

Report On

Procurement Risk in Public Sector Procurement in Bangladesh: *A Case Study of Large Projects at Roads & Highways Department (RHD) of Bangladesh.*

By

Md. Mamun Kaysar

ID No: 20282018

**An internship report Submitted to the BRAC Institute of Governance and Development
(BIGD) in Partial Fulfillment of the Requirements for the Degree of
Masters in Procurement and Supply Management (MPSM)**

BRAC Institute of Governance and Development (BIGD)

BRAC University

February, 2024

© [2024]. BRAC University
All rights reserved.

Declaration

It is at this moment declared that

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

Student's Full Name & Signature:

Md. Mamun Kaysar
ID: 20282018

Supervisor's Full Name & Signature:

Rashed Morshed FCIPS, PMP, PEng.
Faculty, MPSM
BIGD, BRAC University

Letter of Transmittal

Mr. Rashed Morshed
Faculty,
MPSM
BRAC University
66 Mohakhali, Dhaka-1212

Subject: **Letter of transmittal.**

Dear Sir,

This is my pleasure to report to you that, I have collected the primary data from essential resources as you suggested and completed the analysis based on the best practices available in the modern research methodology.

I have attempted my best to finish the report with the essential data and recommended proposition in a significant compact and comprehensive manner as possible.

I trust that the report will meet the standard as expected.

Sincerely yours,

(Md. Mamun Kaysar)
ID: 20282018
BIGD, BRAC University
February, 2024

Non-Disclosure Agreement

To,
Mohammed Abul Kalam Azad
[ID: 006008]
Superintending Engineer
Procurement Circle, Sarak Bhabon, Tejgaon
Dhaka-1208

Subject: **Non-disclosure agreement.**

Dear Sir,

This is my pleasure to report to you that, I have collected the primary data from essential resources as you suggested and completed the analysis based on the best practices available in the modern research methodology.

I hereby give my sincere words that neither I nor BRAC University will disclose this company information collected for the sake of this research to any other medium or entity. It will be kept safe under the university's authority.

I trust that the report will meet the standard as expected.

Sincerely yours,

(Md. Mamun Kaysar)
ID: 20282018
BIGD, BRAC University
February, 2024

ACKNOWLEDGEMENT:

At the very outset, I would like to thank the Almighty for shaping the Universe with enormous blessing and endless generosity. My utmost gratitude goes to learned supervisor **Rashed Morshed FCIPS, PMP, PEng** for the spirit of ultimate cooperation, patience, and pivotal role in assembling this report or practicum.

Furthermore, special gratitude to beloved workplace supervisor **Mohammed Abul Kalam Azad, MCIPS, PMP** and **Superintending Engineer, Procurement Circle of RHD** for invigorating guidelines, enthusiasm, immense knowledge, and proficient views to prepare the report systematically.

Apart from the workplace supervisor, I wish to extend My heartfelt gratitude and sincerest thanks to **Inthaqab Wahid Ruso, MCIPS, PMP** and **Executive Engineer, Procurement Division of RHD** for his invaluable insights, motivation, and intuitive direction.

I am deeply indebted to all of my batch mates of the MPSM program for their cooperation, inspiration, critiques, stimulating discussion, and for all the fun we have had for the last two years which tend me to do better in report preparation.

Last but not least, I would like to express my deepest gratitude to my family and My beloved Wife **Mst. Arifa Easmin** for rendering cerebral support incessantly.

EXECUTIVE SUMMARY:

Public procurement is an inevitable part of the present economic reality globally. A chunk of public funds through the Annual Development Programme (ADP) is being disbursed by various public sectors in Bangladesh to achieve the prescribed vision of 2041. The significant amount of goods and services being procured for national development is very much imperative nowadays. Flawless public procurement management and its efficient maneuvering are crucial for ensuring value for money. As such, the public procurement practices among the public sector to implement infrastructural development projects are a growing concern for stakeholders as they are an integral part of public service delivery for the nation. Conventional procurement practices are riddled with enormous risk at different stages of the procurement process, which is to be handled efficiently as part of inclusive governance, which ultimately serves the equality, equity, and effectiveness of the utilization of payers' money.

The Roads & Highways Department (RHD) is undertaking and implementing several projects to construct and maintain road and bridge projects. But in terms of cost, time, and quality, these projects still face severe criticism, as most of the large projects are not being implemented as planned, which affects RHD's capacity to achieve its goals and objectives. From numerous sources, it has been detected that the procurement risk might act as a prime catalyst for further uncertainties like time and cost overruns, schedule delays, disputes, arbitration, finances, etc., not to be limited to. As there is a plethora of uncertainty and risks that are very obvious and gradually increasing, before floating the procurement process, potential risk assessment, categorization, and its mitigation plan should be hugely emphasized and need to be explored minutely to establish responsible and ethical procurement practices, especially for a large project of RHD that might be complying with the procurement code of ethics. The current study rigorously examines the measurement of procurement risk and its mitigation strategies in the practical execution of large projects and also evaluates the integrity risk in public procurement within the Roads and Highways Department of Bangladesh.

Keywords: *value for money; procurement risk; time and cost overruns; ethical and responsible procurement; integrity risk; efficiency and effectiveness*

Table of Contents

Declaration.....	I
Letter of Transmittal.....	II
Non-Disclosure Agreement.....	III
Acknowledgment.....	IV
Executive Summary	V
Table of Contents.....	VI
List of Tables.....	VII
List of Figures.....	VII
List of Acronym.....	VIII-IX
Chapter-1: Introduction	
1.1: Background of The Study.....	1
1.2: Study Objectives.....	2
1.3: Study Methodology.....	2
1.4: Limitations of the study.....	2
1.5: Outline of the Report.....	2
Chapter 2: Literature Review	03-18
2.1: Roads & Highways Department.....	3
2.2: Public Procurement Practices in Bangladesh.....	4
2.3: Understanding procurement, large projects of RHD and the principle of Procurement, and risk.....	5
2.3.1: Procurement.....	5
2.3.2: Method of Procurement.....	6
2.3.3: Large Projects of RHD and its Approval Process in Bangladesh and Phases of Procurement	6-9
2.3.4: Principle of Public Procurement.....	10
2.3.5: Risks.....	11
2.3.6: Procurement Risk.....	11
2.3.7: Corruption Risk of Procurement.....	12
2.3.8: Integrity Risk in Public Procurement.....	14
2.3.9: Forms of Corruption in Public Procurement.....	15
2.3.10: Risk Management issue.....	17
2.3.11: Procurement Risk Management.....	18
Chapter-03: Procurement risk at the large project in Roads & Highways Department (RHD): Thorough investigations, Critical analysis, and Findings.....	19-30
3.1: Procurement risk during Pre-bidding stage.....	19
3.2: Procurement risk during the Bidding stage	22
3.3: Procurement risk during the Evaluation and Award stage	24
3.4: Procurement risk during the Contract Management stage	26
3.5: Procurement Risk Concerning PPP and G2G Contract.....	30

Chapter-04: Risk Assessment and Control Measures.....	31-42
Chapter-05: Recommendations and Conclusion.....	43-47
References.....	48-49

List of Tables:

Table 1: Corruption Risks and Manifestations across the Procurement Cycle

Table 2: Integrity Risk in Public Procurement

Table 3: Identified Risk and Mitigation Measures during Contract Management of SASEC Road Connectivity Project-2: Construction of 190 KM 4-Lane Highways from Elenga-Rangpur under RHD.

List of Figures:

Figure-1: GoB Project Approval Process

Figure 2: Main Phases of the Procurement Cycle.

Figure 3: Phases of Public Procurement Cycle

Figure 4: Corruption Risk in Procurement

Figure-5: Risk Management Process

Appendix-1: List of Large Projects of RHD.

List of Acronyms

ADB	Asian Development Bank
ADP	Annual Development Programme
AIIB	Asian Infrastructure Investment Bank
BBS	Bangladesh Bureau Of Statistics
BOQ	Bill of Quantities
BPPA	Bangladesh Public Procurement Authority
CAG	Comptroller and Auditor General
C&B	Communication and Building
CCEA	Cabinet Committee on Economic Affairs
CCGP	Cabinet Committee on Government Purchase
CGFR	The Compilation of the General Financial Rule
CFCC	Corrupt, Fraudulent, Collusive, and Coercive
CIPS	Chartered Institute of Procurement and Supply
CMP	Contract Management Plan
CPTU	Central Planning and Technical Unit
CPAR	Country Procurement Assessment Report
DoFP	Delegation of Financial Power
DPEC	Departmental Project Evaluation Committee
DPP	Development Project Proposal
ECNEC	Executive Committee of National Economic Council
e-GP	Electronic Government Procurement
FIDIC	The International Federation of Consulting Engineers
G2G	Government to Government
GoB	Government of Bangladesh
GRS	Grievance Redress System
IMED	Implementation Monitoring and Evaluation Division
IsDB	Islamic Development Bank

JICA	Japan International Cooperation Agency
LC	Letter of Credit
MEAT	The Most Economically Advantageous Tender
MPSM	Masters of Procurement and Supply Management
MoF	Ministry of Finance
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
OTM	Open Tendering Method
PEC	Project Evaluation Committee
PPA	Public Procurement Act
PPR	Public Procurement Rules
PPP	Public-Private Partnership
PW	Procurement of Works
PMBOK	Project Management Body of Knowledge
PMP	Project Management Professionals
RDPP	Revised Development Project Proposal
RHD	Roads & Highways Department
RTI	Right to Information Act
STD	Standard Tender Document
TA	Technical Assistant
VfM	Value for Money
WB	World Bank

CHAPTER-1

INTRODUCTION

1.1 Background of the Study:

The procuring entity might guarantee non-discrimination and equal treatment through effective competition in public procurement as it plays a pivotal role in the enforcement of legislation that encourages the inclusive participation of tenderers. The bias of procurement authority towards any particular bidder may plague the procurement process and pose diversified risk in contract management which renders a potential threat to good governance. From need assessment to contract closure, many risks are observed that might deter the value for money through public procurement.

Like other Government agencies of Bangladesh, the Roads & Highways Department (RHD) has played a crucial role in national infrastructural development activities for a long since. The optimum price and quality relation for acquiring huge amounts of goods and services is not satisfactory as there are some potential threats of proportionality which is nothing but the mismatch between needs assessment and the requirement of the public procurement.

The construction projects for implementing road and Bridge construction work are not risk-free. The faulty need assessment, deliberate mistakes during estimate preparation, changes of legislation and scope of work, high level of inflation for essential construction materials, price adjustment, schedule delay due to rejection of unspecified materials & and late delivery of materials, inadequate labor, financial incapable bidders, the culture of impunity of potential bidders, undue pressure, a hidden requirement from the donor agency, absence of proper due diligence, rarely imposed liquidity damage for poor performance, claim management, data manipulation to fix the base rate, supply chain disruption, inefficient contract management, etc. but not limited to should have been considered for potential sources of procurement risk for large project in RHD. Moreover, the conventional awarding procedures are being followed as part of a fail-safe attitude prevailing which ultimately prevents to selection of the most advantageous contractor irrespective of technical, economic, and financial perspectives. On top of that deliberate deviation from existing rules and regulations can also be deemed as an unethical perspective of public procurement in RHD which also poses a huge risk throughout the contract period.

A hefty amount of public funds is being utilized through public procurement in RHD, the lead executing agency of Bangladesh. But the services which are being provided are not praiseworthy at all. As 80% of freight is being catered through the road transport system compared to other prevailing modalities of Bangladesh the public effective procurement is the condition of success that able to avoid wasteful spending of public funds.

The sources of potential risk of procurement for implanting large projects have not received more attention previously which ultimately indicates inadequate project performance results in a lack of stakeholder confidence in project delivery. However proper public procurement risk management has become the prime concern globally to ensure the best value for money and quality public service. The report represents prevailing procurement risk in the Roads & Highways Department (RHD) in different stages of the public procurement cycle. The risk assessment and management plan of RHD as part of the public sector procurement of Bangladesh and some mitigation measures with recommendations, in a nutshell, will also be discussed to shed light. The author highlights the major categories of procurement risk such as strategic, financial, operational, and compliance, etc. The social, legal, and environmental framework, availability of raw materials, and local labor/workers would also be highlighted.

1.2 Study Objectives:

The objective of the study is:

- To establish a shared understanding of procurement risk at large projects in the Roads & Highways Department.
- To investigate, evaluate, and critically describe the potential sources of risk related to procurement at large projects of RHD and analysis of the consequences in terms of the effect on the achievement of the multiple project objectives explicitly time, cost, quality, environment, and safety.
- To evaluate the relationship between identified procurement risks with the performance of project implementation as an essential mandate of public service delivery of RHD.
- To prepare an appropriate risk response plan to keep the identified risk at a reasonable level.
- To provide insights for making a culture of learning for future large projects of RHD.

1.3 Study Methodology:

To prepare the report workshop or quantitative approach has not been performed. Qualitative research has been performed to acquire primary and secondary data. The primary data has been collected through direct interviews with the running project professional. The in-depth interview paves the way to find the facts regarding the risks embedded in public procurement and its way forward. Secondary data has been collected from official documents, new papers, journals, reports, project completion reports, in-depth monitoring reports, IMED reports, etc. Moreover, with the help of the suggested course book MPSM, CIPS Core study guide, brainstorming, and googling from the website the report is being made to rationalize the report/practicum for fulfillment of the study of MPSM. Data and graphical representation are not being given as it's based on theoretical discussion which helps us to write an exclusive report in the future with utmost professionalism.

1.4 Limitation of the Study:

The data was collected from a few ongoing projects but actually, at RHD there are a huge number of large projects going on. There are time constraints to preparing the report as it is to be submitted within the stipulated time. Moreover, data collection of devolved procurement which is prevailing in 64 different districts was not included in this report.

1.5 Outline of the report:

The report has fragmented into five different chapters for better understanding related to procurement risk in public sector procurement of Bangladesh. A case study has been considered for a large project of RHD. To specify the problem, the Asian Development Bank (ADB) funded project has been considered a large project of RHD.

The Background of the study related to public procurement risk, the study objectives, methodology, limitation of the study, and outline of the report have been incorporated in Chapter 01. In Chapter 02, The literature review related to public procurement and risk, the implication of procurement risk in public sector procurement, general procurement related prevailing rules law, and the system of public sector procurement of Bangladesh, have been described in a nutshell manner. Chapter 03, thorough investigations, findings, and critical analysis of procurement risk has been depicted in an abridged manner. Risk log & and control measures in Chapter-04. And, recommendations, suggestions/directions have been derived in Chapter 05 for future studies.

CHAPTER-2

LITERATURE REVIEW

Procurement risk in public sector procurement has become a concerning issue. Every financial year the Roads & Highways Department (RHD) has been allocating hefty amounts of public funds to construct and maintain the Major Road and Bridge network for a long since. To ensure the well-maintained road network RHD is spending a chunk amount of public funds through the procurement process. There are a plethora of risks prevailing with the public procurement practices in Bangladesh. However, the risk management process is not up to the mark with emerging pace procurement-related risks. Hence, procurement risk is to be taken seriously to ensure value for money, integrity, inclusiveness, and transparency to a great extent. This Chapter deals with the comprehensive picture of public procurement practices in RHD, procurement-related risk, and its impact

2.1: Roads & Highways Department

The Road & Highways Department under the Ministry of Road Transport and Bridges was established in 1962. RHD and PWD have come into force as separate organizations after the splitting of C&B (Communication and Building). To construct and maintain major road networks, Bridges, and Culverts the Roads and Highways Department (RHD) is the trusted and leading agency in Bangladesh. The roads & Highways Department (RHD) is responsible for constructing, repairing, and maintaining roads, and bridges. RHD also provides the ferry service and toll operation under its jurisdiction as need to have basis. The end goal is to create the most efficient network possible, meet the demand of customers, and ensure the lowest possible cost to serve the Road network. The total road network, which includes National, Regional, and District Highways, spans approximately 22,418.95 kilometers. Additionally, the organization maintains over 5,000 bridges along with numerous culverts, ferry ghats, and toll operations. The assets of the Roads and Highways Department are conservatively valued at Taka 46,000 crore (US\$8,000 million). These assets are probably the greatest asset of any organization in Bangladesh and maintaining their value is vital to its economy. This places a great responsibility on the Roads and Highways Department. The departmental goal is that "The Roads and Highways Department can provide the People of Bangladesh with a ***safe, cost-effective and well-maintained road network***". The purpose of the RHD is stated as follows: "The Roads and Highways Department has a sustainable capacity ***to plan, manage and deliver its full range of responsibilities in respect of the main road and bridge network and to be accountable for these duties***". (<https://www.rhd.gov.bd/RHDAAtGlance/index.asp>).

Hence, the Roads & Highways Department (RHD) plays a pivotal role in the national economy as 80% of freight transport is prevailing Highways resulting in significant economic growth. In a nutshell, the key activities and external drive of RHD are given below to shed light on a better understanding of the gravity of effective public procurement.

The Roads and Highways Department (RHD) comprises five Headquarters Wings/Zones and ten Field Zones, each overseen by an Additional Chief Engineer who directly reports to the Chief Engineer of RHD. These wings include:

- Management Services Wing
- Planning and Maintenance Wing
- Bridge Management Wing
- Technical Services Wing
- Mechanical Wing

Activities of Roads & Highways Department:

- To Manage administration and establishment function, Management Information System (MIS), Human Resource Development (HRD), Estates, Audits, and Accounts.
- All aspects of planning, programming, procurement, maintenance, and monitoring of road and bridge projects.
- all aspects of data collection, surveys, planning, construction, and maintenance of bridges on RHD roads.
- In-house and outsourced services in road design, environmental and social impact mitigation, road safety, quality control, and research.
- Associated road construction services (e.g., drainage, curbing, guttering, lighting installation, and tree plantation).
- Operation and maintenance of equipment, vehicles, and ferries required to undertake the activities of RHD.
- Administration and management of Zonal operations are ensured, along with proposing and coordinating annual work programs for maintenance and development with intimate cooperation with RHD Head Quarter, Zone, and Circles.
- Asphalt and concrete pavement surfacing and repair.
- Pedestrian overpass, underpass, flyover construction.
- Road safety, Plantation, Intelligent Transport System (ITS).
- Budgeting through IBASS++ and CMS
- Land acquisition, resettlement, and safeguard implementation.

Key external driver:

- Capital expenditure by public fund
- Performance
- Public fund spending, provides the ultimate level of service through ethical procurement practices.
- Revenue collection

2.2 Public Procurement Practices in Bangladesh:

There is no hard and fast indication of the rules and regulations of public procurement practices depicted in the constitution of the People's Republic of Bangladesh. Apart from direct constitutional obligation, some legal aspects have come into force that can be considered as legal sources. The compilation of the General Financial Rule (CGFR) is considered as most rudimentary legal document for public procurement in the British era. Two Contractual forms such as form no. 2908 for procurement of goods and form no. 2911 for procurement of work was used until PPR 2003 was introduced.

The evaluation of Procurement was started in 1988, with the direct collaboration of the World Bank to ensure national integrity, ethical procurement practices, and good governance to a great extent.

Subsequently, the Country Procurement Assessment Report (CPAR) 2002 identified several weaknesses including - (i) a fragmented procurement system and procedures across the country, (ii) weak standard tender documents, (iii) delay in the procurement process due to complex bureaucracy, (iv) absence of procurement policy formulation unit, (v) weak contract administration, (vi) lack of professional competencies, and (vii) absence of complaint handling mechanism (World Bank:2000).

Consequently, the government of Bangladesh imposed the Public Procurement Act, 2006 (PPA, 2006) as the legal framework for the public procurement system and the Public Procurement Rule 2008 (PPR 2008) as secondary legislation. A nodal agency the Central Procurement and Technical Unit (CPTU), under the Implementation, Monitoring, and Evaluation Division of the Ministry of Planning has been established. A comprehensive electronic government procurement (e-GP) has brought the entire procurement process online. CPTU watches over the transparency, efficiency, and effectiveness of the tendering process based on imposed rules and financial regulations. On top of that, The CPTU possesses its impartiality for the flow of information through the internet which triggers the open competition for national and international bidding. The Government of Bangladesh imposed the Right to Information Act (RTI) in 2009 to ensure utmost transparency to curb corruption or other risks related to procurement.

2.3 Understanding procurement, large projects of RHD and the principle of Procurement, and risk

2.3.1: Procurement:

The Association for Project Management (APM, 1995) describes procurement as "the process of acquiring new services or products. It covers the financial appraisal of the options available, development of the procurement or acquisition of suppliers, pricing, purchasing, and administration of contracts. It may also extend to storage, logistics, inspection, expediting, transportation, and handling of materials and supplies."

United Nations Development Programme, (UNDP, 2008) defines procurement as the overall process of acquiring goods, civil works, and services which includes all functions from the identification of needs, selection and solicitation of sources, preparation and award of contracts, and all phases of contract administration through the end of a services-contract or the useful life of an asset.

According to Bramer and Walker (2011:453), public procurement is the acquisition of goods and services by public sector organizations from selected suppliers to effectively and sufficiently provide basic services to the public

Public procurement refers to the purchase by governments and state-owned enterprises of goods, services, and works. As public procurement accounts for a substantial portion of the taxpayers' money, governments are expected to carry it out efficiently and with high standards of conduct to ensure high quality of service delivery and safeguard the public interest ([Public Procurement - OECD](#)). In a broader sense procurement is nothing but the acquisition of goods and work through due diligence under contractual rule and law.

2.3.2: Method of Procurement:

The adoption of the procurement method is crucial and might play a pivotal role in curbing the procurement risk to a great extent. The procurement entity should have to be more cautious regarding the risk related to the procurement method.

Cartlidge (2009) ascertains that construction in whatever form involves various amounts of risk and the procurement strategy adopted will largely influence the allocation of risk on a project. Different procurement methods have different inherent risks associated with them and will therefore impact differently on project risks (NSW Government, 2008). Acquaye (2011) opines that poor procurement practices as a result of ignorance of the requisite procurement procedures have led to several contract failures. He further contends that; the choice of a procurement method affects the apportionment of risks between the parties during contract implementation.

Several methods of procurement are functioning globally. There are five methods of procurement in case goods and work contracts in PPR 2008 which are stated below.

1. Open Tendering Method (Rule 61),
2. Limited Tendering Method (Rule 63),
3. Two-Stage Tendering Method (Rule 65),
4. Request for Quotation Method (Rule 69) and
5. Direct Procurement Method (Rule 74)

Apart from the works and Goods Procurement method, there are some methods to select consultant and intellectual services which are given below:

1. Quality Cost Based Selection (QCBS)
2. Selection Based on Fixed Budget (FBS)
3. Least Cost Selection (LCS)
4. Single Source Selection (SSS)
5. Design Contest (DC)
6. Individual Consultant Selection (ICS)

The adoption of the procurement method largely depends on the prevailing rule and Law. Still, competitiveness is the critical success factor or it can be adopted as a default method with some exceptions in case of emergency or force majeure.

2.3.3: Large Projects of RHD and its Approval Process in Bangladesh and Phases of Procurement:

Large Project of RHD:

The Roads & Highways Department (RHD) is currently managing 132 projects. Large projects are defined as those demanding an expenditure of one thousand crore taka or more and falling within the jurisdiction of RHD. In the last 15 years, the government has formulated and implemented 35 mega projects under the direct supervision of the RHD. Therefore, this study will assess the procurement risk for RHD's large projects, which involve expenditures exceeding 1000 crore taka.

Approval Process of Large Project:

The projects undertaken by RHD are aligned with sectoral allocation, which means they correspond to the objectives outlined in key policy documents such as the Perspective Plan, Vision 2041, Delta Plan, Eighth Five-Year Plan (FY2020-FY2025), the Road Master Plan, and the National Integrated Multimodal Transport Policy. Moreover, the project is outlined with a Medium-Term Budgetary Framework (MTBF).

Depending upon the fulfillment of the requirement of sectoral allocation and objectives outlined in the 8th Five-year plan, Perspective plan, Vision2041, and SDG the detailed design and feasibility study is the fundamental requirement or prerequisite to formulate DPP/PDPP for capital investment projects which is done by the executive agency though based on technical assistant projects in case of large or aided projects in RHD. After getting approval for the feasibility study and detailed design the estimate and required Bill of Quantities are prepared. After that DPP is formulated and placed in the line ministry of concern executing agency. Then, the DPEC meeting is held chaired by the Secretary of the line ministry. After minute scrutinization it is placed to the planning commission. The planning commission is assigned to appraise the project which must resemble the perspective of a long-term plan for the development of Bangladesh. For manpower and post-approval concurrence of the finance division, the Ministry of Finance has to be convinced.

Finally, DPP is to be placed in IMED for appraisal with comment for justification of component-wise cost breakdown nodded by the Project Evaluation Committee (PEC). The approval process for RHD's project is somewhat lengthy. After that, administrative approval is issued with the appointment of a Project Implementation Unit led by the Project Director. The Project Implementation Unit is responsible for carrying out every responsibility and to deliver of project output according to the log frame within the imposed time frame.

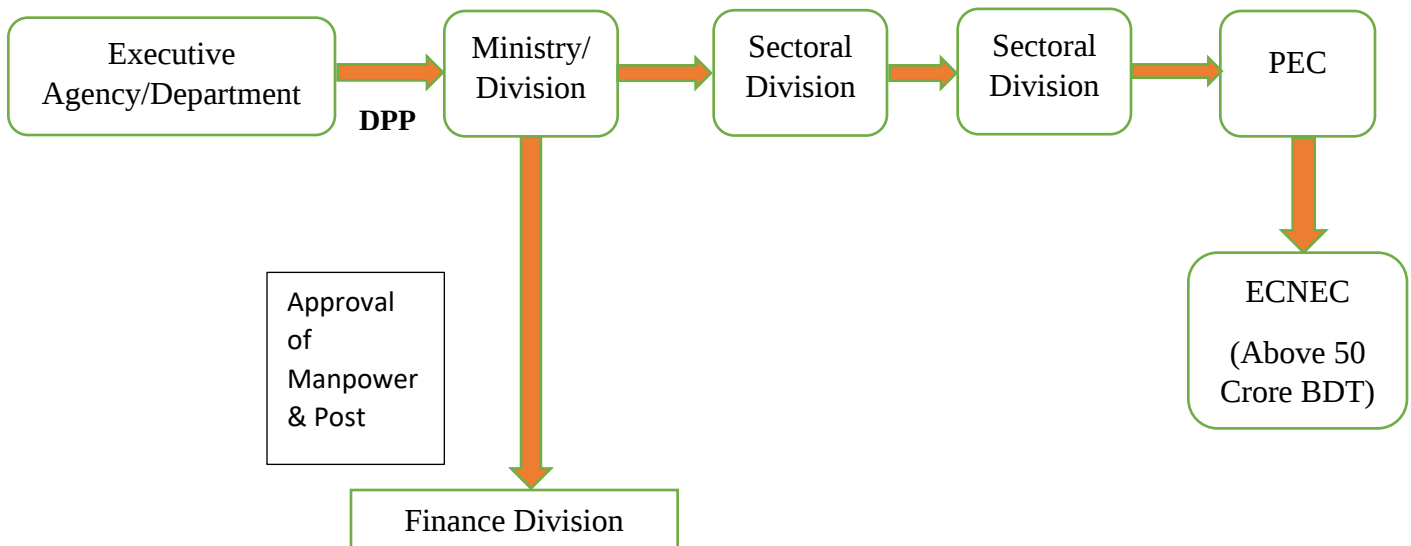


Fig-1: GoB Project Approval Process: Source: Self-Complied

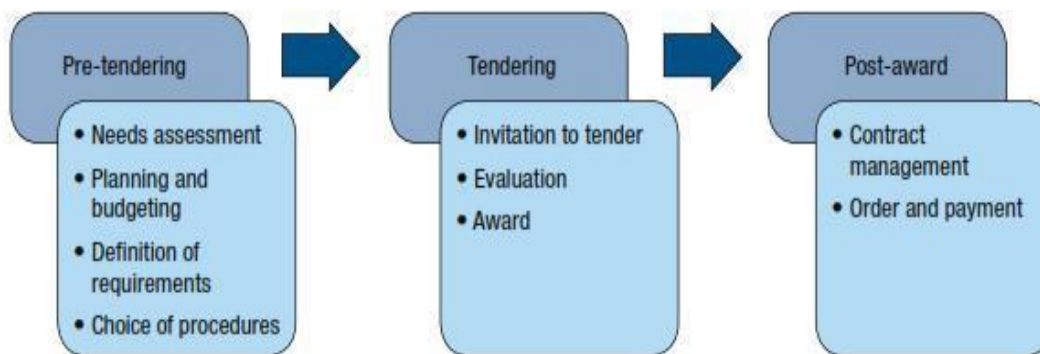


Fig-2: Main Phases of the Procurement Cycle. Source: OECD (2009)

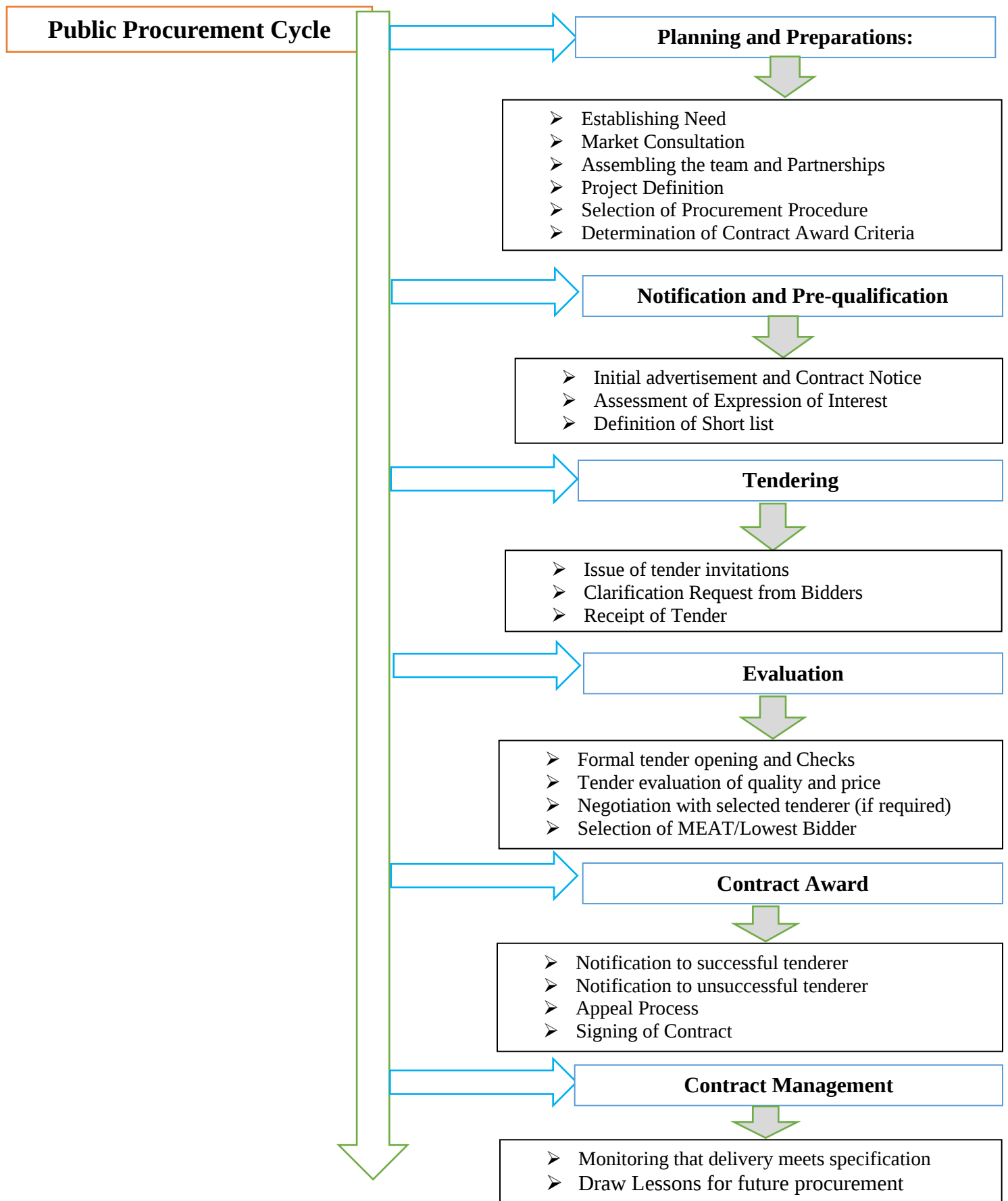


Fig-3: Phases of Public Procurement Cycle

Source: Lewis:2003

2.3.4 Principle of Public Procurement:

Public procurement obeys some key principles as it relates to the optimum utilization of public funds. The value for money, integrity, competitiveness, transparency, and accountability might be considered major principles that underpin ethical public procurement with the highest level of commitment to the nation.

Value for money:

In public procurement, the procuring entity is responsible for selecting suppliers based on the lowest evaluated tenderer or supplier for the best utilization of public funds. It is seen that in most of the cases, the best value is not considered which identifies the aspects of quality which add real, affordable value, using reality checks to confirm quality submissions and promises. To make an efficient supply chain one should encourage the best value rather than the lowest value for sustainable development. To optimize the public fund spontaneous participation from all corners of the country is very much desirable and it will fuel the achievement of competitive advantage. Public procurement entails past performance record and qualification criteria for both technical and financial which ultimately pave the way to ensure value for money.

Integrity:

Public procurement must obey the prevailing rules and laws in an impartial manner which ensures the desired product with fair public funds. The procuring entity with the highest level of integrity can unleash competitive and inclusive participation resulting in ethical practices and standards that curb the various procurement risks to a great extent.

Transparency:

Transparency in Public Procurement means that information on the public procurement process must be available to everyone: contractors, suppliers, service providers, and the public at large unless there are valid and legal reasons to keep certain information confidential. The contract award fairly and equitably is one of the most pressing conditions of transparency for public procurement which can able to attract foreign direct investment and technology in case of international bidding.

For instance, in the Open Tender Method (OTM), the procurement entity (PE) cannot discourage or deter any tenderer from participating in procurement processes irrespective of race, color, sex, or any other ground. The procuring entity (PE) must unleash competition by making available to all concerned all relevant documents, assessment criteria, the process for evaluation of tenders/proposals, and so on. The criteria for selection will be objective, with clear technical specifications, in simple language. Most, not all, will be chosen based on price and quality. There is no point in any negotiation with the tenderers which leads the ultimate transparency.

Accountability:

Ethical public procurement should embark on some accountability and ensure the rule of law. The fraudulent practice of misuse of public funds is the prime impediment to ensuring value for money. Managing risk in a complex competitive environment is a common phenomenon in public procurement which creates a culture of impunity and unethical procurement practices. Role and responsibility with accountability have to be fixed to ensure riskless public procurement.

2.3.5: Risks

Risk is defined by the Chartered Institute of Procurement and Supply (CIPS) as ‘the probability of an unwanted outcome happening’. Probability is the measure of the likelihood that a given event or result might occur. The International Standard on Risk Management (ISO: 2009) defines risk simply as ‘the effect of uncertainty on objectives. (CIPS, 2012; p.2)

Procurement risk can be viewed from a transactional viewpoint (CIPS, 2013:2). Lei et al., (2009:3118) indicated that the procurement process is exposed to risk during the different transactions that occur between the buyer, supplier, and other market factors.

The Project Management Institute in their book ‘Project Management Body of Knowledge’ defines risk as an uncertain event or condition that, if it occurs, affects at least one project objective (PMBOK, 2008; p.275). Several definitions for risks and project risk have been proposed by different authors over the years. The concept of risk as argued by Ehsan et al. (2010) is multi-dimensional with Hansson (2002) categorizing risk definitions into technical and non-technical. The latter contend that the non-technical definition of risk refers to ‘the situation in which it is possible but not certain that an undesirable event will occur’. The technical definition of risk by the author is ‘the statistical expectation value of unwanted events which may or may not occur’

2.3.6: Procurement Risk:

Procurement risk can be viewed from a transactional viewpoint (CIPS, 2013:2). Lei et al., (2009:3118) indicated that the procurement process is exposed to risk during the different transactions that occur between the buyer, supplier, and other market factors.

Effective identification and measurement of the procurement risk is important as the basis of efficient risk management and risk prevention (Lei, Donghong & Tie, 2009)

Mofokeng (2012: 8) commented that the negative publicity regarding public sector procurement indicates the following risk.

- Widespread disobedience with the laws/regulations.
- Poor public sector procurement systems.
- Inferior risk management processes in procurement.
- Lack of transparency, irresponsibility, unethical behavior, and inconsistency.
- Non-responsiveness to public pursuit.
- Misuse of public resources and inadequate service delivery.

It indicates that there are several ways of corruption in public procurement that impede paving the way for ensuring value for money, transparency, good governance, and ethical procurement. But it is also true that fortunately some ethical honest civil servants are rarely habituated to corrupt practices.

2.3.7: Corruption risk of procurement

Ntayi, Ngoboka, and Kakooza (2012: 114) identified procurement-related risks as:

- **Corruption:** Corruption in public procurement occurs when a specific supplier is consistently favored to enrich the favored supplier.
- **Kickbacks:** A kickback is a payment made by the supplier to the public official who influenced the selection process, after being rewarded a contract and receiving payment for the contract

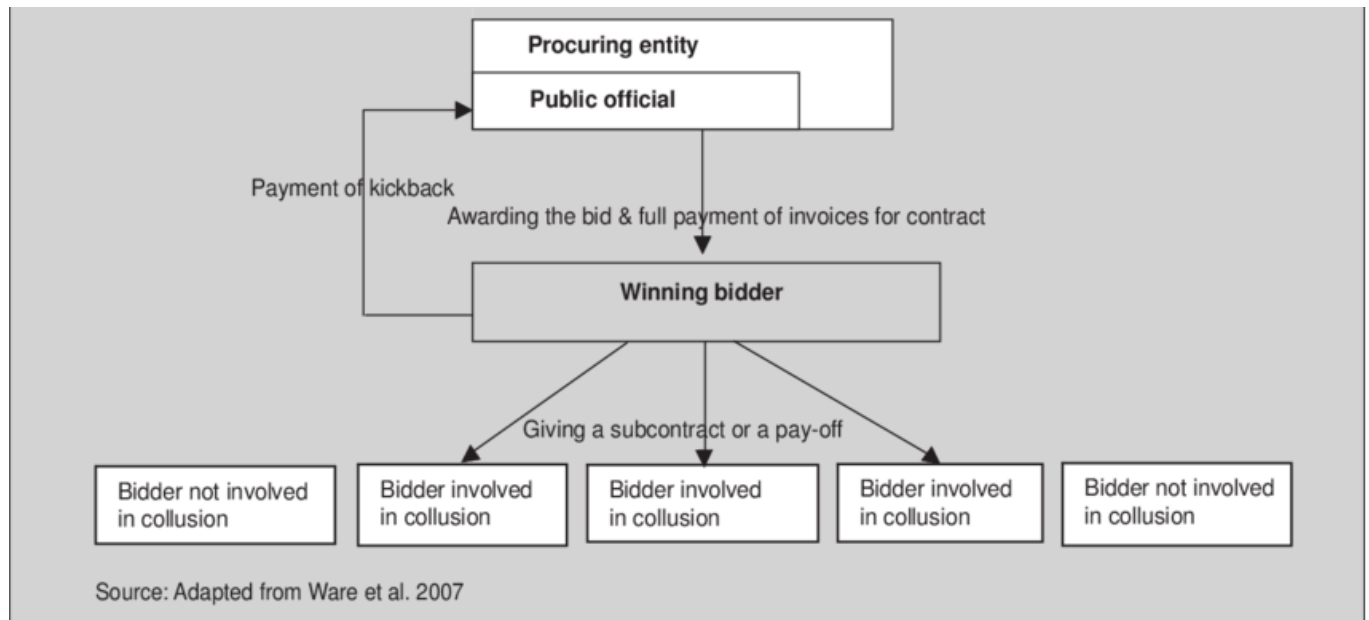


Fig-4: Corruption risk of procurement

- **Bid rigging:** Bid rigging is a form of corruption and occurs when the bidders eradicate competition by increasing prices, this results in the government paying more and ultimately bearing the costs of the bidder. This can be achieved through a variety of ways from when competitors withdraw a bid from the application, to when a competitor chooses to submit bids only in certain geological areas or only to particular public organizations (The Organization for Economic Co-operation and Development, 2009).
- **Fronting:** When a company does not disclose the relationship with the influence of public officials involved in awarding a contract, fronting occurs and the public officials benefit financially through the front company.

In response to the above, the study proposes to investigate, describe, and critically evaluate the various procurement-related risks the public sector is faced with. The study will also evaluate the relationship between procurement risks and poor service delivery in the government.

Need assessment phase or demand determination	• The investment or purchase is unnecessary. Demand is induced so that a particular company can make a deal that is of little or no value to society. • The investment is economically unjustified or environmentally damaging. • Goods or services that are needed are overestimated to favor a particular provider. • Old political favors or kickbacks are paid by including in the budget a “tagged” contract (budget for a contract with a “certain”, pre-arranged contractor). • Conflicts of interest (revolving doors) are left unmanaged and decision
Preparation Phase/ Process Design and Bid Documents	• Bidding documents or terms of reference are designed to favor a particular provider so that in fact, competition is not possible (or restricted). • Goods or services needed are over- or underestimated to favor a particular bidder. • Unnecessary complexity of bidding documents or terms of reference is used to create confusion to hide corrupt behavior and make monitoring difficult.
Contractor Selection and Award Phase	• Decision makers are biased (bribes, kickbacks, or conflicts of interest are involved). • Selection criteria are subjective in ways that allow biases to play a role and remain unattended. • An advantage to a particular bidder is granted through the exchange of confidential information before bid submission or during the clarification period. Clarifications are not shared with all the bidders. • Confidentiality is abused and extended beyond legally protected information.
Contract Implementation Phase	• Winning bidders/contractors compensate bribes and other extra payments with poor quality, defective, or different specifications than those contracted. Faulty or sub-specification work execution, requiring early repairs or expensive correction. • Contract renegotiation or “change orders” introduce substantial changes to the contract, often in small increments that can be decided by the site engineer. • Price increases during execution through “change orders” reflecting changes in specifications or cost increases, facilitated often by collusion between • False or inexistent claims are filed. • Contract supervisors or monitors are “bought” or are not independent and willing to justify false or inexistent claims. • Contract renegotiation is allowed or performed introducing substantial changes that render the bidding process useless.

Final Accounting & Audit	Accountants doing final accounts and Auditors are biased or “bought” and willing to support false certificates.
-------------------------------------	---

Table 1: Corruption Risks and Manifestations across the Procurement Cycle

Source: Transparency International, 2006. *Handbook: Curbing Corruption in Public Procurement*

2.3.8: Integrity Risk in Public Procurement:

The integrity risk might play the entire procurement process which also has a crucial role implementation phase. The time and cost overrun of Megaprojects has become a natural trend in the public sector.

Pre-Tendering Phase	Needs assessment and market analysis	- Lack of adequate needs assessment - Influence of external actors on officials’ decisions - Informal agreement on contract
	Planning and budgeting	- Poor procurement planning - Procurement not aligned with the overall investment decision-making process - Failure to budget realistically or deficiency in the budget
	Development of specifications/ requirements	- Technical specifications are tailored for a specific company - Selection criteria are not objectively defined and not established in advance - Requesting unnecessary samples of goods and services - Buying information on the project specifications. - Lack of proper justification for the use of non-competitive procedures
	Choice of procurement procedure	- Buying information on the project specifications. - Lack of proper justification for the use of non-competitive procedures - Abuse of non-competitive procedures based on legal exceptions: contract splitting, - abuse of extreme urgency, non-supported modifications
Tendering Phase	Request for proposal/bid	- Absence of public notice for the invitation to bid - Evaluation and award criteria are not announced - Procurement information isn’t disclosed and isn’t made public
	Bid submission	Lack of competition or cases of collusive bidding (cover bidding, bid suppression, bid rotation, market allocation)
	Bid Evaluation	- Conflict of interest and corruption in the evaluation process through: ➤ Familiarity with bidders over time ➤ Personal interests such as gifts or future/additional employment ➤ No effective implementation of the “four eyes-principle

	Contract Award	• Vendors fail to disclose accurate cost or pricing data in their price proposals, resulting in • an increased contract price (i.e., invoice mark-ups, channel stuffing) • Conflict of interest and corruption in the approval process (i.e., no effective separation of • financial, contractual, and project authorities) • Lack of access to records on the procedure
Post Award Phase	Contract management/performance	• Abuses of the supplier in performing the contract, in particular about its quality, price, and timing: ➤ Substantial change in contract conditions to allow more time and/or higher prices for the bidder ➤ Product substitution or sub-standard work or service not meeting contract specifications ➤ Theft of new assets before delivery to end-user or before being recorded ➤ Deficient supervision from public officials and/or collusion between contractors and supervising officials ➤ Subcontractors and partners chosen in an on-transparent way or not kept accountable
	Order and payment	• Deficient separation of financial duties and/or lack of supervision of public officials leading to: ➤ False accounting and cost misallocation or cost migration between contracts ➤ Late payments of invoices • False or duplicate invoicing for goods and services not supplied and for interim payment in advance entitlement

Source: OECD (2016) Report on Preventing Corruption in Public Procurement
<https://www.oecd.org/gov/ethics/Corruption-Public-Procurement-Brochure.pdf>

Table 2: Integrity Risk in Public Procurement Process.

2.3.9: Forms of Corruption in Public Procurement:

Collusion: During the pre-tender phase, a procurement official may disclose confidential information to favor the supplier regarding a tender, placing the supplier in an advantageous position compared to other suppliers competing for the contract (Neupane et al., 2012:307).

Fraud: Baciú (2013:7) stated that fraud in public procurement is any dishonest behavior of the suppliers involved in the tender. This is because fraud can take many forms from senior procurement officials planning unnecessary projects for their private benefits, (Neupane et al., 2012:307) to suppliers being dishonest regarding the costs associated with fulfilling the contract.

Unauthorized Expenditure:

Unauthorized expenditure is nothing but the approval of expenditure beyond the delegation of financial power which triggers the deliberate profligate or misuse of public money.

Opportunistic Intermediaries: Some opportunistic intermediaries promote undue settlement of bidding between the procuring entity and bidder adopting several unfair ways to win tender.

Window Dressing: Sometimes window dressing is witnessed in public procurement in RHD. The bidder from the ruling party tries to snatch work with muscle power which prevents taking part from the main opposition party's bidders.

Deliberate Contract Failure:

The requirement of specification or tender specification for a specific part of the component is normally fixed in such a way that the maximum bidder would be unable to meet the requirement which poses a risk of less competition and cost overrun. It might deter to ensure the value for money to a great extent. Deliberate contract failure is one of the major forms of corruption risk in public procurement practices in the case of large projects. More syndicates for bidding rotation are a classy form of corruption practice which also prevails as corruption risk in public procurement.

By the STD PW3 (the PW3 is the Standard Tender Document for the Procurement of Works with a value up to Taka five hundred (500) million applicable only for national procurement) the definitions of CFCC are such as:

“Corrupt practice” means offering, giving, or promising to give, receiving, or soliciting either directly or indirectly, to any officer or employee of the Procuring Entity or other public or private authority or individual, a gratuity in any form; employment or any other thing or service of value as an inducement concerning an act or decision or method followed by the Procuring Entity in connection with a Procurement proceeding or Contract execution;

“Fraudulent practice” means the misrepresentation or omission of facts to influence a decision to be taken in a procurement proceeding or contract execution;

“Collusive practice” means a scheme or arrangement between two (2) or more persons, with or without the knowledge of the Procuring Entity, that is designed to arbitrarily reduce the number of tenders submitted or fix tender prices at artificial, non-competitive levels, thereby denying the Procuring Entity the benefits of competitive price arising from genuine and open competition;

“Coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence a decision to be taken in the procurement proceeding or the execution of a contract, and this will include creating obstructions in the normal submission process used for tenders.

2.3.10: Risk Management issue:

The key aim of risk management in procurement is to curb the potential adverse effects during the implementation of large projects in the Roads Highways Department (RHD). The risk management issue comprised risk identification, assessment, management, and monitoring at the project level. It also highlights the gravity of the risk and its treatment & management as well until the project ends. The risk management issue is an ongoing task which implies that risk assessment and treatments need to be monitored vigorously as existing risks change, and new risks emerge.

Risk Management Process:

The management of risk is not a one-off event. Banaitiene & Banaitis (2012) identify four (4) key steps in the management of risk confirming the works of Zou et al (2006)

- Risk Identification
- Risk Assessment
- Risk Treatment
- Monitor and report the risk



Fig-5: Risk Management Process

2.3.11: Procurement Risk Management:

Procurement risk management is nothing but identifying potential risks throughout the procurement process. This may include some external and internal risks. The potential procurement risk and livelihood of occurrence are to be assessed properly as part of an effective risk management process. However, it is nearly impossible to prevent procurement risk fully but the procuring entity can adopt some measures to bring it acceptable level. This study can clarify the procurement risk and its gravity with some course of action to be cited at the end of the report, which may include:

- Ignoring procurement risks that do not pose a real threat
- Deescalating the likelihood of a risk occurring
- Expunging the possibility of a risk occurring
- Managing procurement risk with anticipated solutions.

The Major Clauses in PPR 2008 for managing procurement risk management in RHD are:

The Central Procurement Technical Unit (CPTU) is a governing body under the Planning Commission of Bangladesh, which administers public procurement management along with imposing some standard rules and regulations enacted by law. The Standard Tender Document (STD) is the document provided by CPTU which offers some clause that contributes a lot to curb the prevailing procurement risk in RHD. Moreover, the foreign-aided mega project offers some clauses to curb the procurement risk according to the prescribed guideline of FIDIC and procurement guidelines of respective funding agencies like ADB, WB, JICA, AIIB, IsDB, etc.

- Clause related to Liquidated damage
- Force majeure clause
- Provision of Time extension
- Insurance
- Settlement of disputes
- Price adjustment/escalation
- Inspection and tests
- Termination clauses
- Sanction/debarment process
- Arbitration.

CHAPTER-3:

Procurement risk at large project in Roads & Highways Department (RHD): Thorough investigations, Critical analysis, and Findings:

The public procurement system is a key component of the country's economic reality and shares many of its traits, as well as its strengths and flaws. The elements of the public procurement system are the executing agency, the contractor, and the consultancy firm. These elements interact with one another, condition one another, enhance one another, or destroy one another to accomplish the overall goal. Hence, such acts may occur with detrimental effects on the overall system throughout the interaction between the system's components and during the purchase process. Risks are those uncertain but likely events that, if they occur during the procurement process, could cause harm to or hurt particular values held by a community.

It is important to emphasize that the general management of procurement is carried out by the Procurement Circle, a permanent central agency of the Government of Bangladesh, which also gives the project implementation unit's procurement team the required guidance and support. RHD possesses sufficient ethics and anticorruption procedures are in place, and there is a manual for the procurement process for goods, works, and services. Moreover, RHD has solid experience hiring consultants and performing civil work for projects with foreign funding.

However, RHD faces significant difficulties as a result of the divergent procurement policies between the government and the development partners. Regarding the civil works contracts included in the project, the authority to authorize bid evaluation, contract award, and contract changes, is required to submit these for approval to the Cabinet Committee on Government Procurement (CCGP). The procedure of CCGP approval as well as agreement by the development partners has frequently delayed the start of works and services. In this chapter the indicators of procurement risk at different procurement stages like before the tendering stage, during tender preparation, during evaluation, award, and contract administering. In addition to that, the procurement risk of PPP projects and G2G contracts also be discussed at the end of this chapter.

3.1 Procurement risk during pre-bidding stage:

3.1.1 Risk due to Project Readiness:

The project readiness outlines the procurement risk at the pre-bidding stage. The interviewee expressed that before the land acquisition, resettlement, and utility relocations the tenders are being floated which can lead to delays and subsequently time and cost overruns. Moreover, it also found that large projects of RHD frequently exhibit a complex structure characterized by numerous interconnected elements and collaborations among various departments, suppliers, and stakeholders.

3.1.2: Clear Directives for Selection of Contract Type in PPR:

In the PPR-2008, the contract type is not specified. Project officials indicate that conventional unit price contracts are predominant in RHD, yet there could be various pragmatic approaches, such as fixed-price contracts, cost-plus-fee contracts, turn-key contracts, incentivized contracts, cost-reimbursable, etc. These alternatives have the potential to mitigate procurement risks and responsibilities significantly.

3.1.3: Lack of Potential Bidder Development of RHD:

Although RHD is spending a hefty amount of money by undertaking several large projects in Bangladesh, in a real scenario the bidder's development to implement such type of project is still a far cry. The project personnel expressed the grim picture of the inadequacy of bidders in RHD. Factors such as limited government support, lack of awareness, and inadequate stakeholder engagement contribute to the incapacity of winning bidders. Consequently, winning bidders often fail to adhere to contractual obligations and exhibit attitudes that compromise the quality and timely completion of work. Additionally, they struggle to comply with safeguard implementation requirements during project execution

3.1.4 Faulty Need assessment: The need assessment comprised of object, quality, quantity, delivery time, place, and price. Some interviewed project officials claim that under and over-estimation of needs is a common phenomenon in need assessment. Sometimes misinterpretation of users' needs also takes place which triggers the faulty need assessment and incurs huge procurement risk. For example, ongoing ADB-funded projects of RHD have no provision for rigid pavement even in urban or Bazar areas. This implies that during need assessment there was no provision for Rigid Pavement in the Bill of Quantities (BOQ) or in the official cost estimate in the period of need assessment which can be treated as a misinterpretation of the Technical Assessment (TA) consultant. But later on, the necessity of rigid pavement was incorporated at least in the bazaar and curved portion of the road for its longevity. As such DPP was revised to incorporate rigid pavement as a Non-tender Item instead of tendered flexible pavement items. For the inclusion of non-tender items, the negotiation of the rate was claimed by the contractor which ultimately paved the way for cost overrun along with time, machinery, and equipment. Moreover, the interviewee claimed that the change of scope like augmentation of the width of the road, the inclusion of flyovers, interchange, and structural capacity of the road was impending to harvest the full benefit of the corridor.

3.1.5 Feasibility Study: The guided/biased or predetermined feasibility study unleashes the potential risk of procurement. Some project officials acknowledge that the technical specification is being refurbished to board the predetermined contractor which unleashes less competitive bidding with the risk of fraudulent practice. For instance, the special type foundation or materials or incorporated forcefully imported materials is considered as a biased technical specification to win over the work by the intended contractor with a relatively high rate which triggers the huge project cost and decreased competition as well. It also apprised that, inadequate initial soil studies, inaccurate survey data, and locations of existing utilities may lead to changes in the scope of work during construction, which raises the cost. Most road projects in our country are delayed because of financial delays. To cover their high daily expenses, contractors place a high value on progress payments. Work progress may be delayed as a result of owner payment delays since there isn't enough money coming in to cover construction costs, especially for less financially stable contractors.

3.1.6: Underestimating Cost and Time Frame:

Some project personnel of RHD said that the technical assistant consultant, due to urgency on the part of the executive agency, restrictive or unrealistic time frames for contract execution sometimes made forth in the bidding document. The time for physical work along with land acquisition is considered for a completion time of the package. As the contractor does not get access due to the unavailability of land even after getting the notice to commence, the chances of price escalation and cost of consultancy get inflated and trigger the cost overrun. Separate time for land acquisition has to be considered before floating tendering to curb the procurement risk must be the mandatory requirement, as RHD has been witnessing time and cost overrun of its 70% project, 100% in case of mega project from long since.

For instance, the time for land acquisition should be considered for two years, and 4 years for physical work may be considered. Some interviewees expressed that the cost estimate is normally inconsistent with the market price.

3.1.7: Insufficient knowledge of the Market: Some interviewee urges that; the supply and demand market analysis is not considered during project formulation and needs analysis. For instance, for the 190 KM upgradation of national highways, there is a huge demand for quality bitumen. The Eastern Refinery Ltd is the sole source of quality bitumen. However, their production capacity is far behind the RHD's demand. So before considering large-scale projects with flexible pavement the supply and demand market has to be analyzed to curb the scarcity of materials. The scarcity of materials ultimately leads to time overrun and unleashes the scope of price adjustment

3.1.8: Unrealistic Identification of Fund:

Certain project officials have disclosed that the budget or loan being negotiated is unrealistically granted based solely on cost records, without adequately addressing the existing needs. This approach, characterized by a layman's identification of funds, exposes the project to potential challenges and uncertainties associated with the budget or loan. Consequently, the procuring entity should formulate risk mitigation strategies to effectively address any unforeseen issues that may emerge during the implementation phase.

3.1.9: Guided or Biased Specification:

Specifications adjustment to favor one bidder over another, or incomplete requirements at the time of contract award, specification manipulation can come about as a result of incorrect participation in the formulation of the need during the pre-bidding period. Bias or manipulation of specification or fabricated qualification criteria is considered a major risk factor in public procurement. Claims of bias in the evaluation standards and contract specifications included in their solicitations continue to subject public institutions to legal challenges. From focus group discussions and interviews, it is observed that there is ample evidence to set qualification criteria for boarding target bidders unlawfully. Special types of foundation, materials, or special types of work may be proselytized to favor the nearest contractor with a relatively higher price. It is also appraised that, the past performance criteria and relevant experience as a prime contractor are specified impartially to board the targeted contractor unlawfully which leads to irrational, capricious, and arbitrary decisions. It also mentioned that the selection and award criteria are not disclosed in advance.

3.1.10: Choice of Procurement method: From the discussion it is observed that the choice of procedure is riddled with a lack of procurement strategy and criteria adopted in make non-competitive manner. The tendency to split the large contract into smaller contracts may comply tender capacity of the targeted smaller bidder.

3.1.11: Pre-qualification evaluation is done based on pass/fail criteria. To maximize value for money, a competent and responsive tenderer must provide the lowest evaluated bid. Even if there is legal scope for such, evaluation criteria rarely use life cycle costs or non-price considerations. Similar to the previous point, the adoption of sustainability standards is uncommon outside of contractual clauses requiring actions to be performed to safeguard the environment and worker health and safety. Environmental certification has been necessary in a few instances, and it has been noted that non-price factors are included when evaluating products for energy efficiency. In the event of a delay other than a case of force majeure, there are typical rules for the application of fines in the form of liquidated damages. Yet it is rarely used.

3.1.12: Defective design: The procuring entity officials expressed on the condition of anonymity that; the performance of the design consultant is to adopt copy-paste rather than using practical data. For instance, the RHD specified the layer coefficient of the Bituminous binder and wearing course which is 0.42 but they consider only 0.34 which serves the over design. Overdesign may turn to optimum design during the implementation period based on design review which may unleash the risk of front or back loading.

3.1.13: Defective Estimate Preparation: The procurement staff said that, a superficial assessment of the contract value without taking into account all potential costs. They also highlight incidents like inadequate preliminary soil investigations or inaccuracies in land acquisition and existing utility locations and survey data can lead to alterations in the scope of work during construction, resulting in an escalation of costs. Moreover, intentional mistakes or natural mistakes during the preparation of estimates to encourage certain parties are also risks for procurement. For example, any unimportant items can be quantified/put extravagantly and important items can be less quantified as a part of deliberate mistakes. Some procurement officials expressed that the official cost estimate is disclosed unlawfully to a pre-determined bidder to give the work which is considered a major risk of procurement and increases the chances of corruption as well. It ultimately decreased the competition and paved the way to profligate public money. Some professionals said that the accuracy of cost estimates is not beyond questionable at all.

3.1.14: Working Methodology: Some project officials claim that criteria of working methodology, equipment, and manpower can be biased during the tender preparation stage. A special type of equipment and manpower may be required to finish the project work which could have predetermined to win over the work with high contract value. Retrofitting work of Bridges can be exemplified for the same.

3.1.15: Clause to cease front loading: The project officials or procurement entity are not aware of deliberately misleading to impose the clause of front loading.

3.1.16: Intentional Variation issue and Mathematical error: Some procurement professionals expressed that some intentional variations issues are kept in mind and reveal the estimate to a contractor with total cognizance which decreases competition and increases package cost through variations. Sometimes mathematical error is kept in mind to win over the work with relatively higher value

3.1.17: Data Manipulation of BBS: Base rates- are the standard rate used to calculate the price adjustment formula. Most often the base rates are manipulated artificially to gain the benefit of price adjustment. Fabrication of base rates is considered a fraudulent practice that triggers the procurement risk to a great extent which leads to inflated costs, unfair competition, and decreased value for money.

3.1.18: Absence of e-procurement process for large scale contract: although the Roads & Highways Department has already entered into the e-procurement process for large-value contracts the adoption of e-procurement is still a far cry. International bidding with large-value contracts is considered one of the major risks for procurement.

3.2 Procurement risk during the bidding stage:

3.2.1: Absence of public notice: Some interviewees said that, the absence of public notice to aware the potential bidder insufficient time to receive the bids or intentional corrigendum or extension of bidding time with security has become the procurement norms which can be considered as procurement risk. Invitation bids in a restricted manner are not possible nowadays. Still, it is also considered a procurement risk which may be registered to curb the procurement risk to a great extent.

3.2.2: Longer Bidding Process: Some interviewees revealed the grim picture of a lengthy bidding process. For instance, an ADB-funded large project took about 1.42 years to 1.67 years from bid invitation to Notice to Commence which fueled the inordinately longer time to complete the tendering process.

3.2.3: Leakage of Sensitive Information: The project officials revealed that most often sensitive pieces of information regarding bid documents are disclosed which prevents competitive bidding. Moreover, the public notice lacks adequate information and guidance for suppliers/bidders to prepare their bids, including pricing instructions. Additionally, bid envelopes are prematurely unsealed or opened before the scheduled opening session.

3.2.4: Performance Security: The fake performance security which may be acknowledged by the Bank itself is considered the major risk of procurement. Once it is fake there are no tools to recover the public money through the Public Demand Recovery Act (PDA) act.

3.2.5: Base Price and Price Adjustment Formula:

Some procurement officials claimed that the base price is somewhat lesser than that of the market price which incurs huge costs in the name of price adjustment. The bidders are illegally involved in proselytizing the data manipulation, which is a potential threat to procurement. The price adjustment formula some sometimes manipulated to grab public money unlawfully. Most of the time, predicted costs are not prepared based on the current market pricing, leading to estimates that are unreasonably high or low compared to the market price. This is one of the main causes of the procurement process failing and the need for re-tendering. The majority of tenders prepare their predicted costs at random or using official rate schedules. Unfortunately, due to poor data gathering, the official rate schedules are frequently out of date and do not accurately reflect the market price.

3.2.6: Negative Rate quoting:

The procurement professional claimed that, for several of the work items listed in the project's bill of quantities, some bidders requested negative unit prices. It was noted that they intended to use negative unit pricing to lower their bid costs and did not intend to claim completed work using negative unit prices. Although proposed negative unit prices do not violate the terms of the contract, they depart from customary commercial practices. Contracts awarded to such bids carry a significant chance of disagreements between the contractor, the engineer, and the employer. The CCGP and the donor agency's procurement committee must approve the bid evaluation for the project's principal civil works packages. However, a long time was spent on several of the work items listed in the project's bill of quantities, some bidders requested negative unit prices. It was noted that they intended to use negative unit pricing to lower their bid costs and did not intend to claim completed work using negative unit prices. Although proposed negative unit prices do not violate the terms of the contract, they depart from customary commercial practices. Contracts awarded to such bids carry a significant chance of disagreements between the contractor, the engineer, and the employer. The CCGP and the ADB procurement committee must approve the bid evaluation for the project's principal civil works packages. Getting everyone to agree on how to evaluate such unusual offers took an inordinately long time which ultimately led to the cost and time overrun.

3.2.7: Offering Discount on Overall Cost Estimate:

The procuring entity concerned with offering a discount from the bidder end seems cost savings approach but it may unleash several procurement risks like quality compromise, financial instability, time and cost overrun, limited supplier pool, etc.

3.3 Procurement risk during evaluation and award stage:

3.3.1: Procurement risk due to Past performance evaluation:

Past performance evaluation is a critical aspect of the procurement process, as it helps assess a supplier's track record in delivering goods or services. However, there are potential risks associated with past performance evaluations that organizations should be aware of and address. Here are some procurement risks related to past performance evaluation:

- **Inadequate or biased information:** The risk exists that the information obtained for past performance evaluation may be incomplete, inaccurate, or biased. This could be due to limited references, unreliable sources, or intentional manipulation of data. To mitigate this risk, it is essential to gather information from multiple and diverse sources, such as customer references, industry databases, and third-party reports. Verification and validation of the provided information can help ensure its accuracy and reliability.
- **Inconsistent evaluation criteria:** Different evaluators may interpret past performance criteria differently, leading to inconsistent assessments. This can occur if there is a lack of clear and standardized evaluation criteria or if evaluators have different perspectives or biases. Establishing objective and well-defined evaluation criteria, along with providing training to evaluators, can help mitigate this risk.
- **Incomplete or outdated performance records:** Suppliers may not always have a comprehensive record of their past performance, particularly if they are new to the industry or have limited prior experience. In such cases, evaluating past performance may be challenging, and there is a risk of overlooking potential risks or opportunities.
- **Overreliance on past performance:** Placing excessive emphasis on past performance as the sole determining factor in supplier selection can lead to overlooking other critical factors such as technical expertise, financial stability, or innovation. While past performance is valuable, it should be considered alongside other evaluation criteria to make a comprehensive and informed decision.

3.3.2: Price Capping:

Price capping has been a long-standing practice in the procurement process of RHD. However, it has struggled to gain ground in international bidding. Regrettably, the implementation of price capping has resulted in significant risks. For instance, there is a notable risk of tenderers gaining access to precise official cost estimates from subordinates. This allows them to manipulate their calculations to align precisely with the threshold limit, posing potential issues.

3.3.3: Limited Scope to Negotiation formally:

In public procurement, there is a limited scope for negotiation with contractors. The rather lowest bidder is to be encouraged to win the bid which incurs intentional delay and unleashes a bad-thought-out project management plan.

3.3.4: GRS with losing Contractor:

The practice of GRS with losing contractors is merely absent for large projects in RHD. The authority should have to adopt some contingency measures to soothe the contractor as part of relationship management to a great extent. This promotes contractor development in the long run.

3.3.5: Negotiation with the immediate lowest bidder:

Frequent and unjustified meeting with the immediate lowest bidder is a matter of regular occurrence in RHD. Sometimes 1st lowest and 2nd lowest come to turn and negotiate with a chunk amount of money from 2nd lowest bidder is a potential threat to procurement management.

3.3.6: Unduly influence the decision-making process of the ODA agency:

It has been observed from the focus group discussion that similar to the selection of contractors for construction projects funded by foreign funds, consultants have been chosen by the development partners which reflects the undue influence on the contracting authority in the decision-making process. Moreover, RHD faced significant difficulties as a result of the disparities in consultant selection processes between the government and the development partners in the case of large-value contracts. It is important to receive approval from the relevant government agencies and agreement from the development partners, but this process is sometimes delayed because of differences. After negotiations, the signing of the consulting service contract typically takes 4-5 months.

3.3.7: Discrepancies of procurement guideline between RHD and Donor agency:

It also apprised that, RHD faced significant difficulties as a result of the divergent procurement policies between the government and the development partners. Because procurement involves unclear and unusual concerns, approval by the relevant government agencies and agreement from the development partners are both required but frequently delayed owing to differences. From the time the invitation for bids was issued until the contract was awarded, approval in certain cases took almost two years.

3.3.6: Excessive quoting: Audit concerns are frequently raised when the so-called lowest bidder is not chosen based only on the reported price. The procurement entity of a particular foreign-aided project that is implemented at the capital urges that even after a strong recommendation of the technical evaluation committee 33% less than that of the official estimate was awarded, it is taking an inordinately long time which unleashes the enormous public suffering.

3.3.7: Absence of Third-Party Monitoring System:

Some interviewed officials agreed that the third-party monitoring system is still ineffectual in RHD. With the adoption of quality management, third-party monitoring can be implemented to ensure openness and accountability in procurement operations in the Roads and Highways Department.

3.3.7: Force Re-tendering:

Some bidders reveal that the 1st lowest bidder adopted unfair means as they were out of order regarding tender capacity and they were able to force the authority to retender of particular contract of an aided project of RHD. The tender capacity was not covered at the time. As such the Project authority was compelled to delay floating the tender to bring the potential bidder under tender capacity. It takes a long time to give notice in favor of that contractor with a significantly lower (more than 30% than that of the official estimate) price which ultimately triggers the whole project for time and cost overrun.

3.3.8: Litigation, Injunction:

Some professionals said that the litigation or debarment may create the potential risk of procurement which creates unusual delays in project implementation.

3.3.9: Approval Delay by Department/Donor agency/ Ministry/CCGP:

Increase procurement approval thresholds at the agency and ministry level with an enhanced accountability mechanism. For instance, for the approval of a variation proposal of an ADB-funded project, the ADB took 12 months to give concurrence which descaled the motivation of the on-board contractor which fueled the cost overrun and subsequently the time overrun.

3.3.10: Advance Procurement:

A strategy known as "advance procurement" has emerged in some PEs to save time and prevent this delay in the processing of tenders. Under this practice, the PEs handle the procurement for the packages already included in the authorized project for which budget allocation for a fiscal year is sought.

The procurement legislation does not provide "advance procurement" procedures; thus, the PEs typically do not request approval of the contract because the Delegation of Financial Power (DOFP) regulations aim to ensure that the budget allocation for a specific FY has already been established.

3.3.11: Unreasonable delays in evaluation bids and selecting winner bidders:

Unreasonable delays in the evaluation of bids and selecting winning bidders can be a challenge in procurement processes in the Roads & Highways Department (RHD), Bangladesh. These delays can lead to inefficiencies, increased costs, and potential risks for both the procuring entity and the bidders involved. From the interview, it was revealed that for an ongoing ADB-funded project in RHD, it took an average of 1.5 years from invitation to Bid to give the Notice to Commence.

3.3.12: Audit risk: Most often the audit objections are made for not selecting the so-called lowest bidder based on the quoted price which ultimately fuels to selection lowest quoted bidder rather than considering the non-price factors that align with the most advantageous lowest evaluated bid.

3.4. Procurement Risk during Contract Management:

During contract management, several procurement risks can arise that can impact the successful execution of contracts. Here are some common procurement risks to consider during contract management and potential mitigation measures:

3.4.1: Absence of Contract Management Plan: A Contract management plan is crucial to curb the procurement risk and successful implementation of the contract as the risk management strategies along with assigned responsibilities are normally embedded in CMP. Moreover, the contract and payment terms are also specified in CMP which might show the way out in case of any potential claims and disputes. From the interview, it was revealed that the culture of preparing the Contract Management Plan is practiced in RHD, which ultimately unleashes the potential procurement risk throughout the contract management.

3.4.2: Contractual Non-Compliance: There is a risk of non-compliance with the terms and conditions outlined in the contract. The project officials stated that contractors are reluctant to submit an Insurance Policy as per the Contract which has risk coverage for the execution of the works. Moreover, the non-compliance includes failure to deliver goods or services as specified, delays in performance, or inadequate quality.

3.4.3: Scope Creep: Scope creep refers to the gradual expansion of the project's scope beyond what was initially agreed upon. This can lead to increased costs, delays, and resource constraints.

3.4.4: Inadequate Supplier Performance: Suppliers may fail to meet performance expectations outlined in the contract, leading to delays, quality issues, or non-compliance.

3.4.5: Supplier Insolvency or Financial Instability: Suppliers may face financial difficulties or even insolvency during the contract period, which can disrupt project continuity and impact delivery. Conducting financial due diligence on suppliers before awarding contracts can help assess their financial stability. Including provisions for financial guarantees, performance bonds, or insurance coverage in the contract can protect against financial risks associated with supplier instability.

3.4.6: Inadequate Risk Management: Inadequate risk management during contract management can lead to unforeseen events and their associated impacts on cost, schedule, and quality.

3.4.7: Inefficient Communication and Stakeholder Management: Poor communication and stakeholder management can hinder the successful execution of contracts.

3.4.8: Incapacitated Contract Administration: Incapacitated administration of contracts, including poor documentation, incomplete record-keeping, or insufficient monitoring of contract deliverables, can increase the risk of disputes, non-compliance, and missed opportunities. Implementing robust contract administration processes, including document control, record-keeping, and performance monitoring, can help mitigate these risks. Utilizing contract management software or systems can streamline and enhance the efficiency of contract administration activities.

Lack of a real monitoring system for cost-quality and time perspectives for a contract; significant changes to the terms of the contract due to longer time frames and higher costs for the contracting party; frequent and pointless meetings with the contracting party; accepted changes to the contract specifications that fall short of the minimum requirements outlined in the documentation; and delayed payment of bills and postponements of payments are considered as the major risk of contract management. Some indicators of procurement risk during contract management are given below.

3.4.9: Change of technical specification, scope, and budget:

Procuring entities reveal that, it is frequently necessary to make significant revisions to the technical requirements, bill of quantities, and drawings in the bidding documents created by the detailed design consultants. Significant price, scope, and schedule revisions are done with the requirement of an additional loan. Also, adjustments to detailed designs and additional work were requested for the principal civil works contracts under this project. Moreover, the adoption of non-tender items is compelled to incorporate which induces the necessity of approval from CCGP. Furthermore, the CCGP or CCEA must approve any changes to the contract's work items or timetable. Which incurs time overrun with the risk of price adjustment and rate negotiations.

3.4.10: Limited Authority of Project Manager/ Director:

The project professional reveals the Project Director lacks the power to authorize alterations or adjustments to work items, as well as changes to contract timelines and schedules. These require approval from the CCGP, and this approval process may probably result in delays in project implementation.

3.4.11: Inadequate resources for record keeping: The procuring entity urges that RHD has the limited capacity to store the documentation electronically. The PIU normally preserves the document manually which cannot be treated as classical documents as it would vanish after the project implementation.

3.4.12: Complexity of getting concurrence from respective authority and donor agency:

The timing of agreement from the relevant authorities and the development partners is delayed. There are various areas where the guidelines of the development partners and those of the government disagree. The project authority unveils the grim scenario of getting concurrence for variation order, time extension, etc. would take a long time and trigger the delayed project implementation.

3.4.13: Fiduciary Risk: When the aided money is not approved which can be treated as fiduciary risk. For instance, the procurement of Padma Bridge was tainted in the name of illegal bribery while boarding the design consultant.

3.4.14: Intentional delay by bidder: The interviewed official expressed that; sometimes the winning bidder adopts dilatory measures to get an added advantage regarding price adjustment as the price adjustment becomes effective after one year of notice to commence. As such, after proceeding notice to commence the contractor tends to sit idle for 365 days to get the benefits of price adjustments.

3.4.15: Volatility of Government rule (VAT, TAX, Exchange Rate, etc.) The regulations governing VAT, taxes, and exchange rates in our country are known for their volatility, which poses significant risks. For example, during an interview, an interviewee pointed out that the compensation for land acquisition increased from 1.5 times to 3 times after the approval of the DPP, even though this change was legislated. As a result, the RDPP had to be revised, incurring substantial additional costs and delays to accommodate the increased compensation. Additionally, the fluctuating infrastructure rates are also taken into account when revising the RDPP.

3.4.16: Financial Risk: As per project officials it is not uncommon for awarded contractors that most often, unable to meet the target cost due to price sensitivity, payment delay, inefficient cash flow management, contract disputes, inadequate financial capacity of contractors, inadequate insurance coverage, etc. these can be considered as financial risk, these are aligned with procurement risk.

3.4.17: Market risk: Some suffered contractors expressed concern regarding supply-chain disruption subsequently scarcity of major construction materials owing to Covid-19, the Russia-Ukraine War, etc. Price hikes, discouragement of large LC, disbursement of Dollars has also been experienced during this crucial time which can be exemplified as market risk during contract management which should have been considered during contract management plan.

3.4.18: Substituting products, providing sub-standard work, or delivering services that do not meet contract requirements: An official who was interviewed expressed worry that cartels and syndicates often prevent the materials called for in the contract from being available on the market. This circumstance may weaken the final product's quality and limit the contractor's options. As per the interview, it was found that bitumen production of govt. own agency was halted during peak hours and the privately sourced bitumen could not meet the specification resulting in a time overrun of the project.

3.4.19: The absence of penalty clauses in the contract: Some interviewee shares the experience of intentional missing of penalty clauses which may trigger procurement risk, especially in contract management.

3.4.20: Delay in Payment and Invoice: Sometimes late payments and invoices can cause of time overrun which might be fueled to dispute.

3.4.21: Work Zone Safety Plan: The procuring entity official said that the work zone safety plan is not considered in the official estimate. That's why contractors are normally unwilling to provide safety appliances during the execution of work. For instance, a mega project has experienced a girder falling on a private car during lifting. The interviewee confessed that the contractor awarded the contract almost 40% less despite not of dissent from the technical evaluation committee which ultimately caused the killing of 4 people in a passing car.

3.4.22: Financial turbulence risk: Some interviewee reveals that for the adoption of a new rate contract re-negotiation is very much required which can unleash the financial turbulence risk. Moreover, risk including cost overrun, exchange rate volatility, and funding shortage can also be scripted in a contract management plan with mitigation measures or contingency plans to curb the associated risk.

3.4.23: Claim and Dispute Management: Some procurement officials suggest that claim management is an important part of contract management. The claim of contractors and bidders has to be formulated as per international practices has to be followed.

3.4.24: Natural Disaster: Almost all interviewed officials reveal the truth that contractors are unwilling to pay the insurance coverage of work. They are a little bit agreed for equipment. But insurance coverage of works up to the end of the Defect Notification period is a mandatory requirement that is not being exercised in mega projects of RHD.

3.4.25: Political instability: Political instability triggers the price hike and time overrun. Sometimes sabotage takes place during the execution of work which is also kept in mind during preparing contract management plans and bidding documents.

3.4.26: Price instability: The road construction industry is influenced by fluctuating material prices, labor costs, and currency exchange rates. These factors can impact project budgets and profitability. To manage this risk, consider including clauses in the contract that allow for adjustments in prices due to significant changes in material or labor costs. Regularly monitor market conditions, maintain open communication with suppliers, and incorporate mechanisms to address price fluctuations.

3.4.27: Sustainability Risk: The project management officials underscore sustainable public procurement at least for the mega project in RHD. The government of Bangladesh still working on it but still to be enacted by law. For instance, the giant donor agency ADB already imposed the guideline on Paris Agreement and other international regulations that are to be integrated with public procurement.

3.4.28: Poor performance of contractor: Poor performance of contractors includes Unethical Sourcing, failure to keep within the cost estimate, failure to achieve imposed time frame, Failure to achieve required quality, etc. which can be caused by poor procurement practices.

3.4.29: Risk associated with Price Adjustment: The factor of price adjustment is somewhat very unstable in Bangladesh. The project implementation consultant of a large project expressed the following awful scenario for the same.

- ✓ as per the tender, PA is applicable after one (1) year. So, the Contractors were not serious about work for the 1st year as they would not get PA in the 1st year, which caused a delay in progress.
- ✓ Construction materials cost raised abnormally but corresponding Price Indices did not reflect simultaneously, which has loss to the contractor resulting negative impact on progress.
- ✓ Base Index of Miscellaneous (MI) item was 467.19 in Aug/17 and usually continued up to Feb/23 as 602.58. Suddenly Base Index changed to 108.53. Now, a running project can't follow this lower Base

Index as they used BBS's previous higher Base Index initially. Change in the Base Index creates a great problem to implement the project.

- ✓ Bitumen- BBS (Bangladesh Bureau of Statistics) Base Price Index was followed as per tender. BBS suddenly stopped publishing the Base Price Index of Bitumen and instructed to follow BPC's (Bangladesh Petroleum Corporation) Base Price Index. However, BBS did not accord approval regarding changing the Base Price Index.

3.5: Procurement Risk Concerning PPP and G2G Contract

3.5.1: Procurement Risk Concern of PPP project:

After conducting numerous interviews with various stakeholders involved in Public-Private Partnership (PPP) contracts, it has been observed that the concessioner holds a crucial role. However, a recurring issue arises when the number of bidders is relatively limited. In such cases, the executing agency, like the Road and Highway Department (RHD), struggles to attain a competitive advantage, as the concessioner's quoted price may surpass the estimated cost. It has been identified that flawed need analysis and inadequate feasibility studies significantly contribute to risks throughout the PPP project cycle.

The deficiencies in need assessment and feasibility studies can lead to contractual amendments, elevated costs, and delays. The concessioner may exploit factors such as administrative expenses, design and supervision costs, and anticipated toll revenue, among others. Additionally, the timely handover of land during implementation becomes challenging due to prolonged processes in land acquisition and utility shifting, resulting in claims by the concessioner. Changes in project scope and design can also open avenues for compensation and time-related issues, similar to other contracts.

Various risks associated with PPP contracts include sponsor risk, where the PPP partner might face bankruptcy, seek higher profits, or opt for outdated technology and obsolete equipment. Design risk is another significant concern, as concessioners may adopt an under-design approach for cost-saving, which may not align with projected demand. Furthermore, changes in the legal framework, political climate, and high toll rates may deter road users from utilizing the infrastructure.

Some project officials underscored the risk of force majeure like several waves of COVID-19 pandemics and the Russian invasion of Ukraine the public-private partnership (PPP) arrangements of a project RHD have experienced a lot of challenges throughout project timelines. Disruptions in project financing, construction delays, supply chain interruptions, temporary operational suspensions, heightened costs from health regulation compliance, and reduced revenue due to decreased service demand have prompted stakeholders to formulate strategies for mitigating immediate challenges and minimizing overall damage.

3.5.1: Procurement Risk Concern of G2G project:

The Government of Bangladesh (GoB) is striving to strengthen its robust bilateral relationships with other governments to foster collaborative development and improvement of substantial public infrastructure assets. However, the Government-to-Government (G2G) contract within the Road and Highway Department (RHD) is still facing challenges. There is a pressing need to address numerous risks associated with G2G contracts promptly. Interviewees engaged in the G2G contract at RHD have highlighted concerns, emphasizing that an overly optimistic or biased feasibility study, guided design, or specifications could lead to significant costs for one of the parties involved. Risks also stem from an excessive focus on overpriced tolls, designs, and materials, as well as a heavy reliance on imported materials in G2G contracts. Immediate attention is required to mitigate these potential risks.

CHAPTER – 4

Risk assessment and Control measures:

As was previously underscored, risk events in large projects for the Roads & Highways Department (RHD) have an impact not only on the project itself but also on the agency's daily activities and even the strategic planning process. Anticipating and successfully managing the range and diversity of these risk implications can provide a significant challenge. A workable strategy is to compile knowledge from previous project experiences, from which a synthesized prediction of the possible risk consequences for a given project can be derived. The information gathered from these investigations may be useful in assessing the extent to which risk events have ramifications that go beyond the parameters of the project.

Procurement Risk Assessment and Control Measures:

High (H)	High-unacceptable risk; major disruption likely; different approach required; priority management; attention required.
Medium (M)	Moderate Risk; Some disruption; different approach may be required; additional management attention.
Low (L)	Low/minimum risk; minimum oversight needed to ensure risk remains low

Procurement Risk Assessment and Control Measures during the Pre-Bidding stage:

Sl No.	Substantial Risk	Risk Rating	Proposed Mitigation Response	Control Measures
1	Risk due to Project Readiness	H	Treat	Phase implementation can take place for instance land acquisition, resettlement, and utility shifting can be done through Phase 1 and Contract implementation can be done through subsequent phases.
2	Clear Directives for Selection of Contract Type in PPR	M	Reduce	A clear indication of contract type based on cost and complexity is to be included through the amendment of PPR-2008.
3	Lack of Potential Bidder Development of RHD	H	Reduce	• The early bidder involvement or development of the bidder or knowledge management of the potential bidder is required to curb the risk. • Addressing the lack of potential bidder development within the Roads and Highways Department (RHD) in procurement requires a multifaceted approach aimed at fostering capacity building, enhancing transparency, and promoting collaboration.

4	Faulty Need assessment	H	Treat	- Stakeholder involvement and communication - Selection of qualified consultants and experts to validate the assessment data. - The procurement is to be economically and environmentally justified.
5	Feasibility Study	H	Transfer	- The feasibility study should be based on a thorough investigation and duly submitted to the project authority. - The project authority should conduct an immediate reassessment to identify gaps, errors, and omissions and create a team for assessing risk management. - A parallel feasibility study can be conducted to compare the feasibility study to ensure the reliability of data.
7	Underestimating Cost and time frame and estimate preparation	M	Transfer	- The realistic time frame for contract execution is to ensure to curb the time and cost overrun. - Estimate preparation should be based on an extensive site investigation. - Superficial evaluation of contract value without considering essential components should not be incurred.
8	Insufficient knowledge of the market and identification of funds	Low	Treat	- The market study has to be conducted before finalizing the construction material to avoid supply chain disruption. - Realistic grant of the budget, which is not only based merely on cost records but also covering the existing needs.
9	Guided Specification to correspond to the specific bidder, Choice of the procurement procedure, Deliberate mathematical error with intentional variations measures	H	Avoid	- Clear and detailed specifications without any ambiguity - Third-party review may be required to ensure fairness to a great extent. - Internal control and stakeholder feedback. - The outright procurement process is to be adopted to foster integrity and transparency.
10	Defective Design and Working Methodology	H	Transfer	- The design should be optimized to ensure value for money. - The value engineering is to be encouraged to curb the cost overrun
11	Front loading	H	Treat	Fair evaluation criteria bounded by contract clause regarding front-loading is to be incorporated in the bid document and sincere intervention of the evaluation committee is required to cease front-loading.

12	Data Manipulation	H	Transfer	- The unrealistic data published by the concerned authority must resemble with market price. - The Base price can be fixed after that annual inflation can added to prevent the publication of unrealistic data. - Major construction material data like stone, MS bar, Bitumen, Labor, cement, and oil can be updated regularly by the direct intervention of concerned delegated authorities like the Bangladesh Public Procurement Authority (BPPA).
13	Pre-qualification based on pass/fail criteria and establishing of contract clause	M	Treat	- Qualitative assessment with non-price factor is to be conducted during evaluation. - Assign weights to different criteria based on their importance to the project which ultimately mitigates the impact of a single failure. - Identification of general clauses that are not specifically related to the contracting authority's need and the object of the contract - Imposing excessive penalties.
14	Adoption of e-procurement Process for Large-Value contracts.	M	Treat	- Adoption of e-procurement and its integration with accounting and financial management systems is to be implemented. - Vendor and Stakeholder management in a transparent manner.

Procurement Risk Assessment and Control Measures During Tendering Stage:

SI No.	Substantial Risk	Risk Rating	Proposed Mitigation Response	Control Measures
1	Absence of Public Notice	L	Treat	- Transparency should be maintained based on Stakeholder involvement and communication - An established pre-qualification process is required.
2	Default bid security	L	Treat	The project authority should conduct an immediate reassessment to identify bid security

3	Base price and Price Adjustment formulae, Adoption of a single equation for all components, non-restriction of the weightage on factors used in formulae.	H	Treat	- Detailed documentation based on providing a detailed explanation of how the formulae work and the factors that contribute to adjustments. - A transparent weighting system for the factors used in the formulae is required along with clearly defining the criteria and assigning appropriate weights to each factor. - Engagement of key stakeholders, including suppliers, in the development or revision of base prices and adjustment formulae.
4	Negative Rate Quoting for winning the contract with excessively low price.	H	Treat	- The clear evaluation criteria are to be well formulated against negative rate quoting. - Minimum price threshold along with submission of cost breakdown might be established or standard deviation for each major item can be applied to curb such risks.
5	Unreasonable discount on an overall cost estimate to win the contract.	H	Treat	- Establish an escalation mechanism to address situations where discounts seem unreasonably high. - Set the threshold limit for discount to make it explicit that an offer with an unreasonably high discount may be subject to closer scrutiny.

Procurement Risk and Control Measures during the evaluation and award Stage:

SI No.	Substantial Risk	Risk Rating	Proposed Mitigation Response	Control Measures
1	Procurement risk due to past performance evaluation.	H	Reduce	- To mitigate this risk, it is essential to gather information from multiple and diverse sources, such as customer references, industry databases, and third-party reports. Verification and validation of the provided information can help ensure its accuracy and reliability. - Overreliance on past performance cannot be the sole determining factor, that's why a holistic approach regarding evaluation criteria is to be refurbished.
2	Price Capping	L	Treat	Price capping should be avoided as it poses a significant risk of leaking

				information about the official cost estimate. • Integrate a provision for identifying abnormally low bids through a formula-based mechanism. • Raise the performance guarantee utilizing a formula-based approach. • Implementing milestone-dependent liquidated damages to incentivize the prompt completion of works contracts. • Improve contract administration by implementing electronic contract management within the e-GP system, incorporating geo-tagging features. • Embrace contracts structured on output and performance when applicable.
3	GRS with losing contractor or limited Scope to Negotiation formally	M	Reduce	• The culture of feedback with losing contractors is to be revamped. • Negotiation with bidder in public procurement is to be encouraged transparently and formally.
4	Connivance with the immediate lowest bidder	M	Treat	• If the procuring entity guesses that there is a chance of connivance, the retender can be floated immediately to ensure the value for money.
5	Unduly influence the decision-making process of the ODA agency	H	Treat	• The specification for consultancy service and work should be formulated in such a way that provides an outline of the expectations regarding ethical conduct, independence, and the avoidance of undue influence. • Conditional aid must be avoided to curb these risks.
6	Discrepancies of procurement guidelines between RHD and Donor agency.	M	Reduce	• The Public Procurement Rules, PPR-2008 should be amended as a donor agency for implementing aided projects. • Non-price factors should also be given priority which might align with the sustainable public procurement process.
7	Overly less quoting, unrealistic discount offer	H	Reduce	• Create a cost estimation module within the system that enables users to estimate costs by utilizing the average unit prices provided in the e-GP platform. • Average bid price and standard deviation formulae can be adopted. • The bid evaluation report must encompass any objections raised by the bidder

				concerning the borrower's estimates and assumptions related to resource items and their respective pricing. The report should also provide a valid justification for the borrower's decision to reject the bidder's objections. • A Hefty amount of performance security can be applied in case of a lower bid price.
8	Absence of third-party monitoring system	L	Reduce	• A third-party monitoring system is very much required as it can assist in minimizing the risk of conflicts of interest by conducting an impartial review and evaluation of relationships among stakeholders engaged in the procurement process.
9	Force retendering, litigation, injunction	L	Treat	• The tendering process should not be influenced by high-stakes stakeholders. • The undue benefit embedded with the retendering process must be scrutinized properly.
10	Approval Delay by Department/Donor Agency/ Ministry/CCGP and unreasonable delays in evaluation bids and selecting winner bidders	M	Reduce	• Adoption of e-procurement and its integration with accounting and financial management systems is to be implemented. • Raising the procurement approval thresholds at the agency and ministry levels while implementing improved accountability mechanisms. • Integrate the assignment of the suitable approving authority into the e-GP system, preventing forwarding to a higher authority unless proper justification is provided. • Monitor the specified procurement timeline outlined in PPR-2008.
11	Absence of Advance Procurement Guidelines		Treat	• Include advance procurement guidelines in procurement legislation to reduce time and cost overrun.

Procurement Risk assessment and Control Measures during contract Management:

SI No.	Substantial Risk	Risk Rating	Proposed Mitigation Response	Control Measures
1	Inadequacy of knowledge regarding Contract Management Plan (CMP)	H	Treat	Develop an elaborate contract management plan that delineates the complete lifecycle of the procurement process which encompasses crucial elements like defining roles and responsibilities, outlining communication strategies, specifying risk management procedures, and establishing performance metrics.
2	Contractual Non-Compliance; Inadequate Supplier Performance.	L	Treat	- Mitigation measures include clearly defining contract requirements, monitoring performance against contractual obligations, and implementing effective contract management processes. - Setting clear performance metrics and key performance indicators (KPIs) in the contract, conducting regular performance reviews, and addressing any performance issues through contractual remedies, such as penalties, performance guarantees, or termination clauses. - Regular communication and proactive issue resolution can help address any deviations from the contract.
3	Scope Creep; Change of technical specification, scope, and budget	H	Reduce	To mitigate this risk, establish a formal change control process that evaluates proposed changes, assesses their impact on cost and schedule, and obtains appropriate approvals before implementing them. Documenting all changes and their associated costs helps ensure transparency and accountability.
4	Supplier Insolvency or Financial Instability, financial risk	M	Treat	Conducting financial due diligence on suppliers before awarding contracts can help assess their financial stability. Including provisions for financial guarantees, performance bonds, or insurance coverage in the contract can protect against financial risks associated with supplier instability.
5	Inadequate Risk Management issue	M	Reduce	Establishing a robust risk management plan that identifies potential risks, assesses their likelihood and impact, and

				implements appropriate risk mitigation strategies. • Regularly review and update the risk management plan to address evolving risks throughout the contract duration.
6	Inefficient Communication and Stakeholder Management	M	Reduce	• Effective communication channels, regular progress meetings, and clear lines of responsibility and accountability can help ensure that all stakeholders are informed and engaged throughout the contract management process.
7	Incapacitated Contract Administration; Inadequate resources for record-keeping	M	Reduce	• Implementing robust contract administration processes, including document control, record-keeping, and performance monitoring, can help mitigate these risks. • Utilizing contract management software or systems can streamline and enhance the efficiency of contract administration activities.
8	Limited Authority of Project Manager/ Director	M	Treat	• Granting increased authority to Project Managers or Directors, simplifying bureaucratic processes, and improving delegation mechanisms can enhance the effectiveness and efficiency of development project management within RHD.
9	Complexity of getting concurrence from respective authority and donor agency; Fiduciary Risk	L	Reduce	• A reasonable timeframe should be maintained for getting concurrences on different contractual issues like Variation and extension of time.
10	Intentional delay by the contractor to take advantage of price adjustment.	L	Treat	• Adoption strategy of providing price adjustment from day one of the contract implementation period.
11	Volatility of Government rule (VAT, TAX, Exchange Rate, etc.)	M	Retain	• Risks related to the exchange rate, VAT, Tax, and other adjustments due to changes in legislation, etc. are to be documented in the contract agreement.
12	Market risk; price sensitivity, and financial turbulence risk; Natural Disaster, political unrest	M	Retain	• Substantial accumulation of material requirement planning is to be implemented strictly to combat the supply chain disruption associated with political unrest, price hikes, pandemics, war, etc. • A contingency plan with physical and price contingency is to be considered justifiably.

13	Product substitution or sub-standard work or service not meeting contract requirements, the poor performance of the contractor.	M	Retain	- The product substitution is to be adopted by engaging internal and external stakeholders based on assessing the potential risk and responsibility. - Clear-cut clauses for termination due to poor performance of contractors are to be exercised.
14	Work zone safety risk	M	Reduce	- Sufficient funds with contractual obligations are to be formulated in bidding documents and a contract management plan is required to curb the risks associated with work zone safety like Safety Training and Awareness Programs, PPE, traffic control measures, regular safety inspection and audit, emergency response mechanisms, etc. - The process of debarment clause is to be incorporated and implemented in case of any violation.
15	Sustainability risk	H	Reduce	- Sustainability integration in the public procurement process is to be formulated and implemented based on amending the PPR-2008 rules. - Incorporating sustainability criteria into the tendering system is essential. Individual procurement professionals must possess the knowledge and awareness to make sustainable procurement choices actively.

Procurement Risk assessment and Mitigations measures concerning PPP and G2G Contract in RHD.

SI No.	Substantial Risk	Risk Rating	Proposed Mitigation Response	Control Measures
1	<u>Sponsor Risk</u> - Bankrupt or insolvency of counterparty - Obsolete technology or overpricing toll rates etc.	H	Treat	- Financial due diligence with proper benchmarking is required. - The incentive structures like penalties, bonuses, and liquidity damage must be well defined in the contract document. - Materials and technology are to conform to contractual clauses.

2	Feasibility Study and Need Analysis	L	Treat	- The need analysis and scope of work must be well defined and sustainable so that chances of scope changes will be minimal which ultimately curbs the ground of various claims by the concessioners. - An alternative feasibility study may be performed for comparative assessment. - Stakeholder engagement and workshop can be arranged to fix the need analysis and feasibility study based on the lessons learned from another project.
3	Design and Engineering Risk	H	Treat	- Soil investigation, Traffic demand analysis, and structural Design of various components must be pragmatic and sustainable to avoid contractual risk. - The safety concerns after implementing the project should also be assessed during the design stage.
4	Delays in approval and contract management	H	Reduce	- Approval delays like Environmental clearance, contract approval, contract amendment, and statutory approval are to be avoided - Contractors' delays and failures are to be solved based on the imposed clause of the contract.
5	<u>User concern:</u> - Not receiving proper and promised services - High user fee etc,	H	treat	The output should be user-friendly with the promised user fee to be maintained.
6	Changes in the legal framework and political climate		Retain	- Thorough due diligence with flexible contractual agreements in response to changes in the legal framework and political climate is required. - A risk allocation mechanism with insurance coverage along with a contingency plan may be adopted to curb this risk.

7	The risk associated with force Majeure like COVID-19, Wars, etc.	M	Retain	• The definition of force majeure events and their mitigation measures should be well documented as contractual obligations. • Evaluate the feasibility of including pandemic or war-related coverage in the insurance policy to provide financial protection in case of unforeseen events.
---	--	---	--------	--

Identified Risk and Mitigation Measures during Contract Management of SASEC Road Connectivity Project-2: Construction of 4 Lane Highways under RHD:

The SASEC Road Connectivity Project-2, a major initiative undertaken by the RHD, is an ongoing endeavor focused on the construction of a 190 KM six-lane highway. This extensive project includes the development of numerous infrastructure components such as bridges, culverts, flyovers, underpasses, and a visually striking interchange at Hatikamrul, Shirajgonj. However, the project has encountered notable challenges in procurement and contract management, prompting a thorough examination of identified risks and corresponding mitigation measures. This report highlights the intricacies of procurement risks throughout the project cycles, with a specific focus on the Construction of 4 Lane Highways under RHD.

Identified Risks	Likelihood ¹	Impact ²	Risk ³	Proposed Mitigation/Response ⁴	Detailed Actions
Project Readiness: Delay due to access to the Site by the contractor (e.g., delay due to land acquisition, relocation of public utility shifting, etc.)	5	5	25	Reduce	• Coordination with the deputy commissioner's office to promote land acquisition and utility shifting. • Inter-ministry and inter-organization coordination
Delay due to Design and Scope change	5	5	25	Accept	• Early selection of Design review consultant. The change of scope has to be acknowledged and agreed by both parties as soon as possible • The initiation of the Variation proposal and analysis of the entitle matrix for the time extension.
Supply Chain disruption: Supply chain disruption due to the Russia-Ukraine War, and COVID-19 changes in law and Tax, the Change of Rate schedule is not regular. Scarcity of major construction Materials like stone and Bitumen etc.	3	5	15	Accept, Transfer	• Collection and accumulation of required quantity to make buffer stock. • Change of rate schedule should be updated regularly. • Innovation of Alternative material through Value Engineering.
Cash flow problem of contractor	4	5	20	Avoid	• The cash flow problem of the contractor is to be monitored. The loan and repayment amount are also to be monitored in case of Bank
Litigation caused by land aqutation and resettlement,	3	5	15	Avoid	• Litigation must be avoided based on stakeholder and community engagement. • Grievance and redress mechanism • Public hearing etc.

Table 3: Identified Risk and Mitigation Measures during Contract Management of SASEC Road Connectivity Project-2: Construction of 4 Lane Highways under RHD.

¹ A numerical representation indicating the likelihood of the risk occurring

² A numerical value indicating the relative severity of the impact if the risk occurs.

³ The level of risk is determined by multiplying the likelihood and impact, expressed as $RL = L * I$.

⁴ The potential strategies to respond to risks include Avoidance, Acceptance, Reduction, and Transfer for negative risks (threats), and Exploitation, Acceptance, Enhancement, and Sharing for positive risks (opportunities).

CHAPTER – 5

Recommendations and Conclusions:

✓ **Indicator: Legal, Regulatory, and policy framework:**

SL	Recommendations	Time frame	Changes Required	Responsibility
1	(+/-)10% price capping should be discarded in NCT	Short term	PPA/PPR-2008	GoB, CPTU and BPPA
2	Launch a program focused on the growth and progress of suppliers and contractors	Medium Term		CPTU, BPPA
3	Simplify the emergency procurement provision by fully entrusting procurement responsibilities to implementing agencies, allowing them to handle tasks such as selecting procurement methods, approving bid evaluation reports, and managing contracts.	Medium Term	PPA-2006/PPR-2008	GoB
4	Quality Based selection method (QBS) is to be incorporated in PPA-2006 and PPR-2008	Medium Term	PPA-2006/PPR-2008	GoB, BPPA, CPTU
5	Establish a separate debarment procedure that operates independently, and includes a temporary suspension provision by the HOPE.	Medium Term	PPA-2006/PPR-2008	GoB, BPPA, CPTU
6	Develop a policy document outlining a comprehensive implementation plan for sustainable procurement, which encompasses the following key elements: • Incorporate sustainable procurement provisions into the Public Procurement Act of 2006 (PPA 2006) and the Public Procurement Rules of 2008 (PPR 2008). • Introduce the evaluation of bids based on the "most advantageous bid" rather than the current "lowest evaluated bid," facilitating preferential treatment for high-quality goods/works, including energy-efficient/low carbon-emitting products and sustainable goods. • Revise the relevant standard tender documents to include provisions for sustainable procurement, emphasizing the importance of maintaining environmental and social safeguards during construction. • Clear indication of contract type in PPR-2008	Long Term	PPA-2006/PPR-2008	GoB, BPPA, CPTU

✓ **Indicator: Institutional Framework and Management Capacity**

SL	Recommendations	Time frame	Changes Required	Responsibility
1	Link e-GP with iBAS++ to enable - instantaneous recording of budget utilization, procurement commitment, and procurement expenditure. - monitoring and tracking of payments in real-time.	Medium Term		MoF, CPTU, and BPPA
2	Build the internal institutional and technical capabilities of BPPA by nurturing a team of qualified, experienced, and sufficiently trained officials, gradually reducing reliance on external support	Medium Term		GoB and IMED
3	Guidelines for advance procurement are to be included in procurement legislation to ensure VfM and timely completion of the contract.	Medium Term	PPA-2006/PPR-2008	MoF, BPPA
4	Raising the procurement approval thresholds at the agency and ministry levels, accompanied by strengthened accountability mechanisms.	Short term		GoB, MoF
5	Implement organization or ministry-level framework agreements, accompanied by the development of an e-GP module specifically designed for managing framework agreements.	Medium Term	e-GP Guidelines	BPPA, CPTU
6	To evaluate the performance of the agency and ministry procurement efficiency can be deemed as one of the key performance indicators.	Long Term		Cabinet Division
7	Project Readiness	Medium Term	DPP guidelines	Planning Commission

✓ **Indicator: Procurement operation and practices:**

SL	Recommendations	Time frame	Changes Required	Responsibility
1	Integrate e-CMS and e-GP into contract management performance and initiate a capacity development program that includes specialized training in works contract management for both contract management and e-CMS.	Short Term		CPTU
2	Incorporating legal provisions involving the utilizing spend analysis, need analysis, and market analysis to ascertain the suitable procurement size and method, and also a legal mandate for obligatory market analysis in high-value and complex procurements	Medium Term		BPPA

3	Formulation of Bangladesh Government tenderers' forum to provide feedback on legal and other compliance like amendment of procurement rules & laws, etc.	Medium Term		BPPA
4	Database of contractors which enables the contracts entered by the contractor and the corresponding payment information obtained from the e-payment system, among other relevant data.	Short-Term		BPPA
5	Creating an updated module within the contract management system to issue unique identification number-based work experience/performance certificates to contractors, suppliers, and consultants.	Short-Term		BBPA
6	Tender Evaluation Forms: Enhance the tender evaluation form to include the following functionalities - (i) retrieve data from the tender document, such as qualification criteria; (ii) extract information from the submitted tender forms; (iii) gather data from experience certificates using unique identification numbers; (iv) validate information through the contractors' database; (v) verify bidders' debarment status; and (vi) introduce a dropdown menu for recording reasons for tenderer non-responsiveness.	Medium-Term		CPTU
7	Integrate the functionality of monitoring contract implementation through geo-tagged images into the e-CM. Create corresponding software for smartphones to facilitate this monitoring capability	Medium-Term		CPTU, BPPA
8	Enhance the current complaint management module to manage and monitor procurement-related complaints, generating consolidated reports for the procuring entity, project, and agency	Medium Term		CPTU, BPPA

✓ **Indicator: Accountability, Transparency and Integrity**

SL	Recommendations	Time frame	Changes Required	Responsibility
1	Conduct specialized procurement audits or procurement performance audits, particularly in large agencies, guided by periodic risk assessments	Long-Term		OCAG
2	Expand training for auditors in procurement, ensuring the inclusion of relevant course content.	Long-Term		OCAG, CPTU, BPPA

3	Enforce the requirement of procurement post-reviews through enhanced monitoring and maintain an online database for review panel cases, including implementation status and decisions	Long Term		BPPA, CPTU
4	Implement a cooling-off period for significant/high-value international procurements	Long-Term	PPA/PPR	BPPA, CPTU
5	Incorporate a thorough section on the integrity and ethical dimensions of procurement, encompassing the identification of indicators for fraud and corruption, within the standard training materials of CPTU.	Medium-Term		BPPA, CPTU
6	Simplify the 4-tier complaint handling process into a more efficient 2-tier process, involving reviews only at the procuring entity (PE) and review panel levels.	Medium-Term	PPA/PPR	BPPA, CPTU

Conclusions:

It is widely recognized that public procurement irrespective of both developed and developing nations, presents a high susceptibility to several risks within public sector management, particularly in the context of procurement risks. Policymakers, project managers, procurement professionals, and academics now harbor minimal doubt regarding the pivotal role of public procurement in facilitating project management across various economic environments, but they also acknowledge the impending procurement risks. Procurement risk management is proven to be a persistent challenge in public procurement management in Bangladesh, often reaching a systematic level where vested interests within the executive agency (RHD) exacerbate the procurement risk issue. This shift of decision-making and service delivery from those in need to those with financial means goes against basic governance principles and raises the risks linked to procurement. Considering the crucial role of effective public governance in Bangladesh's social and economic progress, it becomes essential to establish clear and responsible public procurement procedures to address procurement risks.

The thorough evaluation of procurement risks associated with high-value contracts in the extensive projects managed by the Roads and Highways Department (RHD) in Bangladesh has revealed a nuanced scenario influenced by regulatory frameworks, financial speculation, and project intricacies. The complex situations highlighted emphasize a crucial need for the creation and execution of strong strategies to effectively manage risks, along with the establishment of a resilient procurement framework. As Bangladesh progresses towards undertaking advanced large-value contracts, it becomes more apparent that recognizing and actively dealing with these risks are essential elements for ensuring transparency, efficiency, and the successful implementation of large-scale projects. Despite Bangladesh enacting a modern procurement rule and forming BPPA, this study contends that the crucial aspects of efficiency, transparency, VfM, and accountability in public procurement continue to be overlooked in practice, thereby contributing to heightened procurement risks. Undeniably, public procurement policies and systems are inherently complex, shaped by the specific needs and dynamics of each society, and understanding and managing procurement risks are integral to the process.

Despite certain global standards, the procurement policies of any given country often change, emphasizing the need for ongoing efforts to align these policies with principles of transparency and accountability, thus mitigating procurement risks effectively. Moreover, the recognition of these procurement risks necessitates a collaborative effort among various stakeholders, including government entities, contractors, and oversight agencies. The key is to encourage a shared dedication to improving procurement practices by adopting technological innovations and nurturing a culture centered on accountability. Through these collaborative efforts, Bangladesh can not only reduce the inherent risks linked to procurement but also facilitate sustainable development. By creating an environment that supports the successful and robust execution of large-scale contracts, Bangladesh can establish itself as an exemplar of effective procurement practices and make a substantial contribution to its broader development objectives.

References:

1. World Bank. (2020). *Assessment of Bangladesh Public Procurement System* (Report No. AUS0001404). Retrieved from <https://documents1.worldbank.org/curated/en/950811591599744079/pdf/Assessment-of-Bangladesh-Public-Procurement-System.pdf>
2. World Bank. (2002). *Bangladesh Country Procurement Assessment Report* (Report No. 24144;). Retrieved from <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/812041468743656486/bangladesh-country-procurement-assessment-report>
3. Asian Development Bank. (2019). *Project Procurement Risk Assessment (Project No. 40540-016)*. Retrieved from <https://www.adb.org/sites/default/files/linked-documents/40540-018-sd-05.pdf>
4. Hasan, M., & Haq, E. (2017). *Public Procurement in Roads and Highways Department: A Tussle of Transparency and Accountability*. Retrieved From [Public Procurement in Bangladesh Roads Highways: Tussle of Transparency Accountability \(PDF\) \(Original work published 2017\)](#)
5. Sustainable Public Procurement (SPP) policy of Bangladesh. Retrieved from https://cptu.gov.bd/upload/%20publication/Updated_SPP_Policy_Revised_Draft.docx.
6. Islam, S., Muhammad & Ahmed, Yeasin. (2013). Risk Assessment of Construction Projects in Bangladesh. Retrieved From https://www.researchgate.net/publication/262731678_Risk_Assessment_of_Construction_Projects_in_Bangladesh
7. Rahman, M.A. (2015). Adoption of e-procurement in foreign-aided projects in Bangladesh. Retrieved from <https://dspace.bracu.ac.bd/xmlui/handle/10361/4907>
8. Asian Development Bank. (2021). Contract Management Guidance Note (Publication Stock No. TIM210515-2). Retrieved from <http://dx.doi.org/10.22617/TIM210515-2>
9. OCED (2016). Preventing Corruption in Public Procurement. Retrieved From <https://www.oecd.org/gov/ethics/Corruption-Public-Procurement-Brochure.pdf>
10. Transparency International (2022). Foreign bidders in public procurement: corruption risks and mitigation strategies. Retrieved From https://knowledgehub.transparency.org/assets/uploads/kproducts/Corruption-risks-related-to-foreign-bidders-in-public-procurement_final.pdf
11. Siddique, I.G. (2018). Works Contract Management Practice in the Public Sector in Bangladesh: A Case Study of LGED. Retrieved From <https://dspace.bracu.ac.bd/xmlui/handle/10361/12371>

12. Tawalare, Abhay. (2019). Identification of Risks for Indian Highway Construction. IOP Conference Series: Materials Science and Engineering. Retrieved From https://www.researchgate.net/publication/331308694_Identification_of_Risks_for_Indian_Highway_Construction
13. Mahmood, Shakeel. (2011). Public procurement and corruption in Bangladesh confronting the challenges and opportunities. Journal of public administration and policy research. 2. 103-111. Retrieved From <https://www.internationalscholarsjournals.com/articles/public-procurement-and-corruption-in-bangladesh-confronting-the-challenges-and-opportunities.pdf>
14. Asian Development Bank. (2021). Risk Assessment and Mitigation Plan (Project No. 44316-012) Retrieved from <https://www.adb.org/sites/default/files/linked-documents/42180-013-ra.pdf>
15. OECD (2019), “Managing risks in public procurement”, in Government at a Glance 2019, OECD Publishing, Paris. DOI: <https://doi.org/10.1787/8f1daa80-en>
16. Guha. R., (2018). Managing Risk in Public Procurement in Bangladesh. A Case on Public Works Department. Retrieved from https://dspace.bracu.ac.bd/xmlui/bitstream/handle/10361/11553/16382016_BIGD.pdf?sequence=1
17. T.C. Moema., (2019). Public sector supply chain risk factors in Gauteng Provincial Treasury. Retrieved From <https://ujcontent.uj.ac.za/esploro/outputs/9910735107691>
18. Asian Development Bank. (2021). Procurement Risk Framework: Guidance Note on Procurement (Publication Stock No. TIM210527-2). Retrieved from <https://dx.doi.org/10.22617/TIM210527-2>
19. EA Mantzaris., (2014). Public procurement, tendering, and corruption: Realities, challenges, and tangible solutions. Retrieved From https://repository.up.ac.za/bitstream/handle/2263/58120/Mantzaris_Public_2014.pdf?sequence=1
20. Manea, Ioana. (2010). Risk Management in Public Procurement Process. Studies and Scientific Researches - Economic Edition. 10.29358/sceco. v0i15.145. Retrieved From https://www.researchgate.net/publication/46534068_Risk_Management_in_Public_Procurement_Process
21. Baldry. D., (1997). The Evaluation of Risk Management in Public Sector Capital Project. Retrieved From [https://doi.org/10.1016/S0263-7863\(97\)00015-X](https://doi.org/10.1016/S0263-7863(97)00015-X)

APPENDIX-1: List of Large Projects of RHD, Bangladesh:

Sl No.	Name of Project	Implementation Period	DPP Cost Crore BDT.
1	Upgradation of the Pachdona-Danga-Ghorashal District Highway to a 4-lane with separate service lanes on both sides (including Danga Bazar-Islampur Link) (1st Revised)	01/07/2017-30/06/2024	1489.15
2	Upgradation of Feni-Noakhali National Highway to a 4-lane from Begumganj to Sonapur (1st Revised)	01/07/2017-30/06/2024	1485.38
3	Construction of Boundary Roads (Rangamati, Khagrachhari, and Bandarban Hill Districts) Phase-1	01/01/2018-30/06/2024	3860.82
4	Acquisition of Land for the Upgradation of Faridpur-Bhanga-Barisal-Patuakhali-Kuakata National Highway to 4 lanes	01/07/2018-30/06/2024	1867.86
5	Land Acquisition and Utility Relocation Project: Support to Dhaka-Sylhet-Tamabil National Highway 4-lane Upgradation and construction of separate service lanes on both sides (1st Revised)	01/09/2018-31/12/2023	7975.31
6	Establishment of Excel Load Control Center at the Roads and Highways Department	01/07/2019-30/06/2024	1630.28
7	Improvement of Approach Roads (Padma Bridge) Sharifpur-Jajira-Naodoba	01/01/2020-30/06/2024	1682.55
8	Replacement of Bailey and RCC Bridges at Critical and Vital Points (Dhaka Zone)	01/10/2020-30/06/2024	1190.78
9	Support Project for the Upgradation of Hatirjheel-Rampura Setu-Banshri-Shekhertek-Amulia-Demra National Highway to 4 lanes under Public Private Partnership (PPP) basis	01/01/2020-31/12/2024	1209.60
10	Greater Dhaka Sustainable Urban Transport Project (BRT Gazipur-Airport) (2nd Revised)	01/12/2012-31/12/2024	4268.32
11	SASEC Highway Connectivity Project-II: Elenga-Hatikamrul-Rangpur National Highway Upgradation (1st Revised)	01/09/2016-31/12/2024	18679.62
12	Cross-Border Road Network Improvement Project (Bangladesh) (1st Revised) (Special Amendment)	01/05/2016-31/12/2024	3745.51
13	Western Bangladesh Bridge Improvement Project (1st Revised)	01/10/2015-31/10/2024	2911.75
14	Upgradation of Ashuganj River Port-Sarail-Dharkhar-Akhaoura National Highway to 4 lanes (1st Revised)	01/04/2017-30/06/2025	5791.60
15	Upgradation of Sylhet-Tamabil National Highway to a 4-lane with separate SMVT lanes	01/09/2020-30/06/2025	3583.25
16	We-CARE Phase-1: Jhenaidah-Jashore Highway (N-7) Development	01/01/2021-30/06/2026	4187.70
17	SASEC Dhaka-Sylhet Corridor Highway Development	01/01/2021-31/12/2026	16918.60
18	Upgradation of Madhupur-Mymensingh National Highway (N-401) to appropriate standards and quality	(01/07/2021-30/06/2024)	1107.17

Sl No.	Name of Project	Implementation Period	DPP Cost Crore BDT.
19	Upgradation of Madhupur-Mymensingh National Highway (N-401) to appropriate standards and quality	01/07/2021-30/06/2024	1107.17
20	Upgradation of Tangail-Delduar-Lauhati-Saturia-Kowalipara-Kalampur Regional Highway to appropriate standards and quality	01/01/2022-30/06/2024	1435.89
21	Construction of Nolua-Baherchar Bridge over the Pandab-Payra River from Barishal (Dinerpar) to Laxmipasha-Dumki Road (27th km to 32nd km)	01/07/2021-31/12/2025	1023.50
22	Construction of Keoatkhali Bridge in Mymensingh	01/07/2021-30/06/2025	3263.63
23	Upgradation of Aricha (Barangail)-Ghior-Daulatpur-Nagarpur-Tangail Regional Highway (AR-506) to appropriate standards and quality	01/01/2022-31/12/2025	1635.10
24	Improvement and Development of Sirajganj-Kazipur-Dhunat-Sherpur (Z-5401) and Sirajganj (Baghbat)-Dhunat (Sonamukhi) (Z-5405) Highways to appropriate standards and quality	01/10/2019-31/12/2023	1028.62
25	Construction of Matarbari Coal-based Power Plant (Phase-II)	01/07/2015-30/06/2024	1024.79
26	Improvement Project of Important Regional Highways in Rangpur Zone (2nd Revised)	01/03/2017-30/06/2024	1021.40
27	Rehabilitation of Baraiyarhat-Heyakore-Ramgar Road (1st Revised)	01/07/2020-31/12/2024	1107.12
28	Improvement of 4 District and 3 Regional Highways under Comilla Road Division to appropriate standards and quality	01/01/2023-30/06/2026	1023.52
29	Improvement and Development of the Regional Highway from Bhulta-Araihazar-Banchharampur-Nabinagar-Shibpur-Radhika (AR-203, from Koidandhi to Banchharampur-Nabinagar) and Sarail-Nasirnagar-Lakhai Regional Highway (AR-220, from Sarail to Bolbhadra Bridge)	01/07/2023-30/06/2026	1,532.22
30	Sylhet-Charkhai-Sheola Highway Development Project	01/01/2023-31/12/2027	4,257.08
31	Bangladesh Road Safety Project	01/05/2023-30/06/2028	4,988.14
32	Matarbari Port Development Project	01/01/2020-31/12/2026	17,777.16
33	Improvement of 3 Regional and 3 District Highways under Naogaon Road Division to Appropriate Quality and Standards	01/04/2022-31/12/2025	1,216.38
34	Development of Sherpur (Kanasakhola)-Bhimganj-Narayankhola-Rambhadrapur-Paranagaj-Maymansingh (Rahmatpur) Road	01/05/2022-30/06/2025	1,842.26
35	Upgrading of Cox's Bazar-Teknaf Marine Drive (from 1.60 km to 32.00 km) Road Improvement	01/07/2022-30/06/2025	1,092.35
36	Improvement of Cumilla (Moinamati)-Brahmanbaria (Dhorakhar) National Highway (N-102) to Four-Lane National Highway	01/07/2022-30/06/2026	7,188.66

Source: Monitoring Circle, RHD