

**SUSTAINABILITY PRACTICE IN PUBLIC PROCUREMENT:  
A STUDY ON PUBLIC WORKS DEPARTMENT (PWD) PERSPECTIVE**

**Dissertation**

**Submitted in partial fulfillment of the requirements for the Degree of  
Masters in Procurement and Supply Management**

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**31 January 2015**

## **DECLARATION**

It is hereby declared that I am the sole author of this dissertation. It is also declared that this dissertation or any part of it has not been submitted elsewhere for the award of any degree or diploma.

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## **CERTIFICATION**

This is my pleasure to certify that the dissertation entitled “SUSTAINABILITY PRACTICE IN PUBLIC PROCUREMENT: A STUDY ON PUBLIC WORKS DEPARTMENT (PWD) PERSPECTIVE” is the original work of Mohammad Abul Kalam Azad that is completed under my guidance and supervision. So far I know, the dissertation is an individual achievement of the candidate’s own efforts and it is not a conjoint work. I also certify that I have found the dissertation satisfactory for submission to BRAC Institute of Governance and Development (BIGD), BRAC University which is a partial fulfillment of the requirements for the degree of Masters in Procurement and Supply Management.

Fall, 2014

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## **ABSTRACT**

Sustainable procurement (SP) is procurement that is consistent with the principles of sustainable development. Sustainable procurement is an approach that takes economic, environmental and social sustainability into account when making any purchasing decision. Public procurement is concerned with how public sector organizations spend tax payers' money. Public procurement is guided by principles of transparency, accountability, and achieving value for money for citizens and tax payers. Public Works Department (PWD) is one of the biggest public procuring agencies for government in Bangladesh.

The current scenario of sustainable procurement practice in the public sector has been studied through interviews with mid level procurement professionals from Public Works Department (PWD) addressing three aspects of sustainability. The analyses indicate that although there are a few cases where some sustainability issues are in practice, these are not very common as a whole in the public sector. Existing tendering system in public sector in Bangladesh is still based on the lowest price approach and whole life costing approach is rarely considered. Hardly any procuring entity has any provision as such an environmental management system. The study indicates that at present there is virtually no mechanism in our public procurement system to check the environmental performance of contractors/suppliers.

Sustainability criteria should be embedded in the tendering system. Knowledge and awareness at the individual procurement professional level seem important in order to make suitable sustainable procurement choices. The study reveals that the respondents are lacking in such knowledge and they are not trained enough. A clear commitment is necessary from the very top of government and down through the ministries and authorities formulating a sustainable procurement policy and to align the public procurement framework with the policy. Awareness campaign should be arranged focusing on how to take account of non-monetary benefits of sustainable procurement. Finally, there is scope to further study about the sustainability issues in procurement. Advanced research needs to be conducted in order to get a deeper insight into the sustainability issue in relation to the public procurement.

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## LIST OF ABBREVIATIONS AND ACRONYMS

ADP	Annual Development Plan
BADC	Bangladesh Agricultural Development Corporation
BCIC	Bangladesh Chemical Industries Corporation
BJMC	Bangladesh Jute Mills Corporation
BPC	Bangladesh Petroleum Corporation
BSEC	Bangladesh Steel & Engineering Corporation
BWDB	Bangladesh Water Development Board
CGFR	Compilation of General Financial Rules
CIPS	Chartered Institute of Purchasing and Supply
CPTU	Central Procurement Technical Unit
CSR	Corporate Social Responsibility
DESCO	Dhaka Electric Supply Company
DPDC	Dhaka Power Distribution Company
DoFP	Delegation of Financial Powers
DPHE	Department of Public Health Engineering
DPM	Direct Procurement Method
EMS	Environmental Management System
ERD	Economic Relations Division
GHG	Green House Gases
HOPE	Head of Procuring Entity
IMED	Implementation, Monitoring and Evaluation Division
KII	Key Informant Interviews
KPI	Key Performance Indicators
LGED	Local Government Engineering Department
LTM	Limited Tendering Method
MEAT	Most Economically Advantageous Tender
OTM	Open Tendering Method
PPA	Public Procurement Act
PPPA	Public Procurement Processing and Approval Procedures
PPR	Public Procurement Rules
PWD	Public Works Department
RFQM	Request for Quotation Method
RHD	Roads and Highways Department
SME	Small and Medium Enterprise
SP	Sustainable Procurement
SRFP	Standard Request for Proposals
SRFPs	Standard Request for Proposals
STDs	Standard Tender Documents
TBL	Triple Bottom Line
UK	The United Kingdom
UN	United Nations
UNGM	United Nations Global Marketplace
WLC	Whole Life Costing
WTO	World Trade Organization



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## CHAPTER - 1 INTRODUCTION

### 1.1 General introduction

Sustainable procurement (SP) is procurement that is concerned with the principles of sustainable development, such as ensuring a just and healthy society, living within environmental limits, and promoting good governance. According to United Nations procurement website, procurement is called sustainable when it integrates requirements, specifications and criteria that are compatible and in favour of the protection of the environment, of social progress and in support of economic development, namely by seeking resource efficiency, improving the quality of products and services and ultimately optimizing costs (UNGM, 2011). Through sustainable procurement, organizations use their own buying power to give a signal to the market in favour of sustainability and base their choice of goods, works and services on:

- **Economic considerations:** Best value for money, price, quality, availability, functionality;
- **Environmental aspects :** Green procurement, the impacts on the environment that the product and/or service has over its whole lifecycle; and
- **Social aspects:** social variables refer to social dimensions of a community or region that includes human rights, labour conditions, health and well-being, access to social resources, quality of life etc.

Public procurement is concerned with how public sector organizations spend tax payers' money on goods, works and services. Public procurement is guided by principles of transparency, accountability, and achieving value for money for citizens and tax payers. Public sector expenditure is often substantial as government is the single biggest customer within a country for some cases, and government can potentially use this purchasing power to influence the behaviour of private sector organizations. Environmental issues have been on the international agenda for several decades, and both public and private sectors are concerned about the role they play in environmental issues. More recently, the focus has expanded to broader topics such as sustainability. However, while sustainable procurement activities are common in many developed countries, the awareness and implementation of sustainable procurement is still comparatively low in most developing countries.

## **1.2 Objective & Research question**

In view of the context, the objective of this research is to gain a better understanding of how environmental, social and economic considerations can be advanced through public procurement. Efforts will also be made to analyze the possibilities and constraints for the integration and application of sustainability criteria into the public sector procurement process. The first objective of the study is to identify the level of understanding among mid level officers of Public Works Department (PWD) about different sustainability criterion in public procurement. The second objective is to evaluate the level of their preparedness. The third objective is to access level of sustainability practice in their procurement process.

The research question guides the researcher to formulate specific research objectives and the hypothesis of the study. Research question addresses important aspects of problem & which are doable. Research question provides a synthesis of diverse viewpoints so that the results represent integration to the field. It exhibits policy representativeness by addressing issues in a manner that will help policy makers to act on the problem. Two basic research questions have been proposed in the study those are- i) What is the level of understanding & preparedness about sustainability in Public Procurement among mid level officers of Public Works Department (PWD)? , and ii) How much sustainability is being practiced in procurement process of Public Works Department (PWD)? Detail aspects regarding research question are elaborated in questionnaire.

## **1.3 Hypothesis**

Hypothesis is a projected statement subject to empirical test. A hypothesis is made in order to find out the correct and valid explanation of certain process or phenomena through scientific investigation. Hypothesis enables to direct inquiry along the right lines. Hypothesis determines the method of verification as well as the procedure of inquiry. Hypothesis is the focal point of any research and must be so formulated that it can be tested and will permit the formulation of other hypothesis. Hypothesis needs to be in line with research method, related to existing theory, specific & testable, simple & clear concept and empirically verifiable. Hypothesis of the proposed study is- “Much more attention and preparedness is needed to practice sustainability in procurement process of Public Works Department (PWD) or Public Procurement as a whole”.

#### **1.4 Scope of the study**

The focus of this study will basically remain on public sector procurement. In this study, effort will be made to provide comprehensive insight into the state of sustainable procurement preparedness & practice in public sector organization in Bangladesh in particularly Public Works Department (PWD). Information gathered through Key Informant Interviews (KII) with a questionnaire among a number of mid level officers of PWD will lend support to the research on what the extent of sustainable procurement is and how they define the economic, environmental and social considerations of sustainable procurement & how long they are prepared & how much they practice sustainability considerations into their public procurement process.

#### **1.5 Organization of the report.**

The study has been represented in six distinct Chapters. Chapter 1 gives a general introduction of the sustainable procurement. The chapter also includes the overall objectives of the study including research question & hypothesis, scope of the study and finally organization of the report. Chapter 2 titled “Literature Review” introduces the concept of sustainability, sustainable development and sustainable procurement in order to give a theoretical view of the subject matter. The concepts of various sustainable procurement terminologies have also been elaborated in this chapter.. In chapter 3, background and the chronological evolution of public procurement and Public Works Department have been depicted. The chapter also describes the overall public procurement scenarios like general principle, procurement methods, legal framework etc. in Bangladesh. In chapter 4, research methodology has been described. Research design, sampling and mode of data collection have also been described in this chapter. In chapter 5, data and information regarding sustainable procurement collected through key informant interviews with a number of procurement professionals from Public Works Department (PWD) are analyzed, presented and discussed. This chapter gives a clear view of sustainable procurement practices in public sector in Bangladesh particularly in PWD. Concluding remarks and recommendations came at the concluding Chapter. References and Appendices are placed at the end of the report to support the research work.

## **CHAPTER - 2 LITERATURE REVIEW ON SUSTAINABILITY**

### **2.1 Introduction**

This chapter describes theoretical background of sustainability & sustainable procurement. Chronological emergence of the phenomenon sustainability and its link to environment, development, procurement and public procurement has been analyzed here. Some concepts relevant to sustainable procurement has also been presented. The research works start with through and critical review of existing literature. Henceforth the concept of sustainable development, sustainable/responsible procurement in public sector, potential drivers & constraints of sustainable procurement has been analyzed. To get in-depth knowledge different books, journals, publications & websites have been reviewed. Public Procurement Act-2006 and Public Procurement Rules-2008 have also been reviewed to see its coverage on sustainability of procurement. Different policy document & newspaper articles have also been reviewed to examine the current exposure of the issue.

### **2.2 The Concept of Sustainability**

Sustainability means the ability of an activity to be maintained (sustained) at a similar nature into the future. More specifically it means ensuring that actions taken today do not limit or jeopardize our plans or quality of life in the future. Sustainable Procurement Guide of British Standard Institute defines sustainability as a long-term view when making decisions, to ensure that meeting our own needs does not compromise the needs of others both today & for future generations.

The concept of sustainability was first emerged into mainstream discourse in 1972, during United Nations Conference on the Human Environment. At that time serious environmental concerns were beginning to be raised in relation to development & its practices. A series of high-profile environmental disasters like Chernobyl Nuclear Reactor explosion, Exxon Valdez oil spill subsequently raised the public & political profile of environmental issues. Conference delegates were debating over which is more important: economic development or environmental protection? At the same time issues of social justice also became a matter of concern especially in Africa where racial segregation was acute.

Through continuous discussion UN had recognized that economic development & environmental protection are inextricably linked and mutually reinforcing. Economic development is required to raise living condition and to support investment in environmental conservation, viable technologies. At the same time any attempt to improve human wellbeing

that threatened the environment was doomed to failure in the long run. Because depletion resources, degradation of environment and pollution of air, water, soil would impact on the wellbeing and development potential of future generation.

UN therefore appointed a think-tank under chairmanship of Gro Harlem Brundtland to come up with strategies to enable continuing economic development without threatening the environment. The Brundtland commission published the report 'Our Common Future' in 1987 where sustainable development was defined as 'Development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.

The idea was refined by the 1992 Rio Declaration on Environment and Development, where social justice and human right issues were explicitly added to the mix. These three dimensional (economic, environmental & social) view of sustainability has been widely adopted. In 1994 an accounting framework known as the Term 'Triple Bottom Line' (TBL) of sustainability was coined by John Elkington to highlight for the nations & organizations to measure their performance in all three areas.

The TBL can be expressed through 3P as Profit, People and Planet or through 3E as Economics, Environment & Equity. In 3P Profit is for economic performance, People is for social sustainability and Planet is for environmental sustainability. In recent years these three dimensions have formed a framework for a range of issues broadly related to business ethics and CSR including corporate governance, fair trade, labour relation, diversity, transparency along with an increasing number of existing and emerging environmental concerns like climate change, renewable energy, pollution, genetic modification etc.

### **2.3 The Concept of Sustainable Development**

Development is a short hand term for a range of social, economic & technological activities with the broader aim of bettering condition for human life. Sustainable development is therefore development activity that can be sustained or kept up over the long term that does not undermine or put at risk the conditions and resources required to preserve wellbeing into future. As per Brundtland commission criterion for sustainable development are long term decision making; interdependency among economic, environmental & social wellbeing; equity between generations & among different groups; inclusive, participatory & transparent decision making; proactive prevention of problems & minimizing risks. William Blackburn in his 'The Sustainability Handbook' argued sustainable development from organization's perspective as 'long-term wellbeing, for society as a whole, as well as for itself'. Human &

social wellbeing supports organizational survival by maintaining the flow of skilled & willing labour, consumer spending & investment.

## **2.4 The Concept of Sustainable Procurement**

A widely adopted (including CIPS) definition of sustainable procurement was proposed by UK Sustainable Procurement Taskforce (procuring the future). As per the taskforce sustainable procurement is a process whereby organizations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole-life basis in terms of generating benefits not only to the organizations but also to society and the economy whilst minimizing damage to the environment. So it is an approach that takes economic, environmental & social sustainability into account when making purchasing decision.

Purchasing goods, works & services efficiently with minimum risk and at the best possible value remain central element of a buyer's job. Even buyer must have to consider the impacts on the supply chain of how they buy and operate. For example shortening lead time and purchase price may seem like a good business strategy, but not at the expense of labour standard further down the supply chain or the risk to organizational reputation due to worker exploitation. Sustainable procurement asks the following questions-

- Does procurement meet the present needs of the organization and its stakeholders without compromising the ability to continue to do so in future?
- Does procurement protect or enhance the economic security of the organization without negative environmental or social impacts?
- Does procurement comply with the organizations corporate social responsibility values and international standards in regard to ethical issues?

There are four main aims for sustainable procurement according to British Standard Institutions Sustainable Procurement guide-

- To minimize negative impacts of goods, works or services across their lifecycle and throughout the supply chain.
- To minimize demand for non-renewable resources.
- To ensure that fair contract prices and terms are applied and respected, at least meeting minimum ethical, human rights and employment standards.
- To promote diversity and equality in the organization and throughout the supply chain.



Potential ways to procurement function to add value through sustainability are as follows-

<b>Profit</b> (adding economic Value)	<ul style="list-style-type: none"> <li>- Securing Value for money.</li> <li>- Effective investment appraisal and capital purchasing</li> <li>- Cost management and budgetary control.</li> <li>- Added value through sourcing efficiencies, supplier involvement, and quality improvement.</li> <li>- Ethical trading to support the long-term financial viability of suppliers and supply markets (sustainable pricing, payment on time).</li> </ul>
<b>Planet</b> (adding environmental value)	<ul style="list-style-type: none"> <li>- Input to design &amp; specification of green product &amp; services</li> <li>- Sourcing of green material &amp; resources</li> <li>- Reducing waste of resources throughout the sourcing cycle.</li> <li>- Managing logistics to minimize waste, pollution, GHG emission &amp; environmental impact.</li> <li>- Support 4R policy (Reduce, Re-think, Re-use, Recycle)</li> </ul>
<b>People</b> (adding social value)	<ul style="list-style-type: none"> <li>- Encouraging diversity in the purchasing team &amp; among suppliers.</li> <li>- Monitoring supplier practices to ensure observance of human right &amp; labour standards (child labour, force labour, workplace safety, equal opportunity etc.)</li> <li>- Input to health &amp; safety of products &amp; services (design, specification, supplier quality management)</li> <li>- Fair &amp; ethical trading ( fair pricing, ethical use of power, ethical business practice)</li> <li>- Sourcing from local SME.</li> </ul>

### 2.5 Sustainable Consumption and Production

Demand (arising from consumption of goods and services) and Supply (arising from production of goods and services) are the most two basic phenomenon of economic system. For an industrialized society to be sustainable must therefore seek to attain the economic, environmental and social sustainability of both consumption and production. ‘Sustainable Consumption and production’ is a term used to describe this aspect of sustainable development.

The term production can be used to describe a wide range of activities undertaken in the process of transferring raw materials, resources and other inputs into finished goods,

services as outputs. The activities within the process includes product & service design, procurement & supply, logistics, resource consumption, extraction, processing, manufacturing, assembly or service delivery, waste management, technology management, facilities management, human resource management, outsourcing & off shoring etc. Production activities have the potential to create negative environmental & social impact. Some key sustainability concerns of production process are-

- Minimize environmental pollution and degradation
- Manage waste products from production, packaging,
- Reduce GHG emission & carbon footprint
- Minimize the use of non-renewable resources
- Design products which are environment friendly.
- Design or adapt production processes those are environmentally clean.
- Minimize negative impact on communities and social amenities from business activity.
- Ensure ethical & responsible treatment to labour.
- Build & manage sustainable production capacity.

Sustainable consumption is closely linked to sustainable production as because producers are themselves consumer of labour, materials, products, services etc. Thus sustainable production implies the sustainable procurement & use of the resources. Improving production efficiency means less consumption. Sustainable consumption imposes responsibility on producers to think beyond the sustainability of their own input & processes, to how outputs will be used maintained & disposed of. So, sustainable production actively supports sustainable consumption. Some examples of sustainable consumption which can be applied by organizations are-

- Buying energy efficient equipment & appliances and reducing energy consumption.
- Reducing unnecessary transport mileage, fuel uses & carbon emission.
- Purchasing re-usable, recyclable and biodegradable product.
- Purchasing local, seasonal materials & produce.
- Buying ethically produced & sourced goods.
- Using local, small & diverse suppliers where possible.
- Carbon offsetting or compensating for domestic or corporate carbon emissions.
- Consuming less.

## **2.6 The Triple Bottom Line**

Triple Bottom Line is accounting concept of sustainability coined by John Elkington in 1994, co-founder of SustainAbility, a strategic, consultancy and advocacy organization. The term was designed to raise awareness that corporate activity not only add economic value but can potentially add environmental and social value- more importantly create environmental & social cost. Traditionally these cost have been borne financially by governments & experientially by communities. Triple Bottom Line ( also called as TBL, 3BL and ‘people, profit, planet’) recognizes the need for business to measure their performance not just through profitability but also by how well they protect their secondary stakeholders (society) in relation to social and environmental sustainability. TBL accounting means expanding the traditional reporting framework of a company to take into account ecological and social performance in addition to financial performance.

## **2.7 Benefits of Sustainable Procurement**

Society can be benefited immensely if sustainability is ensured in procurement. Normally buyers has a lot of power & control over what is manufactured & how is manufactured because buyer sets the specification of the product of his desire. Every time buyer purchasing the product is actually ‘voting’ the producer for his product. If products are purchased from companies those are ethically irresponsible i.e companies that exploit their workers, degrade the environment through their operation then these companies engaged in such unsustainable practice are being encouraged to continue. It should not be happen. So having biggest purchasing power government should support companies those produce sustainable products. Public procurement therefore needs to consider sustainability issues in their procurement process. This would ensure that development targets are achieved through the acquisition of goods, works, services without much damage to society and the environment. Sustainable Procurement seeks long term impact on economic, social and environmental issues through-

- Achieving value for money.
- improving ethical behavior of suppliers / contractors especially
- improving working conditions - health and safety, labour standards
- improving condition of disadvantageous groups in the country
- reducing harmful emissions and waste generation

- improving air, water, soil quality
- Making local industries applying sustainable procurement in their practice.

## **2.8 Potential Drivers for Sustainable Procurement**

We have already discussed the main reasons for increasing focus on sustainability in procurement. There are mainly two different type of support factors for sustainability- drivers and enablers. Drivers are forces which create pressure to develop and implement sustainable procurement strategies. Enablers are factors those create condition for sustainable procurement strategies. Main driving factors are resource scarcity, legislation, reputational risk/ opportunity, shareholder pressure etc. Drivers can be classified in two groups. External drivers, those are mainly from STEEPLE factors and internal drivers.

External drivers' are-

- Political drivers- Government policy, targets and standards, incentives and penalties, government practice as a buyer/ supplier and employer
- Economic drivers- Loss of market demand for unsustainable products/ services, rising market demand for sustainable products/services
- Social/ Ethical drivers- Social attitudes and values creating media, public, labour and consumer pressure for sustainable practices, emerging social justice and ethical issues (eg corporate governance, citizenship, corruption, trading ethics, fair trade, human and labour rights), industry/ professional codes of ethical practice.
- Technological drivers- Competitor/market innovation and take-up of sustainable technologies (new products, materials and processes), exposure of unsustainable technologies (eg resource usage, wastes), and opportunities in new sustainable technology markets (eg alternative energy).
- Legal drivers- National and international legislation on sustainability (or threat thereof), waste, pollution, emissions, employment rights, health and safety, consumer rights, corporate governance, public sector procurement etc.
- Environmental drivers- Resource depletion and costs (especially energy costs), issues of concern to key stakeholders (eg climate change, GHG emissions, deforestation, water management, conservation, biodiversity, pollution, waste reduction), national targets under international agreements.
- External stakeholder drivers- Interest and pressure in any or all of the above factors, creating threats and opportunities for the organization in obtaining resources and

collaboration (eg customers, labour, investors, pressure group activism, potential for cause-related marketing)

Internal drivers' are-

- Corporate Goals - Corporate vision, mission and objectives including sustainability values and aspirations.
- Organizational status -Existing CSR and/ or corporate citizenship objectives/ policies
- Top level buy-in - Senior management visionaries, champions and supporters of sustainability.
- Business factors- Business case arguments for sustainability, enhanced reputation, brand strength and sales revenue, cost/ waste reduction (eco-efficiencies), enhanced supply chain innovation and efficiency, reduced regulatory burden.
- Accountability factors- Accountability mechanisms, which demonstrate seriousness, and make reward contingent on sustainability progress/ performance.
- Risk awareness- Priority given to risk management, perception of business, reputational and supply risk from non-sustainability, reputational damage
- Stakeholder factors- Internal stakeholder demand for sustainability (eg need to attract and retain quality managers, employees, investors and supply chain partners).

## 2.9 Barriers to Sustainable Public Procurement

Barriers are the factors those obstruct the organizations progress towards sustainable procurement. Barriers are mainly resistant to change. Main barriers are cost, stakeholder attitude, cultural barrier, macroeconomic barrier, policy conflict etc. In addition to the above barriers, the Sustainable Procurement National Action Plan in the UK identifies a number of primarily internal barriers to sustainable procurement in the public sector. These barriers are shown in Table-

Area	Identified barriers
Leadership, clarity and ownership	Lack of leadership and commitment Confusion about ownership Poor incentive systems Mixed messages to suppliers
Clarity on policy priorities	Lack of clarity and proliferation of priorities. Lack of cross-government buy-in 'One size fits all' approach

Need to meet minimum standards now, while setting challenging future goals	Lack of prioritization Lack of enforcement of mandatory standards Failure to signal future trends to the market Failure to manage supply chain risk.
Developing capabilities	Lack of helpful information, training and accountability Ignorance of sustainability Suspicion about benefits Confusion arising from mixed messages.
Ensuring budgetary mechanisms enable and support sustainable procurement	Failure to apply rules on whole life costing (WLC) Focus on short-term efficiency saving at the expense of long term benefits Concerns regarding affordability, cost Inability to offset WLC savings against short-term budget limits Uncertainty on how to account for non-monetary benefits.
Smarter engagement with the market to Stimulate innovation	Supply chain management falling below good private sector practice Resistance to innovative supplier solutions Risk aversion Risk of delivering poor value to taxpayers.

**Table 2.9.1- Barriers to Sustainable Public Procurement**

From the above describing the drivers and barriers of sustainable procurement, we see that some of the factors are both drivers and barriers depending upon the situation or overall external and internal environment. For example, although economic growth supports better standard of living for the population as a whole, that one of the aims of sustainable development, but it can present a barrier to sustainability by encouraging over-consumption, excessive resource use, wastes and environmental impacts of economic development activities. Moreover, in spite of the sustainable procurement being expensive it should be supported in the public sector as the government is committed to the overall well being of the society.

## 2.10 Representative KPIs for Sustainable Procurement

Key performance indicators (KPIs) are agreed, specific measures of the performance of a unit or organization, against which progress and performance can be evaluated. KPIs should be such that they are relevant, clear and unambiguous and capable of direct, consistent measurement at operational level. Table 2.5 shows some of the representative KPIs for sustainable procurement.

<b>Sustainability area</b>	<b>KPI from Procurement perspective</b>
<b>Economic Sustainability</b>	<ul style="list-style-type: none"> <li>• Cost (procurement costs as a percentage of spend) or cost savings (annual cost savings as a percentage of spend)</li> <li>• Productivity (cost per procurement cycle, time taken per procurement cycle)</li> <li>• Supplier leverage (percentage of suppliers providing 80% or more of his annual spend)</li> <li>• Customer satisfaction (percentage of deliveries received on time in full)</li> </ul>
<b>Environmental Sustainability</b>	<ul style="list-style-type: none"> <li>• Percentage reduction in energy &amp; water consumption</li> <li>• Percentage reduction in GHG emissions.</li> <li>• Percentage reduction in supplier's water and energy usage.</li> <li>• Percentage purchase of recycled materials</li> <li>• Volume of waste to landfill (buyer and supplier)</li> <li>• Percentage of spend with suppliers who report on environmental impacts, or operate Environmental Management System (EMS).</li> </ul>
<b>Social/Ethical Sustainability</b>	<ul style="list-style-type: none"> <li>• Diversity and equal opportunity among procurement staff.</li> <li>• Training/ development opportunity</li> <li>• Compliance with workplace law and standards, ethical sourcing and trading standards/ objectives.</li> <li>• Reduction in health and safety incidents, grievance proceedings etc.</li> <li>• Supplier diversity (number of women-owned, minority owned, small suppliers)</li> <li>• Percentage supply chain monitored and managed for compliance</li> <li>• Supply chain compliance (eg year on year reduction in</li> </ul>

**Table 2.10.1- KPIs for Sustainable Procurement**

## **2.11 Sustainability and Public Procurement**

Environmental issues have been on the international agenda for several decades, and both public and private sectors are concerned about the role they play in these matters. More recently, the focus has expanded to broader topics such as sustainability. However, while sustainable procurement activities are common in many developed countries, the awareness and implementation of sustainable procurement is still comparatively low in most developing countries.

Public procurement is concerned with how public sector organizations spend tax payers' money on goods, works and services. Public procurement is guided by principles of transparency, accountability, and achieving value for money for citizens and tax payers. Public sector expenditure is substantial as government is often the single biggest customer within a country, and government can potentially use this purchasing power to influence the behavior of private sector organizations.

The public has particular reasons for demanding greater levels of sustainability from its supply chain as it is directly and explicitly responsible for ensuring the public money spent on goods, works and services is applied in such a way as to maximize benefits to the society. Sustainable procurement worldwide is heavily driven by public procurement agendas, and is often viewed as a public sector initiative. However, the view is slowly changing as the legal and commercial pressures are raising the priority of corporate social responsibility in the private sector. In summary it can be said that sustainable procurement is a new dimension for the procurement professionals who generally base their procurement decisions primarily on price, quality and time. Through sustainable procurement, an organization not only considers the self interest but also looks after the interests of the wider community by taking into account the economic, environmental and social considerations in their decision making. Public procurement accounts for a substantial part of the economy of any country, as such; public procurement is an attractive policy instrument for effecting positive changes in the broader economy. In particular, public procurement could be used to stimulate the production of innovative and sustainable products.

## **2.12 Flexible Framework**

Flexible Framework is a capacity building or enabling tool for sustainability in procurement in Public sector organizations proposed in UK Sustainable Procurement National Action Plan. The framework identifies five key themes needed to be delivered for sustainable procurement. Flexible Framework identifies five level of performance in each of



the themes, against which organizations can review and appraise their procurement capabilities and plan an improvement route against recommended time frame.

<b>Key Themes</b>	<b>Level-1 Foundation</b>	<b>Level-2 Embed</b>	<b>Level-3 Practice</b>	<b>Level-4 Enhance</b>	<b>Level-5 Lead</b>
<b>People</b>	Sustainable Procurement (SP) Champion identified. Key procurement staff has received basic training in SP principles. SP is included in key staff induction program.	All procurement staff have received basic training in SP principles. Key staff has received advanced training in SP principles.	Target refresher training on latest SP principles. Performance objectives & appraisals include SP factor.	SP included in competencies and selection criteria. SP included as part of induction program.	Achievement publicized & used to attract procurement professionals. Focus on benefit achieved. Good practice shared with other organizations. Internal & external award.
<b>Policy &amp; strategy</b>	Agree overarching sustainability objectives. Simple SP policy in place & communicated to staff & Key suppliers.	Review and enhance SP policy. Consider supplier engagement & check alignment. Communicate to staff, supplier & key stakeholder.	Augment SP policy & strategy covering risk, process integration, marketing, supplier engagement, measurement & review process.	Review & enhance SP strategy. Recognize potential of new technologies. Try to link strategy to EMS and include in overall corporate strategy	Strategy reviewed regularly, external security, linked to EMS. SP strategy recognized by leaders. Detailed review undertaken to determine future priorities.
<b>Procurement Process</b>	Expenditure analysis undertaken & key sustainability impacts identified. Contracts awarded on the basis of VFM,	Detailed expenditure analysis undertaken. Key sustainability risks assessed and used for prioritization. Whole life cost	All contracts assessed for general sustainability risks and management actions identified. Risks managed through all stages of procurement cycle. Target to	Detailed sustainability risks assessed for high impact contracts. Project sustainability governance in place. Lifecycle approach to	Lifecycle analysis undertaken. KPIs agreed with key suppliers. Progress rewarded or penalized. Best practice shared

	not lowest price.	analysis adopted.	improve sustainability agreed with key suppliers.	cost assessment applied.	with other organizations.
<b>Engaging Suppliers</b>	Key suppliers spend analysis undertaken and high impact suppliers identified. Key suppliers targeted for engagement and views on procurement policy sought.	Detailed suppliers spend analysis undertaken. General program of supplier engagement initiative with senior management involvement.	Targeted supplier engagement program in place for continual improvement. Two way communication between procurer and supplier. Supply chains mapped for key spend areas.	Key supplier targeted for intensive development. Sustainability audit in place. Achievement recorded. CEO involved in supplier engagement program.	Suppliers recognized as essential to delivery of SP strategy. Best practice shared. Suppliers recognize they must continually improve sustainability profile.
<b>Measurement &amp; Result</b>	Key sustainability impacts of procurement activity have been identified.	Detailed appraisal of sustainability impacts undertaken. Measures implemented to manage identified high risk impact areas.	Sustainability measures refined from general departmental measures to include individual procurer. Linked to development objectives.	Measures integrated into a balanced scorecard approach. Comparison made with peer organizations. Benefit statement produced.	Measures used to drive strategy direction. Progress formally benchmarked. Benefit from SP clearly evidenced. Independent audit reports in public domain.

Table 2.12.1- Flexible Framework

Through an exercise, an organization can identify his position in the Flexible framework by comparing benchmarking criteria shown in the table and identify the next step for improvement in each area.

## **CHAPTER-3: PUBLIC PROCUREMENT AND PUBLIC WORKS DEPARTMENT (PWD)**

### **3.1 Introduction**

The chapter describes the general background of public procurement including its history and evolution. It provides a picture of public procurement scenario in Bangladesh by incorporating the legal framework, under which public procurement is done and regulated, the general principles and features of public procurement currently in practice. In the Public Procurement Act, 2006 (PPA 2006), the term 'procurement' has been 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'. Public procurement can broadly be defined as the purchasing, hiring or obtaining of goods, works or services by the public sector through any contractual means. Public procurement is alternatively described as the acquisition of goods, works or services if such acquisition is effected with resources from public funds. Governments all over the world have to ensure essential services, such as health, education, defense infrastructure etc. to the people. To be able to meet the demand for these services, governments purchase goods, works and services from the open market. Public procurement thus has both economic and political implications. Yet the subject of public procurement has received little attention by academic researchers and policy makers, because it has been considered merely as an administrative function of the government. The items involved in public procurement range from simple goods or services such as stationary or cleaning services to large commercial projects, such as the development of infrastructure, including road, power stations and airports etc. Procurement in the public sector differs from that in the private sector. The purpose of procurement in the private sector is basically straightforward whereas that in the public sector complex as it considers the economic development and welfare of the country rather than the commercial profits. Furthermore, unlike private procurement, public procurement needs to address the considerations of integrity, accountability, national interest and effectiveness.

### **3.2 History of procurement**

In the earlier time, purchasing was regarded as primarily clerical job. During the World War I & II, purchasing function increased due to the importance of obtaining raw materials, supplies, and services required to keep the factories and mines operating (Wikipedia). Gradually purchasing continued to gain importance as the techniques for

performing the function became more refined and as the number of trained professionals increased. The function became more and more managerial rather than clerical. Besides this, with the introduction of major public bodies and intergovernmental organizations, such as the United Nations, World Bank, WTO procurement has become a well-recognized sector. In September 1983, Harvard Business Review published a ground-breaking article by Peter Kraljic on purchasing strategy that is widely cited today as the beginning of the transformation of the function from "purchasing," to something that is viewed as highly tactical as procurement or supply management, something that is viewed as very strategic to the business. (Wikipedia) Consequently, procurement starts to become more integrated into the overall corporate strategy. As a result, the status of procurement function has elevated significantly as the Chief Procurement Officers of Heads of Procurement are recognized as important business leaders having broader and strategic responsibility of an organization.

### **3.3 History of public procurement in Bangladesh**

The public procurement procedures and practices have evolved over the years from the days of British and subsequently Pakistani rule. A *Compilation of General Financial Rules* (CGFR) originally issued under British rule was slightly revised in 1951 under Pakistani rule and was reissued in 1994 and again in June 1999 with very few changes. The CGFR, *inter alia*, outlines broad, general principles for government contracts to follow, leaving it to the departments to frame detailed rules and procedures for their respective procurements. It also refers to the *Manual of Office Procedure (Purchase)* compiled by the Department of Supply and Inspection as the guide for the purchase of goods and the Public Works Department (PWD) code as the guide for works. Both date back to the 1930s and have not undergone any revision worthy of mention. The CGFR also refers to the Economic Relations Division (ERD) Guidelines issued in 1992, modeled on World Bank Procurement Guidelines at the time, for procurement in externally funded projects, with the proviso that the loan conditions would prevail in case of conflict. Since independence in 1971, the public procurement practices have been influenced by the World Bank, the Asian Development Bank, and other donors since the bulk of public procurement is externally funded. Some departments, autonomous boards, and public undertakings have drafted their own set of procedures or a manual, and the rest follow the PWD code. The public procurement procedures and practices have some unsatisfactory features as outlined in the Country Procurement Assessment Report prepared by the World Bank in 2002 including poor advertisement, a short bidding period, poor specifications, nondisclosure of selection criteria,

award of contract by lottery, one-sided contract documents, negotiation with all bidders, rebidding without adequate grounds, other miscellaneous irregularities, corruption and outside influence etc. In order to address these issues, in August 1998, the World Bank Country Director wrote to the government urging it to streamline the procurement process and to make the process more efficient. In the context of escalating concerns for streamlining the country's public procurement system, the government undertook an array of reforms in order to strengthen the public procurement regime. The reform process ultimately led to the formulation and issuance of Public Procurement Regulations in 2003, providing a unified procurement processing system. The PPR, 2003 was supplemented by Public Procurement Processing and Approval Procedures (PPPA), a revised Delegation of Financial Powers (DoFP) and several Standard Tender Documents (STDs) and Standard Request for Proposal Documents for the procurement of goods, works and services. In order to strengthen the legal basis of public procurement, the Public Procurement Act, 2006 (PPA, 2006) was passed by the Parliament, Under the Act, the Public Procurement Rules, 2008 (PPR, 2008) was issued, replacing the Public Procurement Regulations, 2003.

### **3.4 Legal framework of public procurement in Bangladesh**

In the CPAR, 2002, the World Bank made some recommendations with the objective of bringing the public procurement system in a broad legal framework. Some of the recommendations include:

- i) To create a Central Procurement Policy Unit that will be responsible for *Public Procurement Policy, Public Procurement Rules and Procedures, and Standard Bidding and Contract Documents*, as well as oversight of public procurement.
- ii) To prepare and issue *Public Procurement Rules and Procedures* that should be a public document., covering procurement of goods, works and professional services that will apply to all ministries, departments and public bodies.
- iii) To prepare and issue a set *Standard Bidding and Contract Documents* for goods, works, and professional services that are applicable to all public procurement, using the World Bank and other similar documents as models.
- iv) To review and revise delegation of powers to public sector corporations and autonomous bodies, as well as to department heads, chief engineers, and project directors
- v) To review and revise the layering in the approval process.

In response to the above 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. Since then, the CPTU has been working for maintaining the public procurement rules, standard bidding documents and oversight of the overall public procurement in the country.

At present the legal regime of public procurement in Bangladesh is based on two principal legal instruments which are the Public Procurement Act, 2006 and the Public Procurement Rules, 2008. Besides these documents, the CPTU is working for finalizing the Standard Tender Documents (STDs) for goods and works and the Standard Request for Proposals (SRFPs) for services. Ministry of Finance has already issued the revised Delegation of Financial Powers DoFP to public sector corporations and autonomous bodies, as well as to department heads, chief engineers, and project directors for smoothly implementing the public procurement in the country. Public Procurement System is decentralized in Bangladesh. Different departments and directorates under various ministries carry out the actual procurement functions through their offices from national level to upazila level following the PPR, 2008 and using the Standard Tender Documents and Standard Request for Proposals prepared by the CPTU. At the central level, the ministries handle very little procurement functions essentially food grains, printing, and stationery (World Bank, 2002). The major Government Departments, such as, Public Works Department (PWD), Roads and Highways Department (RHD), Bangladesh Railway, Local Government Engineering Department (LGED), Telephone and Telegraph (T&T) Board, Education Engineering Department (EED), Health Engineering Department (HED), Department of Public Health Engineering (DPHE), Directorate of Food etc. carry out the substantial amount of procurement through their central to local offices, spread all over the country.

Apart from the departments/directorates of ministries, as pointed out earlier, the corporations under the Ministries also undertake large scale procurement activities. The corporations like: Bangladesh Chemical Industries Corporation (BCIC), Bangladesh Petroleum Corporation (BPC) Bangladesh Steel & Engineering Corporation (BSEC), Bangladesh Agricultural Development Corporation (BADC), Power Development (PDB), Bangladesh Water Development Board (BWDB), Bangladesh Jute Mills Corporation (BJMC) are some of the leading procurement agencies of the government. In addition some semi-government/ autonomous bodies like Dhaka Electric Supply Company (DESCO), Dhaka Power Distribution Company (DPDC), a number of companies under petrobangla etc. also carry out a significant amount of procurement. The corporations and autonomous bodies in addition to their own fund generally get allocation under Annual Development Plan (ADP) from the national budget.

### **3.5 General principles of public procurement**

The main principles of Public procurement that is a unified system are outlined in the rationale for the enactment of the Public Procurement Act, 2006 as says that it is an Act to provide for procedures to be followed for ensuring transparency and accountability in the procurement of goods, works and services using public funds and ensuring equal treatment and free and fair competition among all parties wishing to participate in such procurements. So it can be said that the common objectives of public procurement are equal opportunity for all, fair treatment, value for money, nondiscrimination, social and industrial development.

### **3.6 Methods of public procurement in Bangladesh**

The Public Procurement Rules, 2008 prescribes several methods of procurement, dividing the procurement into domestic and international classes. For the domestic procurement, the preferred method is the Open Tendering Method (OTM) which ensures equal opportunity to all bidders, open competition and proper advertisement. However, a number of procurement methods alternatives to the OTM are also allowed under certain circumstances. These methods must be justified on technical and economic grounds. Prior permission of the Head of Procuring Entity (HOPE) has to be sought for the methods other than the OTM. These alternative methods include-

- i) Limited Tendering Method (LTM)
- ii) Two Stage Tendering Method (TSTM)
- iii) Request for Quotation Method (RFQM) and
- iv) Direct Procurement Method (DPM).

There are some essential conditions that need to be considered when applying the alternative methods. The LTM can be used when suppliers are limited in number or the time and cost required to receive and evaluate tenders would outweigh the value of the contract or in an urgent situation. Two stage tendering method may be followed for complex and large projects or when preparing complete technical specifications is not possible at one stage or where alternative solutions may be available but not known to the procuring entity due to rapidly changing technology. The RFQM may be used for standardized, low value goods easily available in the market or low value works and physical services subject to the value being within the prescribed threshold value. However, for resisting the misuse of this method, the application of this method is strictly controlled by the head of procuring entity. Direct procurement method is allowed when, goods are procured from sole proprietor due to patent

or copyrights, or additional goods or services are procured from the original supplier/manufacturer, or the goods are available only from the sole dealer or manufacturer, or a special type of good is procured from a local manufacturer, or for the procurement of goods, works or services of very urgent and essential nature For international procurement, the methods mentioned above are also applicable but with certain differences to maintain standards and competition. For example, in international procurement, specifications should be made conforming to the international standards; provisions for alternative dispute resolution should be incorporated in the contract etc.

### **3.7 Towards the sustainable procurement**

Public procurement is more than just a simple act of purchase by government. It is a major economic activity and it accounts for the largest share of government spending besides wages. It can also be used as a public policy tool to foster particular economic and social outcomes. Procurement practices determine the ultimate destination and beneficiary of a large share of public spending (Ellmers, 2011). As the government of any country is the single biggest purchaser of goods, works or services, this purchasing power of the public sector could play a significant role in initiating the sustainable procurement practices both in public and private sector. By doing so, the public sector can set an example and act as an important “norm setter” towards a sustainable development. The recent spectrum of attitudes have shifted towards the adaptation of a more environmentally and socially responsible ethos. Sustainable procurement is a broad policy concept and a basic value that is gaining legitimacy in business practices. Environmental pressures are increasingly becoming recognized as new market opportunities in which good environmental performance will be seen as a pre-requisite for good management practices. So, it is not sufficient to put only the price and quality criteria in procurement, it is equally important to put sustainability criteria in procurement.

### **3.8 Sustainability addressed in Public Procurement Documents.**

This section addresses the sustainability issues those are addressed in the current public procurement framework. At present the public procurement in Bangladesh is regulated by two principal documents which are the Public Procurement Act, 2006 and the Public Procurement Rules, 2008. Besides these CPTU has prepared a number of Standard Tender Documents (STDs) for goods and works and Standard Request for Proposals (SRFPs) for



services depending upon the size or volume of procurement. The table 3.8.1 shows the sustainability factors those have been addressed in public procurement documents-

<b>Area of Performance</b>	<b>Article relevant to procurement document</b>
Economic Sustainability	<p>The Procuring Entity shall take into account the following when determining the method of Procurement and consolidating of Goods packages:</p> <ul style="list-style-type: none"> <li>(a) availability of the relevant Goods in the local market;</li> <li>(b) quality, sources and brand of the Goods available in the local market;</li> <li>(c) price levels of the designated Goods;</li> <li>(d) Risks related to supply in the local and international markets.</li> </ul> <p><b>[Rule 15(2), PPR, 2008]</b></p> <ul style="list-style-type: none"> <li>• In the case of determining the method of Procurement for Works, the Procuring Entity shall consider the following: –</li> </ul> <ul style="list-style-type: none"> <li>(a) the prevalent conditions of the contracting industry;</li> <li>(b) expected competition;</li> </ul> <p><b>[Rule 15(7), PPR, 2008]</b></p> <ul style="list-style-type: none"> <li>• Technical Specifications prepared by Procuring Entities shall, where appropriate, be-</li> </ul> <ul style="list-style-type: none"> <li>(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;</li> </ul> <p><b>[Rule 29(2), PPR, 2008]</b></p> <ul style="list-style-type: none"> <li>• 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</li> </ul> <p><b>[Rule 29(3), PPR, 2008]</b></p>
Environmental Sustainability	<p>The Contractor shall throughout the execution and completion of the Works and the remedying of any defects therein:</p> <ul style="list-style-type: none"> <li>(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</li> </ul>

	<p>consequence of the Contractors methods of operation.</p> <p><b>[GCC 27.1, STD-PW3]</b></p> <ul style="list-style-type: none"> <li>• 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.</li> </ul> <p><b>[GCC 29.2, STD-PW3]</b></p>
Social/Ethical Sustainability	<p>The Procuring Entity shall take into account the following when determining the method of Procurement and consolidating of Goods packages:</p> <ul style="list-style-type: none"> <li>(a) capacity of local Suppliers to supply the required quantities;</li> <li>(b) capacity of the national industry and quality of its products;</li> <li>(c) market conditions and expected competition;</li> </ul> <p><b>[Rule 15(2), PPR, 2008]</b></p> <ul style="list-style-type: none"> <li>• In the case of determining the method of Procurement for works, the Procuring Entity shall consider the following: –</li> </ul> <ul style="list-style-type: none"> <li>(a) capacity of local Contractors;</li> </ul> <p><b>[Rule 15(7), PPR, 2008]</b></p> <ul style="list-style-type: none"> <li>• Procuring Entities shall, where possible, prepare the specifications in close cooperation with the concerned user or beneficiary of the Goods or Works or Service</li> </ul> <p><b>[Rule 29(5), PPR, 2008]</b></p> <ul style="list-style-type: none"> <li>• 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.</li> </ul> <p><b>[Rule 83(1)(e), PPR, 2008]</b></p> <ul style="list-style-type: none"> <li>• The Contractor shall throughout the execution and completion of the Works and the remedying of any defects therein:</li> </ul> <ul style="list-style-type: none"> <li>(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; <b>[GCC 27.1, STD-PW3]</b></li> </ul>

	<ul style="list-style-type: none"> <li>• 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.</li> </ul> <p><b>[GCC 28.1, STD-PW3]</b></p> <ul style="list-style-type: none"> <li>• 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.</li> </ul> <p><b>[GCC 29.1, STD-PW3]</b></p> <ul style="list-style-type: none"> <li>• 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.</li> </ul> <p><b>[GCC 29.3, STD-PW3]</b></p> <ul style="list-style-type: none"> <li>• 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.</li> </ul> <p><b>[GCC 30.1, STD-PW3]</b></p> <ul style="list-style-type: none"> <li>• 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:</li> </ul> <p>(d) Personal injury or death.</p> <p><b>[GCC 37.1, STD-PW3]</b></p>
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**Table 3.8.1- Sustainability aspects addressed in Public Procurement Documents.**

**3.8 Public Works Department (PWD) and its Procurement activity.**

Public Works Department (PWD), under the Ministry of Housing and Public Works, is the pioneer in construction arena of Bangladesh. Over about two centuries, PWD could successfully set the trend and standard in the country's infrastructure development. It plays a pivotal role in the implementation of governments building construction projects. It also undertakes projects for autonomous bodies as deposit works. Public works Department has

highly qualified and experienced professionals forming a multi-disciplinary team of civil, electrical and mechanical engineers who work alongside architects from the Department of Architecture. With its strong base of standards and professionalism developed over the years, PWD is the repository of expertise and hence the first choices among discerning clients for any type of construction project in Bangladesh. Besides being the construction agency of the Government, it performs regulatory function in setting the pace and managing projects for the country's construction industry under the close supervision of the Ministry of Housing and Public Works.

PWD is headed by a Chief Engineer, supported by 12 Additional Chief Engineers (Civil), 37 Superintending Engineers, 141 Executive Engineers, 284 Sub-Divisional Engineers, 360 Assistant Engineers, 1167 Sub-Assistant Engineers and staffs spread all over the country. It has 7,350 regular employees that include 846 class-1 officers. The Chief Engineer is the administrative and technical Head of the department. He also acts as the Technical Advisor to the Government of Bangladesh. The operational units in the PWD are spread throughout the country. Field offices are divided into Civil Working Units and Electrical/Mechanical (E/M) Working units. In the Field there are seven Zonal Additional Chief Engineers in seven Zonal (Divisional) Head quarters under which there are Superintending Engineers, Executive Engineers, Sub-Divisional Engineers, Assistant Engineers, Sub-Assistant Engineers both for Civil and E/M works. The Ministry of Housing and Public Works exercises the administrative control of the PWD.

To facilitate better client/users satisfaction and adequate technical, administrative and supervisory control in the execution of projects PWD has a number of specialized units like Planning Unit, PWD Structural Design Units, Electro Mechanical Unit, Wood Workshop, arboriculture Division, PWD Health Wing, MIS Cell, PWD Training Academy and Testing Laboratory etc.

The contribution of PWD encompasses the entire spectrum of physical and social infrastructure for national development, national security and international relations. Its activities span the length and breadth of the country including remote areas and difficult terrain. The main responsibilities of PWD are shown in following-

- Design and Construction of Public Buildings (except those of RHD, T&T, Postal Department).
- Construction of National Monuments

- Repair and Maintenance of Public Buildings
- Preparation of Book of Specifications and Code of Practice
- Construction of Buildings for Other Agencies on Deposit Work Basis
- Maintenance of Public Parks.
- Preparation of Schedule of Rates and Analysis of Rates for Construction & Maintenance of Public Buildings
- Acquisition and Requisition of Land for Public Construction Work
- Valuation of Land and Property and Fixing of Standard Rent

All of the Public Works stated above are associated with huge volume of procurement, mainly procurement of works. It may be mentioned here that the architectural plans and designs of almost all Government building infrastructural projects & monuments are done by the Department of Architecture in close consultation with PWD.

## **CHAPTER - 4 RESEARCH METHODOLOGY**

### **4.1 Introduction**

According to Webster International dictionary Research is a careful critical inquiry or examination in seeking facts or principles, diligent investigation in order to ascertain something. Since research is 're+search' Leedy (1989) says Research is a critic and exhaustive investigation or experimentation having as its aim the revision of accepted conclusions in the light of newly discovered facts. More formally research is a systematic careful inquiry or examination to discover new information or relationships and or to expand or verify existing knowledge for some specific purpose. The aim of research is to-

- Find new dimensions and generalizations with old data.
- Know old conclusions with new data.
- Reach in one conclusion from the same set of data.
- Put forward an entirely original idea or theory or to discover unexplored horizon of knowledge.
- Find or to resolve contradictions existing in the area of study.

Research methodology is the combination of tools, techniques and approaches through which a scientifically designed research is actually carried out. Research is a cyclical process which begins with a problem; an unanswered question in the mind of the researcher. Then research sees the goal in a clear statement of the problem. Research subdivides the problem

into appropriate sub problems. Research posits tentative solution to the problem through appropriate hypothesis. These hypotheses direct the researchers to the facts. Research looks for facts directed by the hypothesis and guided by the problem. The facts are collected and organized. The research interprets the meaning of the facts which leads to a resolution of the problem, thus confirming or rejecting the hypothesis and providing an answer to the question which began the research cycle.

#### **4.2 Social Research Concepts and Variables**

A concept is a word or phrase that symbolizes the phenomena under study and helps the researchers to communicate the experimented and observed findings. Concepts are used to construct a framework to guide the research process and investigation approach. Concepts are grouped into two broad categories; **Concepts by postulation** and concepts by intuition. Research as a scientific approach for exploring and examining any process or phenomena is based on logical arguments and reasoning. In research we seek facts from which to draw conclusions. Drawing conclusion depend on the researcher's ability to reason logically. There are two type of reasoning **Inductive** & deductive reasoning. Inductive method consists of studying many individual situations in order to develop generalized conclusions. Deductive method of reasoning starts from a general principle or rule generally regarded as fact and assesses a specific fact or case that seems to fit the rule or principle.

Variable is a general class or category of objects, events or situations. Webster's dictionary defines a variable as something which is 'able or apt to very, changeable'. A variable is a measurable dimension of a concept. Variables could be continuous or discrete. Continuous variables can take values within a specific interval; on the other hand discrete variables are countable specific values which have gaps. Variables can be classified as dependent & independent variable. The variable that is assumed to depend on or be caused by others is dependent variable. Independent variables are those that do not depend on other variables & whose effect upon the dependent variables the researchers attempt to understand and explain.

#### **4.3 Social Research Models and Methods**

Model is an idealization, an abstract of some part of real world and is an incomplete representation of real thing. A model is central to every analysis. To construct a model for a given problem situation the actions to be taken are- to single out certain elements as being relevant to the problem under consideration, to make explicit the significant relationship among these elements and formulate hypothesis regarding the nature of relationship. Models

can be classified broadly in two type's quantitative and qualitative model. **Quantitative model** is a mathematical model defined by a precise set of assumptions expressible in terms of well defined set of mathematical relationship. The behavior of such model is determined completely by assumptions and the conclusions are derived as logical consequences of those assumptions without recourse to judgment or intuition about the real world process. Quantitative model is used here.

A social research entails scientific investigation conducted in the field of social sciences using theories, models, concepts, tools, techniques, processes drawn from the various disciplines of social and behavioral sciences to explain, interpret, understand and improve the social issues, problems and institutions. P.V. Young defines social research as the systematic method of discovering new facts or verifying old facts, their sequences, interrelationships, casual explanations and the natural laws which govern them. Social research focuses primarily on human behavior and social issues and problems. There are different types of social research. Here it is applied type of evaluation research.

Research method is a planned and systematic approach of investigation that denotes the detail framework of the unit of analysis, data gathering techniques, sampling focus and interpretation strategy and analysis plan. There are different methods in social research like content analysis, Descriptive method, Survey method, Historical method, case study method, Focused Synthesis, Scenario building etc. There are at least three points that should be borne in mind while choosing an appropriate research method. Those are- Answering the research question, Current state of knowledge and the nature of the variables involved. **Survey method** is most widely used in social science research.

Survey is composed of two Latin words 'Sur' means above/beyond & 'Vor' means look/see. So survey means to see or look over or beyond or to see something from a high place. Surveys are widely used to collect information and observation over time. In social science it refers to the technique of collecting data through interview or questionnaire in the light of a specific research objective. Mark Abrams defined survey as a process by which quantitative facts are collected about the social aspects of a community position and activities. Survey research is first and foremost study of people. Survey can be used for two different purposes. One is for analysis that establishes relationship between variables and another is for describing current practices and events. They can be used to determine the extent to which certain practices are common or certain trends becoming apparent. In this way survey is very much relevant with the present study.

Social survey is more reliable than any other method as it is quantitative and mostly primary in character. It helps getting more reliable data and well organized information on particular problem. It is an excellent vehicle for measurement of attitudes and orientations prevalent within a large population. However survey method is time consuming & costly. Since survey is conducted on sampling basis, it may involve sampling error and sometimes the result obtained from the study become too general. Survey method does not take into account the historical perspective.

#### **4.4 Research Design**

Research design precisely means drawing a systematic approach and establishing a plan of action to carry out the research. Selltitz defines research design as the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. Research design is only a tentative plan. It differs on the research purpose. The component of Research design are-

- The subject on which information will be gathered- Sustainability practice in Public Procurement
- The type of information required and its intended utilization- Questionnaire response data about sustainability practice in procurement process to identify preparedness & level of practice.
- The population on which information will be gathered- Mid level (Executive engineers) officers of Public Works Department (PWD).
- The method by which information will be gathered- Questionnaire survey.
- The means/organization through which information will be gathered- Directly by researcher.
- Sampling design- Discussed in different section.
- Observational design-
- Statistical Design- SPSS software will be used to analyze quantitative data obtained under the study.
- Operational design-

It must be remembered that none of the designs and the resultant models is independent. A decision in respect of any one phase of the design may influence or affect a decision in any other phase. Consequently the phases generally overlap.



#### 4.5 Sampling and mode of data collection

A population is an entire group of items or individuals of interest in a study. In sample survey two types of population are discussed i.e. Target and Sampling population. Target population is the population for which representative information is desired. Sampling population is the population a sample is drawn as predetermined way. Sampling as a process for selection of representative of the entire population is based upon some assumptions like sample should be such that it can represent adequately the whole data. Selected samples must have likeness or similarity with other units and each unit should be free to be included in the sample. Sampling method saves a lot of time, energy & money. Intensive study is possible due to scientific selection of sampling unit. When the data are unlimited the use of sample is not only very useful but also unavoidable. Sample size depends on the factors like Homogeneity, number of classes, inertia of large number, law of statistical regularity, size of questionnaire and nature of sampling.

Yamane(1967) proposed a formula to get sampling population. If target population is N and precision level is e then sampling population n is

$$n = N/(1+N.e^2 )$$

for, N=target population=425 ( total number of Executive Engineer & SDE in PWD as mid level officer) & e=level of precision= +-20%

$$n = N/(1+N.e^2 ) = 425/(1+425 \times 0.2^2 ) = 24$$

There are different type of sampling like random sampling, Stratified sampling, Purposive sampling, multi-state sampling, convenience sampling, self selected sampling. Random sampling is going to be used in the study. Random sampling is a process of selecting a sample or sub-set of all sample units, giving each sample unit in the frame an equal chance of being included in the sample. There are different methods of random sampling like lottery, Tippett's number, Grid system, sequential list etc. Here some sort of lottery method is going to be used like whoever meets first will be interviewed.

Data and information for social research are scattered all around. Data need to be conscientiously identified, carefully selected and methodically collected. There are four leading methods of data collection those are survey of documents and other secondary sources, interview, Observations, Questionnaires and structured schedule. Selection of method depends on the objective of the study. Questionnaire method is going to be used in the study.

Questionnaire is used to gather objective, quantitative data as well as accruing information of qualitative nature. It is an instrument to collect and aggregate the primary data from the basic sources. A questionnaire consists of a number of questions arranged in a precise logical order with a definite purpose. Normally a questionnaire is mailed to the respondents and is filled in privately without the presence of researcher. Broadly there are two types of questionnaire i.e. structured and non-structured. Structured questionnaire contains definite, concrete and pre-ordained questions. It is prepared in advance. Through structured questionnaire the researcher can exactly set the study variable and collect the quantitative and qualitative data in the light of the hypothesis of the study. So a structured questionnaire is going to be prepared.

Questionnaire can be divided into different types on the basis of nature of the question like open ended questionnaire, closed questionnaire and mixed questionnaire. Mixed questionnaire is being used in the study which consists mostly closed question and some optional open ended question. Questionnaire method is very much useful for educated respondents. If they get up of the questionnaire is attractive, size is small and some monetary incentives are there then people feel interest and easy in responding the questions.

There are some principles to follow for questionnaire formulation. It should be start with a catchy and lucid heading indicating the nature and objective of the study. It should be short enough so as not to take too much time to response and respondent may reject it. Language should be easy, understandable, self explanatory and the question should not be too suggestive. Well organized and sequential limited number of question should be asked. Answer of the question should be objective and capable of tabulation. Leading and prompting questions, technical terms and jargons should be avoided. If possible pre-testing of the questionnaire should be conducted to see its acceptance to respondent and to identify major weaknesses of the questionnaire. However sometimes researchers give insufficient attention to the development of questionnaire due to time and other resource limitation. Since human being is creative questionnaire having much open ended question may generate huge variety of relevant or irrelevant data those are difficult to process. A structured questionnaire has been prepared to conduct the research work which is shown in Appendix-A.

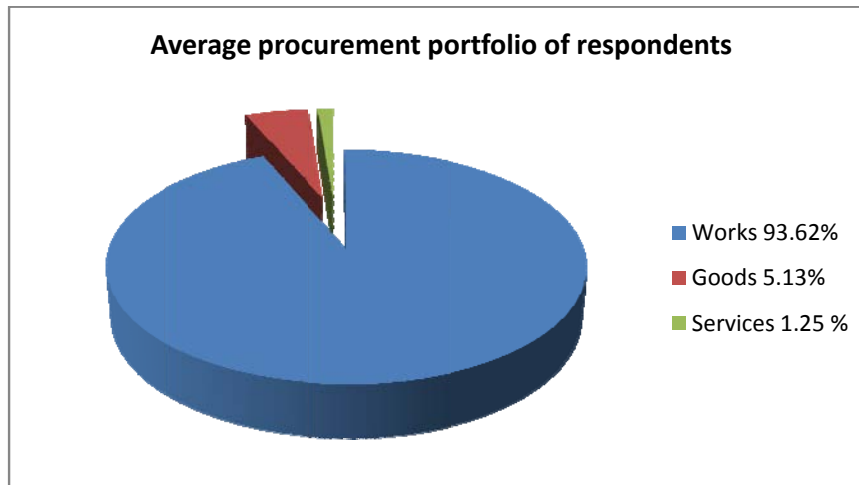
## **CHAPTER - 5 DATA ANALYSIS AND DISCUSSION**

### **5.1 Introduction**

This chapter represents an analysis of the data collected through questionnaire survey and provides the detailed information on the findings from the survey. The data have been collected through filling up a questionnaire by mid level responsible procurement professionals of Public Works Department in order to achieve the research objectives mentioned in Chapter 1.

Sustainable procurement encompasses three dimensions e.g. economic, environmental and social aspects of procurement. The operational definitions of these three aspects are outlined in literature review. A questionnaire was designed including a number of questions which covered not only the above mentioned three aspects of sustainable procurement but also the information about the organization's procurement. There are three sections in the questionnaire. Questions of section-A acts as a conditioner for the respondents. The questions were intentionally set in such a way that the respondents will be reminded about the concepts & aspects of sustainability. A question was set to seek sustainability practice in respondent's daily life. Section-B is about preparedness to practice sustainability in procurement activity. This section will provide the answer how much the respondents are prepared to practice sustainability in procurement activity. Section-C is about the extent of practice sustainability in procurement process of their jurisdiction. Some general questions have been set at the end of the questionnaire to get the perception of the respondents about the potential drivers and obstacles of sustainable procurement.

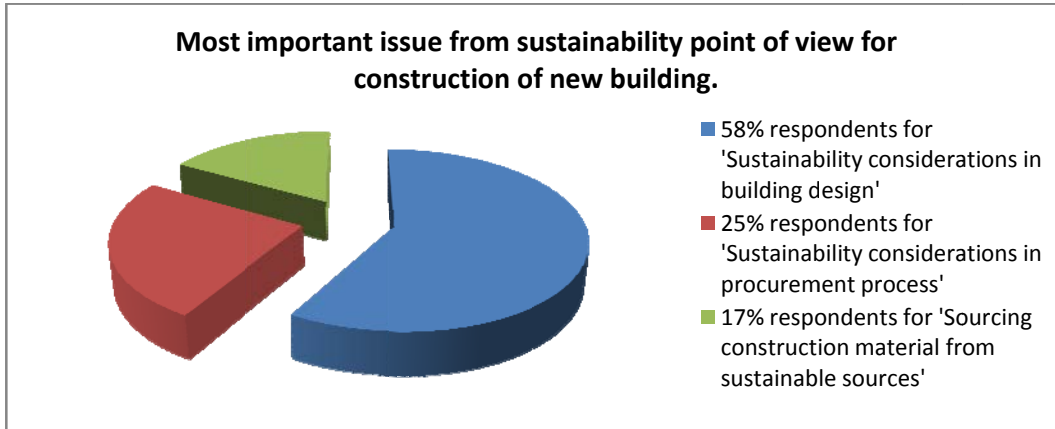
A total of twenty four mid level (Executive Engineer, Sub-divisional Engineer) officials of Public Works Department have been interviewed with the same questionnaire to conduct the survey. These officials have been selected because of their direct involvement in public procurement activities in their jurisdiction. The respondents were selected randomly and interviewed. Average length of experience in procurement activity of the respondents is 10.6 years ranging from 4 years to 20 years. Average annual volume of procurement is 72.2 crore taka at their involvement. Since Public Works Department is a prime construction agency of the government so works is their main procurement item. Their procurement portfolio on average is works 93.62%, goods 5.13% and services 1.25%. The composition of works is on average 73.40% new construction works and 26.60% is repair & maintenance work.



**Fig 5.1.1- Average procurement portfolio of respondents**

### **5.2 Response to the questions on basic concept (Section-A)**

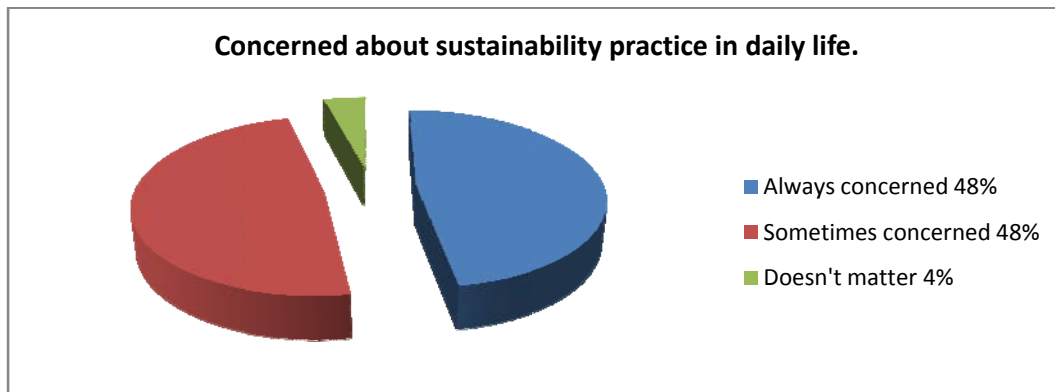
The multiple choice questions of this section were set in such a way that it will remind the respondents' about definition and concepts of different aspects of sustainability and sustainable procurement. 58% respondents answered correctly about the definition of sustainable procurement which is "A process of meeting organizational need in a way that achieves best value for money on whole life basis whilst minimizing damage to the environment and society". 42% respondent wrongly chose the definition of sustainable procurement as 'Conducting procurement activity efficiently & effectively' which is actually operational efficiency rather than sustainability in procurement. 67% respondents correctly answered the definition of economic aspect of sustainability that is 'Justifying best value for money' whilst 29% answered as 'Considering whole life costing of an activity' which is actually sustainability as a whole which includes social and environmental aspect as well. Social sustainability and environmental sustainability was defined correctly by 88% and 79% respondents respectively. In responding which is the most important issue from sustainable point of view for construction of new building 58% says 'Sustainability considerations in building design' 25% says 'Sustainability considerations in procurement process' and 17% says 'Sourcing construction material from sustainable sources'.



**Fig 5.2.1- Sustainability issues for construction of new buildings**

In case of repair & maintenance work issues like rigorous need assessment, Sustainability considerations in procurement process and sustainable re-use of garbage and debris are almost Equally important (38%, 37%, 25% respectively) according to respondents perception. So respondents are agreed upon the importance of sustainability in procurement. But on the other hand 83% respondent says that they are practicing 'Lowest quoted price criteria' as contract award criteria which may not cover sustainability issues effectively. MEAT (most economically advantageous tender) or WLC (whole life costing) could be better option for contract award criteria to ensure sustainability.

All the respondents are highly educated and high officials of public body. They were asked a question to see their sustainability practice in their daily life. 79% respondents says they 'always turn off electrical switches after use', 71% says they always 'try to use less water in their daily activity'. Only 58% respondent says they always 'try to buy energy saving electrical and IT equipments'. Replying to 'try to avoid plastic bags' 13% says always and 79% says sometime. 71% respondent says they sometime 'try to practice 4R policy (Reduce, Re-use, Recycle and Rethink) in daily life.



**Fig 5.2.2- Respondents concern about sustainability practice in daily life**

On average of above mentioned sustainability aspects of daily life 48% respondents says they are always concerned, 48% says they are concerned sometimes and 4% says it doesn't matter to them.

From Section-A it can be conferred that most of the respondents have idea about the definition of different sustainability aspects though a good number of respondents have confusion over it. Respondents are agreeing upon the importance of sustainability considerations in procurement process of work procurement though they don't practice the contract award criteria which may ensure sustainability considerations in procurement process. Respondents say that they are aware enough about sustainability concerns in their daily life.

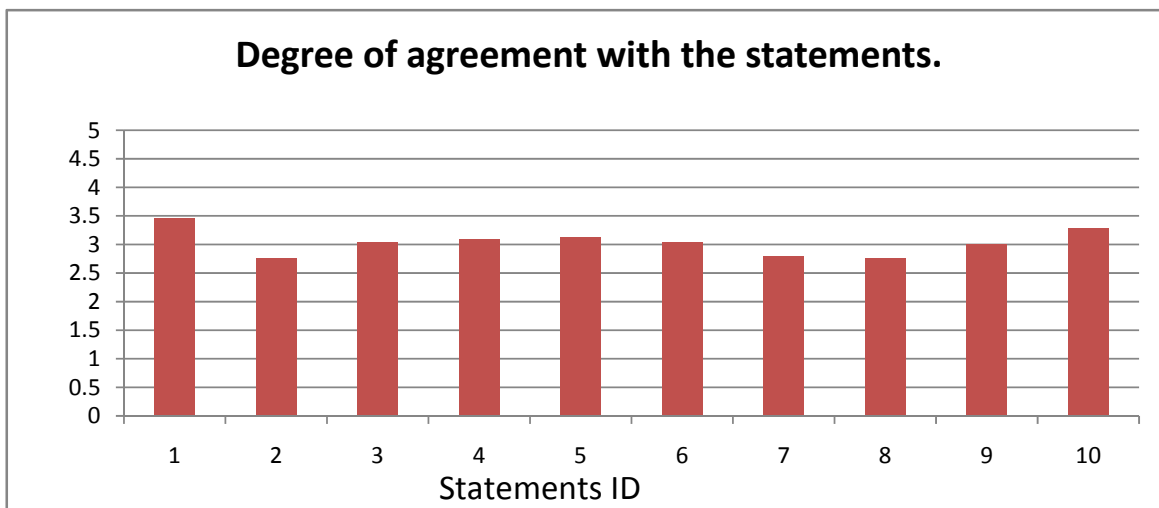
### 5.3 Response to the questions on preparedness (Section-B)

In this section (Section-B) questions were set to judge the degree of preparedness of the respondents to practice sustainability in their procurement process. They were asked about their degree of agreement with some sustainability statements. Scores were set as for strongly agree = 5, agree = 4, neutral = 3, disagree = 2 and for strongly disagree = 1. When the respondents were asked about their degree of agreement with the statement 'Sustainability consideration in public procurement process is very important in developing economies like Bangladesh' the average score was 4.29. That means respondents are near about strongly agree upon the importance of sustainability considerations in public procurement process. But when they were asked about their preparedness to practice sustainability considerations in their procurement process the response is not quite satisfactory. The average response score corresponding to statements are given in tabular form in below-

ID	Statements	Score
1	I have enough training & I am capable to conduct Public Procurement activity.	3.46
2	I have enough training & I am capable to conduct Sustainable Public Procurement activity.	2.75
3	I have clear conception on economic aspect of sustainability	3.04
4	. I have clear conception on Social aspect of sustainability	3.08
5	I have clear conception on Environmental aspect of sustainability	3.13
6	I think PPA-06 & PPR-08 have addressed sustainability in procurement process properly-	3.04
7	I think PPA-06 & PPR-08 have addressed social sustainability in procurement process-	2.79
8	I think PPA-06 & PPR-08 have addressed environmental sustainability in procurement process.	2.75
9	I think PWD has & following Environmental Management System (EMS) in their practice	3.00
10	I think itemized specification of PWD schedule of rates is addressing sustainability in procurement duly.	3.29

**Table 5.3.1- Preparedness of respondents on sustainability in procurement**

The table shows the respondents scored highest in ‘I have enough training & I am capable to conduct Public Procurement activity’. Even this highest score is only 3.46 that mean they are in between neutral to agree level. The score shows they are not confident enough. But when they were asked ‘I have enough training & I am capable to conduct Sustainable Public Procurement activity’ just adding one word ‘sustainable’ the score is the lowest among all. Score 2.75 is below neutral that shows they are not prepared enough to conduct sustainable public procurement.



**Fig 5.3.1- Preparedness of respondents on sustainability in procurement**

Respondents are also declining to agree with when they are asked about ‘PPA-06 and PPR-08 have addressed sustainability issues properly’. They are fairly agreed with the statement that ‘itemized specification of PWD schedule of rates is addressing sustainability in procurement’. The average scores of responses against different statements are shown below in bar chart.

From section-B it can be conferred that respondents are highly agree with the importance of sustainability practice in public procurement but they are not prepared or confident enough to practice it. Even PPA-06 & PPR-08 have not address the issue properly to help practicing by procurement professionals.

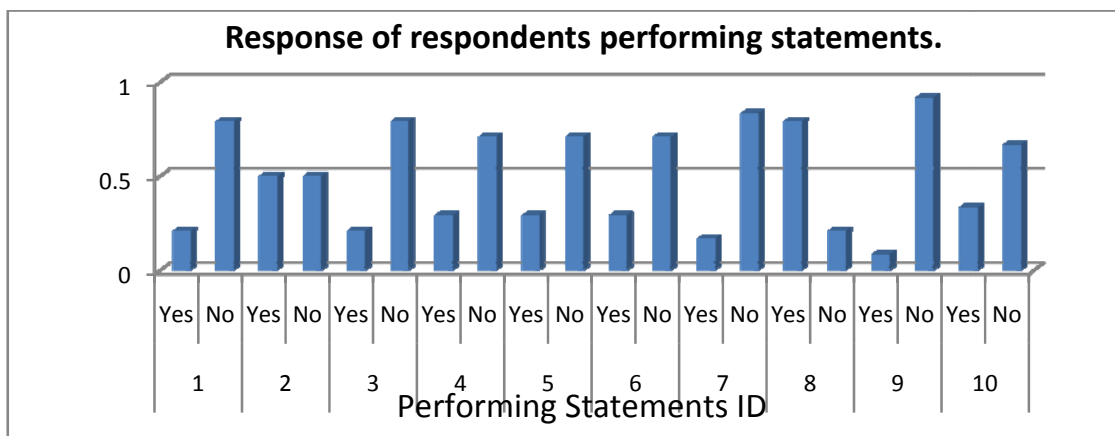
#### **5.4 Response to the questions on Sustainability practice (Section-C)**

The aim of this section is to judge the level of practicing sustainability in procurement activity by mid level procurement professionals in Public Works Department. When they were asked whether they can mention any section or article from PPA-06 or from PPR-08

which they are practicing in their procurement activity only 21% says yes they can but none of them can specifically mention the article. Only one-fourth respondent says they can mention measures deliberately using in procurement process to ensure social and environmental sustainability. In case of economic sustainability positive response is 50%. I think there is some ambiguity regarding the issue. 83% respondent says they are practicing lowest quoted price criteria as contract award criteria which may not support justifying best value for money to ensure economic sustainability. Respondents are confusing lowest quoted price criteria as the means of economic sustainability. So in true sense positive response will be less than 50%.

ID	Statements	Yes	No
1	I can mention sections/articles from PPA-2006/PPR-08/STD that are addressing sustainability in procurement-	21%	79%
2	I can mention measures that we are practicing in our procurement process to ensure economic sustainability.	50%	50%
3	I can mention measures that we are practicing in our procurement process to ensure social sustainability.	21%	79%
4	I can mention measures that we are practicing in our procurement process to ensure environmental sustainability.	29%	71%
5	I put criteria deliberately in the tender documents to encourage participation of local SME firms.	29%	71%
6	I put criteria deliberately in tender document to enhance supplier's/contractors environmental performance such as less carbon emission, less material consumption.	29%	71%
7	I put requirement for contractors in tender document to have & practice Environmental Management System (EMS).	17%	83%
8	I think sustainable building design (to minimize future consumption of energy, water & maintenance services) is promoted in Public Works Department.	79%	21%
9	I am practicing E-procurement in our procurement process to ensure transparency, promoting competitiveness & achieving value for money?	8%	92%
10	I visit our suppliers/contractors Plant/factory/workshop/office to verify the reality of child labour/ force labour/ unfair wage/ Human right violation.	33%	67%

**Table 5.4.1- Respondents response to sustainability performing statements**

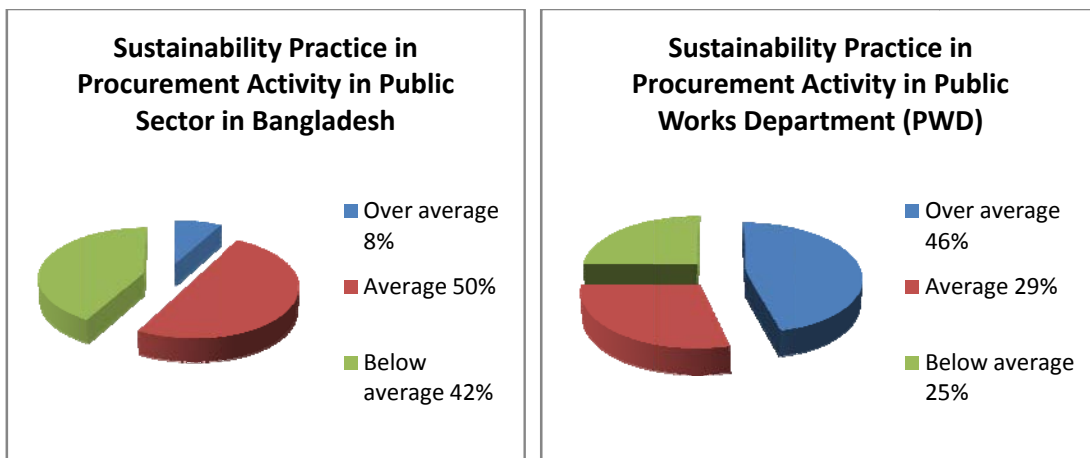




**Fig 5.4.1- Respondents response to sustainability performing statements**

29% respondent answered positively when they were asked whether they put any criteria in contract document to encourage participation of local SME firms in tendering process. Same response was observed in case of putting deliberate criteria to enhance suppliers/contractors environmental performance like less carbon emission; less material consumption; less air, water, soil pollution. They normally do not ask contractors in contract document whether they (contractors) follow Environmental Management System (EMS) in their organization. When the respondents were asked whether they visit suppliers/contractors plant/factory/workshop/office to verify the reality of child labour force, labour unfair wage, human right violation only 33% respondent says yes. 8% of them answered positively about practicing E-procurement in their procurement process to ensure transparency, promoting competitiveness and achieving value for money. Only hope is 79% respondents agreed that Public Works Department (PWD) is promoting sustainable building design (to minimize future consumption of energy, water & maintenance services). PWD is promoting sustainable building design through adding component of rain water harvesting, solar power system and through environmentally well judged architectural plan.

When the respondents were asked about their perception on overall sustainability practice in procurement activity in Public Works Department they responded as 46% over average, 29% average and 25% below average. But in case of overall sustainability practice in procurement activity in Public Sector in Bangladesh the response is 8% over average, 50% average and 42% below average. It seems their perception is biased to some extent in case of PWD. It doesn't resemble to the response of previous performing statements.



**Fig 5.4.2- Sustainability practice in procurement in Bangladesh**

Then the respondents were asked for their perception about the barriers of sustainability practice in public procurement. They identified lack of political will/commitment is the main barrier to implement sustainability in public procurement. Then they ranked as lack of social drive/awareness. The barriers identified by them are shown below with relative score-

SI	Barriers of sustainability practice in public procurement	Relative score (out of 10)
1	Lack of political will/commitment	7.83
2	Lack of Social drive/awareness	7.75
3	Lack of organizational Policy framework & practice.	7.71
4	Lack of expertise/ training of procurement professionals.	6.92
5	Lack of capacity of local suppliers.	6.83
6	PPA & PPR is inadequate to incorporate sustainability in procurement	6.63
7	Lack of product availability or sustainable alternatives	6.58
8	Avoiding tendency of Procurement professionals.	6.38

**Table 5.4.2- Barriers of sustainability practice in public procurement**

When the respondents were asked for the most feasible way of addressing sustainability in procurement decision, they identified as through specification formulation is the best way. Then they ranked as the contract clauses are the suitable way. The ways through which sustainability can be incorporated in procurement process are-

SI	Feasible Ways to incorporate sustainability in procurement process	Relative score (out of 10)
1	Specification formulation	8.17
2	Contract clauses	7.33
3	Pre-qualification criteria	7.21
4	Rigorous need assessment	7.04
5	Award criteria	6.92
6	Negotiation	6.00
7	Any other	1.08

**Table 5.4.3- Ways to incorporate sustainability in procurement process**

## 5.5 Summary of analysis

As mentioned in methodology chapter, twenty four procurement professionals have been interviewed with the objective of gathering their perception about the sustainability

issues and practices. To do this, the interview questions were divided into three parts. The first part was about whether the participants have basic concepts on sustainable procurement or not. The analysis indicates that respondents have fair idea on sustainability issues though a good number of them have confusion over different issues. But most of the respondents are agreeing upon the importance of sustainability practice in Public Procurement in Bangladesh. Most of the respondents have shown concerns on sustainability issues in their daily life. So it can be said that respondents are more or less conversant about sustainability issues but these may not sufficient enough in introducing sustainability in the public procurement.

The second part of the analysis was based on the preparedness of respondents to practice sustainability in their procurement activity. To do this, the interview questions were formulated addressing all three aspects of sustainable procurement those are economic, environmental and social aspects. The analysis shows that respondents are not prepared enough to exercise sustainability in their procurement activity. They don't have enough training on sustainable procurement. They have overall idea but don't have clear & specific perception on different aspects of sustainability. They said that PPA-06 & PPR-08 are not sufficient enough to address sustainability in procurement.

In third part analysis was done on level of sustainability practice by respondents as procurement professional. The analysis shows that around three-fourth of the respondents are not considering practicing sustainability considerations in their procurement activity. They are not taking any measures or incorporating any clauses in contract document to ensure different aspects of sustainability. The analyses done on the responses against the set questions indicate that although there are a very few cases where some sustainability issues are in practice, these are not very common. Lowest price is still the key criteria for selection of suppliers. Participation of local firms is not adequately encouraged through the criteria put in the tender documents. Any type of environmental policy or environmental management system does not exist in most of the public sector organizations. Moreover, the present public procurement system provides little scope for ensuring environmental performances by the suppliers/ contractors.

Besides, a number of additional questions have been asked in order to get some extra comments or suggestions from the respondents. The analyses done on the responses against the set questions indicate that although there are a few cases where some sustainability issues are in practice, these are not very common in the whole of the public sector particularly in PWD. The analysis made from the questionnaire gives a realistic picture of procurement practices in the public sector in Bangladesh.

## **CHAPTER - 6 CONCLUSIONS AND RECOMMENDATIONS**

### **6.1 Introduction**

For a long time economic factor has been the single most important indicator in the practice of public procurement. Environmental and social factors have always been neglected in the procurement system. However, the importance of non-economic factors in public procurement increased significantly with the development of the concept of sustainable development worldwide.

Government in any country is the largest buyers, so, it is evident that what and how governments buy and acquire contribute significantly, both to its ability to deliver sustainable development and to its credibility with development partners. By using market leverage public sector can have a major influence on suppliers and stimulate the production of more sustainable goods, works and services. Public procurement, therefore, needs to consider sustainability issues seriously as it is the only way that can ensure real value for money over a longer term without compromising environmental and social responsibilities. This would further ensure that development targets are achieved through the acquisition of goods, works and services without much damage to the society and the environment. However, perceptions gathered through the interviews with different procurement professionals in the public sectors give a mere indication about the awareness of sustainability issues and it can be expected that this will lead to development of the sustainability issues embedded in the public procurement framework.

### **6.2 Conclusions**

In order to find the answers of the research questions made in Chapter 1, effort has been made in this dissertation paper to explore the level of understanding & preparedness about sustainability in Public Procurement among mid level officers of Public Works Department (PWD) The analysis indicates that respondents have fair idea on sustainability issues though a good number of them have confusion over different issues. But most of the respondents are agreeing upon the importance of sustainability practice in Public Procurement in Bangladesh. Most of the respondents have shown concerns on sustainability issues in their daily life. So it can be said that respondents are more or less conversant about sustainability issues but these may not sufficient enough in introducing sustainability in the public procurement.

The second part of the analysis was based on the preparedness of respondents to practice sustainability in their procurement activity. To do this, the interview questions were formulated addressing all three aspects of sustainable procurement those are economic, environmental and social aspects. The analysis shows that respondents are not prepared enough to exercise sustainability in their procurement activity. They don't have enough training on sustainable procurement. They have overall idea but don't have clear & specific perception on different aspects of sustainability. They said that PPA-06 & PPR-08 are not sufficient enough to address sustainability in procurement.

In third part analysis was done on level of sustainability practice by respondents as procurement professional. The analysis shows that around three-fourth of the respondents are not considering practicing sustainability considerations in their procurement activity. They are not taking any measures or incorporating any clauses in contract document to ensure different aspects of sustainability. The analyses done on the responses against the set questions indicate that although there are a very few cases where some sustainability issues are in practice, these are not very common. Lowest price is still the key criteria for selection of suppliers but we know only lowest price selection criteria cannot be sustainable in procurement process for example garment industry of Bangladesh. . Participation of local firms is not adequately encouraged through the criteria put in the tender documents. Any type of environmental policy or environmental management system does not exist in most of the public sector organizations. Moreover, the present public procurement system provides little scope for ensuring environmental performances by the suppliers/ contractors.

Besides, a number of additional questions have been asked in order to get some extra comments or suggestions from the respondents. The analyses done on the responses against the set questions indicate that although there are a few cases where some sustainability issues are in practice, these are not very common in the whole of the public sector particularly in PWD. The analysis made from the questionnaire gives a realistic picture of procurement practices in the public sector in Bangladesh.

### **6.3 Recommendations**

Although sustainable procurement is an important issue in most of the developed countries, it has not become an important matter of concern in developing countries like Bangladesh. However, it is a matter of hope that this issue is gaining acceptance in our country which may be a potential driver for introducing sustainability in the public procurement.

As a short-term activity, sustainability criteria should be embedded in the tendering system. For example, Environmental parameters can be considered in various stages of tendering: it can be used in the pre-qualification of the tenderers; environmental requirements that must be fulfilled in the contract; and environmental criteria applied in the tender evaluation.

A sustainable procurement policy should be formulated and the public procurement framework should be aligned with the policy. This policy formulation should be considered as a medium-term activity to introduce sustainability. Political willingness is required at the initial stage for such a policy. Then the organizations can perform the study of flexible framework on their level of practice and then they can take necessary actions to fill-up the gaps.

A clear commitment is necessary from the very top of government and down through the ministries, authorities and chief executives in all public bodies. Many public sector procurement professionals lack clear direction from the top of their organizations on the priority to be given to delivering sustainable development objectives through procurement. This should be cascaded down through both government targets and performance management systems and progress monitoring. Education and training on sustainable procurement at the individual procurement professional level seem necessary in order to increase knowledge base for implementing sustainable procurement. Only the formulation of a policy and including sustainability criteria in the documents are not enough to introduce a sustainable procurement system. It should be considered in long-term basis. All procurement should be carried out by people whose procurement skills have been developed appropriately. Because, sustainable procurement cannot be undertaken effectively unless procurement activities are carried out professionally and effectively. So, procurement should be done by the full-time procurement people.

Finally, there is scope to further study about the sustainability issue. Till now, the concept of sustainable procurement has not been well embedded in the public procurement system in Bangladesh and hence, this paper gives an overall scenario of sustainable procurement practices in the public sector in Bangladesh through the eye of Public Works Department (PWD). Advanced research needs to be conducted in order to get a deeper insight into the sustainability issue in relation to the public procurement.

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**Questionnaire on Dissertation**

**Title of Dissertation: Sustainability practice in Public Procurement: A study on Public Works Department (PWD) perspective.**

[This survey questionnaire is intended to perform an academic research on sustainability practice in public procurement especially in procurement activity of Public Works Department. It is a requirement of partial fulfillment of the degree ‘Masters in Procurement and Supply Management’ offered by Bangladesh Institute of Governance and Development (BIGD) of BRAC University. Your honest response is valuable for the research. The researcher does assure that the information given by you will be kept confidential & be used for academic purpose only]

**Section A: General information & concept on sustainability**

1. Name:.....
2. Designation & Organization:.....
3. Length of experience in Procurement activity: ..... Years
4. Approximate annual volume of procurement at your involvement:..... Taka
5. Approximate composition of your procurement portfolio: (total is 100%)

Goods	... ..%	Works	.....%	Services	.....%
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6. Nature of Works Procurement you are accounted for : (Total is 100%)

New Construction Work	.....%	Repair/Maintenance Work	.....%
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7. I understand sustainable procurement as-
  - a. Conducting procurement activity efficiently & effectively.
  - b. Ensuring procurement with minimum cost.
  - c. A process of meeting organizational need in a way that achieves best value for money on whole life basis whilst minimizing damage to the environment and society.
  - d. Any other else as.....
8. I understand economic sustainability as-
  - a) Profitability of an organization      b) Justifying best value for money
  - c) Considering whole life costing of an activity      d) Any other else as.....
9. I understand Social sustainability as-
  - a) Addressing ethical issues.      b) Addressing labour aspects like workplace safety, fair wages, equality & diversity etc.      c) Addressing community benefit & promoting SME.
  - d) All above.



10. I understand Environmental sustainability as-
- a) Take care of planet
  - b) Extracting natural resources without degrading environment.
  - c) Carrying out development activity in such a way that environmental pollution is minimum.
  - d) All of above.
11. Which is the most important issue from sustainability point of view for construction of new building?
- a) Sustainability considerations in building design.
  - b) Sustainability considerations in procurement process.
  - c) Sourcing construction material from sustainable sources.
  - d) Sustainability consideration is not important in developing country like Bangladesh.
12. Which is the most important issue from sustainability point of view for repair & maintenance work?
- a) Rigorous need assessment
  - b) Sustainability considerations in procurement process.
  - c) Sustainable re-use of garbage & debris
  - d) Sustainability consideration is not important in developing country like Bangladesh.
13. Which is the most critical building material from sustainability point of view? Why?
- a) Brick & aggregates due to
  - b) Timber due to.....
  - c) Cement due to.....
  - d) Steel/Iron due to.....
  - e) Any other else.....due to.....
14. Contract award criteria to responsive tenders that we follow is-
- a) Lowest quoted price criteria
  - b) MEAT(most economically advantageous tender) criteria
  - c) Whole life cost (WLC)
  - d) Any other else.....
15. Do you have sustainability practice in your daily life on following cases ?

	Always	sometime	No matter
Turn off electrical switches after use			
Try to buy energy saving electrical & IT appliances			
Try to use less water in daily activity			
Try to avoid using plastic bags			
Try to practice 4R policy (Reduce, Re-use, Recycle, Rethink)			

### Section B: Preparedness

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

Statements	Score
I have enough training & I am capable to conduct Public Procurement activity.	

I have enough training & I am capable to conduct Sustainable Public Procurement activity.	
I have clear conception on economic aspect of sustainability	
. I have clear conception on Social aspect of sustainability	
I have clear conception on Environmental aspect of sustainability	
Sustainability consideration in public procurement process is very important in developing economies like Bangladesh	
I think PPA-06 & PPR-08 have addressed sustainability in procurement process properly-	
I think PPA-06 & PPR-08 have addressed social sustainability in procurement process-	
I think PPA-06 & PPR-08 have addressed environmental sustainability in procurement process.	
I think PWD has & following Environmental Management System (EMS) in their practice	
I think the itemized specification of PWD schedule of rates is addressing sustainability in procurement duly.	

**Section C: Sustainability Practice in procurement**

17. Please response the following statements-

	Yes	No	If yes please define
I can mention sections/articles from PPA-2006/PPR-08/STD that are addressing sustainability in procurement-			
I can mention measures that we are practicing in our procurement process to ensure economic sustainability.			
I can mention measures that we are practicing in our procurement process to ensure social sustainability.			
I can mention measures that we are practicing in our procurement process to ensure environmental sustainability.			
I put criteria deliberately in the tender documents to encourage participation of local SME firms.			
I put criteria deliberately in tender document to enhance supplier's/contractors environmental performance such as less carbon emission, less material consumption.			
I put requirement for contractors in tender document to have & practice Environmental Management System (EMS).			
I think sustainable building design (to minimize future consumption of energy, water & maintenance services) is promoted in Public Works Department.			
I think construction materials used in building construction are being sourced from sustainable sources.			
I am practicing E-procurement in our procurement process to ensure transparency, promoting competitiveness & achieving value for money?			
I visit our suppliers/contractors Plant/factory/workshop/office to verify the reality of child labour/ force labour/ unfair wage/ Human right violation.			

18. How will you rate sustainability practice in procurement activity in your procurement division?

Very good	Good	Average	Below average	Very below
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19. How will you rate sustainability practice in procurement activity in Public Works Department?

Very good	Good	Average	Below average	Very below
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20. How will you rate sustainability practice in procurement activity in Public Sector in Bangladesh?

Very good	Good	Average	Below average	Very below
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21. How will you rate as the most feasible way of addressing sustainability in procurement decision? **(Score 0-10 on the basis of suitability)**

Rigorous need assessment	
Specification formulation	
Pre-qualification criteria	
Award criteria	
Contract clauses	
Negotiation	
Any other	

22. How will you rate as the barriers of integrating sustainability in procurement process?

**(Score 0-10 on the basis of suitability)**

Lack of political will/commitment	
Lack of Social drive/awareness	
Lack of organizational Policy framework & practice.	
Lack of expertise/ training of procurement professionals.	
Lack of capacity of local suppliers.	
Lack of product availability or sustainable alternatives	
Avoiding tendency of Procurement professionals.	
PPA & PPR is inadequate to incorporate sustainability in procurement	

**Thank you for your kind co-operation.**