

**How procurement become sustainable for Agro-Meteorological
Information Systems Development Project (AMISDP),
Department of Agricultural Extension (DAE) under Ministry of
Agriculture**

By

Md. Sanowarul Islam Khan

Student ID-21282016

An internship report submitted to the department of BRAC Institute of Governance and Development (BIGD) in partial fulfillment of the requirements for the degree of Masters in Procurement and Supply Management (MPSM)

BRAC Institute of Governance and Development (BIGD)
BRAC University
December 2023

© 2020.Brac University All rights reserved.

Declaration:

It is hereby declared that

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

Student's Full Name & Signature:

Md. Sanowarul Islam Khan
Student ID-21282016 (MPSM)

Work place Supervisor's Full Name & Signature:

Dr. Md. Shah Kamal Khan
Project Director (PD)
Agro-Meteorological Information Systems Development Project(AMISDP)
Department of Agricultural Extension (DAE), Ministry of Agriculture

Supervisor's Full Name & Signature:

Md. Mosta Gausul Hoque, PMP
Senior Trainer, BIGD, Brac University

Letter of Transmittal

Md. Mosta Gausul Hoque, PMP
Senior Trainer, BIGD, BRAC University
66 Mohakhali, Dhaka-1212

Subject: **Submission of Report/Practicum.**

Dear Sir,

I am grateful to submit herewith my report on “*How procurement become sustainable for Agro-Meteorological Information Systems Development Project (AMISDP), Department of Agricultural Extension (DAE) under Ministry of Agriculture*” as a partial requirement for achieving the degree of Masters in Procurement and Supply Management. It is a great opportunity for me to work under your active supervision, care and guidance.

I have collected data from Agro-Meteorological Information Systems Development Project (AMISDP), Department of Agricultural Extension (DAE) under Ministry of Agriculture for preparing the report. I am thankful to you for providing me this opportunity to work on this topic and I will be trying to answer all the questions that you have about the paper. I have tried my label best to complete this research paper meaningfully and correctly, as much as possible. I am submitting the report with the hope that it lives up to your satisfaction. However, I would be glad to provide you with any clarification regarding this report.

Sincerely yours,

Md. Sanowarul Islam Khan
Student ID No. 21282016
Masters in Procurement and Supply Management
BRAC Institute of Governance and Development (BIGD)
BRAC University
Date: December 22, 2023

Non-Disclosure Agreement

All relevant data and information, supporting records prepared by me for report shall be confidential and become and remain the absolute property of the Agro-Meteorological Information Systems Development Project (AMISDP), Department of Agricultural Extension (DAE) under Ministry of Agriculture (Client). Brac University/I, myself, may retain a copy of such documents, data and/or software but shall not use the same for purposes unrelated to without prior written approval of the Client.

This agreement is made and entered into by and between Md. Sanowarul Islam Khan, Student ID No. 21282016 and the undersigned student at BRAC University.

Acknowledgement

First and foremost, my heartfelt acknowledgement of gratitude to my respected academic supervisor Mr. Md. Mosta Gausul Hoque, PMP, Senior Trainer, BIGD, BRAC University, for his patient mentoring and spirited motivation during the course of this report work.

I am thankful to my workplace supervisor Dr. Md. Shah Kamal Khan, Project Director(PD), Agro-Meteorological Information Systems Development Project(AMISDP), Department of Agricultural Extension (DAE), Ministry of Agriculture for his patient answering of all my queries and support to collect necessary data for the report.

I intend to convey my deepest appreciation to all the associates of BIGD for their continuous support and cooperation during the course of this study. I also thankful to Tanzina M. Mizan, Training Officer, BRAC Institute of Governance and Development (BIGD), BRAC University for her continuous assistance throughout and after the course of the study.

Finally, I would like to express my gratitude to the entire respected faculty of MPSM who teach me many practical examples of public procurement during the different courses of this Master's Program.

Abstract

This thesis focuses on the development of sustainable procurement strategies for the Agro-Meteorological Information Systems Development Project (AMISDP) in the Department of Agricultural Extension (DAE) under the Ministry of Agriculture. The objective of this study is to establish a framework that enhances the sustainability of procurement practices and aligns them with the overall goals of the project and the department.

Sustainable procurement (SP) is defined as procurement that adheres to the ideals of sustainable development, such as supporting a strong, healthy, and just society, living within environmental constraints, and fostering good governance. Sustainable procurement is a purchasing strategy that considers economic, environmental, and social sustainability. Public procurement including AMISDP is concerned with how government organizations spend money from taxpayers on goods, works, and services. Transparency, accountability, and delivering value for money for residents and taxpayers guide public procurement.

The current state of sustainable procurement practice in the public sector has been investigated through interviews with important procurement specialists from a variety of public sector organizations, focusing on three dimensions of sustainable procurement: economic, environmental, and social. The investigations show that, while there are a few situations where some sustainability challenges are being addressed, they are not very widespread in the public sector as a whole.

In Bangladesh, the existing tendering procedure is still based on the lowest price approach, and the full life costing strategy is rarely addressed in various public sector department. With the exception of a handful, the majority of public sector organizations do not have such an environmental management system in place. According to the study, there is now almost no mechanism in our public procurement system to check the environmental performance of contractors/suppliers.

Public procurement and AMISDP guarantees that everyone has an equal opportunity as well as World Bank has the same rule. The Public Procurement Rules, 2008 forbid establishing specifications that can exclude any suppliers/contractors. Ethical labor practices are present throughout the procurement system, albeit to a lesser extent. Female labor participation is not effectively ensured by contract provisions, despite the fact that contractors occasionally use female labor force for their own benefit.

Sustainability factors should be incorporated into the tendering process. Individual procurement professional knowledge and awareness appear to be crucial in order to make active sustainable buying choices. A strong commitment is required from the top of government all the way down to the ministries, authorities, and chief executives in all public agencies. A sustainable procurement policy must be developed, and the public procurement structure must be aligned with the policy. At the outset of such a policy, political will is essential.

The AMISDP project's sustainable procurement strategy presents policy recommendations for the DAE and AMISDP, practical guidelines for procurement officers, and addresses potential impediments and mitigation measures for future research directions in the field of sustainable procurement.

Contributes to the knowledge and practice of sustainable procurement in the context of the AMISDP project. By incorporating sustainable procurement strategies, the DAE and AMISDP can improve the sustainability of their procurement practices, reduce environmental impacts, promote social responsibility, and achieve long-term economic viability in project implementation.

Table of Contents

	Page No.
ACKNOWLEDGEMENT	v
ABSTRACT	vi
ABBREVIATIONS AND ACRONYMS	x
Chapter 1: Introduction	
1.1 General introduction	1
1.2 Background	2
1.3 Objectives	3
1.4 Significance of the Study	3
Chapter 2: Literature Review	
2.1 Sustainable Procurement: Concepts and Principles	5
2.2 Benefits of Sustainable Procurement in Agricultural Projects	6
2.3 Key Elements of Sustainable Procurement	8
2.4 Challenges and Barriers to Sustainable Procurement	9
2.5 Sustainable Procurement Frameworks	10
Chapter 3: Methodology and Data Analysis	
3.1 Research Design	12
3.2 Data Collection Methods	13
3.3 Data Analysis	14
Chapter 4: Public Procurement: An Overview from Bangladesh	
4.1 Introduction	15
4.2 The Public Procurement History	15
4.3 Public Procurement Evolution in Bangladesh	16
4.4 Legal Framework of Public Procurement in Bangladesh	17
4.5 Main Features of Public Procurement	18
4.6 Towards the Sustainable Procurement	19
Chapter 5: Sustainable Procurement Strategies for AMISDP	
5.1 Sustainability Criteria in Procurement Processes	20
5.2 Developing Green Procurement Policies	21
5.3 Supplier Selection Criteria for Sustainability	22
5.4 Capacity Building for Sustainable Procurement	23
5.5 Monitoring and Evaluation of Sustainable Procurement	23
5.6 Continuous Improvement in Sustainable Procurement Practices	25
Chapter 6: Conclusions and Recommendations	
6.1 Conclusions	26
6.2 Recommendations	27
References	29

ABBREVIATIONS AND ACRONYMS

AMISDP	Agro-Meteorological Information Systems Development Project
ADP	Annual Development Plan
BIGD	BRAC Institute of Governance and Development
BCIC	Bangladesh Chemical Industries Corporation
BSEC	Bangladesh Steel & Engineering Corporation
BPC	Bangladesh Petroleum Corporation
BADC	Bangladesh Agricultural Development Corporation
BJMC	Bangladesh Jute Mills Corporation
BWDB	Bangladesh Water Development Board
CPO	Chief Procurement Officer
CGFR	Compilation of General Financial Rules
CPAR	Country Procurement Assessment Report
CPTU	Central Procurement Technical Unit
DAE	Department of Agricultural Extension
DoFP	Delegation of Financial Powers
DPHE	Department of Public Health Engineering
DPM	Direct Procurement Method
DESCO	Dhaka Electric Supply Company
ERD	Economic Relations Division
EED	Education Engineering Department
GPP	Green Public Procurement
GP	Green Procurement
HED	Health Engineering Department
HOPE	Head of Procuring Entity
IT	Information Technology
IMED	Monitoring and Evaluation Division
KPIs	Key performance indicators
LCA	Life Cycle Assessment
LGED	Local Government Engineering Department
LEED	Leadership in Energy and Environmental Design
LTM	Limited Tendering Method
NGOs	Non-Government Organization
OTM	Open Tendering Method
PD	Project Director
PPA	Public Procurement Act
PWD	Public Works Department
PPPAP	Public Procurement Processing and Approval Procedures
PPP	Public Procurement Policy
PPRP	Public Procurement Rules and Procedures
PDB	Power Development
RHD	Roads and Highways Department
RFQM	Request for Quotation Method

STDs	Standard Tender Documents
SBCD	Standard Bidding and Contract Documents
SRFPs	Standard Request for Proposals
TCO	Total Cost of Ownership
T&T	Telephone and Telegraph
TSTM	Two Stage Tendering Method

Chapter 1

Introduction

1.1 General introduction

The Agro-Meteorological Information Systems Development Project (AMISDP) in the Department of Agricultural Extension (DAE) under the Ministry of Agriculture plays a crucial role in supporting sustainable agriculture and ensuring food security (AMISDP, BSR, 2018). The project aims to develop robust information systems that provide accurate and timely agro-meteorological information to farmers, enabling them to make informed decisions regarding crop planning, irrigation, and pest management etc. (PAD, 2016). While the project's core objective is to enhance agricultural productivity and resilience, it is equally important to consider the sustainability of procurement practices within the project.

Sustainable procurement entails integrating environmental, social, and economic considerations into the procurement process. It goes beyond merely acquiring goods and services; it involves making choices that align with the principles of sustainability and contribute to long-term environmental and social well-being. By adopting sustainable procurement strategies, the AMISDP project can maximize its positive impact on the environment, promote social responsibility, and ensure the project's long-term viability.

The implementation of sustainable procurement strategies for the AMISDP project has several benefits. Firstly, it can minimize the project's environmental footprint by considering reducing waste generation, promoting energy efficiency, and reducing the life cycle impacts of procured goods and services. Secondly, sustainable procurement can foster social responsibility by considering suppliers' labor practices, human rights, and commitment to fair trade. This approach ensures that the project contributes to the well-being of local communities, including farmers, and supports ethical business practices. Lastly, sustainable procurement can contribute to the project's long-term economic viability by encouraging cost-effective solutions, reducing risks associated with unsustainable practices, and promoting innovation and collaboration with sustainable suppliers (World Bank Borrowers, 2011).

To achieve these benefits, this study will develop a comprehensive framework for sustainable procurement in the AMISDP project. The framework will encompass various aspects, including incorporating sustainability criteria into procurement processes, developing green procurement policies, establishing supplier selection criteria that prioritize sustainability, conducting life cycle assessments to inform procurement decisions, providing capacity building for sustainable procurement practices, fostering collaboration with stakeholders, implementing monitoring and evaluation mechanisms, and promoting a culture of continuous improvement in sustainable procurement practices.

By implementing the proposed sustainable procurement strategies, the AMISDP project can become a role model for sustainable practices within the agricultural sector. It will not only contribute to the overall sustainability objectives of the DAE and the Ministry of Agriculture

but also inspire other projects and organizations to adopt similar approaches. Ultimately, this study aims to contribute to the advancement of sustainable procurement practices in the context of agricultural development, paving the way for a more sustainable and resilient agricultural sector.

1.2 Background

The Agro-Meteorological Information Systems Development Project (AMISDP) implemented by the Department of Agricultural Extension (DAE) under the Ministry of Agriculture is a critical initiative aimed at supporting sustainable agricultural practices and ensuring food security. The project focuses on the development and implementation of Agro-Meteorological information systems that provide timely and accurate Agro-Meteorological advisory to the farmers. By equipping farmers with reliable weather information, the project empowers them to make informed decisions related to crop planning, irrigation, and pest management, ultimately enhancing agricultural productivity and resilience (AMISDP, 2019).

The AMISDP project's primary goal is to improve agricultural outcomes; however, sustainable procurement methods are vital to the project's execution. Getting things done requires procurement, which is essential. The project may make sure that its operations follow the principles of environmental, social, and economic sustainability by implementing sustainable procurement practices.

Sustainable procurement refers to the integration of sustainability considerations into the procurement process. It involves assessing the environmental impact of procured goods and services, promoting social responsibility, and prioritizing long-term economic viability (World Bank Borrowers, 2011). By adopting sustainable procurement practices, the AMISDP project can reduce its environmental footprint, support ethical and fair business practices, and achieve long-term cost-effectiveness.

However, implementing sustainable procurement strategies within the AMISDP project presents unique challenges and opportunities. Factors such as the diverse range of goods and services required, the involvement of various stakeholders, and the need to balance economic considerations with sustainability objectives must be carefully considered. Therefore, it is essential to develop a tailored framework for sustainable procurement that addresses the specific requirements and objectives of the AMISDP project. To address these challenges and opportunities by developing sustainable procurement strategies specifically designed for the AMISDP project. By conducting a thorough analysis of existing literature on sustainable procurement practices and assessing the current procurement practices within the project, this research will identify areas where sustainability can be integrated effectively. The findings will contribute to the development of a comprehensive framework that enhances the sustainability of procurement practices within the AMISDP project.

Through the implementation of sustainable procurement strategies, the AMISDP project can make significant strides towards its sustainability goals. It can minimize environmental impacts by considering the life cycle of procured goods and services, promote social responsibility by engaging with suppliers committed to fair and ethical practices, and achieve long-term economic viability through cost-effective and innovative solutions. Furthermore, the project can serve as a model for sustainable procurement within the agricultural sector, inspiring other initiatives and organizations to adopt similar approaches. By developing sustainable procurement strategies for the AMISDP project, this study aims to contribute to the broader objectives of the DAE and the Ministry of Agriculture. By aligning procurement practices with sustainability principles, the project can foster a more sustainable and resilient agricultural sector, ultimately benefiting farmers, communities, and the environment.

1.3 Objectives

The goal of this study is to develop a better understanding of how environmental, social, and economic concerns advance through public procurement, or AMISDP procurement, by making it sustainable in the context of the surrounding circumstances. Additionally, efforts will be made to evaluate the potential and limitations of incorporating environmental criteria into the selection process for the AMISDP.

1.4 Significance of the Study

The study on sustainable procurement strategies for the AMISDP in the Department of Agricultural Extension (DAE) under the Ministry of Agriculture holds significant importance due to several key reasons:

Environmental Impact: By integrating sustainable procurement practices into the AMISDP project, the study aims to reduce the environmental impact associated with the procurement of goods and services. This includes considering the life cycle impacts of procured items, promoting energy efficiency, waste reduction, and the use of environmentally friendly materials. The study will contribute to minimizing the project's carbon footprint and preserving natural resources.

Social Responsibility: Sustainable procurement strategies prioritize social responsibility, ensuring that the procurement process supports fair trade, ethical labor practices, and the well-being of local communities. By examining the social impact of procurement decisions, the study will promote responsible sourcing and contribute to the development of sustainable supply chains within the AMISDP project.

Economic Viability: Implementing sustainable procurement strategies can enhance the long-term economic viability of the AMISDP project. By prioritizing cost-effectiveness, innovation, and collaboration with sustainable suppliers, the study aims to optimize procurement decisions and reduce financial risks. This contributes to the project's overall economic sustainability and ensures the efficient use of resources.

Policy Development: The study will provide valuable insights and recommendations for policymakers within the Department of Agricultural Extension (DAE) and the Ministry of Agriculture.

Knowledge Advancement: By conducting a thorough analysis of existing literature, examining current practices, and developing a tailored framework for sustainable procurement, the study contributes to the knowledge and understanding of sustainable procurement within the agricultural sector.

Sector-wide Impact: The AMISDP project, being a significant initiative within the agricultural sector, has the potential to influence and inspire other projects and organizations involved in agricultural development. By implementing sustainable procurement strategies, the project can serve as a model for promoting sustainable practices within the sector, encouraging replication and creating a ripple effect of positive change.

Chapter 2 Literature Review

2.1 Sustainable Procurement: Concepts and Principles

The concept of sustainability first emerged into mainstream discourse in 1972, during the United Nations Conference on the Human Environment, according to Blackburn (2007). At a time when serious environmental concerns were beginning to be raised in relation to industrial development and practices, the conference delegates debated which was more important:

There are many different names for sustainable procurement: green procurement, environmental procurement, affirmative procurement, responsible procurement, socially responsible procurement, and so on. There is no universally accepted definition of sustainable procurement. The United Nations procurement website describes it in the following ways:

When it integrates requirements, specifications, and criteria that are compatible and in favor of the protection of the environment, social progress, and economic development, namely by seeking resource efficiency, improving the quality of products and services, and ultimately optimizing costs, it is called sustainable procurement (UNGM, 2011).

It involves integrating environmental, social, and economic considerations into the procurement process. It goes beyond the traditional focus on cost and quality to incorporate broader sustainability goals. By adopting sustainable procurement strategies, the AMISDP in the DAE under the Ministry of Agriculture can ensure that its procurement practices contribute to long-term environmental and social well-being while supporting economic viability.

Environmental Sustainability:

- *Life Cycle Assessment (LCA)*: Consider the environmental impacts of procured goods and services throughout their entire life cycle, including extraction, production, use, and disposal. LCA helps identify environmentally preferable alternatives and promotes resource efficiency.
- *Green Procurement*: Prioritize environmentally friendly products and services, such as energy-efficient equipment, renewable energy sources, and sustainable materials. Set environmental criteria and standards for suppliers (website).

Social Responsibility:

- *Ethical Labor Practices*: Engage with suppliers committed to fair labor practices, safe working conditions, and respect for human rights. Assess supplier compliance with relevant social standards and certifications.
- *Local Community Development*: Give preference to local suppliers, supporting the local economy and fostering community development. Consider suppliers that engage in community initiatives and contribute to social well-being.

Economic Viability:

- *Total Cost of Ownership (TCO)*: The entire life cycle costs of procured goods and services, including acquisition, operation, maintenance, and disposal, are considered. Assess the long-term value and cost-effectiveness of procurement decisions.
- *Innovation and Collaboration*: Encourage suppliers to offer innovative, sustainable solutions. Foster collaboration with suppliers to identify opportunities for cost savings, efficiency improvements, and sustainable practices.

Supplier Engagement:

- *Supplier Selection Criteria*: Establish criteria that prioritize sustainability, such as environmental certifications, social responsibility commitments, and track record of sustainability performance.
- *Supplier Capacity Building*: Provide training and support to suppliers to enhance their understanding of sustainable procurement requirements and practices. Help suppliers improve their sustainability performance.
- *Transparent Communication*: Foster open and transparent communication with suppliers regarding sustainability expectations, performance requirements, and evaluation criteria.

Monitoring and Evaluation:

- *Performance Metrics*: Define key performance indicators (KPIs) to assess the effectiveness of sustainable procurement strategies. Measure and track environmental and social impacts, cost savings, supplier compliance, and overall sustainability performance.
- *Auditing and Reporting*: Conduct regular audits to ensure compliance with sustainability requirements. Develop sustainability reports to communicate achievements, challenges, and future goals.

By adopting these sustainable procurement concepts and principles, the AMISDP project can ensure that its procurement activities align with broader sustainability objectives. Sustainable procurement not only minimizes negative environmental and social impacts but also promotes economic efficiency and innovation. It contributes to the project's long-term viability, enhances its reputation, and serves as a catalyst for positive change within the agricultural sector.

2.2 Benefits of Sustainable Procurement in Agricultural Projects

Implementing sustainable procurement strategies in the Agro-Meteorological Information Systems Development Project (AMISDP) within the Department of Agricultural Extension (DAE) under the Ministry of Agriculture can yield several significant benefits:

Environmental Conservation:

- *Reduced Environmental Footprint*: Sustainable procurement practices minimize the project's environmental impact by considering the life cycle of procured goods and services. This includes selecting environmentally friendly products, promoting energy efficiency, and reducing waste generation.
- *Preservation of Natural Resources*: By prioritizing sustainable sourcing and responsible consumption, the project contributes to the preservation of natural resources, such as water, land, and biodiversity. This supports long-term ecological sustainability in the agricultural sector.

Enhanced Agricultural Resilience:

- *Improved Decision-Making:* Timely and accurate meteorological data obtained through sustainable procurement of information systems empower farmers to make informed decisions regarding crop planning, irrigation, and pest management. This increases agricultural productivity and resilience in the face of climate variability and change.
- *Better Risk Management:* Sustainable procurement enables the acquisition of reliable and robust technologies and services, reducing risks associated with system failures, data inaccuracies, and inadequate support. This enhances the project's ability to provide critical information to farmers, enabling them to mitigate and manage risks effectively.

Social and Economic Benefits:

- *Ethical Supply Chains:* Sustainable procurement promotes social responsibility by engaging with suppliers committed to fair labor practices, safe working conditions, and respect for human rights. This contributes to ethical supply chains and supports the well-being of workers involved in the project.
- *Local Economic Development:* Prioritizing local suppliers and engaging in community initiatives fosters local economic development. The project can stimulate job creation, support local businesses, and contribute to the overall socio-economic growth of the communities it serves.

Cost Savings and Efficiency:

- *Total Cost of Ownership (TCO):* Sustainable procurement practices consider the total cost of ownership, which includes not only the initial acquisition cost but also operation, maintenance, and disposal costs. By optimizing procurement decisions, the project can achieve long-term cost savings and improve financial efficiency.
- *Innovation and Resource Efficiency:* Sustainable procurement encourages suppliers to offer innovative and sustainable solutions. This drives resource efficiency, promotes the adoption of new technologies, and supports the development of a more sustainable agricultural sector.

Positive Reputation and Stakeholder Engagement:

- *Enhanced Project Reputation:* Embracing sustainable procurement practices enhances the project's reputation as a responsible and environmentally conscious initiative. This can attract positive attention from stakeholders, funding agencies, and the wider community.
- *Stakeholder Engagement:* Sustainable procurement provides an opportunity to engage and collaborate with various stakeholders, including suppliers, farmers, local communities, and government agencies. This fosters partnerships, builds trust, and creates a shared commitment to sustainability goals.

In conclusion, the adoption of sustainable procurement strategies in the AMISDP project brings numerous benefits, including environmental conservation, enhanced agricultural resilience, social and economic advantages, cost savings, and improved stakeholder engagement. By integrating sustainability into procurement processes, the project can effectively contribute to the overall goals of the Department of Agricultural Extension (DAE) and the Ministry of Agriculture, leading to a more sustainable and resilient agricultural sector.

2.3 Key Elements of Sustainable Procurement

While the Agro-Meteorological Information Systems Development Project (AMISDP) in the Department of Agricultural Extension (DAE) under the Ministry of Agriculture focuses on the agricultural sector, it can draw inspiration and learn from sustainable procurement practices implemented in other sectors. Here are some examples of sustainable procurement practices in various sectors:

Public Sector:

- *Green Public Procurement (GPP):* Many governments have adopted GPP policies that require public institutions to prioritize environmentally friendly products and services in their procurement processes. This includes considering energy efficiency, recyclability, and reduced carbon emissions.
- *Social Value Procurement:* Public sector organizations incorporate social value considerations into their procurement decisions, aiming to maximize positive social impacts. This includes supporting local businesses, creating employment opportunities, and promoting fair and inclusive practices.

Construction Industry:

- *Sustainable Building Materials:* Procurement strategies in the construction sector focus on sourcing sustainable building materials, such as recycled materials, low-emission products, and renewable energy systems. This reduces the environmental impact of construction projects and promotes resource efficiency.
- *Green Building Certifications:* Procurement practices align with green building certifications, such as LEED (Leadership in Energy and Environmental Design) and BREEAM (Building Research Establishment Environmental Assessment Method), ensuring that construction projects meet strict environmental performance criteria.

Information Technology (IT) Sector:

- *Energy-Efficient Equipment:* Sustainable procurement in the IT sector emphasizes the selection of energy-efficient equipment, such as servers, computers, and data centers. This reduces energy consumption and associated greenhouse gas emissions.
- *E-Waste Management:* IT procurement practices also focus on responsible disposal and recycling of electronic waste (e-waste). Suppliers are evaluated based on their commitment to proper e-waste management and recycling programs.

Healthcare Sector:

- *Sustainable Medical Supplies:* Sustainable procurement in the healthcare sector involves sourcing medical supplies that are environmentally friendly and ethically produced. This includes considering materials, packaging, and waste management practices.
- *Ethical and Fair Trade Practices:* Healthcare institutions prioritize suppliers that adhere to ethical labor practices and fair trade principles, ensuring that medical supplies are produced under safe working conditions and without exploitation.

Energy Sector:

- *Renewable Energy Procurement:* Sustainable procurement practices in the energy sector focus on sourcing renewable energy technologies, such as solar panels, wind turbines, and biomass systems. This contributes to the transition to a low-carbon energy supply and reduces reliance on fossil fuels.
- *Energy Management Systems:* Procurement decisions include energy management systems and software that optimize energy consumption, monitor energy usage, and identify energy-saving opportunities.

By examining sustainable procurement practices in these sectors, the AMISDP project can gain insights into successful strategies and adapt them to its specific context in the agricultural sector. By leveraging best practices and lessons learned, the project can enhance its sustainable procurement efforts, promote environmental and social responsibility, and contribute to the broader sustainable development goals of the Ministry of Agriculture.

2.4 Challenges and Barriers to Sustainable Procurement

Implementing sustainable procurement strategies in the Agro-Meteorological Information Systems Development Project (AMISDP) in the Department of Agricultural Extension (DAE) under the Ministry of Agriculture may encounter several challenges and barriers. Recognizing these challenges and developing strategies to overcome them is crucial for successful implementation. Here are some common challenges and barriers to consider:

Limited Awareness and Understanding:

- *Lack of Knowledge:* Stakeholders involved in procurement processes may have limited awareness of sustainable procurement practices, including its benefits and implementation strategies. This can hinder the integration of sustainability criteria into procurement decision-making.
- *Training and Capacity:* Insufficient training and capacity-building opportunities for procurement staff can impede the adoption of sustainable procurement practices. Building knowledge and skills through training programs and workshops is essential to overcome this barrier.

Cost Considerations:

- *Perceived Higher Costs:* Sustainable procurement practices, initially, may seem more expensive due to the inclusion of environmental and social criteria. This perception can deter organizations from adopting sustainable approaches. However, a comprehensive cost-benefit analysis can demonstrate the long-term financial advantages of sustainable procurement, including energy savings and reduced life cycle costs.
- *Budget Constraints:* Limited budget allocations may pose challenges for integrating sustainability criteria into procurement decisions. Collaboration with finance departments and exploring funding opportunities for sustainable procurement initiatives can help address this barrier.

Supplier Engagement and Availability:

- *Limited Supplier Options:* The availability of suppliers that meet sustainability criteria may be limited, particularly in regions with fewer sustainable options. This can make it challenging to source environmentally friendly and socially responsible products and services. Engaging with suppliers, promoting awareness of sustainable requirements, and encouraging innovation can help expand the supplier base over time.
- *Supplier Compliance:* Ensuring supplier compliance with sustainability criteria can be challenging. Establishing clear requirements, conducting audits, and monitoring supplier performance are necessary to overcome this barrier. Collaboration with suppliers and establishing long-term relationships can foster their commitment to sustainability.

Complex Supply Chains:

- *Lack of Transparency:* Complex supply chains make it difficult to trace the origin of products and verify sustainability credentials. This poses challenges in ensuring responsible sourcing and ethical practices. Collaborating with suppliers to improve transparency and implementing traceability measures can address this barrier.
- *Subcontracting and Outsourcing:* Supply chains involving subcontractors and outsourced processes can create challenges in maintaining control over sustainability practices. Implementing robust contractual agreements and due diligence processes are essential to ensure sustainable practices are followed throughout the supply chain.

Integration into Existing Procurement Processes:

- *Institutional Resistance to Change:* Resistance to change within organizations can hinder the integration of sustainable procurement practices. Overcoming resistance requires strong leadership, effective communication, and demonstrating the benefits of sustainable procurement to gain organizational buy-in.
- *Aligning with Existing Procedures:* Sustainable procurement practices need to be integrated into existing procurement policies, procedures, and regulations. This may require revisions and updates to ensure alignment and avoid conflicts with existing processes.

By recognizing and addressing these challenges and barriers, the AMISDP project can proactively develop strategies to overcome them. Engaging stakeholders, providing training and capacity-building, promoting collaboration with suppliers, and integrating sustainability considerations into existing procurement processes are key steps to successfully implement sustainable procurement practices. Over time, the project can reap the environmental, social, and economic benefits of sustainable procurement and contribute to the overall sustainability goals of the Department of Agricultural Extension (DAE) and the Ministry of Agriculture.

2.5 Sustainable Procurement Frameworks

Sustainable procurement is an important aspect taken into consideration by the AMISDP in the DAE under the Ministry of Agriculture. There may be gaps in the existing literature. These gaps can highlight areas where further research is needed to enhance the understanding and implementation of sustainable procurement strategies specific to the AMISDP context. Some potential gaps in the present information are listed below:

- *Contextualization of Sustainable Procurement for AMISDP*: The existing literature may lack specific insights into the application of sustainable procurement strategies within the AMISDP. Further research is needed to contextualize sustainable procurement practices in the agricultural sector, specifically addressing the challenges, opportunities, and unique requirements of implementing sustainable procurement for agro-meteorological information systems.
- *Integration of Environmental and Social Sustainability*: The literature may predominantly focus on environmental sustainability aspects of procurement, such as green procurement and resource efficiency, while giving comparatively less attention to social sustainability dimensions. Future research could explore the integration of both environmental and social sustainability considerations in the procurement processes of AMISDP, addressing issues like fair labor practices, community engagement, and social value creation.
- *Evaluation and Measurement of Sustainable Procurement Performance*: There may be a gap in research regarding the evaluation and measurement of sustainable procurement performance in the AMISDP. Developing robust frameworks and metrics to assess the effectiveness and impact of sustainable procurement strategies, including environmental, social, and economic indicators, would be valuable for monitoring and continuously improving procurement practices.
- *Stakeholder Engagement and Collaboration*: The literature may not extensively cover the importance of stakeholder engagement and collaboration in sustainable procurement for AMISDP.
- *Integration of Sustainable Procurement into Policy and Governance*: The existing literature may not sufficiently address the integration of sustainable procurement into policy frameworks and governance structures. Further research is needed to examine the policy implications of sustainable procurement in the agricultural sector, exploring how government regulations, incentives, and institutional arrangements can support and promote sustainable procurement practices in AMISDP.
- *Best Practices and Lessons Learned*: While some literature may provide general guidance on sustainable procurement, there may be a gap in the specific best practices and lessons learned related to sustainable procurement for AMISDP. Case studies and empirical research focusing on successful sustainable procurement initiatives in the agricultural sector can provide valuable insights and practical guidance for the project.

Addressing these gaps in the existing literature can contribute to a deeper understanding of sustainable procurement strategies specifically tailored for the AMISDP.

Chapter 3

Methodology

3.1 Research Design

To investigate and develop sustainable procurement strategies for the AMISDP in the DAE under the Ministry of Agriculture, a comprehensive research design is essential. The research design should incorporate suitable methodologies and approaches to address the research objectives. Here is an outline of a possible research design:

Research Methodology:

- *Literature Review:* Conduct an extensive review of existing literature on sustainable procurement, specifically focusing on the agricultural sector and relevant case studies in similar projects. This will help identify existing frameworks, best practices, and gaps in knowledge.
- *Interviews and Surveys:* Conduct interviews and surveys with key stakeholders involved in the AMISDP, including procurement officers, project managers, farmers, and suppliers. This will gather insights into current procurement practices, challenges faced, and stakeholders' perspectives on sustainable procurement.
- *Comparative Analysis:* Perform a comparative analysis of sustainable procurement practices in other agricultural projects or initiatives at national or international levels.

Data Collection:

- *Procurement Data Analysis:* Gather and analyze procurement data from the AMISDP project, focusing on past procurement processes, supplier selection, criteria used, and sustainability considerations. This analysis will help identify trends, gaps, and opportunities for improvement.
- *Stakeholder Perception Surveys:* Design and administer surveys to key stakeholders involved in the AMISDP to understand their perception of sustainable procurement, identify barriers, and gather suggestions for improvement. It will provide insights into stakeholders' awareness, attitudes, and motivations towards sustainable procurement practices.

Development of Sustainable Procurement Strategies:

- *Framework Development:* Develop a comprehensive framework for sustainable procurement specific to the AMISDP. This framework should integrate environmental, social, and economic considerations, align with relevant national and international sustainability standards, and address the specific needs and challenges of the project.
- *Strategy Formulation:* Based on the framework, develop practical and actionable sustainable procurement strategies for the AMISDP. These strategies should outline specific steps, criteria, and guidelines to integrate sustainability considerations into procurement processes, supplier selection, and contract management.
- *Stakeholder Engagement:* Involve key stakeholders in the development of sustainable procurement strategies through workshops, focus groups, or consultation meetings. This will ensure that the strategies are aligned with stakeholders' needs, perspectives, and expectations.

Pilot Implementation and Evaluation:

- *Pilot Testing:* Implement the developed sustainable procurement strategies in a pilot phase within the AMISDP. This will allow for practical testing and fine-tuning of the strategies in a real-world setting.
- *Evaluation and Monitoring:* Assess the effectiveness of the pilot implementation by evaluating key performance indicators, such as environmental impact, social

benefits, supplier compliance, and cost-efficiency. This evaluation will provide insights into the strengths and weaknesses of the strategies and identify areas for further improvement.

Report Writing: Compile the findings, lessons learned, and recommendations into a comprehensive report. This report should include the developed sustainable procurement strategies, implementation guidelines, and suggestions for integrating sustainability into procurement policies and practices in the AMISDP.

3.2 Data Collection Methods

Data Collection Methods for Sustainable Procurement Strategies in AMISDP:

To gather relevant data for developing sustainable procurement strategies for the AMISDP in the DAE under the Ministry of Agriculture, a combination of qualitative and quantitative data collection methods can be employed. Here are some data collection methods that can be utilized:

Interviews: Conduct in-depth interviews with key stakeholders involved in the AMISDP, such as procurement officers, project managers, farmers, and suppliers. The interviews can be structured or semi-structured and should focus on understanding their perspectives, experiences, and challenges related to procurement processes, sustainability considerations, and potential improvements.

Surveys: Develop and administer surveys to gather quantitative data from a broader range of stakeholders. This can include procurement staff, project team members, farmers, suppliers, and other relevant parties. The surveys should include questions related to current procurement practices, awareness and perception of sustainable procurement, barriers faced, and suggestions for improvement.

Document Analysis: Conduct a thorough analysis of relevant documents, reports, and existing procurement data from the AMISDP. This can include procurement policies, guidelines, contracts, supplier performance reports, and environmental impact assessments.

Focus Group Discussions: Organize focus group discussions with representatives from different stakeholder groups, such as farmers, suppliers, and project team members. These discussions can facilitate open dialogue, exchange of ideas, and gathering diverse perspectives on sustainable procurement practices, challenges, and potential solutions.

Site Visits and Observations: Conduct site visits to observe and understand the existing procurement processes and practices in the AMISDP. This will provide firsthand insights into how procurement decisions are made, supplier interactions, and the integration of sustainability considerations.

Expert Consultations: Seek input from subject matter experts in the field of sustainable procurement, agricultural extension, or relevant domains. These consultations can help validate and enrich the findings, provide additional insights, and offer expert recommendations for sustainable procurement strategies in the AMISDP.

3.3 Data Analysis

Once the data has been collected through various methods, a comprehensive data analysis process is essential to derive meaningful insights and inform the development of sustainable procurement strategies for the AMISDP in the DAE under the Ministry of Agriculture. Here are some steps to consider for data analysis:

Data Organization: Begin by organizing and structuring the collected data in a systematic manner. This involves sorting and categorizing the data according to different variables, such as stakeholder groups, procurement processes, sustainability criteria, challenges, and recommendations.

Qualitative Analysis: For qualitative data, such as interview transcripts or open-ended survey responses, employ thematic analysis or content analysis techniques. This involves identifying recurring themes, patterns, and key messages within the data.

Comparative Analysis: Compare and analyze the data from different stakeholder groups, procurement processes, or case studies to identify commonalities, differences, and trends. This comparative analysis will help identify best practices, challenges, and opportunities specific to sustainable procurement in the AMISDP.

Framework Development: Based on the analyzed data, develop a framework for sustainable procurement strategies tailored to the AMISDP context. Incorporate the identified best practices, lessons learned, and stakeholder recommendations into the framework.

Synthesis and Reporting: Synthesize the analyzed data, key findings, and the developed framework into a comprehensive report. Present the insights, recommendations, and actionable strategies for sustainable procurement in the AMISDP. Use appropriate visualizations, tables, and figures to enhance the clarity and understanding of the data analysis results. Include case studies or examples from other projects to support the recommendations.

Chapter 4

Public Procurement: An Overview from Bangladesh

4.1 Introduction

This chapter covers the history, development, and general environment of public procurement. It provides an overview of Bangladesh's public procurement landscape by presenting the legal framework that governs the practice and regulation of public procurement as well as the general guidelines and features of the current system.

"Procurement" is defined as "the purchasing or hiring of goods, or acquisition of goods through purchasing and hiring, and the execution of works and performance of services by any contractual means" in the Public Procurement Act, 2006 (PPA 2006). Purchasing, hiring, or receiving products, works, or services by the public sector through any contractual mechanism can be broadly characterized as public procurement. An alternate definition of public procurement is the purchase of commodities, works, or services when the finances for the purchase come from public funds.

Governments everywhere are required to guarantee the public access to basic services including health, education, defense infrastructure, and so forth. In order to fulfill the need for these services, governments buy products, labor, and services from the free market. Thus, there are political and economic ramifications to public procurement. Still, because public procurement has been viewed primarily as a government administrative role, it has not gotten much attention from academic scholars or policy makers.

Public procurement covers a wide range of products and services, from small-scale commercial projects like building roads, power plants, and airports, to larger-scale commercial ventures like basic goods or services like cleaning services or clips. The way that procurement is done in the public and private sectors is different. While the goal of public procurement is more complicated since it takes into account national welfare and economic development rather than private sector profits, the goal of procurement in the private sector is essentially simple. Furthermore, public procurement must take into account factors like efficacy, responsibility, honesty, and national interest, in contrast to private procurement.

4.2 The Public Procurement History

Previously, purchasing was thought to be predominantly a clerical function. The purchasing function expanded during World Wars I and II as a result of how crucial it was to get the supplies, services, and raw materials needed to keep the mines and factories running (Wikipedia). Purchasing grew in significance over time as more skilled people were hired and as the methods for carrying out the task became more sophisticated.

The role shifted from being clerical to increasingly managerial. In addition, procurement has grown in recognition since the establishment of significant governmental and intergovernmental organizations like the United Nations. Peter Kraljic's groundbreaking article on purchasing strategy, which was published in September 1983 in the Harvard Business Review, is frequently cited as the starting point for the shift in the role from "purchasing," which is seen as highly tactical, to procurement or supply management, which is seen as highly strategic to the business (Source: Wikipedia). As a result, procurement begins to be included more fully into the overarching business plan. Due to the Chief

Procurement Officers' and Heads of Procurement's recognition as prominent business executives with more extensive and strategic organizational responsibility, the standing of the procurement function has greatly improved.

4.3 Public Procurement Evolution in Bangladesh

The methods and procedures for public procurement have changed throughout time from the British to the Pakistani regimes. Under Pakistani control, the Compilation of General Financial Rules (CGFR), which had been published first under British authority, underwent a minor revision in 1951 and was republished in June 1999 and 1994 with few modifications. The CGFR, among other things, provides broad, basic guidelines that government contracts must adhere to; the departments are responsible for developing specific policies and guidelines for their own procurements. Additionally, it makes reference to the Public Works Department (PWD) code as the work guide and the *Manual of Office Procedure (Purchase)*, which was created by the Department of Supply and Inspection as a guide for purchasing items. Both are from the 1930s and have not been updated in a significant way. The guidelines for procurement in externally funded projects released by the Economic Relations Division (ERD) in 1992 are also referred to in the CGFR. These guidelines were based on World Bank procurement guidelines at the time and stipulated that in the event of a conflict, the loan conditions would take precedence. Since the majority of public procurement is supported by outside sources, since the country's independence in 1971, the World Bank, the Asian Development Bank, and other donors have had an impact on public procurement methods. While the majority of agencies, autonomous boards, and public projects adhere to the PWD code, some have developed their own manuals or sets of procedures.

According to the World Bank's 2002 Country Procurement Assessment Report, there are a number of unsatisfactory aspects of public procurement procedures and practices, such as inadequate bidding periods, poor specifications, nondisclosure of selection criteria, contract awards through lottery, one-sided contract documents, negotiations with all bidders, rebidding without sufficient justification, other irregularities, corruption, and outside influence, among other things.

The World Bank Country Director wrote to the government in August 1998, pleading with it to improve the efficiency and streamline the procurement process in order to address these problems. The government implemented several modifications to fortify the public procurement regime in response to growing worries about simplifying the nation's public incumbent system. After much work, the Public Procurement Regulations were created and published in 2003, offering a centralized framework for handling procurement requests. A new Delegation of Financial Powers (DoFP), various Standard Tender Documents (STDs) and Standard Request for Proposal Documents for the procurement of goods, works, and services were added to the PPR, 2003, along with Public Procurement Processing and Approval Procedures (PPPA).

The Public Procurement Act, 2006 (PPA, 2006) was approved by the Parliament in order to fortify the legal foundation of public procurement. The Public Procurement Rules, 2008 (PPR, 2008) were released in accordance with the Act, taking the place of the Public Procurement Regulations, 2003.

4.4 Legal Framework of Public Procurement in Bangladesh

The World Bank included certain recommendations in the CPAR, 2002, with the aim of providing a comprehensive legal framework for the public procurement system. A few of the recommendations are as follows:

- In order to oversee public procurement and manage public procurement policies, rules, and procedures, as well as standard bidding and contract documents, a Central Procurement Policy Unit will be established.
- Public procurement rules and procedures covering the purchase of products, works, and professional services that will be applicable to all ministries, departments, and public bodies should be prepared and issued. These rules and procedures should be available to the public.
- Utilizing the World Bank and other comparable documents as models, create and distribute a collection of Standard Bidding and Contract Documents for products, works, and professional services that are relevant to all public procurement.
- Project directors, chief engineers, department heads, and autonomous bodies will all have their authority delegation reviewed and revised.
- Examining and updating the approval process's layering.

In response to the aforementioned suggestions, the Bangladesh government founded the Central Procurement Technical Unit (CPTU) in 2002 and placed it under the Ministry of Planning's Implementation, Monitoring, and Evaluation Division (IMED). Ever since, the CPTU has been striving to uphold the nation's public procurement regulations, standard bidding documents, and general control of public procurement practices.

The Public Procurement Act of 2006 and the Public Procurement Rules of 2008 currently serve as the two main legal frameworks upon which Bangladesh's public procurement law is built. In addition to these papers, the CPTU is working to complete the Standard Request for Proposals (SRFPs) for services and the Standard Tender papers (STDs) for goods and works. In order to ensure that public procurement is implemented successfully throughout the nation, the Ministry of Finance has already sent the updated Delegation of Financial Powers (DoFP) to department heads, chief engineers, project directors, and autonomous bodies that are part of the public sector.

Bangladesh's public procurement system is decentralized. Utilizing the Standard Tender Documents and Standard Request for Proposals created by the CPTU, various departments and directorates under various ministries carry out the real procurement responsibilities through their offices from the national level to the upazila level in accordance with the PPR, 2008. The ministries mostly deal with printing, stationery, and food grains when it comes to procurement at the central level (World Bank, 2002). Significant amounts of procurement are handled by the nation's largest government departments, including the Department of Public Works (PWD), the Department of Roads and Highways (RHD), Bangladesh Railway, the Local Government Engineering Department (LGED), the Telephone and Telegraph (T&T) Board, the Education Engineering Department (EED), the Health Engineering Department (HED), the Department of Public Health Engineering (DPHE), the Directorate of Food, and others, through their central to local offices.

As previously mentioned, businesses under ministries also engage in extensive procurement activities, in addition to departments and directorates within the ministries. These are just a few of the top government procurement agencies: Power Development (PDB), Bangladesh Water Development Board (BWDB), Bangladesh Chemical Industries Corporation (BCIC), Bangladesh Petroleum Corporation (BPC), Bangladesh Steel & Engineering Corporation (BSEC), Bangladesh Agricultural Development Corporation (BADC), Bangladesh Jute Mills Corporation (BJMC), and Power Development (PDB). Furthermore, procurement is also done to a large extent by a few semi-government/autonomous organizations, such as the Dhaka Power Distribution Company (DPDC), the Dhaka Electric Supply Company (DESCO), and several businesses under the Petro Bangla umbrella. Corporations and autonomous bodies typically get funding under the Annual Development Plan (ADP) from the national budget in addition to their own funds.

4.5 Main Features of Public Procurement

A number of procurement techniques are outlined in the Public Procurement Rules, 2008, which categorize purchases into domestic and foreign classes. Open Tendering Method (OTM), which guarantees fair competition, appropriate advertising, and equal opportunity for all bidders, is the recommended approach for domestic procurement. Nonetheless, there are a variety of other procurement techniques that are permitted in some situations in addition to the OTM. Technical and financial justifications must be provided for these techniques. For techniques other than the OTM, prior authorization from the Head of Procuring Entity (HOPE) must be obtained. The Limited Tendering Method (LTM), the Two Stage Tendering Method (TSTM), the Request for Quotation Method (RFQM), and the Direct Procurement Method (DPM) are some of these alternate techniques.

When using the alternative approaches, there are a few crucial requirements that must be taken into account. The LTM can be utilized in emergency situations, when there is a shortage of suppliers, or when the time and expense needed to collect and review bids exceeds the contract value. When establishing comprehensive technical specifications at one stage is not feasible, or when technology is developing quickly and other solutions may be available but unknown to the procurement party, a two-step tendering technique may be used for complicated and large-scale projects. If the value falls within the specified threshold, the RFQM may be utilized for standardized, low-value products that are readily available on the market as well as low-value works and physical services. The head of the procurement entity, however, tightly controls how this procedure is applied in order to prevent misuse. When purchasing goods from a sole proprietor due to patents or copyrights, when additional goods or services are obtained from the original supplier or manufacturer, when the goods are only available from the sole dealer or manufacturer, when a special type of good is obtained from a local manufacturer, or when purchasing goods, works, or services of an extremely urgent and essential nature, then the direct procurement method is permitted.

The aforementioned techniques also apply to international procurement, although they must be modified in particular ways to preserve competition and standards. For instance, in international procurement, the contract should include clauses for alternative dispute resolution and the specifications should be produced in accordance with international standards.

4.6 Towards the sustainable procurement

Public procurement is more than just a straightforward government purchasing operation. Significant portion. A of government spending, aside from wages, is allocated to this economic activity. Additionally, it can be a tool for public policy to support specific social and economic goals. The final destination and recipient of a significant portion of public spending are decided by procurement procedures (Ellmers, 2011). The public sector's purchasing power could be crucial in launching sustainable procurement procedures in both the public and private sectors, since the government of any given nation is the single largest consumer of goods, services, and labor. By doing this, the public sector can lead by example and play a significant role in "norm setting" in the direction of sustainable development. In recent times, there has been a shift in attitudes towards adopting a more socially and environmentally responsible way of life. A wide policy idea and fundamental principle, sustainable procurement is becoming more and more accepted in corporate operations. Environmental concerns are turning into new business opportunities that require high environmental performance as a prerequisite for successful management practices. Therefore, it is crucial to include sustainability criteria in procurement in addition to price and quality requirements.

Chapter 5 AMISDP's Sustainable Procurement Strategies

5.1 Sustainability Criteria in Procurement Processes

To ensure sustainable procurement practices in the AMISDP in the DAE under the Ministry of Agriculture, it is essential to incorporate sustainability criteria into the procurement processes. The following are some crucial techniques for incorporating sustainability criteria:

Define Clear Sustainability Objectives: Start by establishing clear sustainability objectives that align with the project's goals and values. These objectives should encompass environmental, social, and economic aspects.

Develop Sustainable Procurement Guidelines: Develop comprehensive guidelines that outline the specific sustainability criteria to be considered in the procurement processes. These guidelines should cover various stages, such as pre-qualification of suppliers, evaluation of bids/proposals, contract management, and performance monitoring. The guidelines should provide detailed instructions on how sustainability criteria will be assessed and weighted during supplier selection and evaluation.

Include Sustainability Requirements in Tender Documents: Incorporate sustainability requirements directly into the tender documents to communicate the project's expectations to potential suppliers. Specify the sustainability criteria that suppliers must meet, such as environmental certifications, social responsibility practices, ethical sourcing, or energy efficiency standards.

Supplier Pre-Qualification: Implement a pre-qualification process to assess suppliers' sustainability credentials. This process involves evaluating suppliers' past performance, environmental management systems, labor practices, and compliance with relevant regulations. Suppliers meeting the sustainability criteria can be included in the list of pre-qualified suppliers eligible to participate in the procurement process.

Supplier Performance Monitoring: Establish mechanisms to monitor and track suppliers' ongoing performance in meeting sustainability requirements. Regularly review and evaluate suppliers' adherence to sustainability commitments outlined in the contract. Consider conducting periodic audits or site visits to verify compliance and identify areas for improvement.

Capacity Building and Collaboration: Support suppliers in adopting sustainable practices by providing capacity-building programs, training, and resources. Collaborate with suppliers to develop innovative solutions that promote sustainability and drive continuous improvement. Foster an open dialogue and knowledge exchange to share best practices and overcome challenges together.

Continuous Improvement and Reporting: Implement a system for continuous improvement of sustainable procurement practices. Regularly review and update the sustainability criteria and guidelines based on lessons learned and emerging best practices. Develop sustainability performance indicators and prepare periodic reports to communicate the project's progress in sustainable procurement to stakeholders.

5.2 Developing Green Procurement Policies

Developing Green Procurement Policies for the AMISDP in the DAE under the Ministry of Agriculture is crucial for promoting sustainability in procurement practices. Green procurement policies provide guidelines and criteria for purchasing goods and services that have a reduced environmental impact. Here are the key steps in developing green procurement policies for the AMISDP project:

Assess Environmental Impact: Begin by conducting an assessment of the project's environmental impact throughout its lifecycle. Identify the key areas where procurement activities can influence environmental sustainability, such as energy consumption, waste generation, and carbon emissions. This assessment helps identify the specific environmental criteria to be included in the green procurement policies.

Set Green Procurement Goals: Establish clear goals and targets for green procurement in alignment with the project's sustainability objectives. These goals may include increasing the percentage of environmentally friendly products and services procured, reducing greenhouse gas emissions associated with procurement activities, or minimizing waste generation through responsible procurement practices.

Identify Green Procurement Criteria: Define the criteria that suppliers must meet to be considered environmentally friendly. This may include factors such as energy efficiency, use of renewable materials, waste reduction and recycling practices, adherence to environmental certifications or standards, and compliance with relevant environmental regulations. Tailor the criteria to the specific procurement needs of the AMISDP project.

Include Green Specifications in Tender Documents: Incorporate green specifications into the tender documents and requests for proposals. Clearly state the environmental requirements and expectations for suppliers, including any necessary certifications or documentation. Provide guidance on how suppliers should demonstrate their environmental credentials, such as by submitting environmental management plans or sustainability reports.

Supplier Evaluation and Selection: Develop a transparent and robust evaluation process that includes the assessment of suppliers' environmental performance. Consider using a scoring system or a multi-criteria evaluation method that assigns weights to environmental factors. Evaluate suppliers based on their track record, environmental certifications, environmental management systems, and their ability to meet the green procurement criteria.

Monitor and Measure Performance: Establish mechanisms to monitor and measure suppliers' environmental performance throughout the procurement process. Regularly review and evaluate suppliers' adherence to green procurement policies. Monitor indicators such as energy consumption, waste reduction, and greenhouse gas emissions to assess the overall environmental impact of procurement activities.

Review and Update Policies: Regularly review and update the green procurement policies based on lessons learned and emerging best practices. Stay abreast of new technologies, materials, and certifications that can further enhance the environmental performance of the AMISDP project. Continuously improve the policies to ensure they remain effective and aligned with the project's sustainability goals.

5.3 Supplier Selection Criteria for Sustainability

Supplier Selection Criteria for Sustainability in the AMISDP under the DAE and the Ministry of Agriculture are crucial for ensuring that suppliers demonstrate a commitment to sustainability in their operations. When selecting suppliers based on sustainability, the following criteria are taken into account:

Environmental Performance: Assess suppliers' environmental performance by considering factors such as their carbon footprint, energy efficiency measures, waste management practices, and use of renewable resources. Look for suppliers that have implemented environmentally friendly processes, technologies, and certifications.

Social Responsibility: Evaluate suppliers' social responsibility practices, including their commitment to fair labor practices, ethical sourcing, and human rights. Consider their labor policies, working conditions, diversity and inclusion initiatives, community engagement, and adherence to international labor standards.

Sustainable Material Sourcing: Examine suppliers' practices regarding the sourcing of raw materials. Give preference to suppliers that prioritize sustainable sourcing, such as using certified sustainable timber or responsibly mined metals. Assess their efforts to avoid materials from endangered species or environmentally sensitive areas.

Supply Chain Transparency: Evaluate suppliers' supply chain transparency and traceability. Ensure they have mechanisms in place to monitor and mitigate any environmental or social risks within their supply chains. Suppliers should be able to provide information about the origin of their products, their manufacturing processes, and their efforts to eliminate or reduce negative impacts.

Long-Term Partnership Potential: Consider the long-term potential for a sustainable partnership with suppliers. Assess their willingness to collaborate on sustainability initiatives, their commitment to continuous improvement, and their ability to adapt to evolving sustainability requirements.

Performance and Compliance: Evaluate suppliers' overall performance and compliance with relevant regulations, certifications, and standards. Consider their history of environmental and social compliance, any incidents or violations, and their commitment to addressing and rectifying issues promptly.

It is important to note that the specific selection criteria may vary based on the unique needs and priorities of the AMISDP project. It is recommended to develop a comprehensive supplier evaluation framework that includes a combination of these criteria to ensure a holistic assessment of suppliers' sustainability practices.

5.4 Capacity Building for Sustainable Procurement

Capacity building for sustainable procurement is essential for the successful implementation of sustainable procurement strategies in the AMISDP under the DAE and the Ministry of Agriculture. It involves developing the knowledge, skills, and capabilities of the project team and relevant stakeholders to effectively integrate sustainability considerations into the procurement process. Here are some key aspects of capacity building for sustainable procurement:

Training and Awareness: Conduct training programs and workshops to enhance the understanding of sustainable procurement concepts, principles, and best practices. This includes educating the project team, procurement officers, and other relevant stakeholders about the importance of sustainability, relevant regulations and standards, and the potential benefits of sustainable procurement.

Policy and Guidelines Development: Develop clear and comprehensive policies and guidelines that outline the expectations and requirements for sustainable procurement in the AMISDP project. These should cover sustainable sourcing criteria, environmental and social considerations, supplier evaluation methods, and procedures for integrating sustainability into procurement decisions.

Stakeholder Engagement: Engage with key stakeholders, including project team members, procurement staff, suppliers, and local communities, to foster a shared understanding of sustainable procurement goals and encourage their active involvement. Encourage open dialogue, collaboration, and the sharing of knowledge and experiences related to sustainable procurement practices.

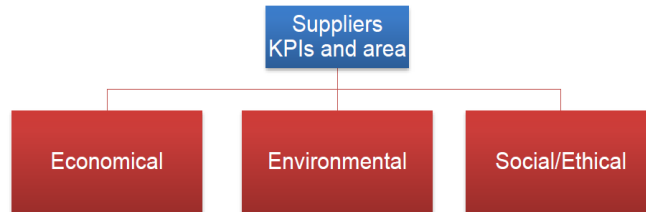
Supplier Capacity Building: Work closely with suppliers to enhance their understanding and implementation of sustainable practices. Provide training and support to suppliers on topics such as environmental management, social responsibility, sustainable sourcing, and green product development.

Monitoring and Evaluation: Establish mechanisms to monitor and evaluate the effectiveness of sustainable procurement practices in the AMISDP project. Develop key performance indicators to track progress, measure the environmental and social impacts of procurement decisions, and assess the overall sustainability performance of the project. Regularly review and analyze data to identify areas for improvement and inform future procurement strategies.

5.5 Monitoring and Evaluation of Sustainable Procurement

Monitoring and evaluation of sustainable procurement practices are essential to ensure the effectiveness and continuous improvement of the AMISDP under the DAE and the Ministry of Agriculture. Monitoring and evaluation provide valuable insights into the sustainability performance of procurement activities and help identify areas for improvement. The following are the key considerations for monitoring and evaluating sustainable procurement:

Define Key Performance Indicators (KPIs): Identify and define specific KPIs that align with the sustainability goals of the AMISDP project. These KPIs should measure the environmental, social, and economic impacts of procurement decisions. For example, KPIs could include greenhouse gas emissions, water consumption, waste generation, supplier diversity, local sourcing, and adherence to labor standards. KPIs for Sustainable Procurement is given below:



Data Collection and Management: Establish a robust system for collecting, analyzing, and managing data related to sustainable procurement. Define data collection methods, sources, and frequency to ensure consistent and reliable data. This may involve collecting data from suppliers, conducting site visits, and utilizing existing databases or reporting frameworks. Implement data management tools or software to facilitate efficient data processing and analysis.

Regular Performance Reporting: Develop a reporting mechanism to communicate the sustainability performance of procurement activities. Prepare regular reports that highlight progress, achievements, challenges, and lessons learned in sustainable procurement. Share these reports with relevant stakeholders, including project team members, senior management, procurement officers, and external partners. Transparent reporting promotes accountability and encourages continuous improvement.

Evaluation of Supplier Performance: Evaluate the sustainability performance of suppliers involved in the AMISDP project. Develop evaluation criteria that assess suppliers' environmental, social, and economic practices. This may include conducting supplier assessments, audits, or certifications. Regularly review and assess supplier performance against the defined criteria and provide feedback to suppliers to encourage improvements.

Stakeholder Feedback and Engagement: Seek feedback from stakeholders on the sustainability performance of procurement activities. Engage stakeholders through surveys, interviews, or focus groups to gather their perspectives and suggestions for improvement. Incorporate stakeholder feedback into the monitoring and evaluation process to ensure their voices are heard and considered.

Continuous Improvement: Use the findings from monitoring and evaluation activities to drive continuous improvement in sustainable procurement. Identify areas of strength and success to replicate and scale up. Address gaps, challenges, and areas for improvement by implementing corrective actions and refining procurement strategies. Learn from experiences, share best practices, and adapt to emerging sustainability trends and opportunities.

5.6 Continuous Improvement in Sustainable Procurement Practices

Continuous improvement is a key element in ensuring the long-term success and effectiveness of sustainable procurement practices in the AMISDP under the DAE and the Ministry of Agriculture. Here are some strategies for fostering continuous improvement in sustainable procurement:

Establish Clear Goals and Targets: Set clear and measurable sustainability goals and targets for procurement activities in the AMISDP project. These goals should be aligned with the project's overall sustainability objectives.

Regularly Assess and Review Practices: Conduct regular assessments and reviews of the sustainable procurement practices implemented in the AMISDP project. Evaluate the effectiveness of current strategies, policies, and procedures in meeting sustainability goals. Identify areas for improvement and potential gaps or challenges. Collect feedback from stakeholders and incorporate their input into the review process.

Engage with Suppliers: Foster collaborative relationships with suppliers to drive continuous improvement in their sustainability performance. Share best practices, provide feedback, and offer guidance on sustainability requirements. Encourage suppliers to adopt sustainable practices and technologies by providing incentives and support. Regularly assess and monitor supplier performance and provide opportunities for supplier capacity-building and training.

Employee Training and Awareness: Provide training and awareness programs for procurement staff and other relevant personnel involved in the AMISDP project. Educate them about sustainable procurement principles, practices, and the importance of integrating sustainability into procurement decisions. Foster a culture of sustainability within the organization by promoting awareness and engagement at all levels.

Innovation and Technology Adoption: Embrace innovation and new technologies that support sustainable procurement. Explore emerging solutions and tools that can enhance sustainability in procurement processes, such as digital platforms for supply chain transparency, data analytics for environmental impact assessment, or block chain for traceability. Stay abreast of technological advancements and assess their potential applicability to the AMISDP project.

Collaboration and Learning: Collaborate with stakeholders, both internally and externally, to foster learning and continuous improvement. Engage in partnerships with research institutions, industry associations, and NGOs to share knowledge, experiences, and resources related to sustainable procurement. Participate in industry forums, workshops, and conferences to learn from peers and share experiences.

Monitor and Evaluate Progress: Continuously monitor and evaluate the progress of sustainable procurement practices in the AMISDP project. Regularly review key performance indicators, track data, and assess the outcomes and impacts of procurement decisions. Use this information to identify areas for improvement, measure success, and guide future decision-making processes.

Chapter 6

Conclusions and Recommendations

6.1 Conclusions

In conclusion, sustainable procurement strategies play a vital role in ensuring the success and long-term sustainability of the AMISDP under the DAE and the Ministry of Agriculture. By incorporating sustainability criteria into the procurement process, the project can minimize its environmental impact, promote social well-being, and contribute to the overall sustainability of the agricultural sector.

The literature review has highlighted the benefits of sustainable procurement in agricultural projects, including reduced carbon footprint, preservation of natural resources, and improved social conditions for small-scale farmers. Lessons from sustainable procurement practices in other sectors have also provided valuable insights for the AMISDP, such as the importance of policy development, stakeholder engagement, and technology integration.

Based on the findings, several recommendations are proposed to enhance sustainable procurement strategies for the AMISDP. These include the development of a comprehensive sustainable procurement policy, increased awareness and capacity building, collaboration with stakeholders, integration of sustainability criteria into supplier selection, monitoring and evaluation of sustainable procurement performance, and fostering continuous improvement.

By implementing these recommendations, the AMISDP can strengthen its procurement processes, minimize environmental and social risks, and achieve its goals in a sustainable manner. Sustainable procurement will not only benefit the project itself but also contribute to the broader sustainability objectives of the agricultural sector.

It is important for the DAE and the Ministry of Agriculture to prioritize sustainable procurement practices and allocate resources for their implementation. Regular monitoring and evaluation of the project's sustainable procurement performance will provide valuable insights for continuous improvement and ensure the project's long-term sustainability.

In conclusion, sustainable procurement strategies are crucial for the AMISDP to operate in an environmentally and socially responsible manner, while maximizing its positive impact on the agricultural sector. By embracing sustainability principles and incorporating them into procurement practices, the project can contribute to a more sustainable and resilient agricultural system.

6.2 Recommendations

Based on the study conducted, the following recommendations are proposed for the implementation of sustainable procurement strategies in the AMISDP under the DAE and the Ministry of Agriculture:

- ***Develop a Comprehensive Sustainable Procurement Policy:*** Establish a policy that clearly outlines the organization's commitment to sustainable procurement, including environmental, social, and economic considerations. The policy should provide guidelines and procedures for incorporating sustainability criteria into the procurement process.
- ***Increase Awareness and Capacity Building:*** Conduct training programs and workshops to raise awareness among procurement officers and stakeholders about the importance of sustainable procurement. Provide them with the necessary knowledge and skills to effectively implement sustainable procurement practices.
- ***Engage Stakeholders:*** Foster collaboration and engagement with relevant stakeholders, including farmers, local communities, NGOs, and industry associations. Involve them in the procurement process, seek their input, and consider their perspectives on sustainability issues.
- ***Integrate Sustainability Criteria into Supplier Selection:*** Develop a set of sustainability criteria that suppliers must meet to be considered for procurement contracts. These criteria may include environmental certifications, social responsibility standards, and ethical sourcing practices. Evaluate and select suppliers based on their sustainability performance.
- ***Monitor and Evaluate Sustainable Procurement Performance:*** Establish mechanisms to monitor and evaluate the project's sustainable procurement performance. Regularly assess the adherence to sustainability criteria, measure the environmental and social impacts of procurement activities, and track progress towards sustainability goals.
- ***Foster Continuous Improvement:*** Encourage continuous improvement in sustainable procurement practices by setting targets, implementing feedback mechanisms, and sharing best practices. Regularly review and update the sustainable procurement policy to reflect emerging sustainability trends and evolving stakeholder expectations.
- ***Leverage Technology:*** Explore the use of technology, such as e-procurement systems and data analytics, to streamline procurement processes, enhance transparency, and facilitate the monitoring of sustainability criteria compliance.
- ***Establish Partnerships with Sustainable Suppliers:*** Seek partnerships with suppliers who have demonstrated commitment to sustainability and have a track record of providing sustainable products and services. Collaborate with them to develop innovative solutions and promote sustainable practices throughout the supply chain.

- ***Promote Knowledge Sharing and Learning:*** Establish a platform for knowledge sharing and learning among procurement officers, stakeholders, and other relevant parties. Share success stories, case studies, and lessons learned from implementing sustainable procurement strategies in agricultural projects.

Lastly, additional study is required to fully understand the sustainability problem. This study gives an overview of sustainable procurement practices in AMISDP in Bangladesh because, up till now, the concept of sustainable procurement has not been fully incorporated in both the public procurement system and the program. To have a greater knowledge of the sustainability issue in relation to public procurement, namely AMISDP, further study is necessary.

References

- AMISDP, BSR, 2018:** Assess User Satisfaction of Agro-Meteorological Advisories and Products Under the Agro-Meteorological Information Systems Development Project.
- AMISDP, 2019:** Risk Mapping for Climate Vulnerability of 487 Upazilas in Bangladesh Under the Agro-Meteorological Information Systems Development Project.
- Blackburn, W. R, 2007.** The Sustainability Handbook. pp 2-3.
- Ellmers, 2011:** Helping or hindering? Procurement, tied aid and the use of country systems in Bangladesh
- PPA, 2006:** Public Procurement Act, 2006.
- PPR, 2008:** Public Procurement Rules, 2008.
- PAD, 2016:** Bangladesh Weather and Climate Services Regional Project.
- UNGM, 2011,** United Nations Global Marketplace. Retrieved 09 October 2011 from <http://www.ungm.org/sustainableprocurement/default.asp>
- Wikipedia:** <http://en.wikipedia.org/wiki/Procurement>
- World Bank, 2002.** “Bangladesh: Country Procurement Assessment Report
- Website:** https://green-business.ec.europa.eu/index_en