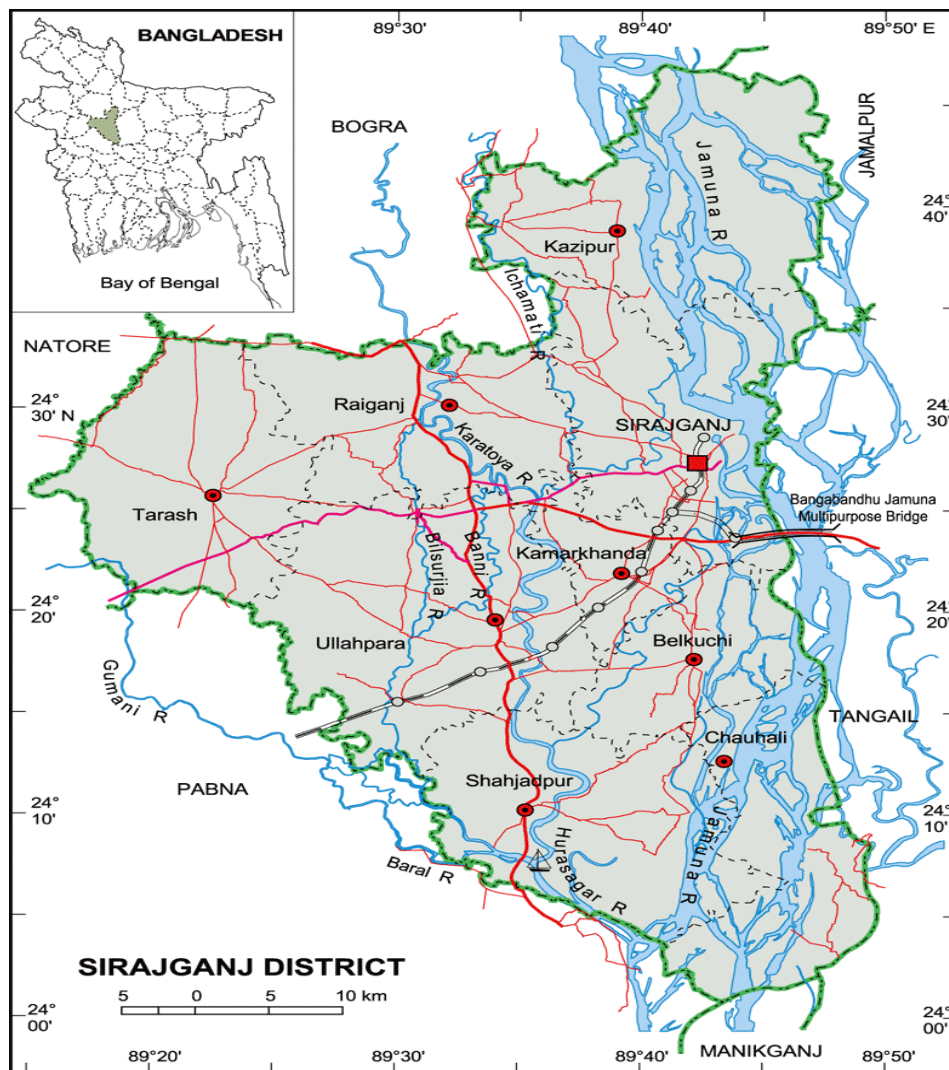


Figure 4: Map of Sirajganj District.

4.1.3 Key Concepts in the Research:

- **Sustainable Procurement:** Refers to purchasing goods and services that have minimal negative environmental and social impact while promoting economic growth.
- **EED (Education Engineering Department):** A governmental body responsible for planning, constructing, and maintaining educational infrastructure in Bangladesh.
- **Sirajganj District:** A geographical location in Bangladesh chosen for this study, which represents a rural yet developing area where procurement practices are still evolving.

4.2 Sample Design:

4.2.1 Population:

- **Target Population:** The study focuses on officials, suppliers, contractors, and other stakeholders involved in the procurement process of educational infrastructure projects under the Education Engineering Department (EED) in Sirajganj.

4.2.2 Sampling Frame:

- The sampling frame will include EED officials, procurement managers, contractors, and suppliers working on education infrastructure projects in Sirajganj.

4.2.3 Sampling Technique:

Non-probability Sampling: A combination of purposive and snowball sampling techniques will be used to select participants who have direct experience with or knowledge of sustainable procurement practices.

Purposive Sampling: Specific individuals such as senior procurement officers, project managers, and key stakeholders in EED who have a role in sustainable procurement practices will be selected.

Snowball Sampling: Once initial respondents are selected, they will be asked to recommend others involved in procurement, thus helping to widen the sample.

4.2.4 Sample Size:

- **Sample Size:** Given the specific and targeted nature of the research, a sample of around 20-30 participants will be considered sufficient for qualitative analysis.

EED Officials: 10-12 officials, including procurement managers, project supervisors, and administrators.

Contractors and Suppliers: 8-10 contractors or suppliers who are involved in education-related procurement in the region.

Other Stakeholders: 2-3 representatives from local communities or advocacy groups who can provide insights into the social and environmental impacts of the procurement.

4.2.5 Data Collection Methods:

- **Primary Data:**

Semi-structured Interviews: In-depth interviews with EED officials, contractors, and suppliers will be conducted to understand their perceptions, practices, and challenges related to sustainable procurement.

Focus Group Discussions (FGDs): Conducted with contractors and suppliers to discuss common challenges, barriers, and opportunities for sustainable procurement.

Field Observations: Observing procurement activities, project implementations, and supply chain processes to gather firsthand insights.

- **Secondary Data:**

Official Documents: Procurement policies, reports, and records from the EED will be reviewed to understand the existing framework of sustainable procurement.

Reports from NGOs or Government Agencies: Documents or case studies from other regions or governmental departments involved in similar procurement practices.

4.2.6 Data Analysis Techniques:

Qualitative Analysis:

Thematic Analysis: Data from interviews and FGDs will be analyzed using thematic analysis to identify key themes related to the scope, challenges, and impacts of sustainable procurement.

Content Analysis: Official documents will be analyzed for the presence of sustainable procurement principles such as environmental criteria, social responsibility, and economic sustainability.

Quantitative Analysis (if applicable):

If survey data is collected (e.g., through questionnaires), statistical techniques such as frequency analysis and correlation analysis might be used to analyze responses.

4.2.7. Ethical Considerations:

Informed Consent: All participants will be fully informed about the study's purpose and will give written consent.

Confidentiality: Respondents' identities and responses will be kept confidential and used only for research purposes.

Non-Bias: The research will be conducted in an objective and unbiased manner, ensuring fair representation of all stakeholders.

4.2.8 Expected Outcomes:

1. **Detailed Mapping** of current sustainable procurement practices in EED, particularly within Sirajganj.
2. **Identification of Barriers** to effective implementation of sustainable procurement, including financial, institutional, and knowledge-based challenges.
3. **Insights into the Benefits** of adopting sustainable procurement practices in terms of environmental protection, social benefits, and cost savings in the long term.

4. **Recommendations for Policy and Practice:** Proposing actionable strategies for enhancing sustainable procurement practices within the EED, which could be generalized for other regions in Bangladesh.

This study will contribute valuable knowledge about the integration of sustainability into government procurement systems, providing a foundation for improved policies and practices in Bangladesh's education sector.

4.3. Sampling Plan-Sample Size

4.3.1 The sampling plan

The **sampling plan** outlines the process for selecting participants and determining the sample size for the research study. Given the focus on sustainable procurement practices within the Education Engineering Department (EED) in Sirajganj, Bangladesh, the sampling plan will ensure that a representative sample of key stakeholders is selected for gathering insights into the topic.

4.3.2 Target Population:

The target population includes individuals and organizations involved in procurement activities related to educational infrastructure projects within the Education Engineering Department (EED) in Sirajganj District. This population includes:

- EED officials (e.g., procurement officers, project managers, administrative staff).
- Contractors and suppliers engaged in the procurement and delivery of materials or services for educational projects.
- Other stakeholders, such as local community representatives or advocacy groups, who can offer insights into the social, economic, and environmental impacts of procurement.

4.3.3 Sampling Frame:

The sampling frame will consist of a list of all relevant stakeholders:

- **EED Officials:** This includes procurement managers, senior administrative staff, and decision-makers who influence the procurement process within the Education Engineering Department.
- **Contractors and Suppliers:** Individuals and companies supplying materials and services for the construction or renovation of educational institutions in Sirajganj.

- **Other Stakeholders:** Local community leaders, advocacy groups, or environmental organizations who have an interest in sustainable procurement practices and can provide valuable feedback on their social and environmental impact.

4.3.4. Sampling Technique:

- **Non-Probability Sampling:** Since the study aims for in-depth understanding rather than generalization to the entire population, non-probability sampling techniques will be used. Specifically:
 - o **Purposive Sampling:** Key individuals who are directly involved in sustainable procurement practices will be selected. These include:
 - Senior procurement officers within EED.
 - Contractors involved in education infrastructure projects.
 - Local experts on sustainable development and procurement.
 - o **Snowball Sampling:** Once initial participants are identified (particularly in the case of contractors or suppliers), they will be asked to recommend other relevant individuals who may have valuable insights into sustainable procurement practices.

4.4 Sample Size:

Given the qualitative nature of the study, the sample size will be moderate, allowing for deep insights from each participant. The sample size will be determined based on the following breakdown:

- **EED Officials (10-12 participants):**
Procurement managers and other senior officials who directly engage with procurement processes will be chosen. Their input will provide a deep understanding of the internal workings, policies, and practices related to sustainable procurement.
- **Contractors and Suppliers (8-10 participants):**
These individuals will be selected based on their involvement in educational infrastructure projects within Sirajganj. They can offer insights into how sustainability criteria are applied during procurement and execution phases, and identify any challenges or opportunities they face in adhering to sustainable practices.
- **Other Stakeholders (2-3 participants):**

Local community representatives, environmental organizations, or advocacy groups will be included to gather perspectives on the social and environmental impacts of procurement. These individuals may offer insights into the broader effects of procurement practices and whether they align with community and environmental goals.

4.4.1 Total Sample Size:

The total sample size will be approximately **20-25 participants**, consisting of:

- **10-12 EED officials** involved in procurement.
- **8-10 contractors and suppliers** working on education-related infrastructure projects.
- **2-3 other stakeholders** from local communities or advocacy groups.

4.5 Data Collection Approach:

- **Semi-structured Interviews:** In-depth, open-ended interviews will be conducted with the selected participants to capture detailed information about sustainable procurement practices, challenges, and their perspectives on the impacts of these practices.
- **Focus Group Discussions (FGDs):** For contractors and suppliers, group discussions will be used to explore common challenges, knowledge-sharing, and potential solutions for improving sustainable procurement.
- **Document Review:** Relevant procurement records, policies, and reports from EED will be reviewed to understand the official guidelines and practices in place.

4.6 Sampling Considerations:

- **Geographical Focus:** Since the study focuses on the Sirajganj district, the sample will be confined to this geographical region. This ensures the study is context-specific and captures the unique characteristics of procurement practices in this district.
- **Diversity of Participants:** Efforts will be made to ensure the sample includes a diverse range of participants with varying levels of experience, roles, and perspectives. This diversity will enhance the depth and richness of the data collected.
- **Willingness to Participate:** Participants will be selected based on their willingness to provide in-depth information and their direct involvement in procurement processes.

Non-respondents or those unwilling to participate will not be replaced, as the focus is on quality rather than quantity.

4.7 Ethical Considerations:

- **Informed Consent:** All participants will be fully informed about the nature and purpose of the study, and their written consent will be obtained prior to data collection.
- **Confidentiality:** Participants' identities will remain confidential, and data will be anonymized to protect their privacy.
- **Transparency:** Participants will be provided with information on how their responses will be used, ensuring that there is no coercion and they can withdraw from the study at any time.

4.8 Conclusion:

The **sampling plan** ensures that the research will collect relevant, comprehensive, and diverse data regarding sustainable procurement practices in the Education Engineering Department in Sirajganj. By focusing on key stakeholders, including EED officials, contractors, suppliers, and community representatives, the study will be able to draw meaningful conclusions about the challenges, impacts, and potential for improvement in sustainable procurement practices in the region. The chosen **sample size** of **20-25 participants** is appropriate for a qualitative case study, providing sufficient depth and variety in the data without overwhelming the researcher with too many responses to analyze.

CHAPTER -05

DATA ANALYSIS, FINDINGS RESULTS & SUSTAINABLE PRACTICES IN EED

5.0 Introduction

Sustainable procurement encompasses three key dimensions: economic, environmental, and social aspects. The operational definitions of these aspects are provided in Chapter Two. A semi-structured questionnaire was developed to collect information on these three dimensions, as well as on the organization's procurement practices. The questionnaire is divided into four sections:

- **Section A:** Serves as an introductory segment to prime the respondents on sustainability concepts. The questions are designed to refresh the officials' understanding of sustainability principles, including one question that prompts them to reflect on how they apply sustainability in their personal lives.
- **Section B:** Focuses on the preparedness of the officials to implement sustainability in procurement activities. This section evaluates how ready and equipped the respondents are to integrate sustainable practices into their procurement processes.
- **Section C:** Investigates the extent to which sustainability is practiced in procurement within their jurisdiction. This section aims to assess the practical application of sustainable procurement in their work.
- **Section D:** Contains general questions designed to capture the respondents' views on the drivers and barriers to sustainable procurement within the EED Sirajganj District office. Additionally, this section seeks their suggestions and insights, drawn from their operational experiences with sustainable procurement.

To further assess the understanding of sustainable procurement issues among the procurement staff at the EED Sirajganj District office, the researcher conducted in-depth interviews with the Head of the office, designated by the Executive Engineer.

This chapter synthesizes the findings from the data collected, addressing the research questions outlined in Chapter One, and concludes the overall study. The analysis reveals that officials at the EED Sirajganj District office have a solid understanding of sustainability issues, supported by multiple training programs on the Public Procurement Rules (PPR),

e-GP, and their extensive experience in public procurement. Furthermore, the officials demonstrate genuine intentions to optimize the use of natural resources and public assets, reflecting their commitment to promoting sustainable development in the Sirajganj District.

5.1 Summary of the Data Analysis

This chapter presents the analysis of the study, divided into two parts. The first part focuses on understanding the level of awareness of EED officials in Sirajganj District regarding sustainable procurement. The findings indicate that while these officials possess some knowledge of sustainable procurement, their preparedness to implement these practices is at an average level. This suggests a need for additional training and clear guidelines to effectively incorporate sustainability into procurement activities.

The second part of the analysis examines the current state of sustainable procurement practices in Sirajganj District. To gather insights, a semi-structured questionnaire was administered to EED officials in Sirajganj. The questionnaire consisted of four sections:

- **Section A:** Designed to assess the general understanding and awareness of sustainability concepts.
- **Section B:** Focused on evaluating the preparedness of officials to implement sustainable procurement practices.
- **Section C:** Aimed at understanding the level of sustainability practices in procurement activities.
- **Section D:** Included general comments and feedback on sustainability issues from the respondents.

The analysis of responses from Section C, which covered the three dimensions of sustainability (economic, environmental, and social), was deliberate and focused. Additionally, five procurement-related officials were provided with printed questionnaires to gather a more comprehensive view of sustainable procurement practices in Sirajganj District. The responses also included general comments and suggestions from the participants.

The findings reveal that while there are a few instances where sustainability practices are being implemented, such cases are not widespread within the public sector. The analysis provides a realistic picture of the procurement practices in Bangladesh, where the lowest price remains the dominant criterion for supplier selection. There is some encouragement for local firms through the criteria outlined in tender documents, but there is no formal environmental policy or environmental management system in place in Sirajganj District.

Furthermore, the current procurement system in EED Sirajganj District offers limited opportunities to ensure environmental performance by suppliers or contractors.

On the positive side, the procurement process ensures equal opportunity for all participants and incorporates ethical labor practices, including the participation of female laborers. However, the overall perception from the respondents indicates that sustainability issues are not yet well integrated into the procurement processes at EED Sirajganj District.

5.2 Findings Results

This section depicts the findings of the research and the analysis and discussion about those findings. The questionnaire was developed using the outcomes of the literature review. The questionnaire consists of three sections, two of the sections contained closed-ended questions and one was for open opinion. The sections are,

- Scope and Preparedness of the procurement professional at District Level
- Sustainability Practices in Procurement at District Level.
- Comments and suggestions.

From first section, it was an aim to collect data from different level officials, Contractors and other stakeholders to learn the level of preparedness of practicing sustainability issues in the procurement of EED. All of them had worked in EED for almost 3 to 15 years. Figure-5 illustrates the respondent's details on the level of experience in Public Procurement

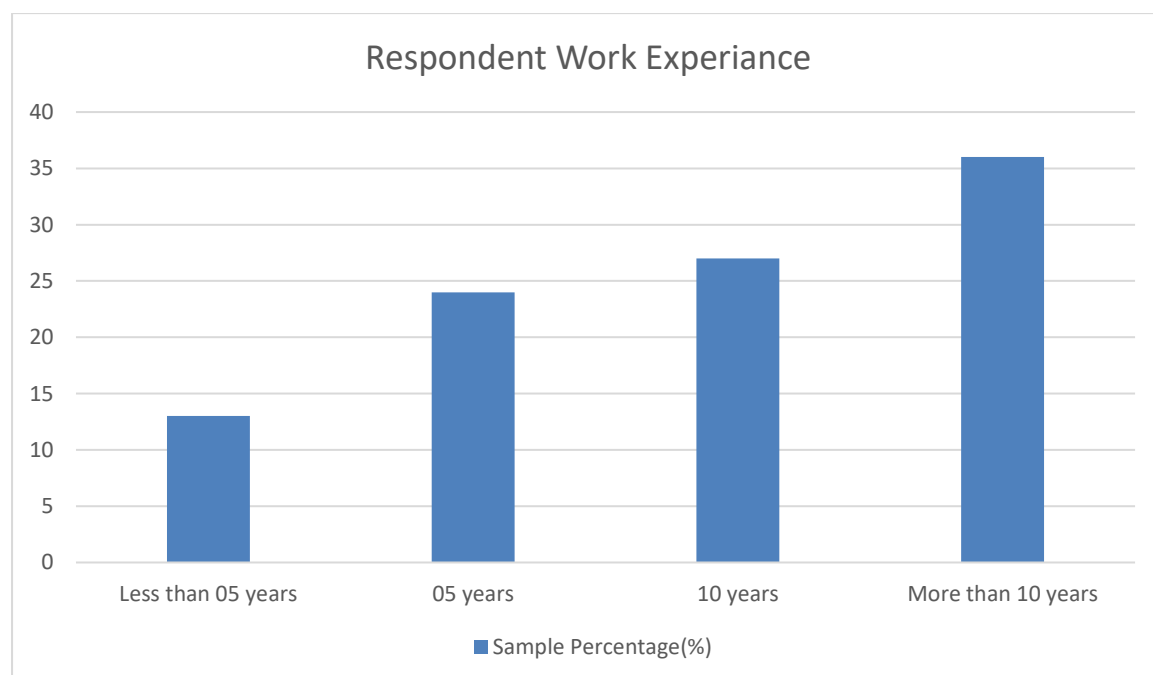
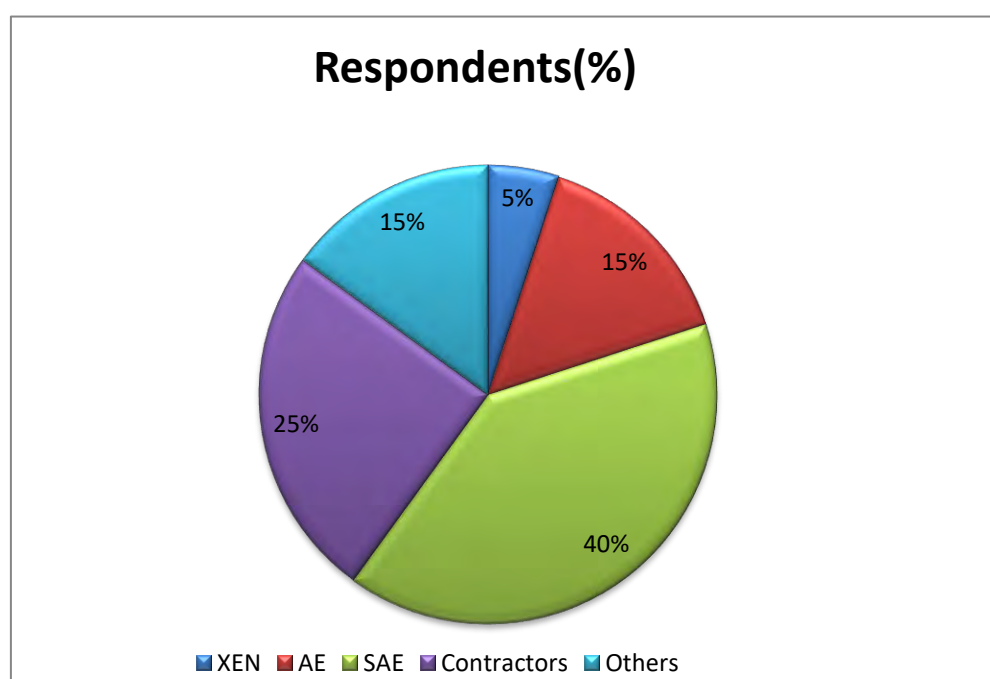


Figure 5: Work Experience of Respondents

There were total 20 samples collected from procurement professionals worked for last 03 financial years (FY 2020-2023) which consisted of 01` XEN, 03 Assistant Engineers and 08 Sub-



Assistant Engineer, 05 Contractors, 03 Others stakeholders of Sirajganj District .

Figure 6: Composition of Respondents Position

The respondents were asked 10 (ten) closed end questions in first section (Part A) on which they answered by choosing Yes, No or Partial. The focus of questions mainly on their thought of the officers about sustainability scopes, in terms of environmental, social, and economic considerations, to adopt at field level works.

5.3 Preparedness of the procurement professional at Sirajganj District :

Almost 70% Participants have good conception and 30% Participants have partial conception about sustainability issues in procurement as they have enough trainings and other qualifications about public procurement of Bangladesh. About 60% Participants they get enough support from stakeholders (suppliers, office staffs and HQ, etc.), 30% think it is partial and 10% think they do not get enough support they required. About 90% procurement professionals of Sirajganj district think that there are enough scopes and 10% think partial to put sustainable criteria in procurement process regarding economic considerations. About 98% procurement professionals of Sirajganj district think that there are enough scopes and

2% think partial to put sustainable criteria in procurement process regarding social considerations About 80% procurement professionals of Sirajganj district think that there are enough scopes but 20% think it is not always possible to put all types of environmental criteria as it cannot be maintained cent percent by the contractors during construction.

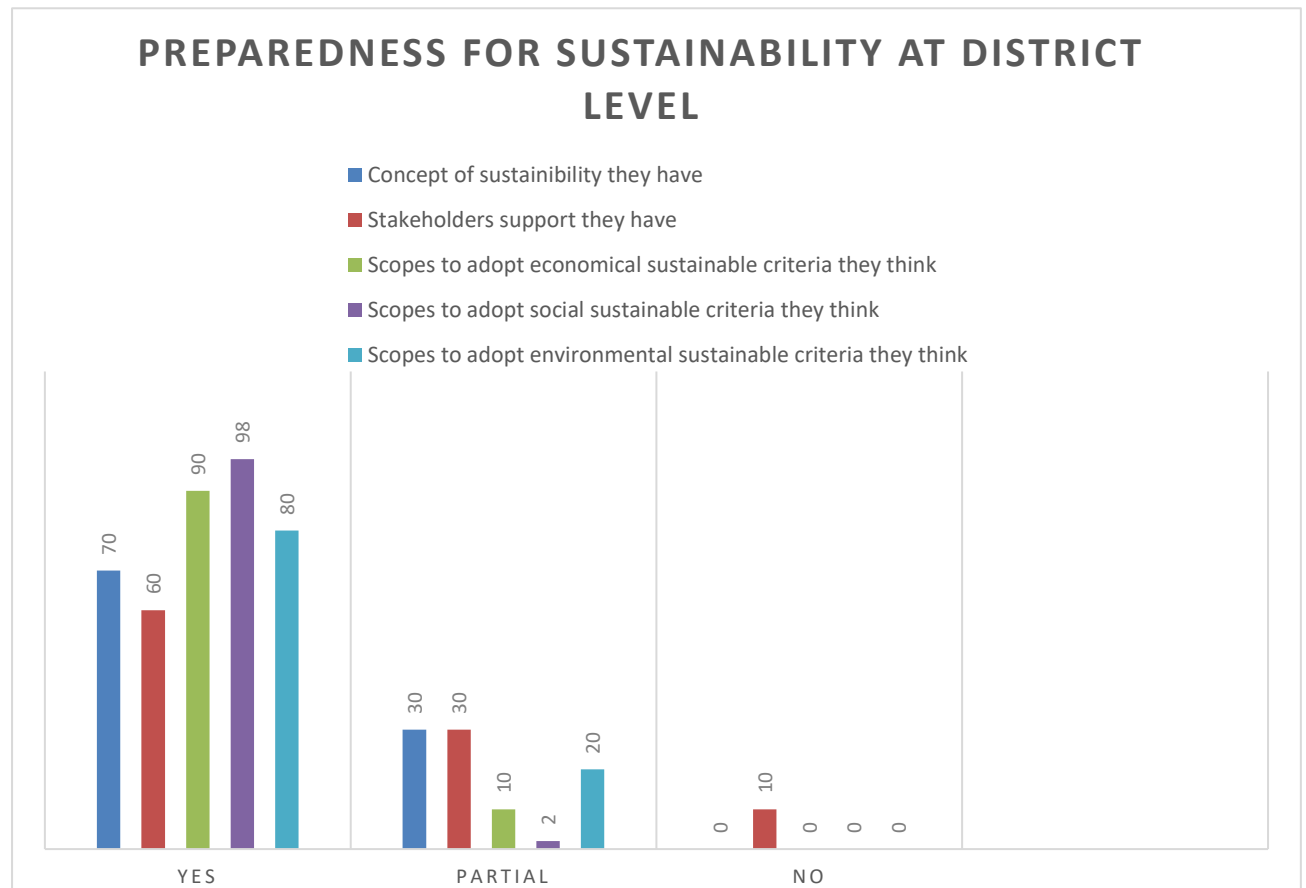


Figure 7: Respondent responses on Preparedness for sustainability

5.4 Sustainability Practices in Procurement at District:

The second section of the questionnaire assessed respondents' opinions on sustainability practices in procurement, focusing on three key categories. A general interview was conducted to explore sustainability practices in Sirajganj District. The findings revealed several important points across the three aspects of sustainable procurement. For new construction projects, sourcing construction materials from sustainable sources was considered the most important issue, while sustainability considerations in the procurement process were viewed as secondary. In contrast, for repair and maintenance works, officials prioritized sustainable procurement practices over the sustainable reuse of waste materials such as garbage and debris. Additionally, the lowest quoted price remained the primary

criterion for awarding contracts, rather than considering the most economically advantageous tender or whole life costs.

The questionnaire also included questions about respondents' sustainability practices in their daily lives. Most respondents reported that they consistently turn off electrical switches after use, purchase energy-efficient electrical and IT appliances, and minimize water consumption in daily activities. While they sometimes avoid using plastic bags, they also adhere to the 4R policy (Reduce, Reuse, Recycle, Rethink). However, the application of the three dimensions of sustainable procurement in Sirajganj District remains limited, as detailed in the following section.

5.4.1 Economic Aspect of Sustainable Procurement

As mentioned earlier, sustainable procurement involves three key dimensions: economic, environmental, and social. In this section, respondents were asked various questions related to the economic aspect of sustainable procurement, and their responses provided valuable insights.

The respondents strongly agreed with the following statements:

- Public purchasers can directly contribute to economic (financial) outcomes, such as cost savings for their organization.
- The Public Procurement Rules (PPR) and financial procedures should prioritize whole life costing to incorporate sustainability criteria, rather than focusing solely on the lowest price in all tenders.
- Procurement processes should be made more transparent by adopting e-procurement systems.

However, respondents expressed a neutral view on the following two statements:

- Local economic development could be promoted by procuring locally grown goods and encouraging first-tier contractors to work with small and medium-sized enterprises (SMEs) or small firms as subcontractors.
- Suppliers' fair and viable margins should be ensured to guarantee quality delivery and effective supply management.

Regarding the criteria used to prepare procurement specifications, most respondents stated that **lowest price** remains the primary consideration. Nevertheless, they also acknowledged that **ensuring better quality** is an important factor when preparing specifications, alongside the price. However, it was clear from their responses that **whole life costing**—a more

comprehensive approach to procurement that considers long-term costs—is rarely taken into account in the decision-making process.

In terms of encouraging local participation, the District Office does not include specific criteria in tender documents to promote the involvement of local domestic firms. However, the district procurement process occasionally incorporates the following practices:

- The process allows some room for **socially and economically disadvantaged enterprises (SMEs) and indigenous suppliers**.
- **Price adjustments** are generally not permitted.
- **E-procurement** is adopted to ensure transparency and promote competitive markets.

These findings reflect the current state of economic considerations in procurement at the district level, highlighting both opportunities for improvement and areas where sustainability can be better integrated.

According to practices of sustainable procurement on economic aspect from interviews of EED officials/Participants it is found about economic aspects, 25% agreed that PE office considers whole life costing rather than lowest price in procurement, but 65% think this practice is partial and 10% think it never happens. About 65% agreed about putting criteria in procure to encourage local contractors' participation, 15% disagreed and 20% said it happens sometimes. 80% agreed that EED district office considers viable estimated tender price but 20% think this practice is partial and 100% agreed that EED district office never considers price adjustment practice.

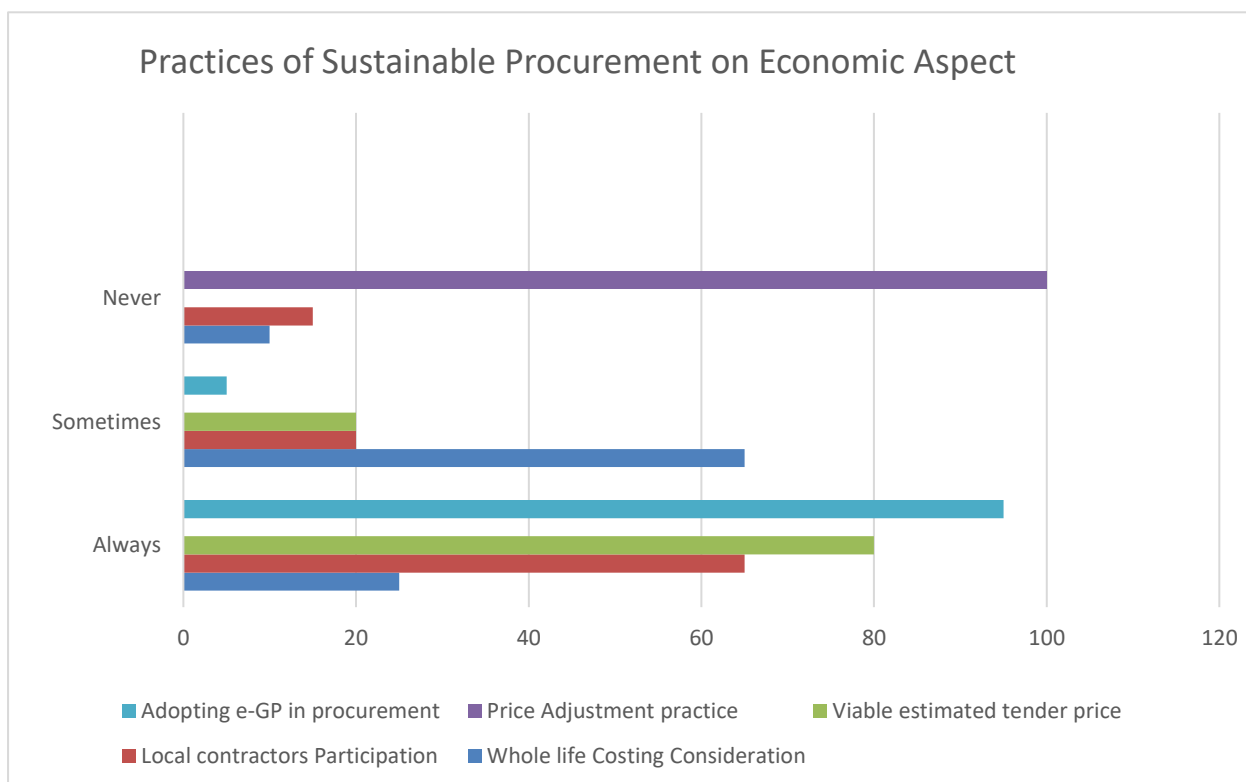


Figure 8: Respondent Responses about Sustainability Practices on Economic Aspect

5.4.2 Environmental Aspect of Sustainable Procurement

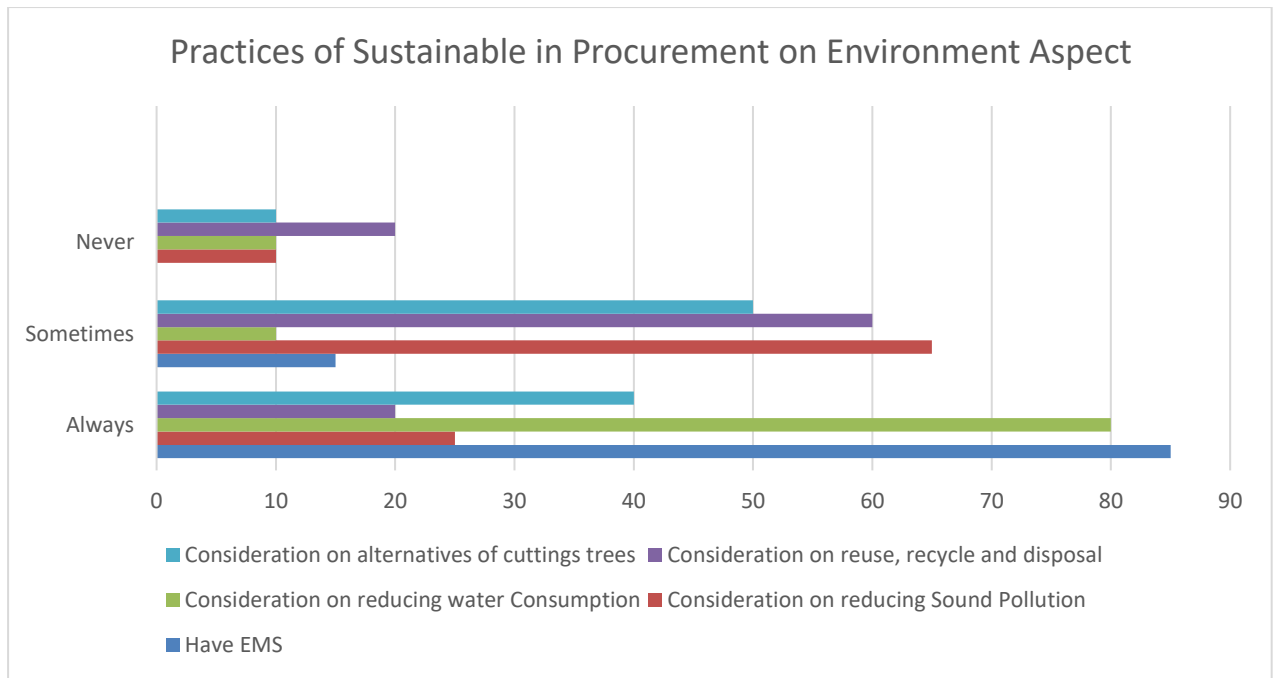
The environmental dimension is a crucial part of sustainable procurement, and efforts were made to gather the views of respondents regarding this aspect through a series of questions. EED officials in Sirajganj district generally expressed agreement with the following statements about environmental sustainability in procurement:

- **Climate change impacts**, such as greenhouse gas emissions, associated with the production, distribution, use, and disposal of goods, need to be addressed through public procurement processes.
- **Key environmental issues**, including energy use, water use and quality, hazardous waste, noise, and impact on natural habitats, should be considered over the lifecycle of goods, works, or services.
- **Sustainable design** should be promoted to minimize future resource consumption, including the use of recycled content in construction materials.

- The **public tendering process** should account for resource conservation, energy consumption, and potential adverse health and environmental effects. Additionally, there is a preference for purchasing products that are **durable, recyclable, reusable, biodegradable, energy-efficient, nontoxic, and environmentally friendly**.

The EED district office has integrated several environmentally conscious practices into its procurement process, including the following actions:

- **Environmental impact assessments** are conducted before launching high-value tenders for the district to evaluate the sustainability of the goods or services being procured.
- **Disposal considerations** for products or works are taken into account to ensure environmentally responsible management after their use.
- **Key environmental factors** such as energy consumption, water use, waste management, noise, pollutants and emissions, and the impact on natural habitats are considered throughout the lifecycle of the goods or services.
- **Sustainable building design** principles are promoted to minimize future consumption of energy and water. Additionally, cleaning services are also considered in procurement decisions.
- Before initiating new purchasing demands, the district office always considers **options for reusing, repairing, upgrading, or modifying existing assets**, reflecting a commitment to reducing waste and prolonging the life of current resources.
- At Sirajganj district in consideration of environmental aspect, 85% Participants agreed that PE office have Environmental Management System (EMS) 15% agreed sometimes. Environmental criteria for reducing noise level during construction 25% agreed always, 65% sometimes and 10% never. For consideration practices of reducing water consumption 80% respondents agreed always, 10% sometimes and 10% never. For considering on reuse, recycle and disposal 20% officers agreed about doing so always, 60 % said it is partial and 10% said it never happens. And finally, 40% agreed with finding alternatives of cutting trees during construction, 50% tried sometimes and 10% never bothered about it at all.



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- Figure 9: Respondent Responses about Sustainability Practices on Environment aspect

5.4.3 Social Aspect of Sustainable Procurement

The social dimension of sustainable procurement was explored through a series of questions posed to the respondents. EED officials in Sirajganj district expressed agreement with the following key statements related to social sustainability:

- Public procurement should prioritize the social dimensions of sustainable development, including enhancing workforce welfare, ensuring equality, and promoting diversity.
- The use of Community Benefit Clauses should be encouraged, where contractors commit to offering employment or apprenticeships to local people, particularly for larger contracts.
- Public sector purchasers should consider the "greatest common good" and provide opportunities for contracts with social enterprises and the voluntary sector to support their capacity-building efforts.
- Public procurement should serve as a tool for social inclusion, fostering local sustainability, strengthening communities, and improving the well-being of local residents by creating local employment opportunities.
- Public procurement should promote diversity and equality by encouraging a wide range of suppliers, including those from minority or underrepresented groups.

Regarding the actual practices in the district's procurement process, the EED Sirajganj district office consistently follows these actions:

- The **principle of equality** is adhered to, ensuring open participation for all potential suppliers and contractors.
- The office requires suppliers and contractors to comply with **legal provisions** regarding working hours, rest periods, vacation, and the payment of decent wages.
- **Child labor** is strictly excluded, and the organization does not engage with suppliers or contractors where child labor or human rights violations are reported.

However, there are certain practices that are applied occasionally:

- The district office **identifies the social impact** of goods, works, or services before launching high-value tenders.
- The office includes **health and safety criteria** for workers in tender documents.
- **Compliance audits** for suppliers regarding employment conditions, such as minimum wages and health and safety standards, are conducted sometimes.

The social aspect of sustainable procurement, while not the final issue, is certainly one of the most widely agreed upon by the respondents. Notably:

- **100%** of the officials agreed that they follow the **principle of equality** and comply with legal provisions in public procurement.
- **40%** of officials agreed that they consistently include **health and safety, child labor, and gender equality clauses** in tender documents, while 60% said these are included occasionally.
- **75%** of officials confirmed that the district focuses on **capacity development** activities, with 25% stating that this focus occurs only occasionally.
- **90%** of respondents acknowledged that there are no formal **compliance audits** conducted for suppliers in the procurement process, with only 10% saying that audits are conducted sometimes.

These findings demonstrate a strong commitment to the social aspects of sustainable procurement, though there are areas—such as regular audits and the inclusion of specific health and safety criteria—that could benefit from more consistent application.

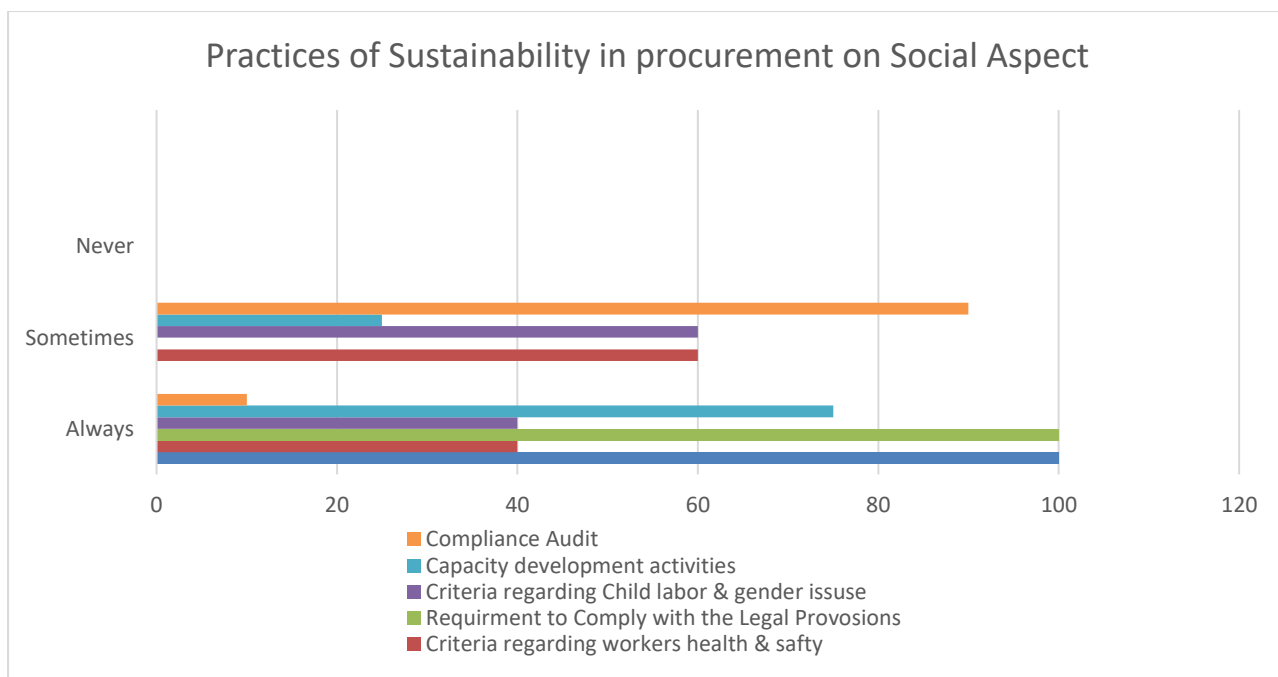


Figure 10: Respondent Responses about Sustainability Practices on Social Aspect

5.5 General Comments on Sustainable Procurement

In addition to the questions focused on the three core aspects of sustainable procurement, respondents were also asked for their general opinions and suggestions on how to improve sustainable procurement practices. Several valuable insights were provided, which are summarized as follows:

E-Government Procurement (e-GP) is currently used for the procurement process of development projects, the Annual Development Program (ADP), and the revenue budget at the district level. However, for the ADP and revenue budget, **offline tendering** methods are still employed. This offline process is sometimes influenced by local politicians and contractors, leading to unfair control. Respondents suggested that if the **e-GP system** could be fully implemented for ADP and revenue budget, it would minimize these issues and ensure fairer participation among local suppliers.

It was recommended that **all officials** should be trained in sustainable procurement practices so they can effectively apply them in their respective fields.

Respondents emphasized that **stakeholder input** should be taken into account during the tendering process. If local suppliers lack the capability to implement environmentally friendly methods, it may not be feasible to pursue sustainable procurement in that jurisdiction. Instead, the focus should be on completing the project in a traditional manner.

5.6 Obstacles to Sustainable Procurement

Respondents were also asked to identify the obstacles hindering the adoption of sustainable procurement within their organization. Apart from the barriers discussed in Chapter Two, additional challenges were highlighted, which are summarized as follows:

Local politicians' reluctance to adopt the e-GP system, which hampers the transparency and efficiency of the procurement process.

Lack of awareness among procurement professionals about the principles and practices of sustainable procurement.

Limited education and contemporary knowledge among local contractors regarding sustainable procurement practices.

General lack of knowledge of sustainable procurement practices among relevant stakeholders, including suppliers and contractors.

The continued reliance on **lowest price** as the main selection criterion, rather than considering **whole life costing** or other more sustainable approaches.

Entrenched traditional procurement practices that are resistant to change and slow to incorporate sustainability.

The absence of **clear guidelines or policies** regarding sustainable procurement, which makes it difficult for officials to implement and monitor sustainable practices effectively.

These obstacles highlight several key areas where improvements can be made, particularly in terms of training, policy development, and greater adoption of technology such as e-GP to enhance transparency and efficiency. Addressing these barriers is critical to advancing sustainable procurement practices within the district.

5.7 Suggestions for Enhancing Sustainable Procurement

During discussions with the officials of the Education Engineering Department (EED) in Sirajganj District, the researcher sought their suggestions based on their experiences in public procurement in Bangladesh. The following points were proposed:

Encourage stakeholders: There should be greater awareness and encouragement for officials, suppliers, and all stakeholders to engage with the sustainable procurement process.

Comprehensive training: Adequate training should be provided to both procurement entities and suppliers to equip them with the necessary skills and knowledge.

Raising awareness: The merits of sustainable procurement should be communicated effectively to all officials and stakeholders involved in the process.

Policy development: Top-level management should take the initiative to establish clear and actionable guidelines for sustainable procurement policies.

Summary of Key Findings

Understanding of Sustainability:

The officials have a **moderate understanding** of sustainability issues, although some confusion remains on specific aspects. However, most officials agree on the importance of integrating sustainability into public procurement. They also expressed concern for sustainability in their daily lives, indicating a general awareness. While they are familiar with sustainability concepts, this knowledge may not be sufficient for full-scale implementation in procurement practices.

Preparedness to Implement Sustainable Procurement:

The preparedness of EED officials in Sirajganj District to practice sustainability in procurement activities is **insufficient**. While they possess an overall understanding of the concept, they lack detailed training on sustainable procurement. Their knowledge is somewhat vague, and many are unsure about specific aspects of sustainability. Officials mentioned that local powerful contractors are resistant to adopting the e-GP system because it limits opportunities for manipulation, especially in offline tendering methods used for the ADP and revenue budgets, where coercion and fraudulence are more common.

Sustainability Practices in Procurement:

The third part of the analysis focused on the **level of sustainability practices** by procurement professionals. The analysis showed that officials follow the **PPR-2008 guidelines** in their tendering processes, including clauses related to sustainability. However, the key selection criterion for awarding contracts remains the **lowest price**, which is inconsistent with the principles of sustainable procurement, which emphasizes whole-life costing. Although **national competitive tenders (NCT)** are called for district-level procurements, local firms are more frequently involved in ADP and revenue budget tenders due to the **offline tendering process**. This highlights that local firms are encouraged to participate, but the overall system does not adequately support environmental performance or sustainability.

There is limited scope for ensuring environmental criteria in supplier selection or contract management.

Additional Comments and Suggestions:

When asked for additional comments, the respondents highlighted several initiatives to help achieve sustainability in procurement. These included promoting e-GP for all tenders, offering training to both procurement entities and suppliers, and raising awareness about the long-term benefits of sustainable procurement. However, they also pointed out several **barriers** to sustainable procurement, such as local resistance to the e-GP system, a lack of education and awareness among contractors, and the persistent use of lowest-price selection criteria.

Realistic Picture of Procurement Practices:

The analysis reveals that, while some sustainability practices are in place, they are **sporadic** and not universally applied across all districts in Bangladesh. Overall, the study provides a **realistic view** of public procurement at the district level, where sustainability is still an emerging practice but not yet fully integrated into procurement systems. Some sustainability issues are being addressed, but there remains a significant gap in effectively implementing these practices across the board.

5.8 Some Scope & Sustainability Practices in EED

Introduction :

Sustainable procurement is an approach that integrates environmental, social, and economic considerations into purchasing decisions. In the context of the Education Engineering Department (EED) in Bangladesh, particularly in Sirajganj District, sustainable procurement can enhance educational infrastructure while promoting responsible resource use. EED is constructing the Institutional infrastructures in district level on behalf of different government organization. From preparing the rough estimate to hand over the projects there are different level of activities. Now the sustainability practices followed by EED in construction projects are going to be discussed.

5.8.1 Non fire Bricks:

Bricks are one of the oldest and most widely used building materials in construction. EED has been using bricks in all its construction projects as they build RCC structure rather than steel structure. But the production of brick has a huge negative impact on the nature. It results air pollution, greenhouse gas emission, deforestation, soil degradation, water and energy

consumption. The Government of Bangladesh has been promoting the use of non-fire bricks instead of the traditional bricks. Incentives, policies, and regulations are being introduced to encourage the adoption of cleaner and more sustainable technologies in the brick-making industry. Production and use of non-fire bricks has been introduced already but it takes a lot of time.



Fig 11: Non fire Building blocks for newly constructed educational building

Why non fire brick can be a sustainable option: Non-fire bricks, also known as fly ash bricks or concrete bricks, offer a sustainable option for construction when compared to conventional clay bricks. Their environmentally friendly attributes are highlighted by the following reasons:

Resource Conservation & waste reduction (Environmental aspect): Non-fire bricks are typically made from industrial by-products such as fly ash, a waste material generated from coal-fired power plants. By utilizing these by-products as raw materials, non-fire bricks help reduce the demand for traditional clay, conserve natural resources as well as reduce the waste as the by-products are used as raw materials.

Energy Efficiency (Environmental aspect): The production of non-fire bricks involves a lower energy footprint, leading to reduced greenhouse gas emissions and less environmental impact.

Reduced Air Pollution and lower carbon footprint (Environmental aspect): The production of non-fire bricks generates fewer air pollutants compared to traditional clay brick manufacturing, which involves the combustion of fuel in kilns. As a result, non-fire brick production contributes to better air quality and reduce the carbon footprint.

Practices in EED: EED has been using non fire bricks in its project in a small scale since few years. The amount of non-fire bricks must be 10% of total bricks required which is the current practice and it is maintained very strictly. It is monitored and reported very strictly. In every month the field office has to report to the higher authority about the use of non-fire bricks. From using fire bricks to non-fire bricks, it will take time as it is a change programmed. Resistance has been come from the manufacturer to contractor but Government has been trying to manage it tactfully. Government encourages the manufacturer to produce environment friendly bricks by incentives, tax advantage etc. Government aims to use 100% non-fire bricks within 2025 in all its construction project.

5.8.2Rainwater harvesting:

Rainwater harvest is a simple method of collection and storage rain water, rather than allowing it to run off. It captures and stores rainwater for diverse uses, preventing wastage and offering an effective and eco-friendly water management solution. It is a very simple and old method of collecting rain water.

Why rainwater harvesting is a sustainable option: Rainwater harvesting is a sustainable practice that aligns with the principles of water conservation and environmental protection. It conserves water resources, reduces the burden on freshwater sources, and helps in managing water scarcity during dry seasons. By reducing runoff, rainwater harvesting helps to prevent soil erosion and flooding, while also recharging groundwater aquifers. It aligns with the reduce, recycle and reuse concept. Those are the reasons behind rainwater harvesting is a sustainable option.

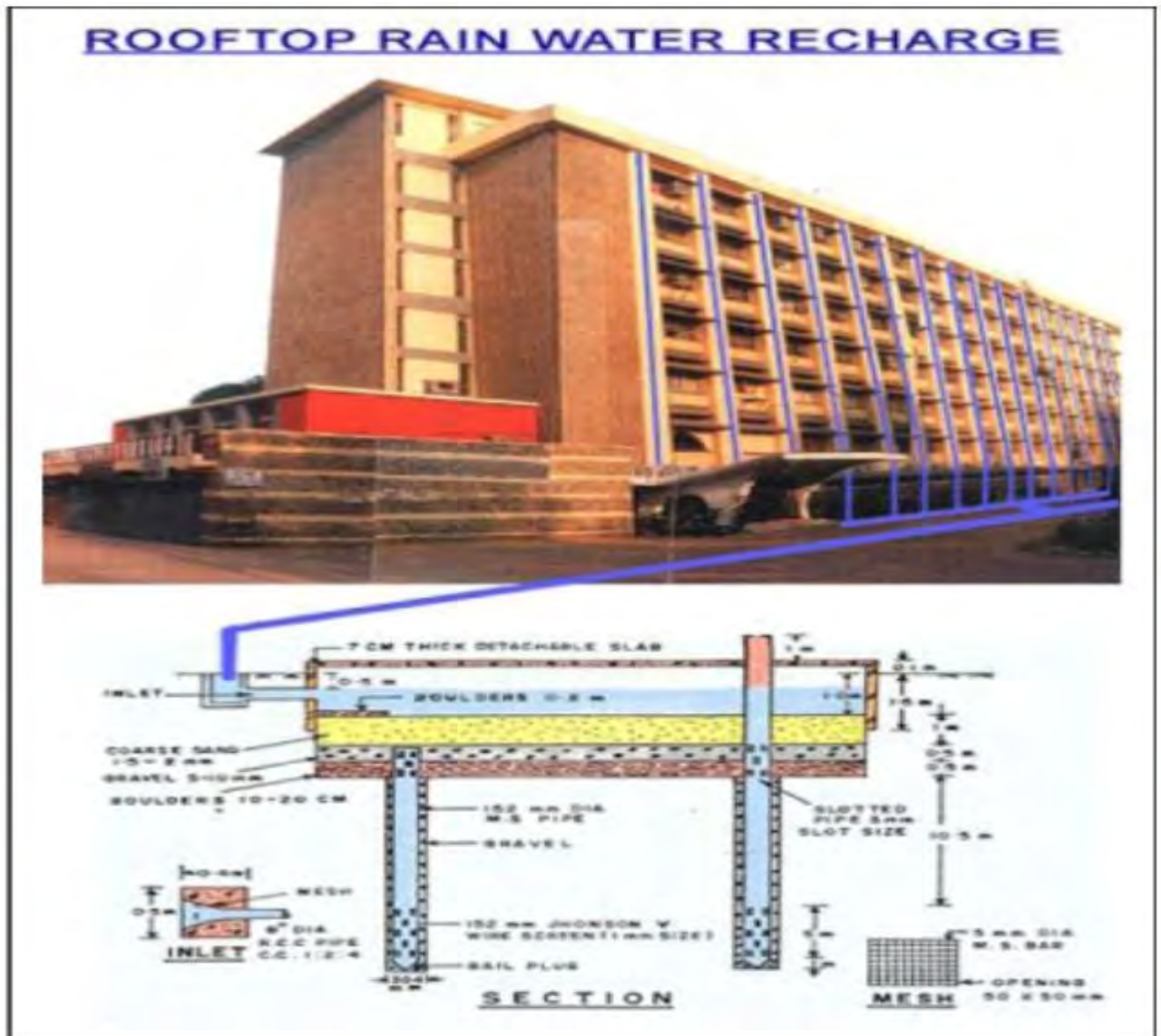


Figure 12: Rainwater harvesting in roof top in newly constructed educational building

Practices in EED

EED integrates rainwater harvesting into the majority of its construction projects, including the 100TSC Project. Most of the high-rise buildings constructed by EED feature a rainwater harvesting system. Pipes are installed on the rooftops to collect rainwater, which is then directed into a filtration system. After the water is filtered, it is stored in an underground reservoir for various uses, including drinking water and domestic purposes.

5.8.3 Solar panel:

Solar panels, also known as photovoltaic (PV) panels, are devices that convert sunlight into electricity. Solar panels are made up of multiple solar cells, typically made of silicon, that capture sunlight and produce direct current (DC) electricity.

Why Solar panel is a sustainable option:

Renewable Energy (Environmental aspect): Solar panels use sunlight, a renewable energy source. By converting sunlight into electricity without consuming finite resources, it helps to reduce dependence on fossil fuels, which are non-renewable and contribute to greenhouse gas emissions.

Reduced Carbon Footprint (Environmental aspect): Solar panels generate electricity without emitting greenhouse gases, such as carbon dioxide, methane, which are major contributors to global warming and climate change. Using solar energy reduces the carbon footprint of electricity generation, contributing to climate mitigation efforts.

Energy Independence (Social aspect): By utilizing solar panels, individuals, businesses, and communities can generate their own electricity.

Low operating cost (Profit aspect): Once installed, solar panels have low operating and maintenance costs compared to traditional fossil fuel-based power plants. This cost-effectiveness makes solar energy an attractive and sustainable choice for electricity generation.



Figure 13 : Solar energy using in roof top in newly constructed educational building

Practice in EED: EED has started the solar panel practice in their institutional buildings projects. EED installs solar panel in 3000 School project, 1800 Madrasa Project, Vertical extension of existing School building project, 100 TSC project, 64 TSC Project,

FOSEC(200college) project and also so on, where the solar energy meets the common space energy consumption and the rest portion directly contributes to the national grid.

5.8.4 LED (Light Emitting Diode) lights:

LED (Light Emitting Diode) lights are a type of lighting technology that converts electrical energy into visible light through the process of electroluminescence. LEDs have become increasingly popular as a sustainable and energy-efficient lighting solution.

Why LED is a sustainable option: LED is considered a sustainable option for lighting. LED lighting technology has several features that make it an environmentally friendly and energy efficient choice:

Energy Efficiency (Environmental and Social Aspect): LED lights are highly energy-efficient, using much less electricity than traditional incandescent or fluorescent bulbs. This results in lower energy consumption, reduced greenhouse gas emissions, and decreased electricity costs.

Long Lifespan (Environmental and Economic Aspect): LED lights have a significantly longer lifespan than traditional bulbs, lasting up to 25 times longer. This reduces the need for frequent replacements and minimizes the amount of waste generated from discarded bulbs.

Reduced Waste (Environmental aspect): Due to their long lifespan, LED lights contribute to waste reduction. Fewer bulbs need to be manufactured, reducing the consumption of raw materials and the energy required for production.

Mercury-Free (Environmental and social aspect): Unlike fluorescent bulbs, which contain mercury, LED lights are mercury-free, making them safer for both the environment and human health.



Figure 14: LED lights using in room ceiling in newly constructed educational building

Practice in EED: EED has started the practice of using LED lighting system in construction projects such as in 3000School project, 1800Madrassa Project, Vertical extension of existing

School building project, 100 TSC project, 64TSC Project, FOSEC (200college) project and also so on LED light will be used. EED has also emphasized in cross ventilation system which allows more day light in the buildings as well as introduced automated sensor which reduces loss of power. Newly constructed 100TSC/64TSC building can be a wonderful example of cross ventilation.

Conclusion : The integration of sustainable procurement within the Education Engineering Department in Sirajganj District has the potential to significantly enhance the quality of educational infrastructure while promoting environmental stewardship and social responsibility. By addressing current challenges and implementing strategic recommendations, the EED can lead by example in sustainable development efforts in Bangladesh.

CHAPTER 6

CONCLUTION AND RECOMENDATIONS

6.1 Conclusion

The primary goals of sustainable procurement (SP) were to guarantee openness, accountability, and equitable treatment in all procurement in order to maximize value for money across the nation's public sector enterprises. It is feasible on both short-term gains and a trend toward long term sustainable problems.

In public procurement the importance of non-economic factors along with the economic factor has been increasing significantly day by day with the development of the concept of sustainable development worldwide.

In this chapter, the whole study will be summed up by finding out answers of the research questions that mentioned in Chapter One to conclude the overall research.

1. What is the level of conception & preparedness on sustainable issues in Public Procurement among the officials of Education Engineering Department (EED), Sirajganj District?

Officials have fair understanding on sustainability issues, as they got several trainings on PPR, e-GP and higher degrees with experiences regarding public procurement. Besides they have honest and sincere intentions to optimize the use of natural assets and public properties during sustainable development in Sirajganj District.

2. What is the existing degree of practice in public procurement process of Education Engineering Department (EED) Sirajganj District as regards as sustainability?

To find out the level of practices and further scopes a comparison can be shown in Table 6.1 that shows the current level of practices with the scopes addressed in PPR mentioned in Chapter 2 (Table 1), as below:

Table 6.1: Comparison of Practices with Sustainability addressed in PPR

SI	Sustainability issues addressed in Public Procurement (Rules in the PPR 2008 and/or Clauses in the Standard Bidding Document)	Sustainability Practices Public Procurement at District according to respective rules in PPR-2008 (Practised / Not Practised /Partially Practised)
01	[Rule 15(2), PPR-2008] [Rule 15(7), PPR-2008] [Rule 29(2), PPR-2008] [Rule 29(3), PPR-2008]	Practised. Respondents agreed that Schedule of Rates of PWD/EED, estimated tender prices including viable margins, use of e-GP and Participation of Local Tenderers help to comply with these rules regarding specifications, fair competition, use of local goods etc.

02	[GCC 27.1, STD-PW3] [GCC 28.1, STD-PW3] [GCC 29.1, STD-PW3] [GCC 29.3, STD-PW3]	Partially Practiced. Due to financial barriers, less co-operation and lack of knowledge of stakeholders, Consideration regarding workers health and safety is not much practiced but criteria regarding compliance with legal is considered effectively.
03	[GCC 30.1, STD-PW3] [GCC 37.1, STD-PW3]	Partially Practiced. Criteria regarding child labour, gender issues and insurance coverage are strongly practiced in mainly donor-funded projects, but not too strongly adopted in other projects (GOB, Own funded).
04	[GCC 27.1, STD-PW3]	Practised. Environment Management system (EMS) and other environmental criteria regarding noise level, water consumption and pollution etc. in tender documents are well practised at District.

Table : Practices with Sustainability addressed in EED

	Name of Department	Steps of Sustainable procurement
01	Education Engineering Department	All tendering process on E-Gp (political turmoil free in field level office
		Ensuring solar energy on roof of constructed academic building
		Installed lightning arrester on roof top
		Rainwater harvesting pilot project
		Composite louver above lintel
		Red roof tally on top slope slab for heat insulation.
		Tree plantation and water quality test on SESIP project

So, in conclusion it can be stated that preparedness level of the professionals for sustainability is quite fair but practice level is not yet up to mark. Despite having different challenges and obstacles. there are scopes to practice more regarding these issues in different programs and projects of District. To obtain sustainable development for rural sector, procurement officials at field level of EED are responsible to cope with other entities, local leaders, contractors, mass beneficiaries and have to face different obstacles like land inadequacy, financial barriers, weather challenges, bureaucratic complexity etc. Hence, they require a proper formal support from top level of government to do their duties in secured and effective way. Otherwise, sustainability cannot be adopted at field level in spite of having good conception and preparedness of the officials about it.

6.2 Recommendations

Some **recommendations** are mentioned as follows to establish sustainability aspects at District level of EED:

6.2.1 All types of sustainability criteria should be set in the procurement process not only for donor-funded projects but also for all development works (new construction as well as maintenance) of District Level.

6.2.2 Capacity Development activities can be increased to aware the suppliers, local leaders and beneficiaries. Increased participation and collaboration in training, symposium, webinars from all parties, including the government, contractors, and suppliers, local service provider policy makers and so on.

6.2.3 Initiatives should be taken to improve cooperative activities with other entities, such as PWD, RHD, LGED, BWDB, PHED, HED, Zila Parishad, Administration, other departments and corporations etc.

6.2.4 Support from top management regarding policy, legal issues, compliances are very important for field level officers to adopt sustainability issues in practice in more effective way. The government ought to incorporate sustainable procurement practices into the CPTU's continuous training programs in addition to basic procurement training and advance training like training of trainers(ToT), highly specialized procurement training.

6.2.5 Innovations regarding sustainability issues should be encouraged and the full-time procurement professionals should handle all forms of procurement. Needs for advanced and widespread sustainable research. Creating a sustainable culture at both the implementation and document levels. This is a major problem that cannot be disregarded, and monitoring and controlling officers should be aware of that.

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8. Sample of Survey Questionnaire

QUESTIONNAIRE ON DISSERTATION

Dear Sir,

This survey questionnaire is part of a research study titled “Scope and Practices of Sustainable Procurement in the Education Engineering Department (EED), Bangladesh: A Case Study of Sirajganj District.” The research is being conducted as part of the requirements for the degree of Master in Procurement and Supply Chain Management (MPSM) at the BRAC Institute of Governance and Development (BIGD), BRAC University.

Your thoughtful responses to this questionnaire are highly valued and will greatly contribute to the research. Please be assured that all information and opinions provided will remain confidential and will only be used for academic purposes. Kindly take some time to review the questions and respond based on your understanding and experience.

Thank you for your participation and best regards.

Part A: PREPAREDNESS ABOUT SUSTAINABILITY

Please mention appropriate answer of the following questions. (Just tick mark appropriate one)

SI	Statement			
i	I have got trainings on Public Procurement, e-GP and e-CMS to conduct Public Procurement activity	Yes	Partial	NO
ii	I have got higher degree (PGD/Masters/PHD) related to Procurement.	Yes	Partial	NO
iii	I think it is not always possible to consider other aspects (environment or social) while a procurement official dedicates his/her works for generating the organization's benefits and reputation by achieving value for money.	Yes	Partial	NO
iv	I prefer including health and social equity, labour rights, decent working condition, etc. focused criteria in tender document in procurement process	Yes	Partial	NO
v	I believe there are scopes to put criteria regarding reduce of air pollution, noise level and water consumption during construction	Yes	Partial	NO
vi	I think the itemized specification of PWD/EED schedule of rates is addressing sustainability in procurement duly	Yes	Partial	NO
vii	I think EED staffs in field level are not electronically (i.e., use of computers, software etc) sound enough which makes barriers in gaining sustainability	Yes	Partial	NO
viii	I think contractors or suppliers are enough concerned and cordial about adopting sustainability issues.	Yes	Partial	NO
ix	I think Department's central Procurement Team give satisfactory support and guidelines to field level procurement professionals when needed.	Yes	Partial	NO
x	I think PPA-06 & PPR-08 have addressed sustainability issues in procurement process properly	Yes	Partial	NO

Part B: SUSTAINABILITY PRACTICE IN PROCUREMENT

Please mention appropriate answer of the following questions. (Just tick mark appropriate one)

Economic Aspect				
i	Does PE office consider whole life cost (WLC) principals rather than lowest price in its procurement decisions?	Yes	Partial	NO
ii	Does PE office put any criteria in the tender documents to encourage participation of local domestic firms?	Yes	Partial	NO
iii	Does Your organization's estimated tender price include suppliers /contractors fair and viable margins?	Always	Sometimes	Never
iv	Do you insert and practice price adjustment clause in your procurement contract in order to cope with market price change and security of delivery?	Always	Sometimes	Never
v	Does your PE office adopt E-tendering process, e-GP	Yes	Partial	NO
vi	Does your PE office adopt E-Contract Management process, eCMS	Yes	Partial	NO
Environmental Aspect				
i	Does PE office have an environmental management system (EMS) or make requirement for contractors to have environmental management system?	Always	Sometimes	NO
ii	Do you consider environmental criteria for reducing Noise Level in procurement process	Always	Sometimes	NO
iii	Do you consider environmental criteria for reducing Water Consumption (i.e., use of membrane curing compound or water hyacinths etc) in procurement process	Always	Sometimes	NO
iv	Do you prefer considering disposal of products/ works procured for your Upazila?	Always	Sometimes	NO
v	Do you consider options for reuse, repair, upgrade or modification in waste management before making a new purchasing demand?	Always	Sometimes	NO
vi	. Do you prefer cutting trees during construction works rather than finding other alternatives?	Yes	Partial	NO
Social Aspect				
i	Does the procurement process follow the principle of equality (i.e. participation to all the potential suppliers/ contractors) in your organization?	Yes	Partial	NO
ii	Does PE office put any criteria or clause regarding workers/ employee's health & safety (i.e., use of helmets, boots, pure drinking water, hygienic toilet facilities, pandemic precautions etc.) in your tender document?	Yes	Partial	NO
iii	Does PE office make requirement for supplier or contractor to comply with the legal provisions	Always	Sometimes	Never

	regarding working hours, rest and vacation and decent wages?			
iv	v. Does PE office put any criteria or clause regarding child labour and gender issues in your tender document?	Yes	Partial	NO
v	Does your office focus on capacity development activities (i.e., trainings, workshops etc.) to develop awareness in the stakeholders?	Yes	Partial	NO
vi	Does your organization conduct compliance audit for suppliers in the employment conditions (e.g. minimum wage, health and safety issues?)	Always	Sometimes	Never

Part C: Comments and Suggestions

1. What do you consider the most important sustainability issue for new construction in Sirajganj District?
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2. What do you consider the most important sustainability issue for repair and maintenance work in Sirajganj District?
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3. Can you suggest any initiatives that could help achieve sustainable procurement in the Education Engineering Department (EED)?
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4. What do you think are the barriers to practicing sustainable procurement in EED?
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5. Do you have any additional suggestions, opinions, or comments on sustainable procurement based on your experience with public procurement in Bangladesh?
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Thank you very much for your kind cooperation.