



**STUDY OF THE PROBLEMS OF CONSTRUCTION
CONDITIONS OF CONTRACT FOR PUBLIC WORKS
IN ETHIOPIA**

BY

KASIEM SEID

**A Thesis Submitted to the School of Graduate Studies,
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Preface

This final thesis has been written to fulfill the partial requirement for the award of Master of Science (MSc) Degree in Civil Engineering, Construction Technology and Management at Addis Ababa University, Addis Ababa.

The thesis report consists of six chapters and one appendix. Figures and Tables are referred to with numbers under each chapter. For example, Fig. 2.3 refers to a third figure in chapter two. The referencing system is based on the Harvard Method where references are numbered and placed in square parenthesis. Abbreviations used through out the thesis report have been shown in the next pages.

Finally it was attempted to make use of gender free third person singulars in this thesis and as an alternative it was tried to use he/she or she/he when referring to a contractor, engineer, or employer as per my advisor's impressive recommendation. However, it was found difficult to avoid the use of third person singulars and in order to present the thesis in a simpler language, the third person singular "he" has been used in some parts of the thesis and readers are noted that words indicating one gender include all genders.

Similarly, as defined in the literature review of this thesis, the "engineer" is a firm or an entity engaged for supervision and contract administration of public works with predetermined roles and obligations set in the contract agreement between the employer and the contractor. Hence, the word "engineer" stands for all related professional teams for supervision and contract administration services of public works.

Acknowledgement

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List of Figures

Fig. 1.1 – Flow Chart of the Thesis

Fig. 2.1 – Factors Contributing to the Inappropriateness of Construction Contract Documents in Developing Countries

Fig. 2.2 – Typical Sequence of Principal Events during Contracts for Construction Works

Fig. 2.3 – Major Roles of the three Primary Stakeholders under Design-Bid-Build Contract Delivery System

Fig. 2.4 – Relationship between Primary Stakeholders under a Design-Bid-Build Contract Delivery System with an Employer-Contractor Contract Agreement

Fig. 2.5 – Stages in the Formation of a Typical Construction Contract for Design-Bid-Build Contract Delivery System

Fig. 3.1 – Construction Risk Categorization Framework

Fig. 5.1 – Distribution of Respondents by Organization for Questionnaire Survey

Fig. 5.2 - Frequency and Amount of Interim Payment Certificates for Local Public Projects

Fig. 5.3 - Frequency and Amount of Interim Payment Certificate for International Public Project

Fig. 5.4 – Period of Time for Interim Payment Process (Combined Response)

Fig. 5.5 – Typical Sequence of Payment Events

List of Tables

Table 5.1 – Response Rate by Organization

Table 5.2 – Distribution of Respondents by Years of Experience

Table 5.3 – Sample of Data Summary Sheet and Codification

Table 5.4 – Capacity of Domestic Contractors in undertaking Public Construction Projects

Table 5.5 – Suggestions for handling of Contractual Matters on behalf of the Employer

Table 5.6 – Respondents' Perception to Team work and Cooperation in Public Works

Table 5.7 – Is Contract Administration in Public Works according to the Contract Provisions?

Table 5.8 – Assistance to Domestic Contractors

Table 5.9 – Minimum Net Amount of Interim Payment Certificate Requirement

Table 5.10 – Purpose of Retention Money as perceived by the Respondents

Table 5.11 – Amount or Percentage of Retention Money from Interim Payment Certificates

Table 5.12 – Amount of Retention Money in obligating Correction of Defects

Table 5.13 – Value of Materials on Site for incorporation into Interim Payment Certificates

Table 5.14 – Should Retention Money be deducted from Materials on Site?

Table 5.15 – Practical Period of Time for Payment Process

Table 5.16 – Amount of Liquidated Damages

Table 5.17 – Maximum Limit of (Cumulative) Liquidated Damages

Table 5.18 – Reason for no Liquidated Damages Claim in Public Construction Works

Table 5.19 – If the amount of liquidated damages is reduced, would employers be motivated to deduct their reasonable liquidated damages?

Table 5.20 – Percentage Limit for Contract Price Adjustment

Table 5.21 – Perception of Respondents on the Fairness and Realistic Allocation of Risks in Public Work Contracts

Table 5.22 – Who Bears the Ultimate Consequences of Unbalanced Risk Allocation?

Table 5.23 – What would Contractors do if a Damaging Risk Materializes?

Table 5.24 – Procedure for claims in MoWUD 1994 Conditions of Contract

Table 5.25 – Practice of Claim Submission and Evaluation in Public Work Contracts

Table 5.26 – Is ADR Provision Suitable for dispute settlement in Public Works?

Abbreviations

ADR	Alternative Dispute Resolution
AECE	Association of Ethiopian Civil Engineers
BaTCoDA	Building and Transport Construction Design Authority
BoQ	Bill of Quantities
DBB	Design-Bid-Build
DLP	Defects Liability Period (maintenance period)
DRA	Dispute Resolution Advisor
EOT	Extension of Time
ETB	Ethiopian Birr
ERA	Ethiopian Roads Authority
Eth. Cal.	Ethiopian Calendar
FDRE	Federal Democratic Republic of Ethiopia
FIDIC	Federation Internationale des Ingenieurs – Conseils, a French acronym with its English equivalent of “International Federation of Consulting Engineers”
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GTZ-IS	Gesellschaft Fur Technische Zusammenarbeit International Service, or Agency for Technical Cooperation (German)
ILO	International Labour Organization
MoE	Ministry of Education
MoFED	Ministry of Finance and Economic Development
MoI	Ministry of Infrastructure
MoWUD	Ministry of Works and Urban Development
US\$	Dollar of the United States of America
PPA	Public Procurement Agency
SBD	Standard Bidding Document
SMEC	Snow Mountains Engineering Consultant

Abstract

Construction industry in developing countries is reported to be insufficiently developed to meet the national development objectives and demands. Literatures show that construction projects are often subjected to long delays and increased costs. In these countries, the public sector is the main employer of the sector and most formally constituted contractors and consultants rely on the public sector for work. From the many other inter-related problems, use of inappropriate and inequitable contract conditions is one of the problems of the industry for lack of any appreciable development.

The objective of this study is to identify drawbacks and shortcomings of the local construction conditions of contract adopted for public works in Ethiopia and to find out provisions that have negative implication for the development of the sector. The study focuses on provisions related to finance, risk allocation, claim substantiation & dispute settlement procedures, and the practice of contract administration.

Questionnaire and interview survey together with desk study provide the main strategy for data collection methods. Samples for the study have been randomly selected from public employers, domestic consultants, and domestic contractors who are actively participating on public construction works. In this thesis, a descriptive statistical method has been used for the analysis of the data that provides a general overview of the results in that some kind of interpretations and discussions are made on the results.

The study has determined the potential contract provisions that hinder the development of the sector and the findings of the study reveal that: the financial provisions adopted for public works are not suitable and need much further improvement; the risk allocation between public employers and domestic contractors need to address price escalation and unforeseeable shortage of materials fairly; the claim substantiation & dispute settlement procedure should adopt modern methods and practices; and contract administration practices & attitudes should be improved. This study further provides recommendations on how to improve the existing situations.

Key Words: Contract Problems, Financial Contract Provisions, Risk Allocation, Claims, Disputes, Contract Administration

Table of Contents

	Page
Preface	ii
Acknowledgment	iii
List of Figures	iv
List of Tables	v
Abbreviations	vi
Abstract	vii
Table of Contents	viii

Chapter One

Introduction

1.1 General.....	1
1.2 Objectives of the Study	3
1.3 Scope of the Study	3
1.4 Problem Statement	3
1.5 Structure of the Thesis.....	4

Chapter Two

The Construction Industry in Developing Countries

2.1 General	
2.1.1 Overview of the Construction Industry in Developing Countries	6
2.1.2 Problems of Contracting Practices in Public Construction Works	8
2.1.3 Construction Project Process	12
2.1.4 Construction Project Stakeholders	14
2.1.5 Contractual Relationships between Major Stakeholders	17
2.1.6 Contract Documents for Construction Projects	19
2.2 Contracts for Construction Projects	
2.2.1 Contracts from Law Perspective	21
2.2.2 Essential Elements of a Valid Contract	22
2.2.3 Discharge of a Contract	26
2.2.4 Contracts for Public Construction Works	27
2.2.5 Standard Conditions of Contract for Public Construction Works	28

Chapter Three

Contract Provisions in focus by this Thesis

3.1 Contract Clauses related to Financial Matters	
---	--

3.1.1	Variations and Contract Price Adjustment	29
3.1.1.1	Extra Costs caused by Additional Quantities of Work and Additional Difficulty of Performance.....	30
3.1.1.2	Extra Costs Caused by Reduction of Work.....	30
3.1.2	Time for Completion, Delays, and Extension of Time.....	31
3.1.3	Liquidated Damages.....	33
3.1.4	Advance & Interim Payments	34
3.1.5	Retention Money	36
3.1.6	Termination of Contracts	37
3.2	Contract Clauses related to Risk Allocation	38
3.2.1	Philosophies of Risk Allocation	39
3.2.2	Risk Allocation in Public Construction Works	43
3.3	Contract Clauses related with Claims Substantiation and Disputes Settlement	51

Chapter Four

Methodological Approach of the Study

4.1	Approach	55
4.2	Limitations	55
4.3	Data Collection.....	57
4.3.1	Questionnaire	57
4.3.2	Interview	57
4.3.3	Desk Study	58
4.3.4	Secondary Data Sources	58
4.4	Analysis of the Results	58

Chapter Five

Analysis and Discussions

5.1	Responses to Survey	59
5.2	Survey Result and Analysis	60
5.3	Codification and Recording of Data.....	61
5.4	Assessment of Contractual Relationships and Practices.....	63
5.4.1	Capacity of Domestic Contractors	64
5.4.2	Competence of Public Employers	66
5.4.3	Cooperation and Team work in Public Construction Works.....	68
5.4.4	Is Contract Administration according to the Contract Provisions?	69
5.4.5	Assistance to Domestic Contractors	71
5.4.6	Contractor's Return of Favours	73

5.5	Financial Provisions on Public Construction Works	
5.5.1	Minimum Amount of Net Interim Payment	75
5.5.2	Purpose of Retention Money	79
5.5.3	Amount of Retention Money	79
5.5.4	Does 5% Retention Money Oblige Contractors for Correction of Works? ..	82
5.5.5	Value of Materials on Site	84
5.5.6	Deduction of Retention Money from Materials on Site	86
5.5.7	Period of Time for Interim Payment Process	87
5.5.8	Bank Rate Compensation for Payment Delays.....	91
5.5.9	Contractor's Reaction to Payment Delays	92
5.5.10	Amount of Liquidated Damages	95
5.5.11	Maximum Limit of Liquidated Damages	96
5.5.12	Reason for no Liquidated Damages Claim in Public Construction Works ...	98
5.5.13	Reduction of Amount of Liquidated Damages	99
5.5.14	Contract Price Adjustment	101
5.5.15	Advance Payment Provision	104
5.6	Risk Allocation in Public Construction Works	
5.6.1	Fairness of Contract Provision with respect to Risk allocation	106
5.6.2	Who Bears the Ultimate Consequences of Unfair Risk Allocation?	108
5.6.3	Do Contractors Consider Risks during Tendering?	109
5.6.4	Inspection and Examining of project Sites before Tendering	110
5.6.5	What would Contractors do if a Damaging Risk Materializes?	111
5.7	Claims Substantiation and Disputes Settlement Procedures in Public Construction Works	
5.7.1	Procedure for Claim Substantiation	112
5.7.2	Necessity of Detailing Claim Substantiation procedure	113
5.7.3	Dispute Settlement Procedure	114
5.7.4	Amicable settlement of Disputes and alternative Dispute Resolution Methods	117
 Chapter Six		
Conclusions and Recommendations		120
References		127
Appendix		131
Declaration		142
Signed Declaration Sheet		143

Chapter One

Introduction

This chapter introduces the thesis by providing a brief discussion on the issues involved in the research. The scope, objective, problem statement, and structure of the thesis are presented with an outline of the thesis.

1.1 General

In a typical public construction project, the employer (public body), the engineer (consultant) in charge of contract administration, and the general contractor are the major stakeholders. Public employers invest capital and provide economic power. The engineer acting as the employer's representative maintains efficient progress on a project. The contractor provides service, skills, and knowledge towards achieving a successful project, that is, a project completed on time, on budget, and of the best or specified quality. Under a design-bid-build contract delivery system, the direct relationship between these primary stakeholders is a necessary interactive process for a successful project accomplishment. Fair compensation, secure financial support, and cooperative working environment are expected and required for prosperity of the sector [31].

For the purpose of fruitful interaction between the above stakeholders and to gear their communication in a defined manner, standard conditions of contract for construction works is prepared by a public authority or delegated institution which will be applied in public construction works. This will allow the stakeholders involved in public works to play their roles in such a manner that the employer receives a soundly executed project to time, cost, and quality and the contractor is paid and compensated as per the terms of the contract. Standard conditions of contract provides rights and obligations of the parties; compensation events; and procedures for payments, approvals, claims and disputes.

This thesis will focus on the problems of some contract provisions in the standard conditions of contract issued by the Ministry of Works and Urban Development in December 1994 i.e. MoWUD 1994 conditions of contract with its amendments [23]. In this standard conditions of contract, most of the provisions were similar to the fourth edition of

FIDIC (FIDIC 1987) with some adaptation to suit the local conditions of the country. Price escalation and cost compensation, advance payment provision, proper claim submission and substantiation procedures, reasonable time limit for payment and dispute settlement were not provided in this form of contract before the amendments [11, 19 and 23].

Developing countries require a very wide range of constructed facilities to achieve their socio-economic development objectives. Many writers on the development of construction industry of developing countries noted out that the sector is not sufficiently developed to meet the demands that these countries require. In these countries, construction projects are often subject to long delays and increased costs. According to George Ofori, some of the factors that contribute to this state of affairs are [27]:

- ✚ difficulty in obtaining tenders;
- ✚ inefficiency in planning, design and construction;
- ✚ difficulty in obtaining vital resources - materials, equipment, and skilled personnel and their high costs;
- ✚ poor estimating and financial management;
- ✚ inappropriate tendering and contractual procedures; and
- ✚ inefficient on-site construction

Moreover, local construction industries are generally insufficiently developed; indigenous contractors undertake the smallest projects and lacked the necessary technical and managerial expertise, although they might be good entrepreneurs [27].

From the above, it can be seen that some of the problems that hinder the development of the sector to meet their national demands are related to contractual procedures. Hence, this thesis will devote at studying the problems of such contractual procedures focusing on provisions related to finance, risk allocations, claim substantiation & dispute settlement procedures together with the practical cooperation and team work under public work contracts.

1.2 Objective of the Study

The primary objective of the study is to assess the problems of the construction industry with respect to the standard conditions of contract applied in Ethiopia. Furthermore, as part of the research objectives, the thesis will:

- identify drawbacks or shortcomings of the MoWUD 1994 standard conditions of contract and propose ways of improvement for the new standard conditions of contract issued by the Public Procurement Authority (PPA 2006)
- find out provisions that have negative implications on the development of domestic construction sector and recommend ways of improvement
- investigate the impacts of contract provisions in promoting the competence and development of the domestic construction industry
- assess problems of contractual relationships with regard to cooperation and team work between the major stakeholders

1.3 Scope of the Study

The research focuses on contract provisions that are applied to public construction works in Ethiopia. Standard conditions of contract for public works issued in December 1994 by the Federal Ministry of Works and Urban Development of Ethiopia (MoWUD 1994) will be used for the assessment of the problems as it has been implemented for a relatively longer period of time and the findings of the study will be compared to PPA conditions of contract. The coverage of the study will be on provisions that are related to financial matters, risk allocation, and claims substantiation & disputes settlement procedures with some focus on the practical contractual relationships between public employers, consultants, and contractors.

1.4 Problem Statement

As has been discussed above, the development of the construction industry in developing countries is affected by numerous problems. This research will examine the main concerns and problems associated with contract provisions used for public works in ensuring the development of the industry and in promoting the competence of the domestic construction sector. This will be done by identifying the main problems related with the contract

provisions and suggesting ways of addressing the problems in meeting the research objectives.

The research will be guided by the following research questions:

1. What are the provisions that have negative implications on the development of the domestic construction industry in undertaking public work contracts?
2. What are the possible mechanisms to sort out and solve the identified problems?
3. What are the implications of these provisions and procedures on the contract administration practice?
4. Is the risk allocation in MoWUD 1994 conditions of contract fair and balanced? If not, what are the effects of such contract arrangement?
5. Do the contract provisions and procedures adopted for public works promote the development of the sector and the competence of domestic contractors to undertake larger public work projects?

1.5 Structure of the Thesis

This thesis has six chapters that discuss various aspects of the construction contract conditions focusing on the main provisions that are of relevance with this thesis. Chapter one explains the background of the research and spells out what the research intends to achieve. Chapter two and three form literature review of the thesis that provides a general understanding of previous studies and theories related to the research area. This will also provide some bases for the analysis of the main issues. Chapter four discusses the methods that are used for the research and it highlights the primary and secondary data collection methods that the research employed. It is followed by chapter five which is dedicated to the analysis and discussion of the results obtained from the study. The last chapter draws conclusion of the research and provides some recommendations for improvement in the sector. Further recommendations for future studies are also included in this chapter. The following figure (Fig. 1.1) shows the organization and structure of the paper.

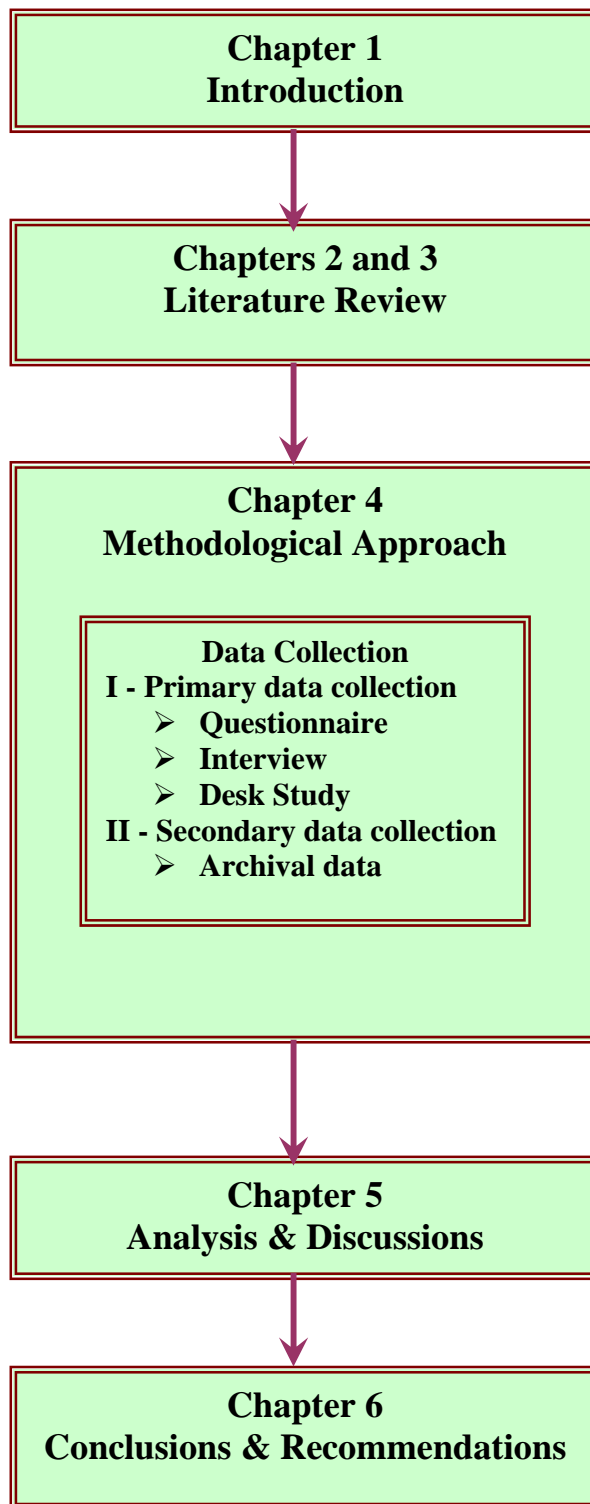


Fig. 1.1 – Flow Chart of the Thesis

Chapter Two

The Construction Industry in Developing Countries

This chapter discusses the general nature of the construction industry and its contributions to the national development focusing on public construction works and the problems associated with contractual arrangements between public employers and contractors. Special considerations have also been given to contractual relationships and nature of the construction works to provide a background for the part of the literature review in chapter three that focuses on some of the contract provisions adopted for public works in Ethiopia.

2.1 General Background

2.1.1 Overview of the Construction Industry in Developing Countries

Construction industry makes significant contributions to the socio-economic development of most developing countries. The level of that contribution is measured in several ways – notably in terms of gross domestic product, GDP, of the national economy and of capital assets or gross fixed capital formation, GFCF [38].

The industry makes its direct contributions to economic growth by providing the basis upon which other sectors can grow by constructing the physical facilities required for production and distribution of other goods and services i.e. the sector indirectly stimulates other sectors through economic multiplier effects and makes a significant contribution in terms of conserving and generating foreign exchange. This latter contribution has implication for the economic development trends of most developing countries [28 and 38].

According to a correlation made by the United Nations Industry Development Organization, UNIDO, between the per capita value added by construction and that of per capita GDP, the share of construction in GDP tends to increase with increasing per capita GDP. In other words, it may be said that value added by construction may represent between 2 and 10 percent of the GDP; for most developing countries it represents between 3 and 5 percent and for most developed countries between 5 and 9 percent [39]. However, the present state of the construction industry in developing countries in general doesn't meet the domestic and international quality standards and the performance demand

expected from the sector. In Ethiopia, its percentage contribution of GDP only amounts to 3 percent which is considerably lower than the Sub-Saharan average of 6 percent [24]. Of course, this low level of contribution to GDP is expected to gradually progress with the growth of overall economy of these countries as the amount of investment for physical infrastructure is expected to increase [28 and 36].

The industry also employs a large proportion of the civilian labour force in countries at all levels of economic & social development and in that way, it affords income earning opportunities and helps in the improvement or acquisition of skills as part of the direct benefits of the sector [28 and 39]. The industry is likely to provide from 6 to 10 percent of total employment in most of the developed countries and from 2 to 6 percent in developing countries [39].

In fact, statistics in developing countries may not be as accurate as those for developed ones; and furthermore, the statistics may not be likely to cover the considerable construction activities that occur in the subsistence sectors of the economy including the number of self-employed and “do it yourself” builders. In addition, employment in construction materials and components industry; in transport, stock and distribution of construction materials and other ancillary operations connected with the sector was not identified separately in the International Labour Organization (ILO), statistics that UNIDO used. However, evidences derived from censuses of industrial production could show that such related sectors of construction activity may provide additional 4 to 6 percent of total employment in developed countries & probably 2 to 4 percent in developing countries [39].

Construction as a whole, including the production and delivery of material inputs may, therefore, account for as much as 15 percent of the total employment in some of the developed counties and for as much as 10 percent in developing countries as described above. It can also have more employment generation potential, especially in developing countries in so far as economically viable labour intensive technologies are adopted for most items of construction works [24, 28 and 39].

Despite the above contributions of the industry to the socio-economic development of the developing countries, several problems are tending to challenge the sector and thus make efforts at developing the domestic construction industry very difficult and complex [26 and 39]. However, with the numerous deficiencies of the sector in these countries, its contributions are still meaningful and if efforts are made to develop a self-supporting domestic construction industry, benefits can increase significantly [38].

2.1.2 Problems of Contracting Practices in Public Construction Works

While the construction industry makes the above contributions and is the basis for national economic development, it is suffering for so many problems and difficulties to meet the national development objectives of developing countries. In these countries, the public sector is the main employer of the industry that forces most formally constituted contractors and consultants to rely on the public sector for work. This is mainly because the commercial or private sector is relatively undeveloped [27 and 38].

From the many other inter-related problems that are taken as causes for lack of any appreciable development of the domestic construction sector of the developing countries, two of these problems are reported to be use of inappropriate contract procedures and inequitable contract conditions [27, 38 and 43].

Forms of contract used in developing countries are often derived from those used for developed countries that require high level of contracting experience than most domestic contractors can meet. These documents and systems are often used without modifications to suit the local situation and the terms and conditions of the contract are said to be unrealistic as to the context of developing countries. Moreover, contractors seldom understand the provisions of such contract forms; small contractors, in particular, are unaware of their rights or unable to enforce their employers. Projects are sometimes unilaterally suspended or abandoned by the employer; contractors are seldom paid promptly for work done. The procedure for payment certificate is “bureaucratic”, and owing to poor financial management, funds are often not available to pay the contractors [27, 38 and 43].

Of course, the finance procedures adopted by public employers govern all formal transactions and cover the procurement of all goods and services by government departments and statutory bodies. The numerous checks and balances are considered essential to ensure that public finances are safeguarded and to properly account for public expenditures. Hence, it may be unrealistic to expect modification of the finance procedures to suit the needs of the construction industry [27].

While this is the case with public contracts in developing countries, the main sources of finance for contractors are their employers and commercial banks. The employers act as source of finance to the contractors through advance payments at the start of the project and through interim or progress payments at different stages of the project. To assist the contractor's cash-inflow requirements, these payments have to be effected in a prompt manner. However, the situation in most cases is the opposite where in some cases, delayed payments, with no provision for compensation, have contributed to the bankruptcy of some contractors in Ghana and non-provision of advance payment to meet the initial requirements of the contractor was reported to be the case in Ethiopia as well [32 and 43 quoting 16].

In many developing countries, the doors of commercial banks are practically closed to the construction industry except when the loan applications are backed by real assets as collaterals [43 quoting 41]. However, domestic contractors have very little fixed assets which might already been used as collateral for acquiring of bonds and guarantees. Also, banks in these countries consider construction as a high risk business due to the uncertainties associated with its nature. These situations leave the contractors to be very much dependant on payments of their employer. The need to approve payment certificates by a large number of individuals in public projects before it enters the "bureaucratic system of the treasury" is said to be the potential reason for delayed payment certificates [43].

In addition to the above, contracts for construction or any other service are seldom effected; goodwill between the parties is of utmost importance in the social milieu of these countries. Contractors are not only unable to understand contract documents, but they are also seldom

in a position to enforce their contractual rights. The contractors are rather dependant on public employers for work and are, understandably, unwilling to jeopardize their relationships. Arbitration is undeveloped and qualified arbitrators are less in number. The fledgling legal systems are generally not geared towards handling civil cases, especially, those involving technical issues such as disputes on construction projects [27].

The underlying factors that contribute to the inappropriateness of contract documents in developing countries are summarized by George Ofori (shown in Fig. 2.1) and the possible measures which could be taken to resolve the above difficulties include [27 and 38]:

1. Forms of contract incorporating fair and equitable contract conditions should be prepared and adopted, paying attention to issues such as price fluctuation clauses; financial assistance to contractors in the form of advances (maintaining ethics of contractors in properly utilizing the advances); arbitration and dispute resolution; employer's obligations; and penalty or bonus clauses.
2. Revising and reformulating contract procedures that reflect the current status of the construction sector so that it will be capable of fulfilling the demand on part of the majority of the population, especially for shelter and infrastructure development.
3. Attempting to correct existing problems and providing framework within which decision makers can formulate comprehensive policies for the promotion of the industry and, in particular, for increasing its efficiency.

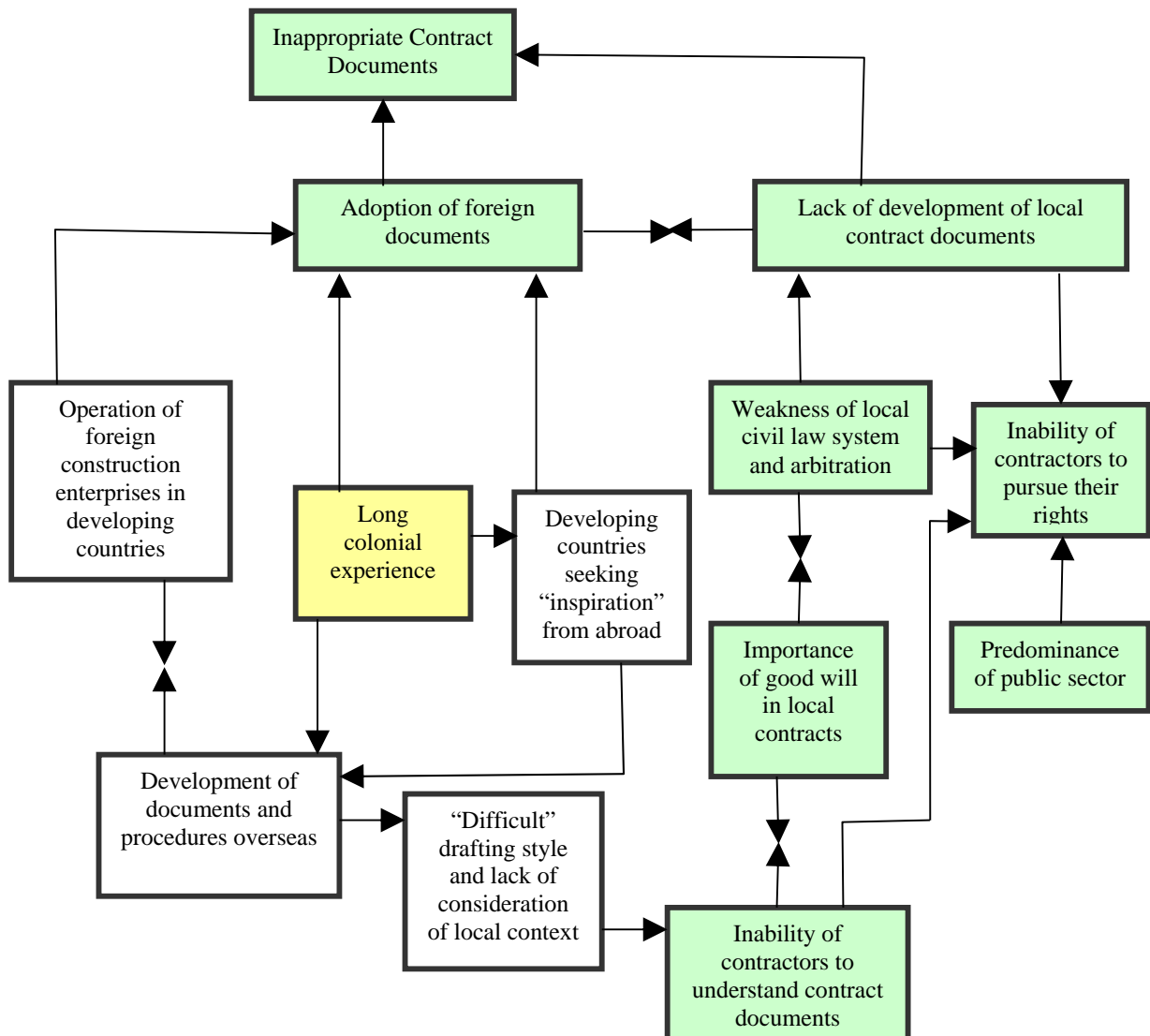


Fig. 2.1– Factors Contributing to the Inappropriateness of Construction Contract Documents in Developing Countries [27]

The above illustration (Fig. 2.1) could show the factors that are relevant to Ethiopia where long colonial experience might not necessarily influence the local construction contracting practice.

In general, contracting should enable achievement of economy and efficiency in a fair way without involving unnecessary costs and procedures in the process. In developing countries, contract conditions should take into account the capacities and experience of

domestic contractors, domestic consulting firms, and public employers. Also, public employers need to reconcile the short term goal of gaining financial advantage, if any, together with the long term objective of developing the domestic construction industry. Government being policy maker, apart from being the predominant originator of demand, plays a significant role in the development of domestic construction industry through introduction of fair and equitable terms of contract and maintaining proper administration and supervision of contracts. This is because, in addition to providing the majority of finance, the government controls attitudes, policies, institutions and working laws in order that the procedures and legal requirements reflect the practical possibilities to serve the objectives of the contracting parties which otherwise makes the business of contracting unproductive exercise [43].

Therefore, in order to fulfill the potential of the industry to the socio-economic development objectives, developing countries have to develop their domestic construction industry by properly addressing the problems and devising mechanisms to tackle the difficulties. As discussed in brief above, one of the basic problems being the contract procedures adopted in these countries, this thesis looks at the problems facing the domestic construction industry with regard to contract provisions and procedures.

2.1.3 Construction Project Process

Construction projects can be described by the following general phases [10 and 28]:

- Feasibility – starting with the identification of the need to build a facility, it includes project formulation, feasibility studies, strategy design, and approval. A go/no-go decision is made at the end of this phase.
- Planning and design – in this phase, the facility is conceptualized and parameters for monitoring and controlling the project are generated. It includes base design, cost and schedule, contract terms and conditions, and detailed planning. Major contracts are let at the end of this phase.
- Construction – represents manufacturing, delivery, civil works, installation, and testing in the time where the facility is to be built. The facility is substantially completed and after final testing and necessary maintenances, it will be in full operation at the end of this phase.

- Operation, maintenance and retirement – this phase is the utilization of the facility with periodic or non periodic maintenance until its retirement that represents the end of the project’s life cycle.

As an alternative to the above stages of a construction project process, an applicable classification for this thesis could be pre-contract and post-contract stages. Pre-contract stage refers to all transactions prior to award of the contract to a competent and responsive contractor. Post-contract stage refers to the execution of the works, the acceptance of the completed project to the employer satisfying all contractual obligations, and utilization of the project up to its retirement. This can be shown by the following line diagram (Fig. 2.2) adapted from FIDIC 1999 as a typical sequence of principal events during contracts for construction works under a design-bid-build contract delivery system.

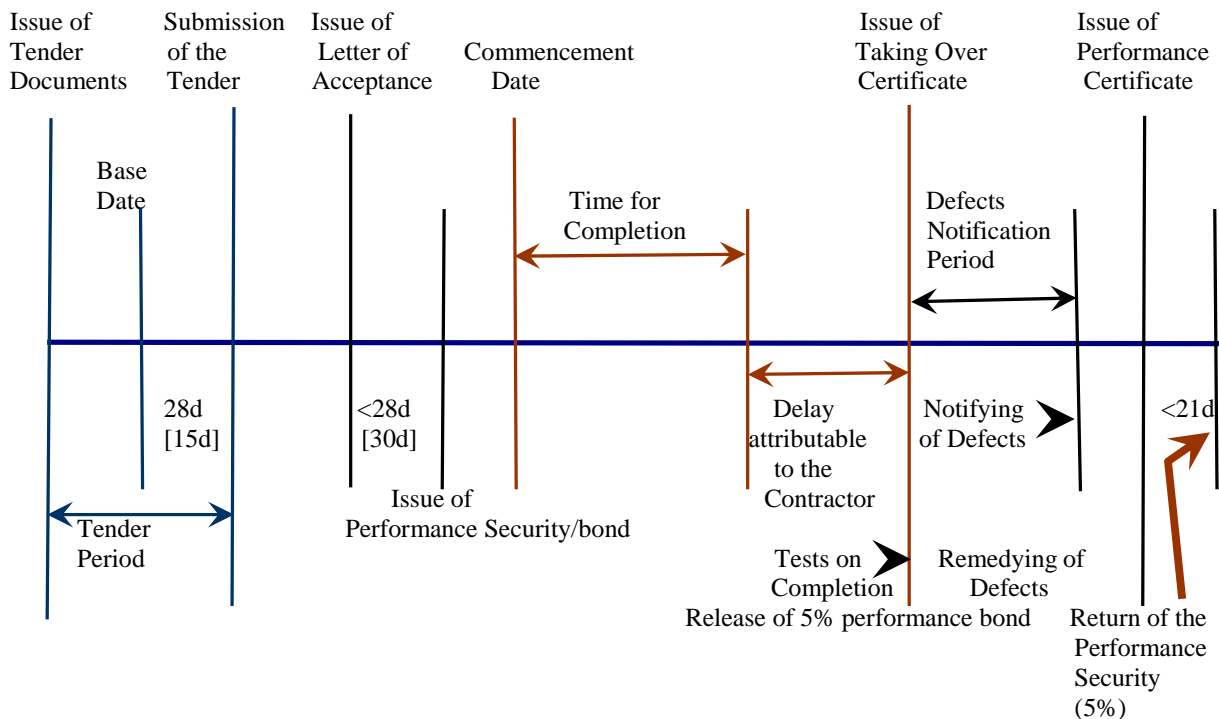


Fig. 2.2 – Typical Sequence of Principal Events during Contracts for Construction Works [12], based on the assumption that the contract completion date is extended, not to scale
 NB: the days in bracket are for MoWUD 1994 conditions of contract [23].

2.1.4 Construction Project Stakeholders

Stakeholders are individuals, groups or organizations, institutions and others that are actively involved in a project and whose interests may be positively or negatively affected by the project execution. They may also exert influence over the project and its results. In short, they are claimants who claim ownership, who have rights or interests in a project and its activities. Hence, every project is influenced and must be managed from a perspective that goes beyond the basic relationship between customers and companies that perform the project [10 quoting 9, 29 and 42].

Project stakeholders can be classified into two major groups: primary and secondary stakeholders. Primary stakeholders are those persons or groups of the project team who have a contractual or legal obligation to the project team and have responsibility and authority to manage and commit resources according to schedule, cost, and technical performance objectives. These stakeholders can also be named as contractual stakeholders. Secondary stakeholders are those who have no formal contractual relationship to the project but can have strong interest in what is going on regarding the project. These stakeholders can be participants on budgetary and financial agreements, business and professional interests or relationships and they are also referred to as budgetary and collateral stakeholders [10 quoting 9, 29 and 42].

The process of construction involves some of the following stakeholders: projects end users, employer, professional team (consultant), contractor and subcontractors, manufacturer of construction materials and components, and construction materials merchant. Other stakeholders might be included as well: authorities that under statutory requirements must approve the structure of the facility; banking and financing institutions that advance some of the capital required; and public undertakings that in some countries act as a contractor for the supply of basic services such as electricity, water sewerage etc.

Project end users are those stakeholders where the project is intended for use by them. In the public sector, the users might be the communities as a whole or a particular section of the community composed of individuals [39].

Employer is a stakeholder who initiates the project based on his assessment of user needs; and who appoints advisors; commissions the work; and throughout the process advances the capital necessary for the project study, design, and construction. Employers can be classified as public and private employers. Public employers correspond to entities that make use of public funds to provide constructed facilities for public use. In a public contract for construction works, the employer is identified as a party who has called for tenders to build, construct, erect or deliver the works and includes the employer's legal successors and representatives [5, 10, 23 and 39].

These public employers provide much of the construction works both in developing and developed countries. For example, in the United Kingdom, public sector provides 80 - 90 percent of all civil engineering works [5] where as in developing countries, the figure would be higher than this percentage as the commercial development sector is relatively undeveloped for which most formally constituted consultants and contractors rely on the public sector for work [27].

The employer plays the most important role within the construction process and therefore, he is the most important party to the contract for without him there would be no contract and no work for consultants and contractors. However, once the contract is signed for the works, the two parties become equal parties to the contract with duties and obligations to each other as per the contract agreement and governing laws [5, 10 and 39].

Professional team as a construction stakeholder is employed by the employer to plan and design the project together with the preparation of cost estimates and depending on the need of the employer, to draw up the contract; to obtain tenders; to let and supervise the work; to administer the contract; and to authorize payments or issue certificates. The professional team may include architects and engineers of several kinds, specialist consultants, cost estimators and quantity surveyors, and other related professionals where they are named collectively as a consultant [5, 23 and 39]. In a public works contract, however, it is generally recognized as the "Engineer" whose responsibilities are defined in the standard conditions of contract. In such a contractual arrangement, the engineer acts on

behalf of the employer or as an agent of the employer with defined authorities and responsibilities [5 and 23].

Contractor is a person or an organization responsible for assembly of the materials and components required to produce the facility or to execute the works. Similar to the employer and engineer, the contractor is also identified in public works contract as a person or persons, firm or company to whom the contract has been awarded by the employer that include his personal representatives, successors and permitted assignees [5, 10, 23 and 39].

Manufacturers of construction materials and components provide many of the material inputs that are produced away from project sites. It is not easy to define the construction materials industry because construction uses many different products, some of which are manufactured by industries outside the construction sector [39].

Construction materials merchant or supplier is also another important stakeholder acting as intermediary between the manufacturing industry and the contractor. Construction materials merchant stocks a large number of construction materials, components and fittings; provides small contractors with valuable technical and commercial information; and most importantly of all, he gives short term credit to the contractors [39].

In a typical public construction project, the contractual arrangement with an employer-contractor agreement involves some of the primary stakeholders such as employer, contractor, engineer, financial institutions, subcontractors etc. This paper focuses on the employer-contractor contract agreement where public employer's, contractor's and engineer's role will be given emphasis under the standard conditions of contract. The following figure (Fig. 2.3) shows some of the major roles of the above three primary stakeholders for a typical public construction project under a design-bid-build contract delivery system.

STAKEHOLDER	MAJOR ROLES
<p style="text-align: center;">Employer</p>	<ul style="list-style-type: none"> ▪ Creates the necessity to build the facility ▪ Provides financial support to develop the project ▪ Determines the scope of the work ▪ Most important player of the process
<p style="text-align: center;">Engineer</p>	<ul style="list-style-type: none"> ▪ Responsible for the project design ▪ Idealizes the final result of the project ▪ Develops drawings and specifications and prepares other contract documents ▪ administers the contract and supervises the works
<p style="text-align: center;">Contractor</p>	<ul style="list-style-type: none"> ▪ Creates the facility based on the design ▪ Brings the project into reality ▪ Manages different resources to build the facility

Fig. 2.3 – Major Roles of the three Primary Stakeholders under a Design-Bid-Build Contract Delivery System [10]

2.1.5 Contractual Relationships between Primary Stakeholders

Construction is a complex process, not for technological reasons but because of the great number of participants involved and the conflicts that might arise out of their differing requirements and attitudes. This is because, the contract is entered into between the parties for the construction of a facility where the nature of the product needs to be described in a detailed manner as much as possible. Depending on the conditions of contract and types of delivery system, the legal obligation of the contractor towards the employer is generally to produce satisfactorily what has been described in the contract which means that any alteration in the characteristics of the product implies a departure from the contract and requires the consent of all parties [14 and 39].

Practically, it is common for public works to adopt competitive tendering where the main objective is for the safeguard of public interest and prevention of favoritism or corruption. In addition, it is also claimed that competitive tendering will give the employer the best value of money [14 and 39].

Generally for the above reason, standard conditions of contract for public works assume that the contractor will be selected by the employer following competitive tendering. Under such contractual arrangement, the employer and the contractor will make agreement for the construction of public works where a separate party with no contractual obligation to the contractor will be assigned for contract administration and supervision of the works with predetermined roles and obligation. This legal contract between the employer and contractor will be established in order that the employer expects a soundly executed project to time, cost, and quality from an efficient contractor. Equally, the contractor expects reasonable working conditions, fair and balanced application of the contract and to be paid promptly what he is entitled to receive under the contract. The engineer is appointed by the employer to administer the contract with the necessary delegations and authorities so that he will be able to perform his job as stipulated in the contract [13].

As important stakeholders of construction projects, these three stakeholders interact with each other, in the framework of the contract, with mutual desire to produce a satisfactory end product through cooperation and team work that will reduce the risk of delays and misunderstandings [10 and 13]. This relationship is shown in Fig. 2.4 for a typical design-bid-build contract delivery system.

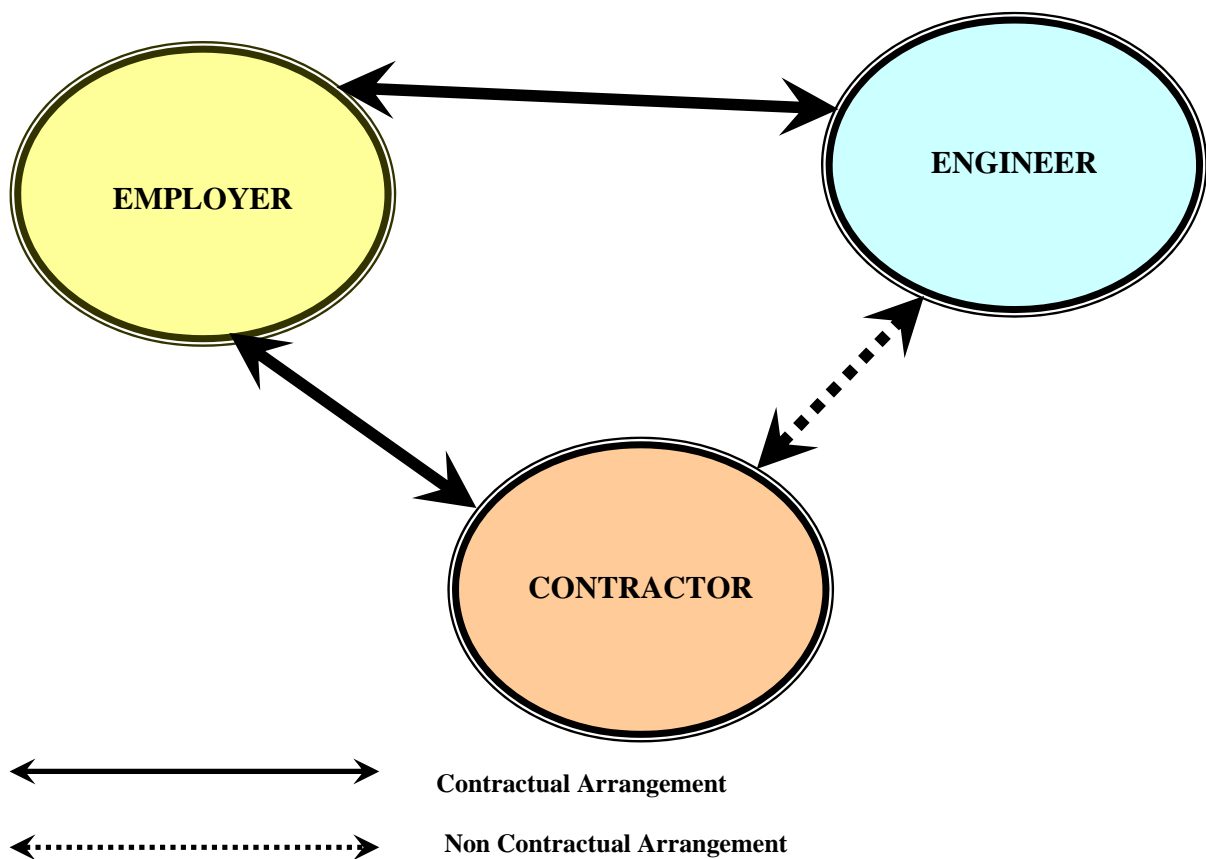


Fig. 2.4 – Relationship between Primary Stakeholders under a Design-Bid-Build Contract Delivery System with the Employer-Contractor Contract Agreement [5 and 10 quoting 17]

2.1.6 Contract Documents for Construction Projects

The majority of construction contracts are of the admeasurements (unit rate or bill of quantities) contract type and are generally compiled to a standard format of which some of them are discussed below [5]:

1. Form of tender and Appendix
2. Form of agreement
3. Conditions of contract
4. Drawings and Specifications
5. Bill of quantities and other documents

1. Form of Tender and Appendix to Tender

Completed tender is addressed to the employer and it is the contractor's formal offer to construct and complete the works in conformity with the drawings, conditions of contract, specification, bill of quantities, etc within the time period stated in the appendix to tender. It includes an undertaking that, if the tender is accepted, the contractor will provide performance security (enter into a bond) which must be provided by a body approved by the employer for a sum not exceeding 10% of the total tender amount. Appendix to tender is prepared in two parts: one having information and requirements of the employer and works that will be completed prior to the invitation of tenders and the second part includes information and requirements to be completed by the contractor, but for those which are not completed in part one [5 and 40].

2. Conditions of Contract

Conditions of contract set out the legal or contractual arrangements that will apply to the contract [13]. Conditions of contract as part of legal terms of a contract are important terms expressing matters basic to a contract. Failure to perform the requirements of a condition is a fundamental breach of an essential obligation giving the aggrieved party the right to terminate the contract and claim damages or to continue the contract and claim damages [5 and 40]. Contract clauses under conditions of contract require that all contract documents need to be mutually explanatory, and where ambiguities and discrepancies occur, they must be explained and adjusted by the engineer, who must then instruct the contractor as per the contract [5, 13 and 40].

3. Drawings and Specifications

Contract drawings show the nature and scope of the required project work and, ideally, should be prepared completely before the contract goes to tender. Where this is not possible, the general arrangements and as many of the details as will permit the contractor to price the bill of quantities should be produced and forwarded to the contractor at the tender stage [5, 13 and 40].

Drawings contain sufficient descriptive and explanatory notes and dimensions to ensure that the quantities are taken off accurately. Particular care should be taken that new and existing work is clearly identified; the nature of the site and ground conditions is indicated; and where applicable, water tables, existing sewers, services and foundations, etc are shown. Once the contract work is started, further drawings and particular details are likely to be required. These should be produced and sent to the contractor without delay in order that he may complete the work within time and satisfactorily [8].

Specifications will define the scope and technical requirements of the contract. In general, drawings show what is to be constructed, whereas specifications tell the contractors how it is to be constructed. The standards, quality of workmanship and materials required for the work are described in the specification.

4. Bill of Quantities (BoQ)

Bill of quantities is document with a list of items giving descriptions and estimated quantities of work to be executed under the contract [12]. The objectives of the bill of quantities are [30]:

- ✚ To provide sufficient information on the quantities of works to be performed to enable bids to be prepared efficiently and accurately; and
- ✚ When a contract has been entered into, to provide a priced bill of quantities for use in the periodic valuation of works executed.

2.2 Contracts for Construction works

2.2.1 Contracts from Law Perspective

In addition to complying with the procedures and conditions of contract stated in contract documents, the execution of construction contracts must conform with the broader requirements of law [5 & 40].

Law can be described as rules of a community or state to control the conduct of people in that community or state in respect of their private and business relationships and their relationships with the state itself. Contract can be described as liability arranged between

individuals for their own convenience, as compared with liabilities imposed by law in a general way [5 and 40].

A contract is a legally binding agreement between two or more individuals or parties; or it is an exchange of promises where one party agrees to provide something in return for something else from a second party. Contracts need not necessarily be in writing, but can be oral as well. However, even though such oral contracts are as binding as written ones, problems might arise in the event of disputes between the parties as it may be difficult to establish exactly what has been agreed and what the parties intended. Hence, as a consequence, public construction contracts are formalized in writing [5, 25 & 40].

2.2.2 Essential Elements of a Valid Contract

There are a number of essential elements required for a valid contract to be formed [5 and 40]:

- a) Agreement between the parties
- b) Offer and acceptance
- c) Considerations to be provided by the parties
- d) Intentions to create a legal relationship
- e) Genuine consent of the parties
- f) Legal capacity of the parties to enter a contract, and
- g) Legality of the contract

a) Agreement

Agreement between the parties regarding the purpose, rights, obligations, and remedial measures which the contract will create is essential. A written agreement is not a necessary requirement, but in practice it is desirable to put the agreement in writing since it will provide substantial evidence for the terms of the contract. Although the parties to a contract are free to decide the terms of the contract, within the law, care should be taken that contracts are worded precisely as the courts will interpret and implement contracts in accordance with those agreed terms. Courts are generally concerned with what is written, not what is meant. This is because, the courts have no power to change the terms of the contract although they may be willing to imply a term to repair an obvious oversight of the

parties. Agreement is considered to have been reached when an offer made by one party is accepted by a second party [5 and 40].

b) Offer and Acceptance

In forming a contract, there must be an offer consisting of a definite promise from one party to the other of his willingness to be legally bounded on specific terms and an unconditional acceptance of those terms by the second party. An offer may be withdrawn before it has been accepted and will be valid for a “reasonable” time if no time limit is imposed [5 and 40].

A contractor’s tender, which is his offer, does not have to be accepted by the employer and that, strictly speaking, it may not be necessary for contractors to be informed that the employer is not bound to accept the lowest tender, as often happens when invitations to tender are sent out. In practice, the employer does not always accept the lowest offer and, on occasions, rejects them all. The offer and acceptance must be communicated to have an effect and can be in writing, oral or inferred. However, if the offer stipulates a manner of acceptance, then the method stipulated or an equally expeditious method must be used. The various stages in the formation of a typical construction contract are shown in figure 2.5. It should be noted that the offer comes from the contractor not from the employer, who offers an opportunity for the contractor to participate and compete for the work [5, 25 and 40].

c) Considerations

Consideration is what each party contributes to the contract, or in other words, it is what the parties put into and get out of the contract. Consideration must have some economic value, but the law is not concerned with the value being inadequate. A contractor’s low rate, for example, may not be sufficient for him to make a profit, but if it is his offer which is freely given, it will be deemed good consideration [5 and 40].

d) Intention to Create Legal Relationship or to be Legally Bounded

Although a legal contract necessitates agreement between the parties as to the rights and obligations it will create, a mere agreement by itself will not be enforceable at law unless

the parties there to fully intend to be legally bounded by its terms and conditions. Hence, the parties are required to form a contract enforceable at law if it is intended that the contract is to be legally binding [5 and 40].

In the majority of commercial contracts, there is a clear and obvious intention by the parties to create a legal relationship. Indeed, the courts will generally presume this to be so unless the agreement contains a clear statement to the contrary, for example, including a statement that “this agreement is not intended to be legally binding” where in such a case, the agreement will not be enforced by law. Similarly, the agreement will not be enforced if the parties demonstrate by their continued negotiation that they do not regard themselves as legally bounded [5 and 40].

e) Genuine Consent of Parties

Agreements must be free from misrepresentation, mistake, duress, and undue influence. Misrepresentation is a false statement of an existing or past fact which was made that misled the party to whom it was addressed and so induced that party to enter into a contract. Mistakes of fact may arise in contracts as to the identity of the other party, the existence of the subject matter at the date of the contract, or the quality of the subject matter. Duress constitutes forcing a party to enter a contract as a result of actual or threatened violence to his person but not to his goods i.e. physical pressure. Undue influence is similar to duress but the threats or influences here comprise any kind of improper pressure applied on a person to enter a contract. The word ‘undue’ stresses that the contract was not made voluntarily [5 and 40].

f) Legal Capacity and Legality

Certain parties are either not allowed to enter into a contract or are restricted in some way which includes minors, drunks, lunatics, and convicts under sentence. Corporate bodies, such as limited companies and public authorities, can only make contracts within powers contained in their memorandums of associations and persons signing contracts on behalf of their organization should not do so unless they are specifically authorized to commit the organization [5 and 40].

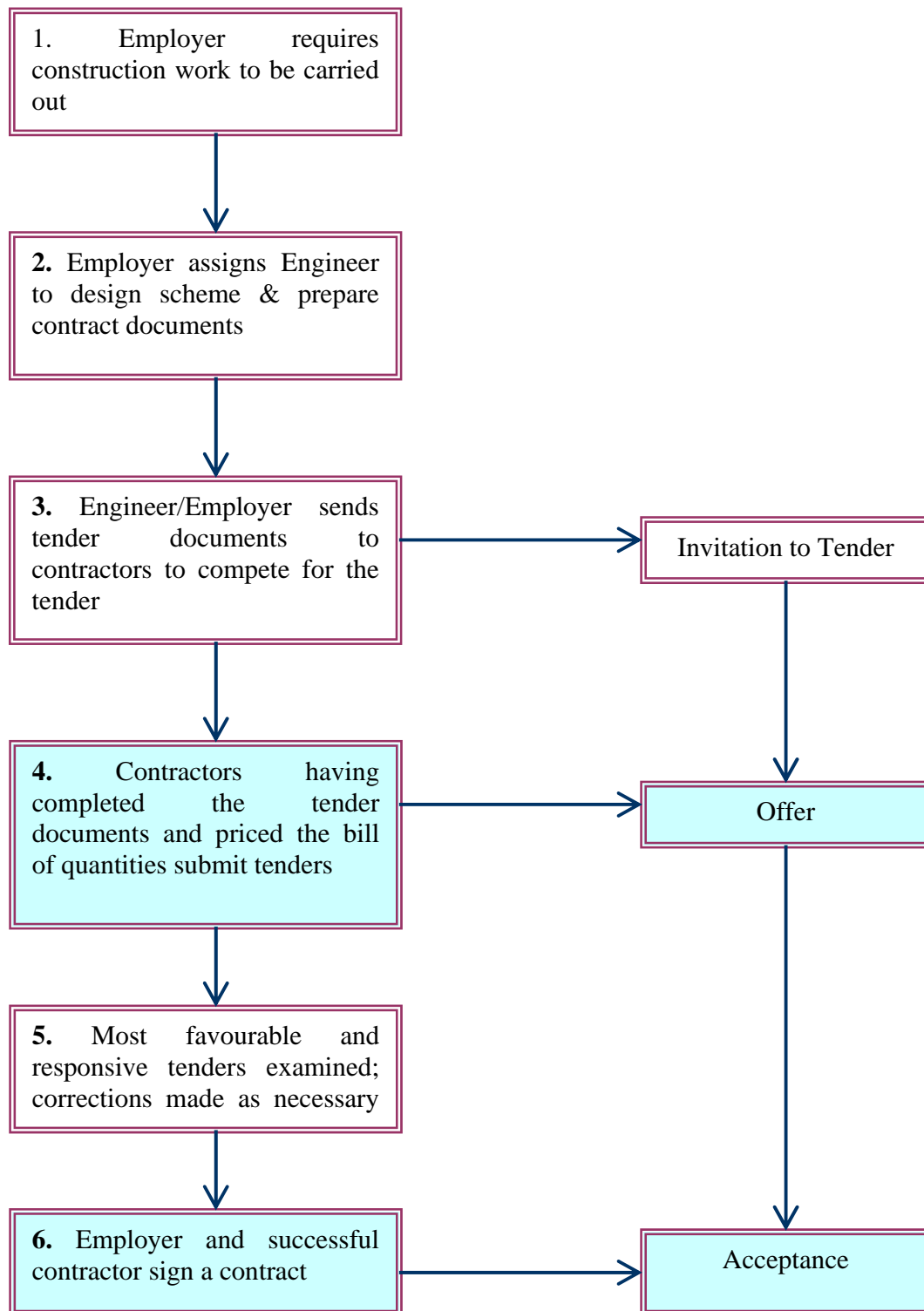


Fig. 2.5 – Stages in the Formation of a Typical Construction Contract for Design-Bid-Build Contract Delivery System [5]

2.2.3 Discharge of a Contract

Terms of a contract fall into two categories: express terms and implied terms. Express terms are statements of promises made by the parties, for example, the contractor's undertaking to carry out and complete the works by a specific date and the employers undertaking to make interim and final payments to the contractor. Implied terms are terms not expressly stated in the contract, but are as legally binding as express terms. However, it should be noted that express terms will normally take precedence over implied terms. Examples of implied terms include the understanding that goods and materials must be of good quality and fit for the purpose intended and that the employer will give possession of the site within a reasonable period of time [5 and 40].

Contracts are said to be discharged when the contracting parties are released from their contractual obligations. Discharge of contracts does not come about automatically, but is usually brought about by an act of one or both of the parties. Once the contract is discharged, the parties are no longer bounded by its terms although the discharge itself may result in enforceable rights [5 and 40].

Situations may arise in construction contracts where the contractors work is terminated but the contract is not discharged. Likewise, if hidden defects attributable to the contractor are found in construction after completion of the works and during the period of limitation, the contract will not be discharged and the contractor will be held liable.

Breach of a contract occurs when one party fails to fulfill his contractual obligations either totally or in part. Here, the contractual obligations may be discharged or brought to an end if there is a breach of a condition leading to refusal by one party to perform his obligation under the contract. Similarly, when one party states that he will not perform the contract or puts himself in a position that he will be unable to perform on the due date, it will be anticipatory breach of the contract. In this case, the party affected by the breach has two options [5 and 40]:

- i.** to treat the contract as discharged from the date of breach

- ii. to wait until the due date of performance, in the hope that the other party will have a change of heart and perform. However, choosing to wait may result in losing the right to recover if some intervening event occurs that will automatically discharge the contract such as a war, a government action making the contract illegal, or a force majeure.

In general, there are four ways in which a contract may be discharged [5 and 40]:

1. Performance – where the parties have performed all their respective obligations, as for example, when the contractor has carried out the work fully in accordance with the contract and when the employer has paid all amounts due to the contractor.
2. Frustration – where the parties are unable to perform their obligations owing to events outside their control, force majeure. It should be noted that contracts are not frustrated if there become too difficult or too expensive to perform.
3. Breach – where one party fails to perform his contractual obligations.
4. Agreement – where both parties agree to terminate the contract before complete performance. For example, excessive variations which have changed the nature and scope of the contract.

2.2.4 Contracts for Public Construction Works

Generally, the employer initiates a construction project following user requirements. The objective of the employer in initiating a construction project is to acquire a sound and finished work at a minimum or optimum price and on time maintaining the quality or scope of the work as specified. Most employers, however, do not have the skill or the desire to undertake this task on their own; and thus, they delegate the responsibility of the works to designers, contractors, and supervisors with the appropriate competence and skill with a certain consideration [14].

Hence, a contract is entered into between the employer and contractor in order to get the work done for a consideration with a sharing of risks. Construction project, as discussed before, is often of a complex nature arising from the very sophisticated demands of the modern society and involving many experts with different interests, policies, objectives, and as it is to be carried out over a long period of time. Therefore, it is essential to define

the details of the works, the rights and obligations of all participants in the project including their levels of authority and channels of communication between them in order to avoid confusion and disagreements during the conduct of the work. The clauses in this agreement will establish the contractual relationships between the various parties involved in the contract and define the limits of such relationships that will be seen as a guide for the execution of construction projects [14].

2.2.5 Standard Conditions of Contract for Public Construction Works

In some lines of business like construction works, it is practicable to prepare standard contract forms that can be used repeatedly by merely filling in the pertinent names, dates, prices, terms of payment, etc. appropriate to the particular situation. These standard contract forms eliminate the need for composing new documents each time when a similar contract is made. After a considerable use, such standard contract forms will generally have been proved by experience to be satisfactory and any errors will have been found and remedied [8 and 13].

Next to the standard conditions of contract for construction of civil work projects issued by MoWUD in 1994, a standard bidding document (SBD) has been prepared by the Public Procurement Authority in 2006. The objective of this SBD is to provide public employers with one standard draft containing basic contractual provisions and safeguards which are required by the Government of the Federal Democratic Republic of Ethiopia in the execution of public procurement and use of public funds [30].

This standard bidding document contains general conditions of contract, special conditions of contract, and guidelines on how to use the document. It is suitable for works valued up to US\$10 million and it is not suitable for the following situations in which the employer is required or allowed to find an alternative, more appropriate document, such as an appropriate FIDIC standard form of contract [30]:

1. Complex works under US\$10 million, such as large water treatment plants;
2. Works over US\$10 million;
3. Works designed by the Contractor, including turnkey contracts,

Chapter Three

Contract Provisions in focus by this Thesis

In this chapter, contract provisions related to the thesis will be discussed. It is sub-divided into three parts based on their relevance to the subject matter. The first part discusses contract clauses related with financial matters such as variations and contract price adjustment; time for completion, delays and liquidated damages; advance and interim payments, retention money and related provisions. It is then followed by contract clauses related with risk allocations which are further classified into four categories such as natural risks, political and social risks, economic and legal risks, and behavioural risks and provisions related to each category are discussed accordingly. The final part discusses provisions related to claims substantiation and dispute settlement procedures.

3.1 Contract Clauses related with Finance

3.1.1 Variations and Contract Price adjustment

A construction contract should make definite and adequate provisions for the handling of extra or additional costs which may result from ordinary revisions made by the engineer; from a substantial change in the quantity of work required; and from a change in the specification of materials and workmanship from that specified in the contract. Also, something unforeseen may be encountered and the performance of unanticipated work may become essential. If so, the necessary work has to be done regardless of extra costs involved and such costs will be dealt as per the terms of the contract [8, 13 and 23].

The provisions in the contract regarding extra costs in general are intended to minimize future arguments concerning the overhead and profit part of the contractor's claim for extra compensation during price adjustments necessitated by changes made in the drawings, specifications, or other contract documents. They are not intended to remedy misjudgment, inefficient management, or anything else that is the responsibility of the contractor which shortcomings may have caused the cost of performance of the contract to be greater than originally anticipated [8].

3.1.1.1 – Extra Costs Caused by Additional Quantities of Work and Additional Difficulty of Performance

Additional works necessitated by different unforeseen events may be paid for a contractor at the contract unit prices. However, if the additional quantity of work will force the contractor to rent costly equipment or will incur extra cost and difficulty to discharge his responsibility, paying for such additional expense based on the contract unit price may not be adequate compensation. Therefore, it seems that the contractor should be entitled to extra payment for such additional works. Where a construction contract has been fully performed by the contractor, his further agreement to do extra work, to bind him, must be supported by consideration. This further agreement is a supplementary contract as opposed to extra work under the contract [8].

Similarly, increase in quantity of works or unexpected difficulty in the way of performance may be a ground for the contractor to claim extra compensation. When the additional quantity of work becomes more difficult than called for by the contract, the employer has to pay the contractor a considerable extra sum to compensate him for his additional expense in executing the work. Paying the contractor on the regular contract unit price on all extra work which is difficult than stated in the contract may not be fair [8].

3.1.1.2 – Extra Costs Caused by Reduction of Work

A reduction in the quantity of work may also be a proper basis for compensation under an admeasurement (unit rate) contract. Because of the resulting loss of profit and of a portion of the allowance for overhead in the unit price of reduced quantity, the contractor should be compensated for extra payment above that made in accordance with the contract unit price. This will of course be based on the fact that the reduction in quantity is large enough to affect the contractors profit and overhead allowance such as 10 or 15 percent of the project cost [8 and 23].

Also, it is very important to determine whether the employer is responsible for an unanticipated extra cost or whether these are to be claimed upon the contractor. Undoubtedly, the employer is obliged to pay when the information given by the contract documents is inadequate to enable the contractor to determine in advance what kind of

works will be executed. The employer is obliged to pay the contractor: when the data given by him to the tenderers are inadequate; when extra costs arise because of improper design and plans; and when the engineer makes serious changes after the contract is signed. If the contractor performs the work as required by the contract but unforeseen conditions arise, through no fault of his, that necessitate modifications of the design, and if these modifications are approved or considered by the engineer, then the extra costs involved have to be properly paid by the employer [8].

In preparing a tender, the contractor may distribute his over head costs and profit in various ways such as dealing with separate fixed sum items in the bill of quantities if any or covering these costs and profits by spreading over in the unit rates of the bill of quantities. For this reason, if the total value of the work differs from the total of the corresponding items in the contract price, the contractor may gain on his fixed on-costs if the overall value is increased or lose if the total is less than that in the original bill. The extent of such increase or decrease will depend on the degree to which the overhead costs have been covered in the contract [13].

According to Sub-clause 52(3) of MoWUD 1994 conditions of contract, the amount of the contract price shall be adjusted if on certified completion of the whole of the works, it is found that a reduction or increase greater than ten percent resulting from the aggregate effect of all variation orders and all adjustments upon remeasurement of the estimated quantities. This adjustment is made having regard to all material and relevant factors, including the contractor's site and general overhead costs of the contract. The adjustment is not applicable for cost increase or decreases arising from all fixed sums, provisional sums and allowances for day works. This percentage limit was 15% in BaTCoDA 1987 conditions of contract which was reduced to 10% in MoWUD 1994 conditions of contract while on the contrary it was increased to 15% from 10% in FIDIC third and fourth editions respectively [6, 13 and 23].

3.1.2 Time for Completion, Delays, and Extension of Time

The period for completion of projects is specified in the appendix to tender together with the mobilization period for commencing the works. This period of completion will be

extended to a new completion date that supersedes the completion date set in the contract whenever events that entitle the contractor for extension of time (EOT) occur as per the terms of contract [13 and 23].

The contractor is entitled to recover losses sustained because of delays caused by the employer unless the contract specifically states otherwise. The employer is also assumed to have an implied obligation to provide all drawings and other information that are necessary to enable the contractor to complete the works within the specified time. For this reason, public work contracts embrace provisions in that in case of any act or default on the part of the employer that causes delay, the contractor will be entitled for a reasonable compensation and/or extension of time. For such compensation and extension of time, the contractor is required to give written notice of his intention to claim and of the cause for it within a specified time provided in the contract so that the engineer and the employer will be alerted for the claim [8, 13, 23 and 37].

Delays that are caused by the contractor himself are naturally his own responsibility and he will utilize every effort to prevent such delays. However, the engineer and public employers should not demand the impossible if the original time requirement for completion of the project is unreasonable. The contractor will have to add a sum to his tender to cover possible liquidated damages or he will have to include extra expenses for overtime work and for other costs that arise when a job is to be “rushed inefficiently”. Hence, before setting too short a time for completion, the engineer and the employer should be satisfied that the profit to be derived from speed of execution is worth the extra charge that may be added in the tender to attain this objective [8 and 37].

In setting the completion periods of a project, the engineer and employer might well consult interested contractors about the time necessary to prepare the tender and to complete the construction. If the time allowed for completion is inadequate, the contractor will have to set a high price in his tender to cover the cost which inevitably accompanies overtime work and the possibility of a certain amount of liquidated damages when the work does not progress satisfactorily. Perhaps these costs will be included as an indistinguishable

part of the tender price; nevertheless, they are very real, and the engineer should be sure that the employer realizes that specifying a very short period of time for completion of the work is likely to prove expensive [8].

3.1.3 Liquidated Damages

A contract may contain the words “time is of the essence” meaning that, the time of completion of a contract is one of the most important items for the contractor to consider when tendering on the job. The contractor will be bound to meet a designated completion date or some specified compensation will have to be made to the employer. Such payments for failure to meet the required date of completion are referred to as liquidated damages, not as penalties [8, 13 and 23]. The amount of liquidated damages is determined by the employer, before tenders are invited, as a reasonable assessment of the actual damages which he would suffer in the event of delay in completion of the works. Tenderers are, therefore, aware of the nature of their commitment at the time of tendering and it is important to specify a limit on the total liquidated damages which can become due. Also, should liquidated damages become due, deduction is to be made by the employer [13].

Liquidated damages is usually stated in the form of a specific number of currency or as a percentage of the contract price per day or per week. The amount of this daily or weekly figure is supposed to be the employer’s estimate of what he will lose in income by reason of delayed completion. Of course, this matter of liquidated damages should not be used as a means of making a profit for the employer at the expense of the contractor. Also, even though occasionally provided, it would seem fair treatment to provide a bonus arrangement if the contractor completes the project before the completion period. The employer will generally deduct any liquidated damages from the sum due to the contractor at the time of final payment [13 and 23].

When a contract does not specify a figure for liquidated damages, it is generally difficult to determine the amount of the damages that should be paid to the employer because of the delay in completion. Factors to consider include estimated losses to the employer because he cannot utilize the property as soon as it had been anticipated; interest charges which he must pay during the delay; cost of legal assistance in his action for recovery; and any other

expenses that are chargeable to the contractor's failure to finish the project on time [13 and 23].

According to MoWUD 1994 conditions of contract, this figure has been set as 1/1000 of the contract price per day as a minimum limit where depending on the nature of the works, liquidated damages higher than this amount may be used. Furthermore, the maximum limit of the liquidated damages was set at 20% of the contract price which was reduced to 10% of the contract price through amendment [19 and 23].

3.1.4 Advance and Interim Payments

It is difficult for a contractor to finance a project from his own funds for a project that extends over a certain period of time. He will generally have to borrow money. All or part of the interest on this borrowed money will be added into the contractor's estimated costs and will be included on his tender. Therefore, the employer will ultimately have to pay the contractor's borrowing expense [8, 13 and 23].

To avoid the above situation, it is customary and good practice to arrange advance and interim payments to the contractor during the course of the job. One convenient method is provision for payments once a month, each payment being based upon an estimate of the value of the work or portion of the contract that has been completed during the preceding month together with costs of materials and plants delivered to the site. The mechanism for the determination of the size of these payments is provided in the appendix to tender or in the special conditions of contract [8, 13 and 23].

From contractor's perspective payment is the most important aspect of any construction project while from the employer's point of view, it is the ultimate obligation to be discharged for contractor's performance. However, many factors impact the contractor's right to payment and the employer's right to withhold payment both during and after the project has been completed [33].

If the contract states that interim payments are to be made to the contractor as the work progresses, this naturally must be done. Even when the contract fails to specify such a

procedure, it may be implied that interim payments will be made if complete financing by the contractor alone is unreasonable. Interim payments should not be based up on time alone, but upon accomplishment by including the minimum amount of interim payment requirement in the contract i.e. performance is required prior to payment in the absence of a contract language to the contrary [3 and 33].

Reviewed contract documents reveal that in most of the public building works undertaken in Ethiopia, the minimum net amount of interim payment to be requested by the contractors is stated as five percent of the contract price. If, following the check by the engineer, the amount due to the contractor is less than the minimum amount stated in the appendix to tender, no certificate will be issued and the payment will be included in the next payment certificate [8 and 13].

According to MoWUD 1994 conditions of contract, the contractor will be paid 100% of the estimated value of the work executed up to the end of the previous month together with the other items that are to be paid as per the terms of the contract for each of the monthly or otherwise interim payment within 30 days of the presentation of the engineer's interim payment certificate to the employer. This payment includes the value of materials on site intended to form part of the permanent work as they are reasonably, properly, and not prematurely brought upon the site but only if adequately stored and protected against weather and other damages. There was no time limit for the engineer's certification of interim payments in this form of contract. This period of time was reduced to 21 days (7 days for the engineer and 14 days for the employer) through amendment which counts from the date the contractor submits the payment statement to the engineer [19 and 23].

If the employer fails to make payments to the contractor as and when provided in the contract, the contractor will have the right to suspend the work and the contractor should be ready to resume his activity if the payment is delivered before the expiration of any stated time limit for breach of the contract. However, since such a delay almost always causes additional expense to the contractor, he should be entitled to make a claim for the recovery of all of the cost directly chargeable to such interruption. Also, continued failure by the

employer to make payments should entitle the contractor to terminate the contract after giving a written notice to the employer of his intention to do so assuming payment is not made in the meantime. In the event of such termination, the contractor would have the right to recover the cost of all materials provided; all works done; and all costs and damages suffered by him resulting from delays in payments [8].

As compensation for delayed payments, official bank rate of interest for borrowing will be paid to the contractor for all unpaid certified sums which is not paid to the contractor within 30 days as provided in the contract. Also, the contractor can make the employer at default as per sub-clause 69(1) of MoWUD 1994 conditions of contract that entitles him to terminate the contract and recover any losses or damages arising in consequence of the termination [19 and 23].

According to FIDIC guideline, the payment for listed materials (if any) to be incorporated in the interim payment certificates is reduced to 90 percent or other suitable percentage of the invoice value of the materials in recognition that there is likely to be some wastage [13]. The practice in public projects in Ethiopia is generally 80 percent of the invoice value which also considers the unit prices of the work items as well.

Furthermore, unlike to BaTCoDA 1987 conditions of contract, there was no provision for advance payment in MoWUD 1994 conditions of contract till the amendments made that envisages a provision to effect advance payment of up to 20 percent of the contract price [6, 19 and 23].

3.1.5 Retention Money

It is usually desirable for the employer to have the right to withhold a certain percentage of the estimated interim payments due to the contractor as computed from the quantity of work completed so that the employer will have a reserve in his undertaking. This gives the employer a sort of hold on the contractor because of the money due to the latter but not yet paid by the employer. Therefore, the contractor will not be encouraged to quit near the end of the job. The withheld money can also be used by the employer towards remedying poor work or any defective work that may appear after the approval of the work and for

finishing up of the works if the contractor fails to complete the contract i.e. for security of completion and correction of defective works [5, 8 and 33].

When performance under the contract is accomplished by the contractor, this withheld money is to be paid as part of the final settlement. However, it should be noted that the money withheld from the interim payments to the contractor is not a substitute for the performance bond as such bonds are primarily intended to provide additional protection for the employer. After the final inspection and approval of the works by the engineer and after its acceptance by the employer, a general accounting is usually necessary before the amount of the balance due the contractor can be determined [5, 8 and 33].

According to MoWUD 1994 conditions of contract, the interim payment shall cover five items listed in sub-clause 60(1) such as value of permanent works executed, value of materials on site, value of temporary works if allowed on the contract, amounts reflecting any changes in cost as per clause 70, and amounts approved in respect of day works. Then payment shall be subject to retention in the sum of 10% (reduced to 5% through amendment) of value certified until completion of the works which will be reduced to 5% (2.5% as per the amendment) at completion of the works to be retained until the expiration of the maintenance period. The retention will include all the above stated items including materials on site. The final half of the retention can also be released to the contractor if the contractor provides an equivalent unconditional bond which shall remain valid for 12 months as provided through amendment [19 and 23].

3.1.6 Termination of Contracts

It is possible that circumstances may develop which make it necessary or desirable for the employer or contractor to terminate a contract and this right for termination of contracts should be stated in the contract clauses. The bases for the employer to terminate the contract might include bankruptcy of the contractor or assignment by him for the benefit of his creditors; appointment of a receiver or liquidator for the contractor's property; serious failure or refusal of the contractor to supply sufficient skilled workmen or proper materials to carry out the work as per the contract (after adequate warning by the engineer). Furthermore, persistent and flagrant failure of the contractor to carry out the work

diligently, to comply with the instructions of the engineer or with applicable laws and codes, to pay for his labour and his materials might be ground for the employer to terminate the contract at the default of the contractor [8 and 23].

However, if the termination of the contract is not due to the fault of the contractor himself, the employer should not simply terminate a contract and leave the contractor to suffer. The contractor shall be compensated for all sums spent up to the date of termination and there should be some sort of adjustment to compensate the contractor in whole or in part for the profits that he may be said to have lost because of the termination [8].

It is obvious that termination of a contract may lead to a great deal of disputes and troubles. Therefore, not only should the right to terminate be specifically reserved but also the general details of the procedure to be followed in the event of termination should be stated clearly. Hence, employers shall have the right to terminate the contract in whole or in part if an equitable settlement of the resultant losses can be mutually agreed up on by the engineer or employer and the contractor. The settlement shall be arrived in accordance with a clause entitled “settlement of disputes” if not agreed between the parties [8].

3.2 Contract Clauses related with Risk Allocations

Proper risk allocation in construction contracts can help to reduce negative impacts that will affect the achievement of contract management efficiency. While a number of risk allocation principles are theoretically correct, more realistic considerations should be made for risk allocation in construction contracts, especially to language clarity and particular contextual assessment of the construction culture [44]. Risk can be defined from different perspectives and practically refers to an event or set of circumstances that if occurs will have an effect on the achievement of the project objectives [7 and 44].

As public projects are normally involved with long term contracts, many risks are inherent with the planning, design, construction, and handover phases. Hence, in order to reduce project risks, the employer would transfer all or some uncertainties to the contractors through contract clauses [7].

However, due to the natures of project uncertainties and unknown events, the issues related to unfair allocation of project risks by unfair or unreasonable contracts between the contracted parties become unavoidable. In spite of reasonable or unreasonable requests by the contractor for ambiguous conditions of risks to the employer, this situation always mutually causes both parties to face unexpected phenomena and to suffer unknown risks. Moreover, this will possibly damage the quality of the product and may result in delay of the whole project with an increase of the cost of the project [44].

Further more, to keep the best efficiency and benefits of construction contracts, shifting all the risk to the other party may not be the best possibility. Normally in a contract, one party may shift most of the risks to the other party who is bearing too much cost of the risk where in such a situation, the quotation of prices is needed to rise up in order to balance the cost. The result is increasing the employer's cost which might make the budget over. Contrarily, the extreme case is the employer bearing all risks and pay for all damages. But this way will not adopt suitable risk allocation that may also let the contract with low efficiency and benefits [7].

3.2.1 Philosophies of Risk Allocation

All construction contracts allocate risks and there are some basic philosophical choices to be made. The most basic of all is to choose who takes the default position where different views could be seen for this. The American institute of architects takes the view that all risks belong to the employer when no other party can either control the risks or prevent the losses [15].

The choice of construction delivery system is partly an exercise in risk allocation because, the accompanying payment schemes operate to place the cost of risk materialization on one party or on the other in the absence of a specific provision to the contrary. For example, when the employer adopts a design-build delivery system, he will have the advantage that the contractor will bear the risk of design error and designer delays in circumstances not rising to the level of professional malpractice as the risk of malpractice falls on the designer by law [15]. It is also possible to share risks using the following mechanisms:

- ✚ percentage sharing of over runs - both time and cost
- ✚ awarding time but not money
- ✚ limiting types of costs that can be recovered
- ✚ setting liquidated damages rates lower than justifiable, etc

One logical basis for the sharing solution could be to give both parties (employer and contractor) incentive to avoid and mitigate project risks. However, since both parties are adequately motivated for undertaking the project or to enter into a contract, the sharing solution has no appeal other than the spirit of compromise [15].

The ultimate goal of optimal risk allocation is to promote project implementation on time and on budget with specified quality in the contract, that is to obtain the greatest value of money. Hence, the goal of the employer in general should be to minimize the total cost of risk on a project i.e. not necessarily the cost of either party. According to a study in the United States of America, 5% of project cost may be saved by a choice of the most appropriate terms of contract alone where the different standards of risk allocation for the “most appropriate terms of contract” are discussed below [15]:

i). The Fault Standard

According to this view, the cost and time impacts of risks caused or not avoided through the fault of a party should be borne by that party. This unexceptional or common concept runs through most of the construction contracts.

ii). The Foreseeability Standard

The rationale for this standard is that employers will pay for un-materialized risk if contractors are forced to include contingency sums in tenders to protect against that which is unforeseeable. This rationale may apply in some circumstances, but the traditionally stiff competitive conditions in the construction industry forces contractors away from adding contingencies, except for large construction projects.

The real disadvantage to the employer of forcing the risk of unforeseeable conditions on the contractor is that contractors who are "gamblers and claims artists" will predominate among the winners of contract awards. Most conditions of contract include this theme in that "a contractor should only price for those risks which an experienced contractor could reasonably be expected to foresee at the time of tender".

The foreseeability concept could be subject to fair criticism on the ground that uncertainty is introduced. It requires fair judgment applied to unique circumstances like for the definition of "reasonable or experienced contractor" and consequently, there will be room for disputation.

iii). The Management Standard

This philosophy holds that risk belongs to a party who is best able to evaluate and control it or to manage it because that party will do the best job of minimizing both the occurrence and severity of the risk for the good of all parties in the contract. However, the parties' ability to bear the risk should be given proper consideration as a crushing risk materialization is not manageable. The management standard does not explain the rationale for allocating risks that neither party can evaluate and control the risk effects such as acts of God and third parties. Further more, allocation according to ability to manage the risks may not be consistent with well developed notions of fundamental fairness.

Mostly, it is the employer who can reduce risks through pre-construction planning, exploration and design effort while it is mostly the contractor who can mitigate the effect of an occurred risk during construction. If a risk such as ground conditions is subject to both pre- and post- construction mitigation, the management standard may not provide obvious association rule.

iv). The Incentive Standard

The postulate for this standard is that risk should be placed on a party most in need of incentive (presumably already the ability) to prevent and control them. This is thought to motivate people to play their part. Compensation events or provisions of construction

conditions of contract should be examined if they demonstrate this philosophy uniformly as contractors and employers are already motivated to avoid and mitigate risk materialization. Both parties lose when a project is impacted by cost and time over runs regardless of risk allocation although one may lose more than the other.

Hence, as it is not easy to agree on what is a “fair and reasonable” balance between the contractor and the employer or which terms are “most efficient” for either of the parties, the following common considerations could be drawn from the various philosophies or standards of risk allocation to arrive at a “balanced or efficient risk allocation” [15]:

- ✚ Which party can best control the events that may lead to the risk occurring?
- ✚ Which party can best manage the risk if it occurs?
- ✚ Whether or not it is preferable for the employer to retain an involvement in the management of the risk.
- ✚ Which party should carry the risk if it cannot be controlled?
- ✚ Whether the premium charged by the transferee is likely to be reasonable and acceptable.
- ✚ Whether the transferee is likely to be able to sustain the consequences if the risk occurs.
- ✚ Whether, if the risk is transferred, it leads to the possibility of risks of different nature being transferred back to the employer.

If these considerations are applied, it could be possible to achieve clear and realistic terms of contract that are acceptable to the employer and on which contractors are prepared to tender at prices that does not contain contingencies for unclear terms or for significant risks which are not possible to estimate with some certainty or which are unlikely to materialize [15]. According to Max Abrahamson, the closest to laying down an acceptable "formula" for risk allocation, is as follows [15 quoting 3 and 44]:

A party should bear a construction risk where:

1. It is in his control, i.e., if it comes about, it will be due to willful or deliberate misconduct or lack of reasonable efficiency or care; or

2. He can transfer the risk by insurance and allow for the premium in settling his charges to the other party and it is most economically beneficial and practicable for the risk to be dealt within that way; or
3. The preponderant economic benefit of running the risk accrues to him; or
4. To place the risk on him is in the interests of efficiency (which includes planning, incentive, innovation); or
5. If the risk eventuates, the loss falls on him in the first instance, and it is not practicable or there is no reason under the above four principles to cause expense and uncertainty and possibly make mistakes in trying to transfer the loss to another.

The job of trying to balance the five principles in practice is the hard one. But, at least it is best to work from declared principles rather than undeclared and perhaps unconscious prejudices [15].

3.2.2 Risk Allocation in Public Construction Contracts

For the purpose of risk analysis in construction projects, various risk categorization frameworks can be adopted. Construction project risks may be classified as or into:

- i. National or regional level; construction industry level; company level; and project level risks where sub-division will be made under these four levels such as political risks, economical risks, market risks, physical risks, etc [44].
- ii. Natural and human risks where natural risk is sub-divided into weather and geological risks and human risk is sub-divided into nine types such as social, political, economic, legal, cultural etc [44].
- iii. Seven categories based on the standard clauses of construction contracts as variation, care of works, force majeure, cooperation and coordination, change in laws, contractor's liability, and suspension and termination [7].

Based on the above first two and other categorization of construction project risks, Zhang developed the following categorization framework as illustrated in Fig. 3.1 below, which is used for this paper by inter-relating the risk types mentioned in MoWUD 1994 conditions of contract. Then, the risk allocation under a recent new version of international standard

conditions of contract, FIDIC 1999, and MoWUD 1994 forms of contract will be compared in order to see the fairness or realistic sharing of risks using this risk categorization framework.

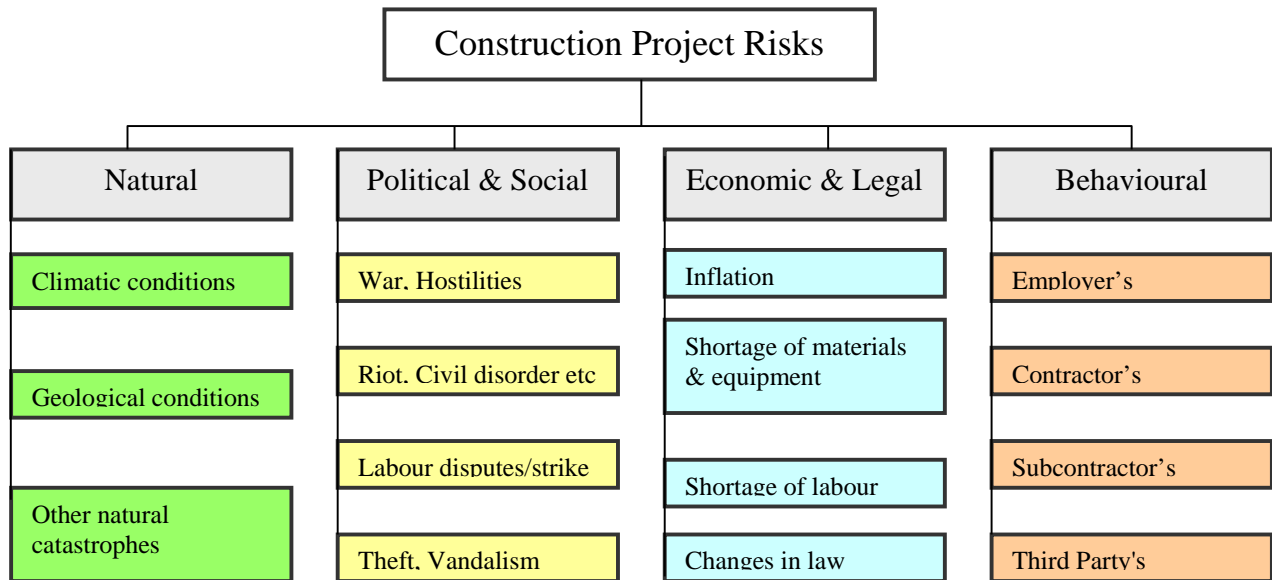


Fig. 3.1 – Construction Risk Categorization Framework [44]

1. Natural Risks

There are several clauses in FIDIC 1999 form of contract that deal directly with natural risks. Sub-clause 8.4 specifies in express terms that risks concerning climatic conditions are shared between the employer and the contractor in that the employer shall allow an extension of time (EOT) if exceptionally adverse climatic conditions affect the contractor's construction progress. This implies that the contractor shall bear the relevant costs incurred by him due to such risks [12 and 44].

It also implies that under "normal" adverse climatic conditions such as rainy or cold days, the contractor shall bear the corresponding responsibility. However, according to Sub-clause 17.3 (employer's risks) and sub-clause 17.4 (consequences of employer's risks), the contractor shall be entitled to an EOT and cost compensation in case of "unforeseeable forces of nature that an experienced contractor could not make provisions for or insure against" which may include some climatic conditions particularly when such forces turn

out to be of the catastrophes such as typhoon, hurricane, etc. as per sub-clauses 19.1 (definitions of force majeure) and 19.4 (consequences of force majeure) [12 and 44].

Concerning geological conditions, sub-clauses 4.12 (unforeseeable physical conditions) and 4.24 (fossils) specify that the contractor shall be allowed an EOT and compensated for costs incurred from such risk events. However, the term "unforeseeable conditions", which is of an ambiguous nature, blurs the division of risks between the employer and the contractor. Other natural catastrophes, which are of extreme natural events such as earthquakes and volcanic activities are also mostly allocated to the employer under sub-clauses 19.1 and 19.2 in that the contractor is entitled for extension of time and cost compensation [12 and 44].

It can be seen from the above analysis that natural risks are basically shared by the two parties under FIDIC 1999 form of contract. Regarding "extreme" natural catastrophes, the employer takes most of the consequences, i.e. EOT and additional cost with the contractor taking the loss of profit. However, for the risks relating to exceptionally adverse climatic conditions, the contractor takes most of the consequences, i.e., additional cost uncompensated and loss of profit with the employer taking the risk of EOT. As for "normally" adverse climatic and geological conditions, the contractor takes almost all the consequences except for the ones that are justified to be "reasonably unforeseeable by the contractor by the date for submission of the tender (sub-clause 1.1.6.8)".

The risk allocation under MoWUD 1994 form of contract is similar to FIDIC 1999 form of contract with regard to climatic and geological conditions except for unforeseeable artificial obstructions and fossils that allows the contractor only for cost compensation. Extension of time can be granted if the occurrence can be taken as "other special circumstances of any kind whatsoever which may occur other than through a default of the contractor (clause 44)" [23].

Of course, the contractor has the obligation to satisfy himself with the conditions of the site including underground soil natures and interpretation of the data that the employer owns

before submitting his tender, as per clause 11 of MoWUD 1994 conditions of contract. However, the risk of unforeseeable site conditions is allocated to the employer while the risk of reasonably foreseeable nature is allocated to the contractor.

Also, other natural catastrophes with extreme natural events such as earthquakes and volcanic activities can also be taken as allocated to the employer as it can be taken as frustration or “a war or other circumstances out side the control of both parties that prevents either of the parties from fulfilling his contractual obligations or under the law governing the contract, the parties are released from performance”, clause 66 of MoWUD 1994 conditions of contract. This also offers the definition of force majeure under the Ethiopian legal system which according to article 1792 and 1793(c) of civil code of Ethiopia, force majeure includes natural catastrophes such as earth quake, lighting or floods [23 and 25].

2. Political and Social Risks

Under sub-clause 17.3 (employer's risks) and clause 19 (force majeure) of FIDIC 1999 form of contract, most of the political and social risks (war, civil commotions, disorders and strikes) are basically allocated to the employer. In case of occurrence of such risk events that impact the contractor's project execution, the employer shall allow both an EOT and pay cost compensation (but not profit) to the contractor [12 and 44].

Some social risks, such as theft and vandalism, are allocated to the contractor under FIDIC 1999 form of contract. Although these are not expressly stated, it can be inferred from Sub-clause 17.2 (contractor's care of works) that the contractor shall take the responsibility for the care of works and goods during the construction period and the contractor shall rectify the loss or damages at his own cost and risk [12 and 44].

Concerning political and social risks, MoWUD 1994 form of contract similarly allocates most of these risks to the employer where only cost compensation is allowed to the contractor explicitly unlike FIDIC 1999 form of contract which allows both EOT and cost adjustment. Of course, it could be argued that such occurrences can be taken as a ground

for EOT claims as per sub-clause 44 (c) “other special circumstances of any kind whatsoever which may occur other than through a default of the contractor” [23]. By this argument, the risk allocation for political and social risks could be similar to FIDIC 1999 form of contract that explicitly entitles the contractor for cost compensation and extension of time.

3. Economic and Legal Risks

Economic risks occur frequently during construction period, particularly the fluctuation of prices of materials, labour, and equipment. Under sub-clause 13.8 of FIDIC 1999 form of contract, an adjustment formula for price fluctuation is given to deal with this issue:

$$P_n = a + b \frac{L_n}{L_o} + c \frac{E_n}{E_o} + d \frac{M_n}{M_o} + \dots \dots \quad (a+b+c+d+\dots = 1.00)$$

This formula applies both to the rise and fall of prices. P_n is adjustment multiplier; "a" is a fixed coefficient; "b", "c", "d"... are coefficients representing the estimated proportion of each cost element; " L_n ", " E_n " and " M_n "... are the current cost indices or reference prices for period "n" while " L_o ", " E_o " and " M_o "...are the base cost indices on the base date which is defined as "the date 28 days prior to the latest date for submission of the tender (Sub clause 1.1.3.1)" [12 and 44].

The fixed coefficient "a" represents the non-adjustable portion in the contractual payments. Such a provision indicates that the risk of inflation is shared between the employer and the contractor i.e. as the accepted contract amount is deemed to have included amounts to cover the contingency of other rises and falls in prices, full compensation for any rise or fall in prices is not covered in the provision [12 and 44].

Shortage of labour, materials, and equipment is also dealt with under FIDIC 1999 form of contract to some extent where if such shortage is reasonably unforeseeable, the contractor is entitled to an EOT under Sub-clause 8.4 (unforeseeable shortages in the availability of personnel or goods caused by epidemics or governmental actions). However, under sub-clauses 4.1 and 6.1 of FIDIC 1999 form of contract, it is the contractor's obligation to

"provide all contractors' personnel, goods, etc" and the contractor shall "make arrangements for the engagement of all staff or labour and for their payments". It can be inferred from such provisions that the contractor shall bear all the consequences of the risks of unavailability of the required personnel, materials, and equipment except for allowed EOT in case of unforeseeable shortages caused by epidemics or governmental actions, not by the market [12 and 44].

Legal risks refer to changes in legislation or introduction of new laws after the base date of the contract. It is provided in sub-clause 13.7 (adjustments for changes in legislation) of FIDIC 1999 form of contract that the contract price shall be adjusted to take account of any increase or decrease in cost arising from a change in the laws of the country including the introduction of new laws and the repeal or modification of the laws made after the base date. Since the contractor is entitled to an EOT (which is explicitly mentioned) and additional cost caused as a result of the changes in law, such legal risks are basically retained by the employer under FIDIC 1999 form of contract [12 and 44].

However, MoWUD 1994 form of contract does not embrace price adjustment provision for fluctuation of prices and cost changes by the market unless such costs such as rates of wages, other emoluments and expenses are increased or decreased by any Act, Statute, Decree, Regulation and the like after the date of bid pricing [23]. This means that the risk of inflation is not shared by the parties where the contractor is to carry the risk and the contractor should forecast and add a contingency for this work.

According to paragraph (c) sub-clause 70(1) of MoWUD 1994 conditions of contract, the contract price is deemed to be calculated in the manner that the rates contained in the priced bill of quantities are based up on the rates of the contractor's compulsory contributions payable at the date of bid pricing under or by virtue of any Act, Statute, decree, Regulation, and the likes. The net amount of the increase or decrease of the emoluments and expenses shall form additions and deductions as the case may be to or from the contract price and be paid to or allowed by the contractor when the cost is changed by any Act, Statute, Decree, Regulation and the like after the date of bid pricing as

stated in paragraph (b) sub-clause 70(1) [12 and 23]. Hence, in such situations, the cost has to be adjusted in which by clause 44 the contractor is entitled for EOT even though not explicitly mentioned as in FIDIC 1999 form of contract.

Date of bid pricing is the date 15 days prior to the deadline for the submission of bids as per sub-clause 70(6) of MoWUD 1994 conditions of contract and it has to be noted that the contractor's profit should not be altered in this case. More over, unforeseeable shortages in the availability of personnel or goods caused by epidemics or governmental actions does not entitle EOT in which the risk of shortages of personnel or goods whether unforeseeable or foreseeable is allocated to the contractor like the fourth edition of FIDIC [11, 20 and 23].

From the above comparison, it can be observed that the risks of inflation and unforeseeable shortage of labour and goods are allocated to the contractor in MoWUD 1994 form of contract unlike FIDIC 1999 form of contract that entitles the contractor for extension of time. However, through amendment, price escalations covering for some basic materials such as cement, reinforcement bar, fuel, bitumen, etc were allowed to be compensated. Risk of inflation is also entertained with the currently adopted PPA conditions of contract in a similar manner as FIDIC 1999 form of contract if only provided in the special conditions of contract. However, the PPA user's guide recommends price adjustment for contracts which provide for time of completion exceeding 18 months [30].

4. Behavioural Risks

Behavioural risks are defined as those risks caused by one party's action or inaction that adversely impacts the project and performance of the other party. Risks caused by the behaviours of the parties under FIDIC 1999 form of contract are summarized as follows [44]:

I. Employer's Behavioral Risks (including Engineer's)

- ✚ Late giving possession of site; late issuance of design drawings or instructions; late attendance to tests or inspections;
- ✚ Interference with tests on completion
- ✚ Delay in payment and unreasonably withholding permissions or certificates

- ✚ Defects in design drawings by the employer's personnel or for whom the employer is responsible; notifying incorrect setting-out data
- ✚ Occupation of the works by the employer if not specified in the contract
- ✚ Non-notification of financial arrangements upon request

II. Contractor's Behavioral Risks

- ✚ Labour injuries and accidents
- ✚ Defects in materials, plant and workmanship
- ✚ Improper interference with the convenience of the public
- ✚ Damage caused by transportation of goods
- ✚ Acts or defaults by subcontractors

III. Risks Caused by Third Party's Behaviours

- ✚ Unauthorized entry as retained by the contractor
- ✚ Delay caused by public authorities as retained by the employer

Under both forms of contract, FIDIC 1999 and MoWUD 1994, the employer is responsible for his own behavioural risks including the risks of engineer who acts on the employer's behalf and the contractor is responsible for his own risks, including those of the sub-contractor. The only exception between the two forms of contract is that the provision which entitles the contractor to get evidences on the financial arrangement is not covered in MoWUD 1994 conditions of contract [44].

In general, except for the risks of inflation and unforeseeable shortages of personnel and goods, the risk allocation for both forms of contract are some how similar. However, the provisions in MoWUD 1994 form of contract are not clear and require cross referencing with other related provisions and articles from civil code of Ethiopia i.e. MoWUD 1994 form of contract lacks clarity in allocating risks which would promote reasonable pricing of works during tendering.

3.3 Contract Clauses related with Procedures for Claim Substantiation and Disputes Settlement

Claims in construction projects are common phenomena, especially on large construction contracts. This is because, construction industry covers a complex field of activity involving many operative skills and conditions which vary considerably from one project to another. For this reason, most construction contracts make provisions for these complexities and uncertainties by inclusion of clauses permitting the contractor (and also the employer nowadays as the recent FIDIC 1999 envisages) to claim for losses or expenses suffered from specific occurrences [8, 12 and 34].

From a construction point of view, claim means a request, demand, application for payment, or notification of presumed entitlement to which a party, rightly or wrongly at that stage, considers himself entitled. Therefore, claim is a request by a party for recompense for some loss or expense that he has suffered. Disputes can arise over claims when the party's demand of what he believes is his right differs from what the other party believes or when a claim or assertion made by one party is rejected by the other party [34 quoting 18].

Standard conditions of contract for construction works generally set out procedures for handling of claims and for settlement of disputes which will be of advantage for the contracting parties, contract administrators, and others that might be involved in claims and disputes of contracts. Claims are certain to provoke differences particularly if the claim is established long after the work giving rise to the claim has been completed. For this purpose, it is advisable to introduce a procedure that places time limits for the notification and substantiation of claims [13].

MoWUD 1994 conditions of contract envisages a sub-clause for claims of additional payment and of all extra or additional works ordered by the engineer under the heading of *alterations, additions and omissions*, which doesn't include a detailed procedure for the notification, record of data, and substantiation of claims. Cost and EOT claims which are not related to alterations, additions and omissions could be substantiated as according to

their respective clauses' requirement. However, the trend of claim procedures nowadays is to detail the procedure both for the contractor and the employer [11, 12 and 23].

Similarly, construction contracts contain a clause to the effect that the engineer has power to make final and binding decisions in settlement of various types of disputes that arise in the execution of the works. Of course, this power is not to be unlimited in that the engineer in charge of a construction contract administration has no implied power to bind the parties by his interpretation of the contract. Not infrequently, a contract may stipulate that, in the absence of fraud, etc, the decision of the engineer or some other designated person shall be final on any question submitted, such as what constitutes satisfactory performance. This authority to make certain final decisions places the engineer or some other designated person in a position that gives him a sort of judicial function [8].

However, since the engineer is representing the employer in the execution of the contract, it may seem that the engineer is not in a position to make unbiased decisions in disputes between the employer and the contractor. In practice, however, the engineer should always do his utmost to judge such matters wisely and impartially. His reputation is likely to depend upon his fairness as well as upon his technical ability. Except in case of fraud, gross error of judgment, or action that indicate bad faith, the contractor and the employer are bounded by the engineer's decisions provided that the contract contains a clause to that effect [8 and 13].

It is advisable, however, to make provisions for the settlement of certain types of disputes through arbitration. Even though the contract states that the engineer has the authority to settle a particular category of dispute between contractor and employer, charges of fraud against the engineer are usually sufficient reason to have the matter referred to arbitration or to a court [8 and 13].

In a similar manner, MoWUD 1994 conditions of contract settles disputes in a way that the decision made by MoWUD or its authorized representative will be final and binding. The dispute shall first be referred and settled by the engineer within ninety days of the dispute

referred to the engineer. If the engineer fails to give decisions in ninety days or if one of the parties to the contract is dissatisfied with the engineer's decision, the party may refer the dispute to MoWUD or his authorized representative within ninety days. There is no time limit for decision by the ministry or his authorized representative [23]. By this provision, the parties waive their rights to submit their disputes related to the contract to any other legal means of dispute resolution, in particular to any public court which might have jurisdiction over the dispute.

However, through amendment, the delegation of MoWUD or his authorized representative for final settlement of construction disputes was returned to the contracting parties in that the employer and the contractor were allowed to settle their disputes by their own way. The amendment does not have any guidance on how to settle the dispute especially for public employers who may not have sufficient knowledge and practice for such settlement of disputes [21].

Of course, the general sentiment when conflicts arise out of contractual relations is that too much time and energy will go towards settling of disputes instead of towards completing the projects. This will result in escalating the costs of both parties and loss of profits that may be gained from the project. The legal expense and long waiting times for a court date are troublesome for businesses like construction projects which demands coordination of different activities, procurement of materials and machineries [31].

For this reason, it is becoming common for construction industry to adopt and implement Alternative Dispute Resolution (ADR) initiatives such as mediation, adjudication, arbitration, and others. For this reason, adjudication and arbitration are currently allowed in the new construction conditions of contract issued by the Federal Democratic Republic of Ethiopia Public Procurement Authority (PPA conditions of contract) where in some public projects neither adjudication nor arbitration was applied for the settling of disputes [30].

Finally, it has to be noted that the intention of both parties is to conclude the project meeting their objectives without any type of disputes that may arise during the progress of

the works. For this purpose, it might not be advisable to have "encouraging attitudes" towards disputes and discouraging claims and disputes might be a mechanism so that contracts are finished with mutual understanding and cooperation. In other words, good faith negotiations should better be taken as a common step towards resolving conflicts. However, this shall not force domestic contractors to accept "unreasonable" decisions, if any, which would also question the reputation of the engineer for the fairness of his contract administration.

Even though the litigation history of the construction industry in Ethiopia is not like the developed ones, such kinds of procedures may lead to unhealthy and adversarial relations between the contracting parties that would affect the public interest. Therefore, contract conditions for public construction works should provide contracting parties a firm provision with fair and speedy dispute resolution mechanisms. If any conflict arises, the provision of alternative dispute settlement by itself would maintain an effective contract accomplishment as the parties and the engineer will take special attention for their decisions which might have implication on their reputation for future jobs.

Chapter Four

Methodological Approach of the Study

This chapter discusses the methodological approach of the thesis that entails the research approach and the delimitations considered coupled with data collection methods and how the analysis was made.

4.1 Approach

This research is basically of a mixed research type where both qualitative and quantitative methods are employed. There are two types of researches i.e. qualitative and quantitative researches where the division bases on the way in which the research objectives can be questioned. A qualitative research is a “subjective” assessment of a problem and takes the form of an opinion, view, perception or attitude towards objects (that are referred to as an attribute, variable, factor or question). Quantitative research, on the other hand, is an objective measurement of the problem that investigates facts and tries to establish relationships using statistical tools [24].

The research focuses on randomly selected groups of stakeholders namely public employers, domestic contractors, and domestic consultants who have been actively participating in undertaking public construction works in Ethiopia. It includes Ministry of Works and Urban Development (MoWUD) who acts as a regulatory body and who had been assigned as arbitrator as per MoWUD December 1994 conditions of contract where this authority to settle disputes as arbitrator was ceased to apply since Megabit 1, 1996 EC through amendment [21 and 23]. The research will identify problems with regard to the contractual arrangements in public construction works and suggests ways of improvement based on the gathered data or information and literature review highlighting the trends and differences observed from the findings of the study and the suggestions given by the respondents.

4.2 Limitations

An issue like construction conditions of contract is a wide area of study to be covered as it is much related with the general law requirements. Hence, the study is limited to the basic

provisions of standard condition of contract for public construction projects. There fore, the basic problems of public construction projects with respect to contractual provisions have been targeted in this study.

Among from the limitations of this study, the first one is lack of willingness of organizations to participate and complete the questionnaire. Some of the organizations requested to complete the questionnaires were not willing to receive the questionnaire. For this reason, a first brief on the study were to be given to the concerned person in order to motivate them to participate. By doing so, the other respondents completed the questionnaire even if this has been achieved with frequent follow-up which took longer period of time for collection of the data than expected.

For this study, a lower response rate has been registered for consultants (57.89%) while a reasonably higher response rate was recorded for contractors (77.27%). All in all, 50% of the respondents are from contractors while the other 50% comprises of the respondents from consultants and employers. However, consultants who hold the position of the “Engineer” in the standard conditions of contract for contract administration service were expected to be much more interested for the subject area. As observed during the follow up of the data collection, the likelihood of this problem was that contractors are on a better position as to the staffing of their offices while in some consulting offices, there is only a limited office staffs while holding much of their staffs on project sites.

The second limitation was concerning public employers. As some of these public employers usually undertake a one time public project, their key professional staffs for construction service will resign after the projects have been completed. Further more, it was difficult to get documents and records from MoWUD as their office has been reorganized and for the shifting of their offices which become difficult to get data from their archives. Also, some organizations were not willing to give archival documents that are related to claim and dispute issues as they think that the cases might invoke legal implications.

4.3 Data Collection

The data collection approach adopted for conducting this research includes both primary and secondary sources. Questionnaire, interview, and desk study provide the primary data for this thesis while the secondary data sources include journals, internet sources, as well as reviewing related archival documents (such as payment certificates, and correspondences) on contractual issues of public works. These different methods of data collection have been used in order that the data or information obtained from one can be supplemented by the others whereby the collected data will give multiple evidences.

4.3.1 Questionnaire

Questionnaire provides first hand information for the subject matter of a research as it is focused on issues which further serves as a survey to understand the main concerns and attitudes of respondents towards the problems [24 and 26]. In this thesis, questionnaire was administered to some randomly selected stakeholders of the construction industry such as public employers, domestic contractors, and domestic consultants.

For the purpose of this thesis, a random sampling of these organizations was made and copies of the questionnaire were distributed to the selected firms. The questionnaire has been divided into five sections where section I contains questions related to the background of the individual and organization completing the questionnaires such as names of organization, position, years of experience and other descriptive data. Section II raises general questions related to practices on contractual relationships in between the parties and the engineer. Sections III contains questions related with financial matters such as payment issues, liquidated damages and price adjustment provisions. In section IV, the respondents were asked how they perceive the risk allocation in construction projects as adopted in public works and its consequences and effects. The last section deals with provisions related to claims substantiation and disputes settlement procedures.

4.3.2 Interview

Interview is one of the primary data collection methods which is flexible and adaptive way of investigating underlying motives of a subject in a way that self administered questionnaires can not [26]. The interview undertaken for this thesis was based on semi-

structured style. This type of interview has a predetermined set of questions (generalized form of questionnaire) with a flexible order depending on what the interviewer perceives the subject matter by looking at the respondent capability and exposure or experience. The interview for this thesis was made with six reputed professionals of the sector. From these interviewed professionals, two of them are from contractor side and the others four are from consultant sides.

4.3.3 Desk Study

Desk studies on some selected topics were used in this research to support or supplement responses and arguments found by questionnaire and interview through in-depth analysis of some cases of a project. Of course, as the nature of the cases focuses on one aspect of a problem or practice, the conclusion drawn may not be generalized, but rather related to one particular event [24]. For this reason, desk studies under this research are used to supplement the findings obtained through questionnaire and interview. The cases considered in this thesis include payment procedures, dispute settlement procedures, and risk allocation issues.

4.3.4 Secondary Data Sources

Archival documents, correspondences and other related documents have been reviewed to understand the background of contract provisions, problems and practices in public construction works. These secondary sources provide a general understanding of the subject area by presenting a wide range of ideas in the field which help to supplement other specific information obtained from the primary data sources.

4.4 Analysis of the Results

The research attempted to touch most of the relevant problems under the study that enables to appreciate all the concerned issues under the subject area. A descriptive statistical method has been used for the analysis of the data which provides a general overview of the results in order that some kind of interpretations and discussions can be made on the results. More over, reviewed literature was also used as one of the main backbone for the analysis of the findings. For summarizing of the collected data and to determine the number of responses belonging to each category, frequency tables and charts have been used.

Chapter Five

Analysis and Discussions

The purpose of this study is to provide an understanding on the problems of some contract provisions and their relative effects on the development of the construction industry in Ethiopia. This chapter analyses the collected data and presents the results of the analysis on the main issues by combining with literature review. It also presents the ways that public authorities can address these problems together with the results of their attempts. The technique adopted for analysis of the questionnaire and interview survey is frequency distribution.

5.1 Responses to Survey

This study has focused on the major construction stakeholders that have been participating in the local public construction works. Consulting organizations of category III and above; domestic contractors who are of class III and above; and ten public employers including MoWUD or MoI are considered in this study. From these consultants, contractors, and public bodies, 51 organizations were randomly selected considering their participation on public works and a ten-page structured questionnaire was submitted to these randomly selected organizations. The survey included organizations undertaking public construction works for the last 20 years and who are still working on public construction projects.

Out of the total 51 number of questionnaires sent out, 34 completed questionnaires (66.67%) were received for this study. In addition, six reputed professionals of the sector (two from contractors and four from consultants), who have strong expertise and interests with regard to the standard conditions of contract in focus, have been interviewed and their responses have been supplemented with the questionnaire survey. Table 5.1 summarizes the distribution of respondents by organization with their respective response rate while figure 5.1 illustrates the proportion of the respondents using a pie chart form.

Table 5.1 – Response Rate by Organization

Organization	Distribution in No	Response in No	Response rate in percentage
Employer	10	6	60%
Contractor	22	17	77.27%
Consultant	19	11	57.89%
Total	51	34	66.67%

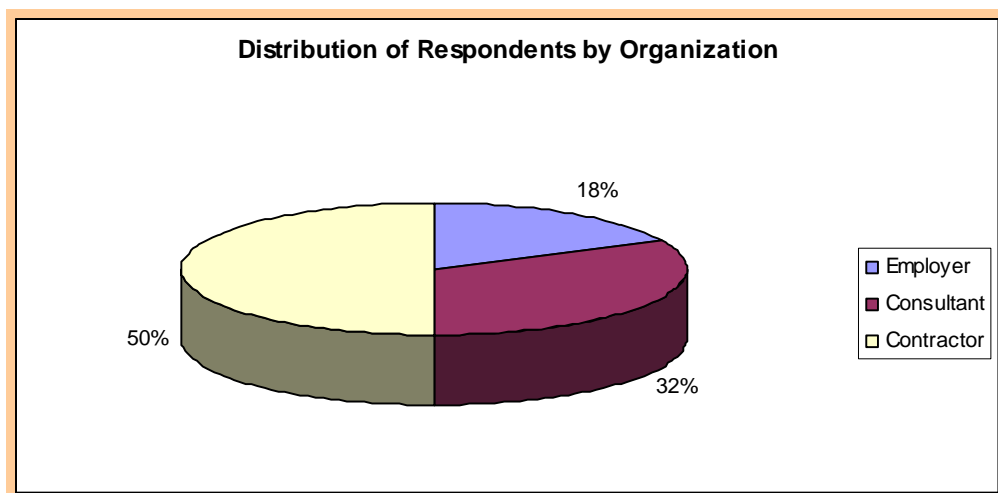


Fig. 5.1 – Distribution of Respondents by Organization for Questionnaire Survey

5.2 Survey Result and Analysis

The survey shows that the majority of the respondents (64.71%) have a working experience of more than fifteen years in public construction works such as building, road, water, irrigation, and other infrastructure projects. This could demonstrate that the respondents have ample and adequate knowledge and expertise on public works contract. Thus, it can be concluded that the result from the survey is relatively accurate and reflects the actual situation in the domestic construction industry with respect to the focused contract provisions on the standard condition of contract together with its implications. Besides, considering the relatively high experience of the respondents and the number of responses, the data obtained from the survey contains a wealth of information that can help to draw

reliable conclusions and recommendations. Table 5.2 below illustrates the distribution of respondents by their years of experience in the domestic construction industry.

Table 5.2 – Distribution of Respondents by Years of Experience

Range of Organization's Years of Experience	Number of Organizations	Percentage
5 - 10	4	11.76%
10 - 15	8	23.53%
15 - 20	7	20.59%
>20	15	44.12%
Total	34	100%

5.3 Codification and Recording of Data

Recording of the data or information obtained from the survey is an important step in a research process and it is necessary to devise a data summary sheet for the collected data from questionnaire or any other data collection forms adopted for the study. Coding is the process of identifying and classifying each response with a numerical score or other character symbols which usually involves entering the data for analysis and computer storage [10 and 24].

For this purpose, both open-ended and closed-ended forms of questions have been coded on the data summary sheet as the use of statistical software packages require the codification of the categorical variables. The responses to open-ended questions included in the questionnaire have been placed into a general category that provides mutually exclusive and independent categories so that all possible responses are to be represented. These categories of responses together with the responses for the closed-ended questions have then been coded as shown in Table 5.3 below. The data summary sheet of this thesis has been prepared accordingly and in this data summary sheet, employers are labeled as E1, E2, etc; consultants as CS1, CS2, etc; and contractors as CT1, CT2, etc under the

respondent number column and the data have been processed with Microsoft excel programme.

Table 5.3 – Sample of Data Summary Sheet and Codification

Respondent Number	Section 3 - Financial Questions			
	3.1	3.2		
	3.1 1 2 3	3.2.1 1 2 3 4	3.2.2 1 2	3.2.3 1 2 3 4 5
E1	3	3	1	5
E2	1	1	1	4
CS1	2	4	2	2
CS2	3	3	1	2
CT1	3	4	2	2
CT2	1	3	1	2
Mode	3	3	1	2
Frequency (Countiff)	3	3	4	4
% Countiff	50.00%	50.00%	66.67%	66.67%

In the above table (Table 5.3), mode stands for the most frequently selected variable as represented by its code number and it represents the preferred variable by the majority of the respondents according to their views or perception. “Countiff”, an excel function, represents the proportions of the respondents in the various categories who selected the most frequent variable while “% countiff” gives this proportion in percentage. Therefore, the following findings of the study have been obtained based on this analysis as discussed below.

5.4 Assessment of Contractual Relationships and Practice

For the purpose of this study, respondents were requested to give their general opinions and perceptions on the nature of contractual relationships in between the contracting parties considering the practical cooperation, team work, and capacities of domestic contractors and public employers in discharging their contractual responsibilities and obligations.

From the responses obtained, the contractors and consultants who participated in this research undertake from 2-20 public projects annually depending on their capacity, interest, and availability of tenders. Except three contractors and one consultant, all the others stated that they will participate on public works with the same pace or they will increase their participation despite the contract provisions being favourable or not for the following basic reasons:

- ✚ because of their vision to grow and increase their share in the construction industry
- ✚ since public projects are the only available projects to participate easily and equally where the private sector is difficult even for participation, and
- ✚ as the government expenditure for infrastructure development is increasing

One consultant indicated that his participation on supervision and contract administration of public construction works is decreasing focusing on design services because of employer's interference on the supervision and contract administration services. Two of the contractor respondents similarly indicated that their participation on public works is decreasing as the standard conditions of contract does not entertain price escalation and other risks they are suffering from and one of them stressed that the conditions of contract in use for public works empowers the engineer which makes difficult for them to comply with the engineer's instructions and decisions. Another contractor stated that his participation on public works is increasing in the road sector and decreasing in the building sector for "poor contract administration and 'bureaucratic' procedure" in the building sector.

From the above responses, we can see that most domestic contractors and consultants are still willing to increase their participation in the public sector for construction works whether the contract conditions and practices are favourable or not. Their basic reason is of

course unavailability of works from other or private sectors as discussed in the literature review part of this thesis. The other reason that was given by some of the respondents is that contractors are getting the contract amount that they agreed and these respondents believe that sufficient profit is gained from public projects one way or other way.

Some of the problems related to practical contract administration that some domestic contractors and consultants face are reported to be employers' interference, lots of authorities given to the engineer, unavailability of provisions for price escalation and other similar risks, and monopoly of supervision and contract administration service by one consulting firm for public building projects. The suggestions that would solve the above problems are:

- ✚ detailed contract provisions should better be adopted for the authorities and responsibilities of the engineer and the employer; and for rights and obligations of the contractor
- ✚ role of the engineer should be in unbiased manner or in good faith as the contract requires
- ✚ the engineer shall discharge his responsibilities in a balanced way treating both parties equally as per the terms of the contract that will build the reputability of fair contract administration; and
- ✚ sharing public work supervision and contract administration service to as many competent domestic consulting firms as possible

5.4.1 - Capacity of Domestic Contractors

The following table (Table 5.4) shows the responses for the question related with the capacity of domestic contractors in delivering public construction projects with specified quality, within time and budget as per the contract requirement.

The result from table 5.4 shows that the majority of the employer and consultant respondents believe that domestic contractors deliver public construction projects with lower quality and with time/cost overruns. One of the employer respondents, however, remarked that generally domestic contractors deliver projects with specified quality but

with time and cost overruns. A consultant respondent also added that the reason for the delivery of public projects with lower quality and with time/cost overrun is the existing materials shortage at the national level that hinders domestic contractors to discharge their contractual obligations with respect to quality, cost and time.

However, the majority of the contractor respondents believe that domestic contractors, especially higher class contractors, deliver public projects with optimum quality, optimum time/cost overruns or as per the terms of the contract except for the reasons beyond their control such as price escalation, design changes, “unfulfilled” contract documents, etc. In other words, these respondents confirm that it is difficult to achieve delivery of public projects with optimum quality, optimum time/cost overruns as specified in the contract for the above mentioned reasons.

Table 5.4 – Capacity of Domestic Contractors in undertaking Public Construction Projects

They deliver projects with lower quality, and with cost/time overruns			They deliver projects with optimum or acceptable quality, time and cost		
E	CS	CT	E	CS	CT
83%	64%	29%	17%	36%	71%
Remark: Existing material shortage hinders domestic contractors to discharge their responsibilities			NB: Some respondents believe that the reason for non-compliance is hindrances beyond their control		

Of course, the existing material shortages in the country and other reasons such as uncompensated price fluctuations can be critical problems for the delivery of public projects as per the contract requirement. Hence, it could be expected that domestic contractors would have been able to deliver public projects as per the contract requirement if the contract procedure adopted for public projects include provisions for compensation of such unforeseeable shortage of materials and price fluctuation fairly and reasonably.

In general, the employer will take over the project when the contractor substantially completes the project where the extent of any outstanding work is of a minor character. The projects to be taken over would be in such a condition that they are capable of being occupied and used by the employer for the intended purpose [13]. From the practice and responses of two respondents from an employer and contractor organization, public projects will not be taken over unless the quality requirement is within the tolerance limits. Hence, it can be concluded that domestic contractors deliver public construction projects within acceptable range of quality standards as practiced in the country but with delay and cost overruns.

Further more, it is logical to assume that public employers would have been able to receive the projects as per the contract requirement had contractors been compensated for such unforeseeable risks which is also practiced for other international projects undertaken within the country. It is also advisable to address all the risks allocated to the contractors by giving opportunities for contractors to appreciate risks before submitting their tenders through maintaining a competitive nature of tendering. This could be achieved by insisting domestic contractors and including a mandatory provision on the instruction to tenders to visit project sites; to study contract documents; and arranging pre-bid meetings with all interested contractors before tenders are submitted.

5.4.2 - Competence of Public Employers

All of the employer and consultant respondents together with 94% of the contractor respondents believe that public employers are not well organized for construction works to carry out their responsibilities and obligations set in the conditions of contract and they mostly rely on the engineer or other bodies. However, one of the contractor respondents holds a view that Ethiopian Roads Authority (ERA), exceptionally as a public employer, is competent enough to handle contractual matters and manage public road projects as per the contract requirement.

In situations where public employers are not competent enough in responding to engineer's determination (cost, time, etc); in deducting liquidated damages as per the contract; and in

approving time extensions and variations that are beyond the engineer’s authority, the respondents were asked to recommend solutions to the problem. Table 5.5 shows the responses obtained from the survey.

Table 5.5 – Suggestions for handling of Contractual Matters on behalf of the Employer

Developing a well organized staff for construction works (central or in the employer’s office)			Vesting additional functions & responsibilities to the engineer			Outsourcing part of the routine works to “ethical & competent” construction management consultants		
E	CS	CT	E	CS	CT	E	CS	CT
75%	60%	93%	25%	20%	-	-	20%	7%

From the above analysis, it can be observed that the majority of the respondents prefer developing a well organized staff centrally or in the employer’s organization with sufficient construction professionals as a solution for the problem. Some of the employer and consultant respondents also prefer vesting additional functions and responsibilities to the engineer than allocated on the standard conditions of contract for construction projects. Similarly, 20% of the consultant and 7% of the contractor respondents suggested outsourcing part of their routine works to well-organized and “ethical or reputed” construction management consultants or hiring management advisors on project basis would be a better solution rather vesting additional responsibilities to the engineer.

This suggestion is probably given to maintain fair and reasonable contract administration as it might be unwise to give lots of responsibilities and authorities to the engineer. Besides, from a discussion held with one employer respondent during the follow up of the questionnaire, outsourcing of such works is somehow being implemented by GTZ-IS organization for public projects in the health sector and he added that even such organizations are not sufficiently organized to manage construction projects effectively as per the contract. Also, one interviewee from a consultant firm suggested the same on the ground that public employers generally do not have senior staffs to undertake such contractual matters as most of them do not have routine construction projects. The

interviewee suggested that it would be very economical for public employers to outsource their works to construction management consultants which would result in a better delivery of public projects.

Generally, in such a reflection of a practical situation where the public employers are mostly represented by the engineer, the consultant firms acting as the “engineer” in the standard conditions of contract shall also be well organized and sufficiently capable to undertake fair and realistic contract administration. The importance of consultation of the engineer with both parties should be highlighted here in order to maintain the parties’ attention towards the delivery of public projects as per the contract requirement.

5.4.3 - Cooperation & Team work in Public Construction Works

The result from the data analysis (Table 5.6) shows that the majority of the respondents perceive the practical team work, cooperation, and mutual understanding between public employers, domestic contractors, and the engineer in a framework of public work contracts is good or at least not bad while the others stated that the relationship is poor. Some of the consultants who perceive a good relationship suggested that the contractual relationship should be bounded by the terms of the contract. One contractor respondent also added that team work and cooperation is not a necessary requirement for the accomplishment of a public work contract. However, 12% of the contractor and 9% of the consultant respondents exceptionally stated that the relationship, team work and cooperation is very poor indicating their dissatisfaction with the team work and relationship they expected from public work contracts.

Table 5.6 – Respondents’ Perception to Team work and Cooperation

Good			Not Bad or Not Satisfactory			Poor			Very Poor		
E	CS	CT	E	CS	CT	E	CS	CT	E	CS	CT
-	36%	24%	75%	37%	41%	25%	18%	23%	-	9%	12%

In summary, most of the respondents stressed that team work being necessary for a successful accomplishment of public construction works, a detailed and transparent contract provision that clearly addresses the responsibilities of the parties will improve the situation. One contractor respondent also added that teamwork and relationship is poor because of “wrong” practice and attitude of contract administration which is becoming a “culture” in the construction sector.

Hence, it is advisable to underline the necessity of good communication, understanding, and cooperation between the employer, engineer, and contractor where contracts of such nature would achieve of the objectives the contract when contract provisions and contract administration practices are backed up by such undertakings. This will in turn result in a win-win contract accomplishment where the employer would get the project as per his requirement and the contractor would achieve his objective in undertaking and participating on such public work contracts.

5.4.4 – Is Contract Administration according to the Contract Provisions?

The majority of the employer and contractor respondents together with 36% of the consultant respondents (Table 5.7) stated that the engineer administers public construction contracts mainly as per the contract provisions while some of the employer and contractor respondents remarked that sometimes the engineer acts out of the provisions where his action is in favour of the employer or to “punish or suppress” the contractor. One of the contractor respondent also remarked that the engineer is mostly subjective in administering the contract due to lack of skill and knowledge of contract administration and another contractor suggested revision of contract provisions in a sufficiently detailed and defined manner to assist the contract administration practice.

On the other hand, the consultant contractor respondents (43%) stated that it is very difficult for the engineer to administer the contract according to the provisions as most of the employers and contractors are not sufficiently aware of the contract provisions which may force the engineer to administer public contracts without necessarily following the contract provisions. The other reason reported by them is that favouring domestic

contractors might be interpreted as corruption where as favouring a public employer may not have such implications.

Table 5.7 – Is Contract Administration according to the Contract Provisions?

Yes			No			Mainly Yes (Sometimes No)		
E	CS	CT	E	CS	CT	E	CS	CT
100%	36%	56%	-	43%	22%	-	21%	22%

From the above responses, it can be seen that the engineer mostly administers the contract as per the contract provisions. However, it is reported by some of the respondents that in some situations, the engineer favours the employer or suppresses the contractor so that the contractor will act as per the engineer’s decisions and instructions. Other reasons stated by the respondents for such practices include:

- ✚ lack of skill and knowledge of contract administration by the engineer that results in subjective contract administration
- ✚ lack of detailed and well defined contract provisions to assist the contract administration practice
- ✚ lack of awareness of contract provisions by public employers and domestic contractors, and
- ✚ fear of being misinterpreted as corruption while favouring the (private) contractor

If the situation is as stated above, the practice will have implications on the outcome of the project with respect to quality, cost and time besides on the impediment of developing the capacities of domestic contractors and performance of the construction sector. In addition, had contractors (and employers) been given other opportunities of referring such cases to arbitration or other alternative dispute settlement procedures, such favouring of one party might question the fairness of contract administration and reputation of the engineer. This is because, the provision of alternative dispute settlement procedure or arbitration could promote fair and reasonable application of the contract by the engineer.

Of course, in a fair contract management practice and in such a public works contract where public expenditure is the main source of finance, it might not be possible and advisable to “favour” any of the parties while administering the contract. However, the “favouring perception” of the parties could be constructive if it is practiced ethically on both ways with mutual understanding of both parties with the objective of good project accomplishment. Also, the problem that might arise from skill, awareness, lack of knowledge, etc could be managed by arranging intensive trainings, seminars and workshops (especially by a public regulatory body) where the losses in quality, cost, and time could substantially be reduced or avoided through proper contract administration practice in a balanced way that will in turn enhance the performance of the domestic construction sector as well.

5.4.5 - Assistance to Domestic Contractors

Half of the employer respondents together with the majority of the consultant respondents stated that domestic contractors will be assisted in times of difficulties mainly on minor issues such as reducing the minimum amount of interim payment requirement; through design modifications; justifying or nullifying non-excusable delays with mutual understanding and as counter compensation for cost claims; and advising them on work methodologies.

Table 5.8 – Assistance to Domestic Contractors

There is appreciable assistance			There is no appreciable assistance		
E	CS	CT	E	CS	CT
50%	55%	69%	50%	45%	31%

Similarly, the majority of the contractor respondents confirmed that domestic contractors are helped through arranging or advising release of additional advance payments or funds other

than mobilization advance payment for material purchases; effecting payments for unexecuted works; exempting liquidated damages with good understanding of actual circumstances such as price escalations; and arranging frequent meetings to solve problems

that they face. One contractor respondent stressed that contract provisions should not necessarily prohibit assistance.

However, the other respondents do not agree with the above response stating that there is no appreciable assistance or consideration to domestic contractors as the engineer and employers stick to contract provisions for the following reasons:

- ✚ it might be interpreted as favouring the contractor (through corruption)
- ✚ the engineer does not exercise his authorities as per the contract and private consultants in particular fear losing future jobs if they deviate from the contract provisions
- ✚ fear of latter risks as the assistance without proper guarantee might increase the employer risks, and
- ✚ to some degree, employers do not trust domestic contractors as professional service providing firms

The consultant respondents in this category, however, believe that such consideration is helpful to complete the works to the employer's satisfaction, esp. with respect to time requirement even if some of them argued that the engineer is to discharge his responsibilities under the contract and the binding contract document should be followed.

While this is the case, the majority of the employer and contractor respondents (E75%, CT71%) together with 45% of the consultant respondents stated that the engineer usually advises the employer in helping a contractor for financing the project in cases of financial shortages. This is because projects might be delayed by finance shortages where most of such practice is seen for Governmental or State owned contractors. Sometimes such engineer's advice may arise from contractor's initiation where the action is supportive and outcome is positive as good progress achievement would be recorded.

They also remarked that employers are mostly positive for such engineer's advice where such assistances will in reality help to expedite completion time avoiding further delayance of projects for finance shortage and they suggested that such assistances concerning public funds would be made protective. One contractor respondent cited a case where the

employer has arranged additional financing and the contractor managed to speed up the progress but not succeeded for capacity problem. Another consultant respondent also cited a case in which the employer refused such recommendation by the engineer and the project has been delayed significantly.

On the contrary, the majority of the consultant respondents (55%) together with the other employer and contractor respondents stated that the engineer does not recommend the employer such proposals for the following reason:

1. no mutual interest is developed in the domestic construction culture for such practices
2. fear of being interpreted as corruption by the employer
3. public financial matters are very sensitive which will make the engineer unlikely to favour the contractor or to recommend for such assistances
4. both the engineer and the employer do not have such authority on public funds as against to the governing finance rules
5. the engineer has no ground for such proposals and may not be held responsible for delay of public projects to the extent that the employer feels

5.4.6 – Contractor’s Return of Favours

In situations where domestic contractors are helped through all the above mentioned meanses for better accomplishment of public projects, it is expected that contractors will be motivated to return the favours through accelerating the progress of works; executing works in good quality (even though this is their contractual obligations); and they will pay better attention to the completion of the project as per the contract.

The last question in this section was to ask for the respondents’ opinion whether contractors return such favours or not. About 83% of the employers and 36% of the consultants did not respond for this question. The reason might be due to the practice that domestic contractors were assisted and they did not succeed to register major changes or the assistance is not significant enough to attain the required change.

However, the majority of the contractor respondents (67%) together with 37% of the consultant respondents stated that contractors will try to return such favours. The other respondents (E17%, CS27%, CT33%), on the other hand, stated that they are not sure or they doubt for the return of such favours. One of the consultant respondent in this category remarked that it is the contractor's responsibility to complete the project within the contract time, to correct defects, etc where such assistances should not be prerequisite for meeting their contractual obligations. But, from the contractors' response, it can be assumed that if most contractors can be assisted, they will try to enhance progress of the works as mentioned above.

In conclusion to the above findings, most assistances and recommendations are for financial matters which indicate that for domestic contractors, the contract procedures should pay attention to financial provisions as a main portion for the timely delivery of public projects within budget and specified quality. The major assistances that domestic contractors obtained include:

- ✚ reducing the minimum amount of interim payment requirement and effecting payments for unexecuted works
- ✚ exempting liquidated damages or nullifying non-excusable delays with understanding of actual circumstances such as uncompensated price escalations and as counter compensation for other cost claims
- ✚ advising release of additional advance payments or funds other than mobilization advance payment for material purchases
- ✚ arranging frequent meetings to solve problems that domestic contractors face

Also from reviewed archival documents, it was observed that some public employers such as the Federal Ministry of Education have arranged additional material advance payment up to thirty percent of the contract on the construction and expansion of university projects. Moreover, it was observed that interim payments less than the minimum amount of interim payment certificate (from 2-4 percent which is less than five percent) was certified by the engineer and paid to the contractor.

Hence, such arrangements and assistances should not be seen as insignificant or minor assistances for the domestic contractors to maintain the progress of the works and to ensure timely completion of public projects. As cited by some of the respondents of course, such assistances may not be sufficient enough to register major progress as domestic contractors are actually suffering from other problems and it should not be misunderstood as such assistances and arrangements do not bring changes at all in practice as probably the projects might be abandoned or delayed significantly.

5.5 Financial Provisions on Public Construction Works

5.5.1 - Minimum Amount of Net Interim Payment Certificate

Table 5.9 summarizes the responses on a question that asks the respondents on the fair limit of the minimum amount of interim payment requirement considering the financial capacities of domestic contractors.

Table 5.9 – Minimum Net Amount of Interim Payment Requirement

To be increased based on the project cost up to 10% of the contract price			To be maintained at 5% of the contract price			To be reduced to an average of 2-3% of the contract price		
E	CS	CT	E	CS	CT	E	CS	CT
16%	18%	-	17%	36%	24%	67%	46%	76%
These responses are basically given on the reason that it will increase work load for payment checking and certification if the limit is reduced from 5 percent as it will increase the number of payment requests by the contractors						NB: 2% for small projects and 0.5-1% for larger projects is suggested by these respondents		

The result from the analysis shows that the majority of the employer and contractor respondents prefer the minimum net amount of interim payment requirement to be reduced to an average of 2-3% of the contract price considering the cost, type, size, and completion period of the project. Some of them remarked that 2% is enough for small projects while 0.5% - 1% of the contract price will be reasonable for larger projects reasoning it will

reduce the financial constraints of domestic contractors as most of them suffer from liquid cash shortage. One of the contractor respondents added that the five percent minimum requirement hurts the financial cash flow of domestic contractors.

Contrary to the above, the majority of the consultant respondents (54%) hold a position that it should be maintained at five percent of the contract price or increased up to ten percent of the contract price depending on the project completion period for the following reasons:

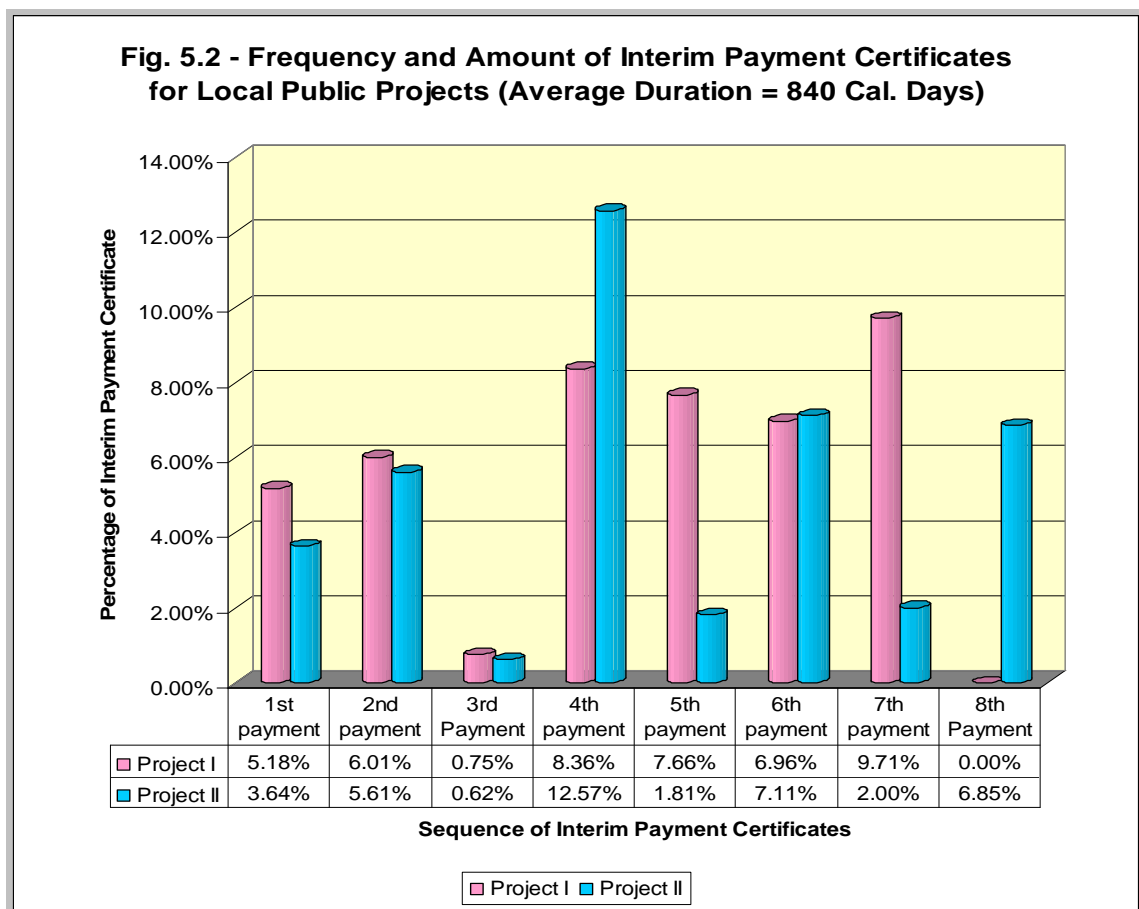
1. it is a fair limit considering the volume of works that domestic contractors undertake
2. it will be difficult for payment arrangement of public employers
3. it will increase paper work for payment process in the consultant firms as the number of interim payments will increase

For the purpose of looking at the impacts of this requirement, two local public building projects have been compared with one international South African public building project undertaken in Addis Ababa (New Chancery and Residence Project at Addis Ababa – South African Embassy Project). The minimum amount of interim payment certificate to be made to the contractor for the South African Embassy project at Addis Ababa is 1% of the accepted contract amount while for the local university expansion projects, it is 5% of the contract price.

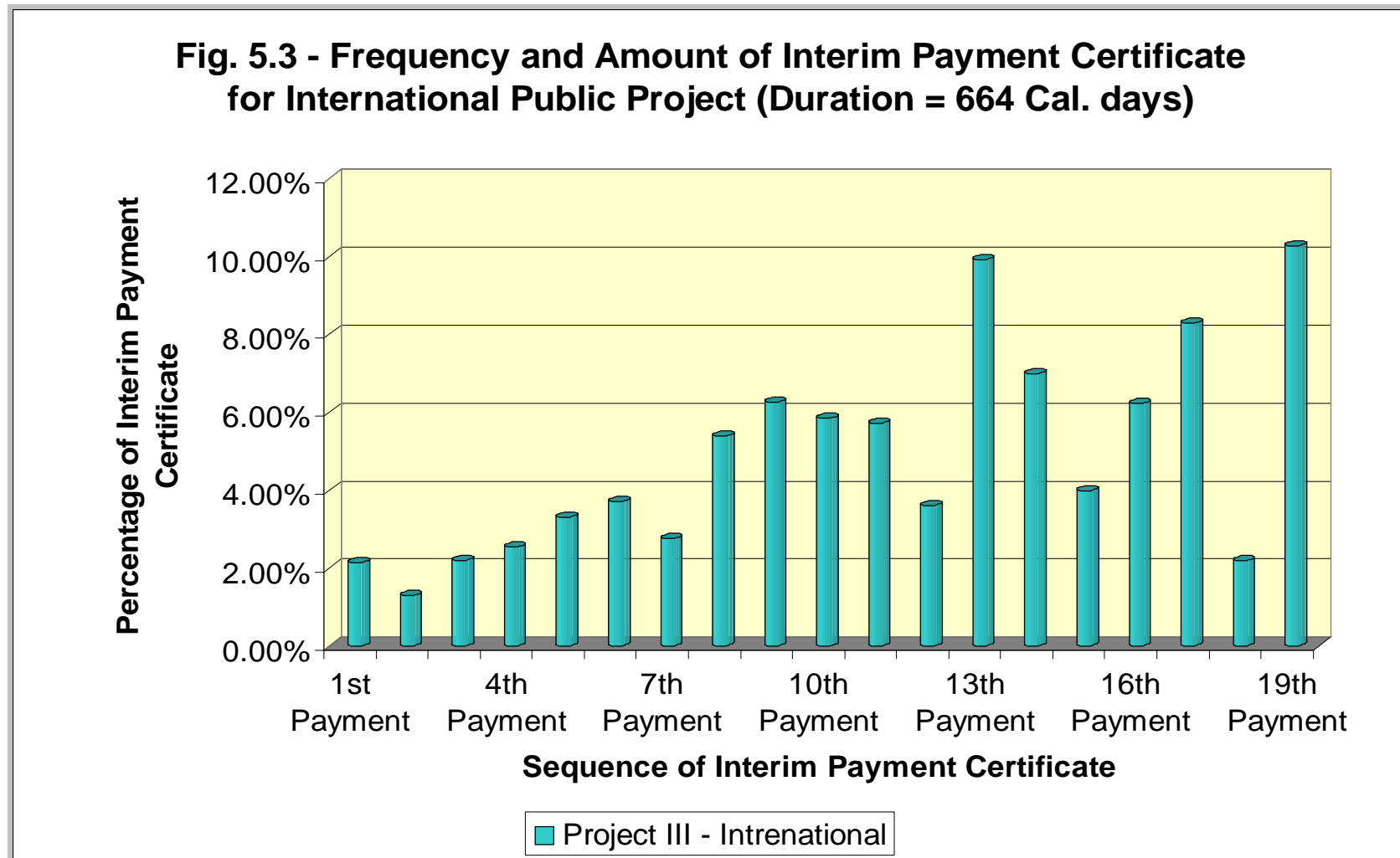
From the two graphs (Fig. 5.2 and Fig.5.3) that indicate the frequency and amount of interim payment certificates, it can be observed that the interim payment arrangement for local public work contracts is by far difficult to achieve while for the international project, it is flexible and relaxed. Contractors executing some four percent of the contract amount may face financial shortage to arrive at five or more than five percent of the contract amount in which case the project progress may be lagging until the financial shortage is solved by other meanses of financing.

Therefore, it is recommended that the minimum amount of interim payment certificate requirement should be reduced from five percent (to an average of 2%) of the project cost as it will basically relieve the financial constraints of domestic contractors where the

reduction should consider the type, cost and completion period of the projects even though it will increase the work load for payment processing, both on the engineer and employer staffs. Of course, this might also be inconvenient for some employers' financial arrangement as it might increase the risk of contractor's frequent claims for interest rate during payment delays. However, the trend should be changed in that the payment process should be facilitated in both the employer and consultant offices as it will substantially promote the progress of the works and early completion of public projects.



Note that the third interim payment certificate was made to settle the retention money when it was reduced to five percent of the certificate amount through amendment. Also, these interim payments have been made with an average duration of one hundred twenty calendar days (four months) in between the certificates.



NB: The above interim payments were made to the contractor with an average duration of thirty five calendar days in between these certificates.

5.5.2 – Purpose of Retention Money

Table 5.10 – Purpose of Retention Money as perceived by the respondents

As safeguard money for the employer			As binding system so that contractors will not terminate the contract			To obligate or motivate contractors for correction of defects			Others, all of the three choices		
E	CS	CT	E	CS	CT	E	CS	CT	E	CS	CT
83%	36%	24%	-	-	-	17%	28%	58%	-	36%	18%

From the above analysis, it is indicated that the majority of the employer respondents perceive retention money as safeguard money for the employer to make corrections on defective works that the contractor fails to do while the other respondents (17%) believe that retention money will motivate contractors to undertake corrections and remedies for defective work so that they will collect their final retained money. However, the majority of the consultant and contractor respondents (at least 64% and 76% respectively) believe that retention money will motivate contractors to undertake correction works.

None of the respondents from all categories explicitly selected the choice that retention money can be used as a binding system in that contractors will not quit the contract at the end of the project. The reason for this might be that the employer will have the right to claim for all damages through court procedures if the safeguards such as performance bond, advance payment guarantee, and retention money become insufficient to complete the project as per the contract. From the above responses, esp. from the significant percentage of contractor respondents, most of the contractors can be motivated to undertake correction works in order that their final retained money will be released.

5.5.3 - Amount of Retention Money

As shown on table 5.11 below, the majority of the employer and contractor respondents prefer the amount of retention money to be maintained at five percent of the certificate amount and resident supervision should be arranged when making five percent retention

money. They suggested this on the ground that it will help domestic contractors in their liquid cash problem and defects can be handled within this percentage for resident supervised projects. They also added that keeping such amount of cash is not advisable to maintain the progress of public project where the profit that may be earned from such undertaking may range from 5-15%. This means, if retention money is increased to ten percent of the certificate amount, the employer will withhold five percent of the contractor's profit or money after completion of works for the whole of the defects liability (maintenance) period i.e. one year, which is non-helpful for the employer.

However, the majority of the consultant respondents stated that retention money should be raised to ten percent as per MoWUD 1994 conditions of contract depending on the scope, type, required quality of the project and arrangement of resident supervision on site. These consultant respondents reasoned out that the quality of works delivered by domestic contractors is decreasing which makes public employers suffering for maintenance during implementation period of the project. Here, it has to be noted that retention money will be reduced by half of the percentage at completion of the works i.e. after temporary acceptance. Exceptionally, some consultant and contractor respondents prefer the percentage of retention money be reduced to 3 percent of the certificate amount.

Table 5.11 – Amount or Percentage of Retention Money from Interim Payment Certificates

2-3 percent of the certificate value			5 percent of the certificate value			10 percent of the certificate value		
E	CS	CT	E	CS	CT	E	CS	CT
-	9%	6%	83%	36%	76%	17%	55%	18%

According to MoWUD 1994 conditions of contract, the retention money to be deducted from payment certificates was ten percent until the completion of works where up on receiving the certificate of completion of works, it would be reduced to half of this amount i.e. five percent that would remain with the employer for the whole of the maintenance period. This percentage was reduced to five percent of the certificate amount through

amendment and now it is in practice with the new PPA conditions of contract [19, 22 & 29].

Similarly, it can be seen from figure 5.2 above that the third interim payment certificate was for the settlement of retention money when the provision for retention money was amended to reduce from ten percent to five percent of the certificate amount. It was shown that 0.75% (874, 332.38 ETB) and 0.62% (498, 245.13 ETB) of the certificate amount was retained by the employer from project I and project II respectively at that early stage of the project which could help the contractor significantly.

The amount of retention money can also be handled by considering the outstanding works and extent of defects observed before the certificate of completion of works is issued. So, the five percent retention money limit can be lowered or made upper depending on the outstanding works not completed satisfactorily as recorded on the snag list or by looking at the scope of work required when the contractor requested for temporary acceptance of the project.

However, with the arrangement of resident supervision of public projects, it would be waste of money to expend more than 2.5% of the contract price for rectification of defects observed during the temporary acceptance of the projects. In addition, the five percent remaining performance bond can supplement the final retention money. It should also be worth mentioning that contractors are legally liable for any failure of the project for ten years from the date the employer enters into occupation. Moreover, according to FIDIC guideline, five percent final amount of retention money is reasonable for big and complex public projects [13]. Hence, ten percent retention money with the final five percent retained by the employer during the maintenance period could be applied for bigger and complex projects.

International practice as per FIDIC 1999 is that a certain percentage of the contract price will be collected as retention money until a maximum limit of retention money set in the appendix to tender is reached. FIDIC 1999 provides a clear provision in that the amount to

be deducted for retention shall be calculated by applying the percentage of retention stated in the appendix to tender to the total of items that the retention will be deducted until the amount so retained by the employer reaches the limit of retention money (if any) stated in the appendix to tender [12].

For the reviewed international public project undertaken at Addis Ababa (South African Embassy Project), the percentage of retention money is ten percent of the certificate amount and the limit of retention money is five percent of the contract amount so that the employer retains at a higher rate at the early stages of the contract until five percent of the maximum limit. This indicates that employers take retention money as a binding system at the early stages of the contract as the literature review reveals as well. This is also recommended by one consultant respondent who prefers retention money to be increased to 10 percent of the certificate amount as contractors may front load their tender price.

5.5.4 – Does 5% Retention Money Oblige Contractors for Correction of Defects?

Respondents were requested to give their views for a statement that five percent retention money will not motivate domestic contractors to undertake remedial works during maintenance or defects liability period (DLP) as half of this retention money (2.5 percent of the contract price) is small. Table 5.12 gives a summary of responses obtained from the survey concerning the question and the findings based on this analysis is discussed below.

Table 5.12 – Amount of Retention Money in obligating Correction of Defects

Half of 5% retention money (2.5% of the contract price) sufficiently obliges or motivates contractors for correction of defects			Neutral Responses			Half of 5% retention money (2.5% of the contract price) doesn't sufficiently obliges or motivates contractors for correction of defects		
E	CS	CT	E	CS	CT	E	CS	CT
67%	27%	70%	16%	-	12%	17%	73%	18%

The majority of the employer respondents believe that five percent retention money sufficiently motivates domestic contractors to undertake correction works. Two of them stated that there is five percent performance bond in addition to the remaining half of the retention money which the employer withheld until the maintenance certificate is issued and it is safe for the employer. Furthermore, the contractor is obliged by law and by subsequent blacklisting for failing to correct defects as the contractor has legal obligation to rectify defects and most domestic contractors rectify defects for their goodwill than the collection of the remaining retention money.

Similarly, the majority of the contractor respondents hold the same view for the following reasons:

1. it is sufficient amount of money for remedial works even in the events that correction of defects is to be undertaken by the employer
2. most domestic contractors are giving professional services and they need their reputation and recommendation by their employers
3. it promotes proper quality assurance by employers and the engineer for small and large projects which will enhance the capacity and competence of the sector
4. contractors will be blacklisted if they do not undertake correction works which is against their main objective to be free from any litigation history
5. five percent retained amount for one year, if it is increased to ten percent, might be more than the profit that may be gained from most of the public projects where compensation for price escalation is not fully covered
6. in general, the contractor is obliged by law to correct any defects observed in the project

However, the majority of the consultant respondents do not support the above views in that five percent retention money does not sufficiently motivate contractors to undertake correction works. They reasoned out that the final half part of the retention money (2.5 percent of the contract price) is small, esp. for small projects in which contractors may ignore it. One of the respondents also remarked that it should be equivalent to the cost of correction defects not the percentage of a contract price since employers usually take-over

public project where the project might not be substantially completed with lots of defects recorded in the snag list.

During a discussion held with one of the employer respondents, he indicated that the retention money should be raised back to ten percent citing a case in which a contractor who collected around 500,000 Ethiopian Birr (final 2.5% retention money) submitting an equivalent unconditional guarantee bond was not motivated to undertake correction works. Noticing that the guarantee will expire after twelve months, the employer is addressing a number of correspondences concerning this issue where the contractor seems to be “unresponsive so that it will expire”. This will be additional burden to the employer for the follow-up of the correction of the works and maintenance required unless contractors discharge their obligations under the contract without proceeding with legal procedures and repeated correspondences.

5.5.5 - Value of Materials on Site

Table 5.13 – Value of Materials on Site for incorporation into Interim Payment Certificates

The percentage should be maintained at 80 percent of the invoice value of the materials			The percentage should be increased to 80-100 percent of the invoice value of the materials		
E	CS	CT	E	CS	CT
100%	90%	69%	-	10%	31%

From table 5.13 presented above for the responses on a question that asks for the percentage of materials on site to be paid for contractors considering the financial capacities domestic contractors, the majority of respondents prefer eighty percent of the value of materials to be considered for payment in order to avoid risks for the employer. They reasoned out that it will incur extra administration cost for proper handling of stored materials, esp. during contract termination as the delivered material might lose its quality standard if it is not used within a reasonable period of time. Also, one of them remarked that only seventy percent of the value of materials is paid to the contractors in their

practice. The contractor respondents supported this percentage limit (eighty percent of the invoice value of materials) on the ground that the percentage should also protect the employer which is fair for both parties and they added that contractors can expedite other meanses of financing their projects.

The other groups of the respondents (CS10%, CT31%), however, stated that the percentage should be increased considering the financial constraint of domestic contractors as the problem with the storage of materials can be handled by adding some effort on the proper storage and utilization of the materials. Also, the contractor respondents stressed that most domestic contractors supply materials on site on credit basis from their suppliers for their low financial capacity. So, employers should pay the whole amount in order that contractors will not suffer problem with their suppliers as long as materials can be stored safely and properly and as far as the material is delivered to the project site.

Of course, because of the inherent risk or nature of construction materials, esp. with respect to storage and handling at the project sites, it is logical to deduct a certain percentage of the value of materials. Further more, the work to which its constituent materials has been paid as material on site will be executed and its value will be included fully in the next interim payment that might also motivate contractors to execute the works. The practice in most public projects is that mostly eighty percent of the value of the materials is paid to the contractors considering the unit prices of the work items. The value of the material may even be reduced from eighty percent if the contract unit price offered by the contractor is lower than the purchase value.

It is also assumed or inferred that the engineer has approved the delivered materials for incorporation in the works. Depending on circumstances, the appendix to tender may include list of materials of importance to the contract that will be covered in the interim payment certificates and according to FIDIC guideline, the payment for the listed materials is reduced to ninety percent (or other suitable percentage) of the invoice value in recognition that there is likely to be some wastages [13].

As pointed out by some contractor respondents, domestic contractors deliver construction materials from their suppliers mostly on credit basis. Hence, depending on circumstances and contract unit prices, it might be advisable to increase this figure to ninety percent of the value of materials with some effort on the assurance of the quality of delivered materials on site and its proper storage on project sites. In addition, since the engineer can correct and deduct the value of damaged materials, if any, in the next interim payment certificate, the risk to the employer can be minimal if the material coverage of the interim payment certificate is not large to bring high risk to the employer.

5.5.6 - Deduction of Retention Money from Materials on Site

From table 5.14, it is evident that the majority of the employer and contractor respondents together with half of the consultant respondents believe that retention money should be collected only from executed works and they remarked that as retention is mainly for correction of defects especially after completion of the works, it should not be deducted from materials on site. However, the other consultant and contractor respondents believe that retention money should be deducted from materials on site for the following reasons:

1. it is part of the contractors accomplishment as the materials are to be part of the executed works
2. in order to simplify payment certificates, and
3. according to the contract conditions where retention money must be deducted from any monies due to the contractor

Table 5.14 – Should Retention Money be deducted from Materials on Site?

YES Retention money should be deducted from materials on site			NO Retention money should only be deducted from executed works		
E	CS	CT	E	CS	CT
-	50%	38%	100%	50%	62%

Sub-clause 60(2) of MoWUD 1994 conditions of contract does not put the provision clearly in that interim payment due to the contractor is subjected to retention in the sum of five percent of value certified until completion of works. This retention will be reduced by half of this percentage from the value of executed works to be retained until the expiration of the maintenance certificate. The new version of FIDIC (FIDIC 1999), however, explicitly indicates that retention money will not be deducted from materials and plants delivered to the project site to be incorporated in the permanent works on each of the interim payment certificates [12 and 22]. Also, according to the PPA conditions of contract, retention money has to be collected from any monies due to the contractor [30].

For one of the reviewed public projects (Project I), payment certificate number ten incorporated 20, 010, 011.74 ETB which is eighty percent of the invoice value of the materials (25, 012, 514.68 ETB). From this eighty percent of the value of the materials, five percent of retention money which amounts to 1, 000, 500.59 ETB was deducted for the final certificate value of the interim payment. After all such and other deductions, the contractor collected a net amount of 2, 243, 583.30 ETB which is close to twice of the retained amount from materials on site after eighty percent of the value of the materials is considered.

Hence, considering international practices and the above situations together with the financial capacities of domestic contractors, it is recommendable to increase the percentage of the value of the materials delivered to the project site to ninety percent or to exclude the deduction of retention money from materials on site.

5.5.7 - Period of Time for Interim Payment Process

Respondents were asked on the period of time that is sufficient for payment to be effected to the contractor from the date it is submitted to the engineer i.e. sufficient and practical period of time to check the executed volume of works, to approve and pass finance processes both in the consultant and employer offices. Table 5.15 shows the results of the study for the above question while figure 5.4 shows the responses by combining the three categories of respondents on a pie chart form.

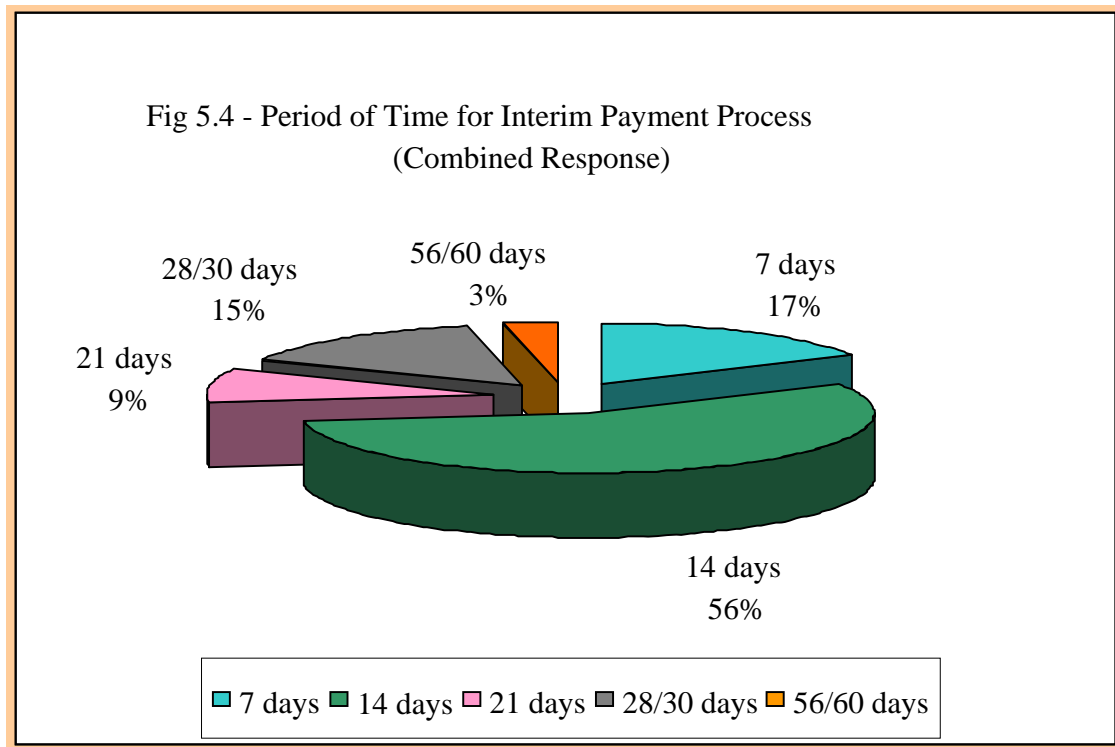
Table 5.15 – Practical Period of Time for Payment Process

7 days			14 days			21 days			28/30 days			56/60 days		
E	CS	CT	E	CS	CT	E	CS	CT	E	CS	CT	E	CS	CT
17%	-	29%	33%	46%	71%	-	27%	-	50%	18%	-	-	9%	-

From table 5.15, it is clear that the majority of the employer respondents and 18% of the consultant respondents prefer 28/30 days as reasonable period of time for payment processing since sufficient cross-checking is necessary for public funds. However, the majority of the consultant and contractor respondents (CS46%, CT71%) together with 33% of the employer respondents suggested that 14 days can be sufficient for payment process aiming at solving financial constraints of domestic contractors. They added that this can be achieved through avoiding “unnecessary” works and checks both in the engineer and employer offices and by taking joint measurement of the executed works prior to submittal of payment statement by the contractor.

It is only 27% of the consultant respondents who believe that 21 days is a sufficient and relaxed period for payment approval provided that joint measurement can be made on site ahead of payment statement submittal by the contractor. Exceptionally, 9% of the consultant respondents prefer 56/60 days as payment process should depend on the project size, proper presentation of payment by contractors and on site organization of the consultant staffs.

Since the responses obtained for this question is a staggered one to summarize, the following pie chart (Fig. 5.4) will be used to show the period of time sufficient for payment process by combining the responses of the three categories. Here is noted that FIDIC conditions of contract expresses all periods of time in multiples of “seven days” and the question uses 28/30 (or 56/60) days in order to accommodate both options, i.e. 30 or 60 days probably for the local conditions.



Payment clauses contain strict stipulations regarding the time allowed to the engineer for issuing payment certificates and to the employer for making the payment after the engineer's certification. It is the duty of the engineer to comply with this certification obligation as he can omit such item or part of it to be dealt with during the next interim payment certificate if he is not satisfied concerning any particular item or part thereof [13].

MoWUD 1994 conditions of contract did not provide time limit for the engineer where the employer was to make payments within thirty days after the certification of the payment by the engineer. However, the time limit was amended in such a way that the engineer shall certify payment certificates within seven days and the employer shall effect the payment within fourteen days after certification where by the contractor will be paid within twenty one days of his submission of the payment statement.

This provision was to be applicable in the PPA conditions of contract as per the Federal Public Procurement Directive issued by the Ministry of Finance and Economic Development in 2005, clause 26 - payment certificate for works [22]. However, PPA 2006 conditions of contract puts this provision in a similar manner as stipulated in the MoWUD

1994 conditions of contract i.e. within thirty days after certification by the engineer and in the event of payment delays up to ninety days, only cost compensation will be made for the contractor at the official bank interest rate .

In some practices, the date of submission of the payment statement to the engineer's representative is misinterpreted as the date of submission of the checked payment statement by the engineer's representative for certification by the engineer. This may indicate that seven days is not sufficient to check and measure the volume of works to be incorporated in the payment certificate unless the payment approval system is changed.

However, from the majority of the responses of the questionnaire and interview surveys, it can be concluded that as far as the contractor and the engineer's representative take joint measurement of executed works prior to the submission of the payment statement, twenty one days could be sufficient for payment to be paid to the contractor. The following line diagram (Fig. 5.5) shows a typical sequence of payment events as envisaged in FIDIC 1999 where the events above the horizontal line are for each of the monthly (or otherwise) interim payment and those events below the line are for final payment.

From the line diagram, it can be observed that the engineer issues payment certificate within 28 days and the employer has to make the payment in 28 days and the contractor can claim for interest rate only if the payment is not made within 56 days of his submission of the payment statement to the engineer and the contractor is entitled to terminate the contract if payment is delayed for a further 42 days.

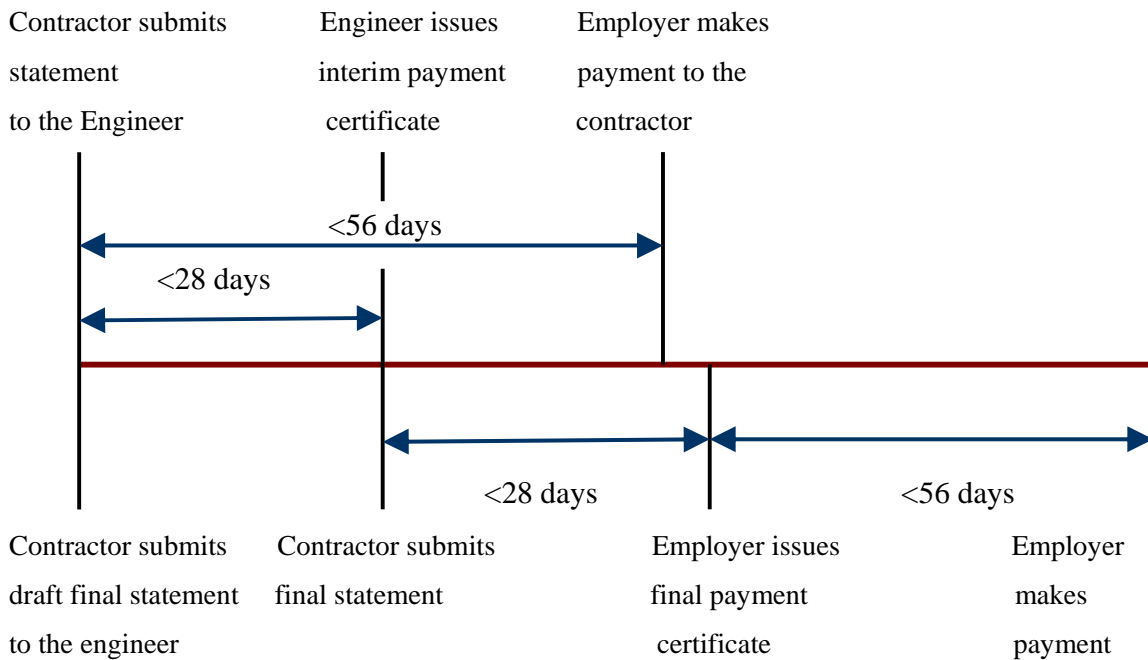


Fig. 5.5 – Typical Sequence of Payment Events [12], not to scale

5.5.8 - Bank Rate Compensation for Payment Delays

The majority of the respondents (E60%, CS72%, CT71%) believe that compensation by official bank interest rate is not fair for delayed payments for the following reasons:

1. besides the higher cost of financing the project as compared to official bank interest rate, longer period of time is required to process the loan which doesn't serve the losses, esp. for progress achievement during the period of payment delays
2. the financial constraints and logistic burden created on the contractor is not comparable to the losses due to cash flow shortages and cannot be recovered by interest rate only i.e. bank interest rate is insignificant to recoup progress
3. the provision should basically facilitate the payment process, i.e. it should be notable provision to alert those who are on payment route
4. it does not recover the actual financial losses or expenses that the contractor incurred in the actual situation such as rental or idle machineries and overhead losses
5. it should compensate price escalation and other related damages that might have arisen during payment delays

6. over-draft rate, which is more applicable for such situations, should be considered for compensation as it is much higher than bank borrowing interest rates (overdraft rate is around 14.5% in addition to other commitments in getting this facility)

And some of the consultant respondents recommended that all financial claims must be considered for schedule and performance impediments because of payment delays. One of the consultant respondents further recommended the following:

- ✚ if payment is delayed by one month (30 days), official bank interest rate compensation could be fair and sufficient
- ✚ if the payment delay is from 1-3 months (up to 90 days), recovering all financial and related losses could be fair compensation, and
- ✚ if the delay of the payment is more than 3 months (>90 days), it can be sufficient ground for breach of contracts i.e. default of the employer.

The other groups of respondents (E40%, CS18%, CT29%), however, believe that it is fair as contractors can get letter of credit or can arrange loan of an equivalent amount from banks in the form of credit and they added that this is the only logical provision to avoid litigation over such issues. The contractor respondents also remarked that it can be more fair if 1 or 2% is added over the bank interest rate and they claimed that even this compensation provision is not applied in our country as both the engineer and employer do not have positive attitude for such compensations.

5.5.9 - Contractor's Reaction to Payment Delays

The majority of the respondents (E100%, CS64%, CT100%) stated that domestic contractors slow down and suspend the progress of works in times of payment delays as they will not have sufficient finance to maintain their progress, not as implementing their contractual rights. Then, depending on the circumstances, they may claim for interest rate or absorb the consequences as they do not want to aggravate the problem with public employers for their goodwill.

The contractor respondents remarked that domestic contractors absorb the consequences of payment delays and will not slow down nor suspend the progress of the works unless they are forced by their financial shortages. Furthermore, these respondents added that domestic contractors do not make public employers at default even for prolonged payment delays for the following reasons:

1. fear of losing future business with public employers
2. as collection of compensation for damages requires court proceeding for contractors unlike employers who have direct mechanisms of collection of damages; and court procedure is waste of time and money
3. avoiding litigation history which has bad implication on their future business regardless of the fairness of the case referred to the courts
4. lack of contractual commitment on both parties and fear of “counter-attack” or counter- claims by the employer or engineer

Similarly, the employer respondents confirmed that termination is not thought of by domestic contractors even for prolonged payment delays. However, one of the employer respondents remarked that price escalation should fairly be considered during payment delays because of the unpredictable market prices. Some contractor respondents and one interviewee also claimed that there is no clear and direct provision in the local construction conditions of contract for suspension of the progress of the works and for the termination of the contract for payment delays, whether prolonged or not.

On the other hand, the other consultant respondents (36%) believe that contractors usually refer back such implications to the employers especially for extending the completion period of projects. Some of the consultants in this category added that prolonged payment delay could be considered as a fundamental breach of contracts where all associated damages (costs, profit loss and EOT) should be considered.

Generally, in the event of failure by the employer to make payment within the time stated in the contract, the employer will be liable to pay interest on the amount overdue. From referred archival documents, it was observed that this provision is some times overlooked

to be stated in the appendix to tender which might be the reason for its non applicability in practice. Therefore, standard conditions of contract should clearly put this provision with reference to the appendix to tender.

However, sub-clause 69(1) of MoWUD 1994 conditions of contract entitles the contractor to terminate the contract when the employer fails to pay the amount due under any certificate of the engineer within thirty days after the same shall have become due to the contractor. This means that if the contractor is not paid the certificate amount within thirty days of the engineer's certification, the contractor can terminate the contract giving thirty days prior notice to the employer with a copy to the engineer. In such a situation, the contractor is fully entitled to recover all losses and damages arising out of, in connection with, or by consequence of such termination which also includes losses in profit [23].

Since such occurrences are not unusual in the domestic construction sector, the provision might increase the number of contract terminations which will be a loss for all stakeholders including domestic contractors. For this reason, the following suggestions can be made for payment procedures to be applied for public works considering the above responses and principles of an effective contract:

- ✚ provisions should clearly set out a period within which interim payments must be made to all participants in the process; twenty one days as provided on the directive for public works procurement
- ✚ provisions should allow automatic right for fair and reasonable compensation when failing to make the payments involving payment of interest at sufficiently heavy rate such as interest rates higher than overdraft rates to deter slow payments
- ✚ provisions that allow the contractor to suspend the progress of the works and to be compensated fully for all losses before terminating the contract should be included in the standard conditions of contract
- ✚ provisions that entitle the contractor to terminate the contract recovering all losses and damages for prolonged payment delays without affecting the contractor's right to proceed the work should be included in the standard conditions of contract

5.5.10 - Amount of Liquidated Damages

In MoWUD 1994 conditions of contract, 1/1000 of the contract price per day is applied as liquidated damages of the employer in public projects where depending on the nature of works, liquidated damages higher than this minimum limit may be fixed and 20% (reduced to 10% through amendment) was the maximum limit. Respondents were asked to give their thoughts whether this is a reasonable damage to public employers considering the level of implementation of public projects by employers after temporary and final acceptance and the responses for the question related to the daily liquidated damages is shown in Table 5.16 below.

Table 5.16 – Amount of Liquidated Damages

0.1 percent of the contract price per day is reasonable liquidated damages for public works			Amount of liquidated damages has to be reduced from 0.1 percent of the contract price per day, it is high amount		
E	CS	CT	E	CS	CT
83%	82%	59%	17%	18%	41%

From the above table of results, it can be seen that the majority of the respondents believe that 0.1% of the contract price per day is a reasonable liquidated damages for public projects. The employer respondents remarked that this provision should be preserved where other mechanisms could be used in order to upgrade the performance of the domestic construction sector. One of the respondents added that as far as health projects are concerned, there is no implementation problem and considering the problems of end users of health sector, the amount of the liquidated damages is not a sufficient amount and it does not compensate the losses that public employers suffer.

The consultant and contractor respondents hold this view on the ground that the percentage should also protect the employer and it should depend on the purpose of the projects. They added that 0.1 percent of the contract price per day will promote early project accomplishment within reasonable period of time and the amount should consider the general economy of the sector together with the capacity of domestic contractors. Some of

the consultant respondents remarked that public employers should take reasonable measure for delays in projects by deducting their reasonable damages.

The others groups of respondents, however, believe that it is not reasonable amount as compared to the current project management skill on all project participants where the inexistence practice for deducting the liquidated damages as per the contract is indicative of the high percentage amount according to these respondents.

5.5.11 - Maximum Limit of Liquidated Damages

Similarly for the maximum limit of liquidated damages (Table 5.17 shown below), the majority of the respondents believe that 10 percent of the contract price is sufficient maximum limit of liquidated damages remarking that our construction sector should follow international practices as much as possible. Moreover, compared to the profit that may be earned from such public projects, it would be unreasonable for the employer to take more than ten percent of the contract price where the contractor can forfeit only his profit that may not go up to twenty percent of the contract price.

However, the other respondents want the limit to be 20 percent or 10 percent plus additional “punishment” like suspending from future tender participation. They suggested this as a better approach to create substantial awareness as the contractors will be much more concerned with the cumulative time of delay in such circumstances. Some of the contractor respondents added that as far as substantiable EOT claims (excusable delays) are properly administered, the maximum limit can be twenty percent of the contract price. This response can be an indicative where these contractors believe that the delays are caused by the employer or employer representatives and contractors are not liable for the delay.

Contrary to the above responses, 31% of the contractor respondents exceptionally stated that the maximum limit should further be reduced from 10% of the contract price (2-10% of the contract price) depending on the importance of the projects for the following reasons:

1. practically it is better to start from the minimum amount/limit which can improve the practice or culture
2. delay of projects can be avoided rather through proper follow-up and supervision of projects by all concerned project participants
3. even a reduced maximum limit (say 5%) can sufficiently pressurize domestic contractors under the current “cut-throat” competition as described by one respondent

From the above reasons given to reduce maximum limit of liquidated damages from 10 percent of the contract price, lesson can be taken in that delays could be avoided through effective project management and according to these respondents, even 1 or 2 percent of cumulative delays substantially affect the performance of the sector. However, further reduction of the maximum limit from 10 percent of the contract price to 2-10 percent of the contract price might increase breach of public work contracts which would result in unhealthy development of the sector if contractual provisions are to be applied strictly. Besides, it would result in a lengthy claims and disputes settlement which will arise in connection with the closing of projects by breach of contracts.

Table 5.17 – Maximum Limit of (Cumulative) Liquidated Damages

20 percent of the contract price or 10 percent of the contract price plus additional measures for non compliance			10 percent of the contract price after which the contract will be terminated at the default of the contractor			To be reduced from 10 percent of the contract price to 5 (2-10) percent of the contract price		
E	CS	CT	E	CS	CT	E	CS	CT
40%	27%	13%	60%	73%	56%	-	-	31%

The amount of liquidated damages for the reviewed international project considered for comparison in this study (South African Embassy Project at Addis Ababa) is 0.1 percent of the contract amount while the maximum limit of liquidated damages after which the contractor will be terminated is 5 percent of the contract amount. Also, user’s guide for

PPA conditions of contract recommends liquidated damages to be set between 0.05 percent and 0.10 percent of the contract amount per day and the total amount is not to exceed between 5 percent and 10 percent of the contract amount [30].

As can be seen from the above responses, the majority of the respondents believe that 0.1% of the contract price per day is a reasonable liquidated damages for public projects that the employer would suffer in the event of delay in projects and ten percent of the contract price is sufficient maximum limit of liquidated damages. Of course, the amount of liquidated damages is to be determined by the employer and tenderers will be made aware of their commitment with regards to the amount and limit of liquidated damages at the time of tendering. Hence, the contractors may reflect the probable cost of liquidated damages in their tender under a competitive tendering procedure while maintaining this provision.

5.5.12 - Reason for no Liquidated Damages Claim in Public Construction Works

From prior researches, it was found that there was no liquidated damages claimed and collected by public employers where public building projects have experienced more than fifty percent delays from the original contract period [1]. This question was raised to ask the probable reason that the respondents feel for such conditions. Table 5.18 summarizes the responses obtained from the survey.

Table 5.18 – Reason for no Liquidated Damages Claim in Public Construction Works

Delays are mostly excusable delays and completion period being insufficient practically			Understanding of the capacities of domestic contractors (the application might bankrupt the contractor)			Other reasons discussed below		
E	CS	CT	E	CS	CT	E	CS	CT
28%	50%	47%	58%	25%	44%	14%	25%	9%

From the above table, it can be seen that the majority of the employer respondents believe that liquidated damages is not deducted for projects completed with delays from the original completion period for the reason of understanding the capacities of domestic contractors i.e. as the amount of liquidated damages is too much, it may bankrupt most of the domestic contractors. However, the majority of the consultant and contractor respondents (CS50% and CT47%) indicated that the reasons for the above situation is that delays are mostly excusable delays and completion period is practically insufficient whereby contractors will be granted extension of time (EOT) considering this situation. Of course, as far as the contractor is informed of his commitment as to the completion period of public projects during tendering, the contract procedure does not allow granting EOT unless it is considered as compromise.

The other respondents (E14%, CS25%, CT9%) exceptionally gave the following reasons for the situation:

1. engineer and employer being weak in contract management as according to the binding contract procedure or lack of good contract administration practice; contractor, engineer and employer are not bounded to the contract provisions
2. “lubrication” through informal procedures in that the reasons of delay will be referred back to the employer fairly or unfairly
3. to settle claims and disputes related to financial matters through consideration where the employer will nullify damages and contractor will not raise cost claims; and to compensate contractors for price escalation of materials and increased labour cost which are not compensated by the contract, and
4. since level of implementation of public projects is low, they found unreasonable to deduct the liquidated damages i.e. due to time consciousness of public employers and all participants in general on the implementation of the facilities

5.5.13 - Reduction of Amount of Liquidated Damages

Based on the analysis (Table 5.19), it is indicated that the majority of the employer and consultant respondents (E50% and CS55%) do not agree that employers may deduct liquidated damages reasonably that they suffered whether the amount of liquidated

damages is reduced from 0.1 percent of the contract amount or not. The consultants who do not support the statement stated that if it is reduced, contractors may not focus on the timely completion of public projects. Also, the contractor respondents in this category added that the reason is not the amount of liquidated damages but poor project management skill and time consciousness of all project participants. Their argument is that should employers deduct liquidated damages, the percentage or amount will not affect their action as it could be practiced for lesser number of days which is also supported by one interviewee who was one of the drafters of the standard conditions of contract under study.

Table 5.19 – If the amount of liquidated damages is reduced, would employers be motivated to deduct their reasonable liquidated damages?

YES/AGREE Employers will deduct liquidated damages from the money due to the contractor			Neutral			NO/DISAGREE Reduction has nothing to do with deduction of liquidated damages by public employers		
E	CS	CT	E	CS	CT	E	CS	CT
17%	36%	58%	33%	9%	18%	50%	55%	24%

The majority of the contractor respondents, however, support the reduction of the liquidated damages on the ground that it will motivate contractors for better performance as employers will deduct their reasonable damages. This is because, if it is reduced, it will considerably be less than the contractor’s profit which may alert both parties for liquidated damages i.e. it will promote the practice of deducting reasonable liquidated damages where the practice will alert contractors to be aware of project delays. One of the contractor respondents put figuratively that 10 percent of a 100,000,000.00 Birr project is 10,000,000.00 Birr which is highly damaging for the contractor if it is practiced and this makes unlikely for the employer to deduct liquidated damages and terminate the contract for delay of projects.

From the above responses, it can be observed that liquidated damages claim was not raised for the basic reason of understanding the capacities of domestic contractors and to settle claims and disputes related to financial matters through consideration where the employer will nullify liquidated damages and the contractor will not raise cost claims. The other reasons could be weakness in contract administration; lack of time consciousness of all project participants; delays being excusable delays to which the contractor is not responsible; and original completion period being insufficient practically when compared to the capacities of the domestic contractors.

These problems, especially those related to effective project management, could be solved through upgrading the skill, knowledge, and capacities of all construction project participants. Also, as stated by one consultant respondent, the basic reason for delay of public projects could be unforeseeable shortage of basic construction materials which affects the contractor's progress achievement and that forces employers not to react as per the provision. This can be taken as reconsideration or as an excuse for contractors not to be affected by project delays. From such situations, it is recommended that the interest of public employers should be for timely completion of projects and the provisions should be directed to motivate contractors for timely completion of works as per the contract. However, the reduction of the amount of liquidated damages say to 0.05% of the contract price per day or the limit of the liquidated damages to 5% of the contract price (as per PPA user's guide) could promote the applicability and practicability of liquidated damages which may create substantial awareness on all project participants.

5.5.14 – Contract Price Adjustment

Standard conditions of contract for construction works provide cost adjustment provisions for projects whose project cost increases or decreases above or below a certain limit or percentage of the contract price. The fourth and latest editions of FIDIC (FIDIC, 1987 and FIDIC, 1999) adopt fifteen percent of the contract price as a limit for adjustment of contract price which was ten percent in the older versions. This percentage limit to which the contract price should be adjusted was fifteen percent in BaTCoDA 1987 conditions of

contract and it was reduced to ten percent in MoWUD 1994 conditions of contract [6, 11, 12 and 22].

When responding to a question related to this issue, the majority of the respondents (E67%, CS64%, CT67%) indicated that practically, there is no cost adjustment made to the contract price whose project cost has increased or decreased by more than ten percent of the contract price for the following reason:

1. lack of awareness on part of the contractor, engineer, and employer
2. lack of willingness by employers to allow any compensation related to cost
3. low capacity of domestic contractors for such documentation of claims
4. poor contract administration practice related to “corrupt” practice
5. for better relationship in between the parties

One respondent remarked that mostly some provisions like such contract price adjustment provisions are not applied in the domestic construction sector. The other respondents (E33%, CS36%, CT33%), however, stated that sometimes it is practiced for some public projects when initiated by the contractor or engineer.

From the majority of the responses, it can be observed that there is no cost adjustment made with regard to all material and relevant factors, including the contractor’s site and general overhead cost of the contract for most public projects while the average cost overrun of public building projects is from ten to fifteen percent of the contract price [1]. And generally, employers are to raise such claims when the cost of the project is above the limit of adjustment for reduction of contract price and contractors are to raise the claim when the project cost is reduced so that they will be compensated for overhead and other related losses.

In situations where there is an average cost overrun of more than ten percent of the contract price in public building projects, the employers were expected to request or claim for reduction of over-head and other related costs of the contractor. In other words, contractors are beneficial in this regard. However, the reasons mentioned above could show that

claims are not raised by both parties for better relationships between them besides the capacity and awareness problem that may exist in the sector. The other reason worth to discuss is that public employers are not willing to administer any cost adjustment whereby such compensations that are of advantage on their behalf will be overpassed if not taken as reconsideration for other legitimate cost claims of domestic contractors.

While the practice is as stated above, respondents were asked to recommend suitable percentage limit for such cost adjustment considering the trend of contract administration for domestic public construction works and international practices. Table 5.20 summarizes the responses given for this question and from this table, it can be seen that the majority of the consultant and contractor respondents prefer ten percent of the contract price to be the limit for contract price adjustment based on the ground that it is better to start from ten percent which may create awareness. However, the majority of the employer respondents recommend 15 percent of the contract price to be the limit of contract price adjustment. Also, from review of archival documents, it was observed that the construction of low cost housing projects in Addis Ababa city applies this percentage limit (fifteen percent) which might be intended to avoid such cost adjustment that may be claimed by either of the parties.

Table 5.20 – Percentage Limit for Contract Price Adjustment

5 percent of the contract price			10 percent of the contract price			15 percent of the contract price			Others (20 percent or Neutral)		
E	CS	CT	E	CS	CT	E	CS	CT	E	CS	CT
-	-	13%	33%	73%	50%	50%	18%	25%	17%	9%	12%
<p>NB: 17% of the employers respondents recommended 20 percent of the contract price as a limit for contract price adjustment while 9% and 12 % of the consultant and contractor respondents suggested that other serious assessment be made and pre-adjusted formula be prepared for the contract price adjustment depending on the magnitude of the project.</p>											

Therefore, considering the contract administration of domestic construction sector and international practices, it is advisable to increase the percentage limit from ten percent to fifteen percent of the contract price as far as it is not practiced with ten percent of the contract price. Further more, as suggested by some of the respondents, it is recommended to prepare guideline for implementing such cost adjustment with respect to the profit and overhead parts of the contract and other factors based on practical assessment of such cases.

Currently with PPA conditions of contract, if the final quantity of the work done differs from the quantity in the BoQ for a particular item by more than 25 percent, provided the change exceeds 5 percent of the initial contract price, the engineer shall adjust the rate to allow for the change. However, the Engineer is required to get approval from the employer for such rate adjustment if the initial contract price is exceeded by more than 15 percent arising from changes in quantities.

This adjustment provision seems to be only for change in quantities up on remeasurement and there is no clear provision for the following cases:

- ✚ when the change arises from other reasons such as the aggregate effect of all variation orders
- ✚ when the initial contract price changes from 5-15 percent arising from changes in quantities of different items of works, but less than 25 percent for each item
- ✚ when the change from the initial contract price decreases by more than 15 percent (whether or not the employers approval or consent is required)

5.5.15 – Advance Payment Provision

As discussed in the literature review part of this thesis, advance payment provision was omitted from MoWUD 1994 conditions of contract which was claimed to be by the reason of misuse of the advance payment by domestic contractors for other purposes until the amendment is issued [32]. The majority of the respondents (E83%, CS82%, CT94%) disagree on the omission of advance payment provision from public work contracts stating

that misuses could be avoided through penalizing contractors who fail to discharge their obligations under the contract.

They also claimed that advance payment could be provided for public work contracts with a requirement of an equivalent amount of unconditional guarantee and with close administration and follow up of contractors' progress achievement. According to these respondents, most domestic contractors are not able to start execution of projects on their own and it is very difficult for them to arrange mobilization of materials and machineries to the project site and to maintain the progress of the works in situations where there is no advance payment provision.

The respondents stated that it was not a right action to omit the provision and they described the effect of the omission as:

1. financial bankruptcy of domestic contractors
2. delivery of "poor" quality of public construction projects
3. fostering of illegal lending practice such as "arata" at a higher interest rate which will be reflected in the project cost

They further remarked that many domestic contractors lost their capacities and many public projects were abandoned that threatens the performance of the domestic construction industry which further weakened the capacity of domestic contractors to maintain the progress of works and to complete the project within a reasonable period of time. Also, some of them indicated that the basic reason of delayed delivery of public construction projects during that period was the omission of this provision.

Advance payment promotes early mobilization of materials and machineries to start work on the project sites and if a project delays at the start of the project, it would be difficult to manage the progress of the works at latter stages of the project. Hence, it would result in delayed delivery of public projects. Moreover, since delay of projects almost always incurs extra costs to the contractors as well, there would be a possibility of quality problem on the built up facilities to recoup the financial losses that the contractor suffers.

As discussed in the literature review, delayed payment with no compensation provision in Ghana and non-provision of advance payment to meet the initial requirements of the contractor in Ethiopia resulted in bankruptcy of some domestic contractors where the above responses from the survey confirmed this situation.

The current practice is that advance payment will be arranged up to thirty percent of the contract price where domestic contractors are required to submit an equivalent amount of unconditional bank guarantee or conditional insurance bond with joint account system which will be release phase by phase. The contractor should also submit cash flow and disbursement schedule for the follow up of the contractors' financial arrangement and for the release of the advance payment phase by phase when insurance bonds are submitted by the contractor.

5.6 Risk Allocation in Public Construction Works

5.6.1 - Fairness of Contract Provisions with respect to Risk Allocation

Table 5.21 – Perception of Respondents on the Fairness and Realistic Allocation of Risks in Public Work Contracts

Fair, but may not be Realistic			May not be fair, but Realistic			Fair and Realistic			Unfair and Unrealistic		
E	CS	CT	E	CS	CT	E	CS	CT	E	CS	CT
17%	20%	6%	33%	10%	19%	-	30%	19%	50%	40%	56%

NB: From this analysis, the following responses can be summarized:

- E=33%, CS=40%, and CT=38% believe that the risk allocation is REALISTIC
- E=17%, CS=50%, and CT=25% believe that the risk allocation is FAIR
- E=67%, CS=60%, and CT=62% believe that the risk allocation is UNREALISTIC
- E=83%, CS=50%, and CT=75% believe that the risk allocation is UNFAIR

Respondents were asked whether or not the risk allocation on public work contracts is fair, balanced, and realistic. From the above table of results (Table 5.21) concerning this question, the majority of the respondents perceive the risk allocation on domestic

contracting practice as unfair and unrealistic while the others perceive as fair, realistic, or fair and realistic. Those respondents who feel the risk allocation as unbalanced remarked that employers are favoured since they have sufficient safeguards such as performance bond, retention money, advance payment guarantee, and other indemnities. Also, one of the employer respondents stressed that generally there is no practice of examining and analyzing risks starting from project proposal stage in which none of them are favoured in practice.

Some of the respondents added that even if the risk allocation is unbalanced and the employer is favoured, the contractors could consider such risks with the probable consequences by adding contingencies when submitting their tender sums. However, as the practical situation or the reality in most developing countries can depict, the traditional stiff competition of tenders may not allow the contractors to add contingencies for risks allocated to the contractor. Otherwise, as far as competitive nature of tendering procedure and good evaluation system is maintained at the tendering stage of public projects, the risk allocation could be said fair and balanced. The risks that all respondents felt unfair include: price escalation, unforeseeable shortage of materials, etc and remarked that generally all or most risks are subjected to the contractor.

As discussed briefly in the literature review part, the risk of price escalation which covers a substantial part of construction costs was allocated to the contractor in MoWUD 1994 conditions of contract. Also, the risk of unforeseeable shortage of materials, which is the characteristics of the problems of construction industry in most developing countries, is fully allocated to the contractor unlike FIDIC 1999 form of contract which allows the contractor for an extension of time in cases where the shortages are caused by epidemics or governmental actions.

From review of archival documents, the contractor undertaking project II, whose project cost is 80,764,474.77 ETB had been compensated 4,434,949.54 ETB which is 5.5% of the contract price through amendment that entitle contractors to be compensated for the basic materials such as cement, reinforcement bar, fuel, etc. From the above figure it can be

seen that had the contractor not been compensated for this much percentage of price escalation, it would have been reflected in the lowering of the quality of the works or it would be transferred to the employer by some other means unless domestic contractors are getting a substantial amount of profit that can cover such risk effects.

5.6.2 - Who Bears the Ultimate Consequences of Unfair Risk Allocation?

As presented on table 5.22 below, the majority of the respondents indicated that public employers especially project end users will bear the ultimate consequences of unfair, unbalanced and unrealistic risk allocations. The other respondents with the exception of 38% of the contractor respondents (who believe all stakeholders will be affected by the consequences of unbalanced risk allocations) stated that contractors will be affected by the consequences of unbalanced risk allocations in public work contracts. One of the employer respondents remarked that, esp. for health sector projects, project end users are highly affected for project delays which can be a consequence of improper risk allocations. Also, some respondents stressed that the engineer will face problems in administering public work contracts fairly when unbalanced and unrealistic risk allocation is adopted.

Table 5.22 Who Bears the Ultimate Consequences of Unbalanced Risk Allocation?

Employers and Project End Users			Contractors			Consultants			All Stakeholders		
E	CS	CT	E	CS	CT	E	CS	CT	E	CS	CT
83%	80%	39%	17%	20%	23%	-	-	-	-	-	38%

NB: One of the contractor respondent added that all stakeholders except consultants will be affected by the consequences of unbalanced risk allocations.

From the responses, public employers and especially projects end users will be affected by the consequences of unbalanced risk allocations. This is because if the risk effect is damaging, the contractor will try to transfer the risk to the employer, probably "unethically". As discussed briefly in section 5.6.4 below, the majority of the respondents stated that delivery of poor quality of works and delay of public projects are some of the

worst mechanisms of passing back the consequences to the employer or to the project end users. This is also remarked by an interviewee in that contractors will try to lower the quality of works in such a way that the project will serve mainly for maintenance period of the project through indirect ways in order to reduce the effect of the risk. Hence, risks shall be shared between the contractor and the public employer fairly in that the best out put of the project is obtained from the contract.

5.6.3 - Do Contractors Consider Risks during Tendering?

Contractors are expected to inspect and examine the site and its surroundings and have satisfied themselves before submitting their tenders. In general, they are deemed to obtain all necessary information as to the risks, contingencies, and all other circumstances which may influence or affect their tenders. This research included questions related to this issue that are raised to ask whether domestic contractors consider risks, examine tender documents, visit project sites, and add contingencies in their tender sum while submitting their tenders for public works.

The majority of the employer and contractor respondents (E80%, CT53%) stated that contractors do not add contingencies for risks allocated to them as their main objectives is to secure projects. One of the employer respondent remarked that unit prices for two different projects are usually the same (regardless of the nature and locations of projects) which is indicative that they do not consider risks while pricing their tenders. As stated by these respondents, some of the contractors might consider risks, esp., economical risks or price escalations, and variation to the scope of works while most of them do not identify and consider risks for the following reasons:

1. low knowledge and awareness of risks during evaluation and pricing of tender documents, esp. with respect to risk allocations
2. improper tendering procedure or unfair tender competition does not allow domestic contractors to add contingencies in practice

However, the majority of consultant respondents (75%) believe that contractors add contingencies when pricing tender document using the following mechanisms:

1. over estimating or over pricing of some work items; varying unit prices with respect to the estimated and actual quantities; front loading for admeasurement contracts and back loading for lump sum contracts
2. adding a certain percentage to the contract price and by lump sum consideration

These respondents stated that the risks that contractors consider include: over head costs in case the project delayed; price escalation; weather condition; labour shortage etc. From the above responses, we can see that contractors make some financial provisions for delay whether it is excusable or non-excusable. In fact, this is so because domestic contractors may not be compensated for such extra costs when EOT is granted.

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5.6.4 - Inspection and Examining of Project Sites before Tendering

From the majority of the respondents (E60%, CS60%, CT87%), it is evident that contractors inspect and examine the project sites and surroundings giving emphasis to: form, nature, distance, and accessibility of the site; nature of work; and availability of materials and labour with lesser emphasis for the following:

1. geological, hydrological, subsurface and climatic condition
2. locations and levels of all existing and projected utilities and services (above/below ground)
3. social stability or safety of the project area, utility availability, and availability of resources in general
4. cost of local materials and man powers etc

The other respondents, however, believe that contractors do not inspect and examine project sites as they do not give weight for the benefit of site visit and as they do not want to expend money for the project where there is a possibility that they may not win the tender. More over, most domestic contractors are not well organized with respect to technical staffs to undertake such tasks which could be good input for the project accomplishment if incorporated in the tender price. Hence, according to these respondents, contractors mostly examine bill of quantities to price their tenders and they rely on secondary information for site data. One of the contractor respondent remarked that

contingency is “luxury item” in our construction sector where only small number of contractors would “enjoy” it.

5.6.5 – What would Contractors do if a Damaging Risk Materializes?

From table 5.23 shown below, it is indicated from the majority of the responses that contractors will try to pass all consequences and effects of the risk back to the employer through mechanisms including “negotiating and altering the contract requirements” in cases where risks materialize and contractors could not bear the consequences of the occurred risk. They also remarked that delivery of poor quality of works by the contractors and delay of public projects are some of the worst mechanisms of passing back the consequences of the risks to the employer and project end users.

These respondents stated the impacts of the consequences as:

1. delay of projects as decision in a “loss-market” will not be made timely in any condition
2. cost overrun (projects will not be executed within allocated budget)
3. poor performance or inefficiency of the sector which will affect the general economy
4. low quality products, esp. for employers and project end users

One of the respondents added that practically there is no implication of such risks on domestic contractors as they are getting the agreed contract amount whether the project is delayed or failed to attain the quality required i.e. the contractual implementation is not strict for the contractors to be affected by such contractual implications. The other consultant and contractor respondents (CS44%, CT36%) on the other hand believe that contractors will terminate the contract either at their default or through some other termination provisions in such situations.

Table 5.23 – What would Contractors do if a Damaging Risk Materializes?

Attempting to pass it back to the employer through some strategy			Terminating the contract through provisions such as “impossibility clauses”			Terminating the contract at his default			Others, negotiating and altering the contract; poor performance of works		
E	CS	CT	E	CS	CT	E	CS	CT	E	CS	CT
100%	56%	50%	-	11%	14%	-	33%	22%	-	-	14%

5.7 Claim Substantiation and Dispute settlement Procedures in Public Construction Works

In this section, respondents were asked on issues related to claim substantiation and disputes settlement procedures adopted in MoWUD 1994 conditions of contract and their suggestions on the problems related to these procedures.

5.7.1 - Procedure for Claim Substantiation

Table 5.24 – Procedure for claims in MoWUD 1994 Conditions of Contract

Favourable			Favourable, but needs further amendment			Unfavourable or Poorly adopted		
E	CS	CT	E	CS	CT	E	CS	CT
-	-	30%	-	67%	20%	50%	33%	50%

NB: 50% of the employer respondents hold reservation on this issue and do not want to comment on the procedure as adopted in MoWUD 1994 conditions of contract.

Table 5.24 shows that the majority of the employer and contractor respondents together with 33% of the consultant respondents believe that the claim procedure adopted for domestic construction sector is unfavourable or poorly adopted from international standards. However, the majority of the consultant respondents (67%) are of the opinion that it is favourable except for some provisions as it is adapted from FIDIC (i.e. as it is

more or less “near to FIDIC” as described by one interviewee) stating that the problem lies on the practice of substantiation of claims and settlement of disputes. One consultant respondent remarked that the procedure is some how clear where the problem is that contractors do not have the practice of submitting financial claims but EOT claims at the last stage of projects.

Some contractor respondents further remarked that:

1. the procedure empowers the engineer
2. claiming for reasonable and legitimate damages by domestic contractors is poor which needs creation of awareness and change of attitudes on all project participants
3. while the fact is no clear provision or procedure concerning all contractor’s claims, the main problem is lack of proper contract administration and experience on how to handle claims and disputes

5.7.2 - Necessity of Detailing the Claim Substantiation Procedure

It can be seen from the majority of the respondents that standard conditions of contract should embrace a clause with detailed procedure for claim substantiation where only 10% and 8% of the consultant and contractor respondents respectively believe that it is already detailed and no further revision or detailing is necessary for the procedure.

Similarly, when responding to a question on the practice of claim substantiation in public work contracts especially on issues related to timely submittal of claims or intentions to claims and evaluation of the claim as per the provision, most of the respondents are not satisfied with the practice as to the already available claim procedure. The other consultant and contractor respondents (CS20%, CT14%), however, stated that at least intention to claim is submitted where the response from the engineer and employer is not welcoming for unreasonable and unacceptable reason that might be to discourage the contractors. Some of these respondents also remarked that mostly contractors file their claims at the end of the project unlike the procedure set out in the standard conditions of contract and contractors do not have sufficient office engineering staffs to substantiate and submit

claims with complete evidences both at site and head office levels. Table 5.25 below presents the responses for this question.

Table 5.25 – Practice of Claim Submission and Evaluation in Public Works Contract

Practice is good as to the already available provision			Contractors do not submit claims as per the provisions; Contract administration for claims is not good			At least intention to claim is submitted; Claims evaluation and response is not welcoming		
E	CS	CT	E	CS	CT	E	CS	CT
-	-	-	100%	80%	86%	-	20%	14%

More over, an interviewee from a contractor side stated that whether notification for intention to claim is submitted or not as per the provision, the main reasons for the engineer or MoWUD to settle disputes of financial claims is budget shortage. According to this interviewee, the engineer's and the MoWUD's final decision will highly be biased on the availability of budget i.e. acceptable cost claims will not be awarded for this reason. Generally, the respondents suggested that easily understandable and applicable provision for claims, which requires timely submittal of claims by the contractor and early decisions by the engineer, should be included in the standard conditions of contract.

Hence, it is suggested that well organized contract administration practice should be adopted and attitude change should be brought to all project participants through intensive trainings for awareness creation. This might include encouraging contractors to submit claims according to the contract provision; to substantiate claims on time as per the contract; to arrange arbitration and other fair dispute settlement procedures with close follow-up by the engineer and employer in a similar manner to international practices.

5.7.3 - Dispute Settlement Procedure

As discussed in the literature review part of this thesis, MoWUD 1994 conditions of contract settles disputes in a way that the decision made by the Ministry of Works and

Urban Development or its Authorized Representative will be final and binding. The dispute shall first be referred and settled by the engineer within ninety days and if the engineer fails to give decisions in ninety days or if one of the parties to the contract is dissatisfied with the engineer's decision, the party may refer the dispute to the Ministry or his Authorized Representative within ninety days. There is no time limit for decision by the Ministry or his Authorized Representative.

For a question related to this provision, the majority of respondents (E100%, CS73%, CT93%) stated that the dispute settlement procedure provided in MoWUD 1994 conditions of contract is not fair including the period of time given for decision making by the engineer and MoWUD. They reasoned out that decision could be biased as both the employer and MoWUD are public bodies and suggested that a neutral and professional body in a form of arbitration should have been allowed to settle such disputes. They also remarked that the long period of time allocated to settle disputes for the engineer and MoWUD is discouraging and contractors would be forced to accept the claim evaluation as decided and settled by the engineer.

Furthermore, it was reported by most of the respondents (E75%, CS72%, CT73%) that engineer's decision was usually based on subjective judgment for lack of records and detailed procedure which forces the parties, especially the contractors, to refer disputes to MoWUD. However, the decision made by MoWUD was discouraging since MoWUD mostly sides to the employer and since MoWUD is the one authorized for registering, certifying, and renewing construction licenses who may file the contractor as blacklisted if the case is submitted before courts.

They also stated the effect of such "discouraging dispute settlement" as:

1. under development of the sector as most contractors are shifting to other business areas which will ultimately results in losing domestic competence in the sector
2. forcing contractors to find out other "short-cut" mechanisms to settle claims before reaching dispute level with the engineer
3. it resulted in poor contract management practice

Also, most of the respondents stated that a time limit should be set for all concerned bodies to settle construction disputes whether for public or non-governmental institutions. However, 10% of the consultant respondents exceptionally stated that MoWUD should not be bounded by the contract with a time limit to settle disputes as he is a responsible body to undertake such tasks with accountability. One of the employer respondents, namely ERA, stated that dispute resolution advisors (DRA) is already in practice for public road projects which could be a good lesson for other public projects.

One contractor respondent remarked that even though the procedure needs revision and update as to international practices and standards, referring disputes to MoWUD was normal and mostly dispute settlement by MoWUD was reasonable for EOT claims while for cost claims, it would not be entertained fairly for shortage of budget with the public employer.

However, 27% and 7% of the consultant and contractor respondents respectively support the way of dispute settlement procedure adopted for public works for the following reasons:

1. the dispute will be ruled according to the contract even though MoWUD, who was authorized to settle disputes with a final and binding decision, is a public body
2. such a public body should better take the authority for dispute settlement (arbitration) of public work contracts where public expenditure is the main source as reported by a contractor respondent
3. MoWUD usually calls the parties and the engineer for discussion which will give them, esp. for the contractor, an opportunity to clarify and convince the nature of the claim or dispute (which is a kind of amicable settlement) even though MoWUD mostly follows the engineer's decision. However, some respondents cited some cases that MoWUD reverses the engineer's decision "favouring contractors" in their opinion. This could show that MoWUD settles disputes where the decision given was not necessarily following the foot step of the engineer's decision. Also, from an interview with a consultant, it was observed that there was a case taken to a court by

an employer since the decision made by MoWUD was against the employer's expectation.

4. if any of the parties are dissatisfied with the decision made by MoWUD, the case could be referred to courts where the "winner" before court could be compensated for all losses and damages and they remarked that courts would give decision in consultation with technical and professional bodies

5.7.4 - Amicable Settlement of Disputes and Alternative Disputes Resolution Methods

In MoWUD 1994 conditions of contract, if a dispute is once referred to the engineer, there is no opportunity for the parties to negotiate and settle the dispute amicably. Respondents were asked whether amicable settlement of disputes and alternative disputes resolution methods are favourable to public works.

The majority of the respondents (E100%, CS100%, CT93%) that amicable settlement should better be embraced expressly in the standard condition of contract in order to enable settlement of disputes in a shorter time and with lesser cost that will benefit both parties through transparent ways of contract administration. In fact amicable settlement procedures with a time limit and final decision making authority or power given to the engineer (in order to avoid lengthy amicable settlement) will reduce long disputes. This will in turn promote close follow-up of the case under dispute by concerned bodies with good understanding of the dispute nature to give fair and reasonable decisions considering the status and effect of the dispute on the progress accomplishment.

Even though the provision is not expressly included in the standard conditions of contract, some of the respondents and interviewees stated that frequent meetings for discussion on the dispute with all responsible bodies have been in practice which shows that amicable settlement of disputes was under practice. Of course as far as the provision is concerned, once the dispute is referred to MoWUD, there is no way to settle amicably either by minutes of meetings or other ways. However, such frequent meetings made with the presence of the employer, contractor, engineer, and MoWUD would give supporting evidences and grounds for the final decision to be made by MoWUD.

Similarly as shown on table 5.26 below, the majority of the respondents suggested that other alternative dispute resolution (ADR) mechanisms should be embraced in the standard conditions of contract for the following reasons:

1. it will facilitate early or timely decisions of disputes with lesser cost starting from the early identification of the dispute nature
2. it will create good opportunity for fair and reasonable awards of disputes
3. it will create a favourable working environment with respect to relationships in between the project participants as all concerned participants will be aware of their authority limits, especially as it will maintain fair contract administration

One of the consultant respondent remarked that the local standard conditions of contract should embrace such ADR systems by considering the availability of experienced professionals to handle disputes as per the requirement. This respondent also suggested that it should start from simple and non costly systems to the complex and probably costly ones in such a manner from mediation, conciliation, mini-trial, arbitration etc as appropriate.

The other consultant and contractor respondents (CS37%, CT9%), however, do not support the inclusion of ADR systems in the standard conditions of contract for the following reasons:

1. amicable settlement if embraced will be sufficient
2. so far no problem is observed with the existing dispute settlement procedure
3. making effective the already available procedure is better than looking for alternative ones
4. ADR will create zones of interest in between project participants (i.e. contractor, employer, engineer, adjudicators etc) which will be result in conflict of interests

The above last remark being critical to be addressed or other controlling mechanism being devised, adoption of all the above mentioned ADR systems is advisable where the practice by it self is a good ground for improvement of settling construction disputes for local construction contracts. Also, as some of the respondents stated, ADR will promote ethical

contract administration where the contractor will not be forced to settle and change decisions unethically. Hence, this could be a good remark for adoption of such ADR systems as a proper safeguard for public expenditures and reasonable contract management strategies.

Table 5.26 – Is ADR Provision Suitable for dispute settlement in Public Works

Alternative dispute resolution (ADR) methods should be embraced in standard conditions of contract			There is no need of providing alternative dispute resolution (ADR) methods in standard conditions of contract		
E	CS	CT	E	CS	CT
100%	63%	91%	-	37%	9%

Currently with PPA conditions of contract, the dispute resolution method was provided as stated below even though this is not applicable in some of the public projects:

- ✚ any dispute shall in the first place be referred to and settled by the engineer
- ✚ if either party is dissatisfied by the engineer’s decision, the engineer’s decision shall be referred to an adjudicator and the adjudicator has to settle the dispute within 28 days
- ✚ if either party is dissatisfied by the adjudicator’s decision, the adjudicator’s decision shall be referred to an arbitrator within 28 days where the decision of the arbitrator will be final and binding



Chapter Six

Conclusions and Recommendations

This chapter draws conclusion from the study by combining the research results, findings, and personal recommendations as to what should be done to solve the problems together with future research proposals. Conclusions for this study will be based on the objectives mentioned on section 1.2 of the introduction chapter. All the main objectives of this research have been achieved. The research carried out has shown some of the problems associated with the contract procedures and provisions adopted for public construction works on the investigated areas. The following conclusions and recommendations are drawn from the investigation undertaken on the research.

6.1 Conclusions

1. Contract administration by the engineer in public construction projects is mostly as per the contract provision with some exceptions where the employer may be favoured. Some of the problems associated with contract administration practices are: lack of skill and knowledge of contract administration by the engineer; lack of awareness of contract provisions by public employers and domestic contractors; and lack of detailed and well defined contract provisions.
2. Practical team work, cooperation, and mutual understanding between the employers, contractors, and the engineer in a framework of public work contracts is perceived by the majority of the respondents as good or at least not bad situation.
3. In public work contracts, domestic contractors are assisted in times of difficulties through arranging additional advance payment for material purchase; reducing the minimum amount of interim payment requirement; exempting liquidated damages with mutual understanding of uncompensated price escalation and other cost claims. And it is reported by the majority of the respondents that these financial assistance helped domestic contractors to expedite progress of the works so that projects will not be delayed significantly.
4. Financial procedures adopted in MoWUD 1994 conditions of contract are not flexible and need much further improvement and modifications. These include reducing the minimum amount of interim payment requirement; modifying the provision of

retention money with respect to deductible items and percentage limits; providing fair and reasonable time period for payment process and certification; providing reasonable compensation provisions for payment delays; and provision of advance payments for mobilization for all projects.

5. Compensation by official bank interest rate for delayed payments is not reasonable as reported by the majority of the respondents. Besides, the attitude of public employers and the engineer is not welcoming for such legitimate claims.
6. Liquidated damages amount at a rate of 0.1% of the contract price per day is a reasonable liquidated damages for public construction projects considering the demands of the constructed facilities by the project end users. Also, the maximum limit of liquidated damages has to be maintained at ten percent of the contract price considering the existing project management skills and as it will create awareness for the cumulative time of delays.
7. Some provisions especially those related to financial matters are not applied in public work contracts whether or not the cost implications would fall on the contractor or on the employer. Such practices include adjustment of contract price when the final contract price of a public project is increased or decreased by more than ten percent.
8. Omission of advance payment provision from MoWUD 1994 conditions of contract resulted in delivery of poor quality of public projects and fostered illegal lending practice at a higher interest rate which was reflected in the tender price.
9. Risk allocation between public employers and domestic contractors on the domestic contracting practice according to MoWUD 1994 conditions of contract is perceived by the majority of the respondents as unfair and unrealistic. The risks identified as unfairly allocated to domestic contractors include risks of price escalation and unforeseeable shortage of materials.
10. The majority of respondents indicated that public employers and project end users are the one who bear the ultimate consequences of unfair and unrealistic risk allocations. Especially in such a developing country, project end users in need of health, education and other similar facilities (even for existence) will be affected by project delays as a consequence of unfair risk allocations. This is because, delivery of poor quality of works and delay of projects are reported to be some of the worst

mechanisms that contractors pass the consequences of such risk effects to public employers and project end users.

11. Even though the practice of examining and analyzing project risks is not exhaustive in the domestic construction sector starting from project proposal stage, domestic contractors generally do not identify and consider risks for the following reasons:

- ✚ low knowledge and awareness of risks during evaluation and pricing of tender documents, esp. with respect to risk allocations
- ✚ improper tendering procedure or unfair tender competition which does not allow domestic contractors to add contingencies

However, some of the respondents stressed that the following practices can be indicative that some contractors consider risks during tendering:

- ✚ over pricing of some work items or varying unit prices with respect to the estimated and actual quantities
- ✚ front loading for admeasurement contracts and back loading for lumpsum contracts

12. Claim substantiation procedure adopted in MoWUD 1994 conditions of contract is reported to be unfavourable and poorly adopted from international standards by the majority of the employer and contractor respondents. These respondents claimed that the procedure empowers the engineer and lacks necessary procedures as to the time of submittal and substantiation of the claims. Moreover, the practice requires creation of awareness and attitude change on all project participants for reasonable and legitimate claims submitted by the contractors. However, the majority of the consultant respondents believe that the procedure is favourable except for some provisions as the procedure is "near to FIDIC".

13. Dispute settlement procedure adopted in MoWUD 1994 conditions of contract is reported to be unfair and the time allocated for dispute settlement by the engineer and MoWUD is unreasonably long. The procedure and long time required for resolution of the dispute was discouraging for contractors to refer disputes to MoWUD. This forced domestic contractors to accept the evaluation of their claims and decisions by

the engineer before it reaches a dispute level and this is reported to result in unethical contract administration practices.

6.2 Recommendations and Proposals for Further Studies

1. As awareness of contract provisions by public employers, domestic contractors, and consultants is reported to be low, contract provisions to be applied for domestic construction works should be clear, easily understandable, and well detailed in order to assist the contract administration practice.
2. Intensive trainings, workshops, and seminars should be arranged (especially by public bodies) to manage the problems that arise from lack of skill, awareness, and knowledge where the losses in quality, cost, and time could substantially be reduced or avoided through proper and balanced contract administration practice. This will in-turn promote the competence of the domestic construction sector as well.
3. The minimum amount of interim payment requirement has to be reduced to an average of 2-3% of the contract amount considering the cost, type, size, and completion period of the projects. This will substantially promote the progress of the works in order to ensure timely completion of public projects.
4. While making retention money at five percent of the amount certified by the engineer, resident supervision should be arranged in order to follow and ensure the proper quality of works.
5. The percentage of the value of materials delivered to the project site to be incorporated into interim payment certificates should better be increased to ninety percent of the invoice value of the materials by adding some effort on the proper handling and storage of the materials. Or alternatively, retention money should not be deducted from materials on site if the value of the materials to be incorporated into interim payment certificates is maintained at eighty percent of the invoice of the materials.
6. Contract provisions should set out clear period of time for payment process on all project participants where payment will be made and fair compensation such as payment of interest at a sufficiently higher rate should be applied to deter slow payments.

- 7.** The system of payment certifying and approval has to be changed in that joint-measurement of the volume of executed works should be taken prior to the submission of payment statement, as soon as the works are executed, or periodically so that the engineer will be capable of certifying and approving interim payment certificates within seven days in a promptly manner.
- 8.** Alternatively, contractors should submit payment statements monthly and the engineer has to check the contractor's monthly statements whereby if the payment qualifies to satisfy the minimum amount of interim payment requirement, the engineer will certify the amount to be paid. Otherwise, it can be postponed to the next or another monthly statement.
- 9.** Effort to reduce delay of public projects through proper follow-up and supervision of projects by all concerned project participants should be exhausted while maintaining the amount of liquidated damages at 0.1 percent of the contract price per day.
- 10.** The practice of applying liquidated damages provision by deducting some reasonable liquidated damages may alert contractors and other project participants for the timely completion of public projects.
- 11.** Contract provisions should properly be applied by the engineer, employer, and contractor while administering public work contracts.
- 12.** Public authorities in charge of reviewing and modifying standard conditions of contract should look at the impacts or consequences of omissions and additions of contract provisions and in particular should seek alternative mechanisms to solve the practical problems observed in public contracts. Also, all the stakeholders of the sector need to comment and work hand to hand in a cooperative manner when rules and regulations that are related to the sector are to be issued.
- 13.** Economical risks (price escalation) for a wider range of materials and the risk of unforeseeable shortage of materials should be shared in such a way that both parties to the contract will fairly manage the risks effectively. Also other similar risks should be shared in a fair manner and in the interest of efficiency so that the best out put of the project is obtained from the contract together with the promotion of the competence and performance of the sector.

14. The tendering procedure to be adopted for public work procurements should promote competitiveness and should probably insist domestic contractors to consider projects risks, to visit project sites, and to study contract documents before submitting their tenders. Moreover, it is advisable for public employers to arrange pre-bid meetings with all interested contractors and brief about the identified and expected risks of the project.
15. Standards conditions of contract should embrace a procedure for prompt submittal and substantiation of claims with respect to notification, time of submittal by the contractor, and analysis of the submitted claim by the engineer. More over, the attitude for reasonable and legitimate claims and requests should be positive since the result of such undertakings would be constructive.
16. As the dispute settlement procedure is the main part of contract provisions to maintain the fairness and efficiency of the contract, discouraging dispute settlement procedures should be replaced by other alternative and innovative dispute resolution methods. Amicable settlement of disputes with a time limit and decision making authority, mediation, adjudication, and arbitration procedures could provide better dispute settlement methods for public construction projects.
17. The following areas of study are suggested for further future studies as part of the extension of this research work:
 - ✚ Comparison of the final part of retention money with actual cost of rectification incurred by the contractor during maintenance period for small and large projects; for supervision arranged on resident basis or periodically
 - ✚ Assessment on the feasibility of completion period of time set for construction projects at the tendering stage
 - ✚ Assessment of actual liquidated damages suffered by public employers or project end users for delayed public projects and comparing with 0.1 percent of the contract price per day for a maximum of 10 percent of the contract price
 - ✚ Assessment of the practice of substantiation and evaluation of extension of time claims for public works
 - ✚ Assessment of contract administration practices for public building and road projects in Ethiopia

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APPENDIX

QUESTIONNAIRE COVER LETTER

Dear Sir/Madam,

I am undertaking a research survey on contract provisions focusing on standard conditions of contract for construction works in our country.

The research is an individual research project as part of my study for MSc. Degree in Construction Technology and Management at Addis Ababa University, Technology Faculty.

The attached questionnaire attempts to survey the problems of contract procedures on the development of the construction industry in our country where the main theme of the research revolves around contractual provisions related with finance and payment procedures, risk allocation in between the parties, and claim substantiation and dispute resolution procedures adopted in domestic public construction works. It focuses on standard conditions of contract for construction of civil work projects December, 1994 with amendments made on it. The findings of this study will then be compared with the current standard conditions of contract, namely Public Procurement Agency - PPA. Hence, it is hoped that the research will provide a substantial input to the new and currently adopted contract procedure considering the development stage of the local construction industry.

I would be very grateful if you could kindly take your invaluable time to complete and return this questionnaire.

Thank you for your invaluable time,

Kind Regards,

Kasim Seid /Researcher

The following questions survey problems on contract provisions that are related with finance in construction contracts considering the financial capacities of domestic contractors; how risk is allocated in construction contracts, how fair is the risk apportionment as perceived by the main parties under the contract and other construction professionals; and the claim substantiation and dispute settlement systems used in the domestic construction contracts.

Please give your response for the questions here under by putting a “✓” mark at your appropriate choice or by putting your answers in the space provided. You may use the back side of the paper if the space provided is not sufficient.

SECTION ONE – ABOUT THE FIRM

1. Organization Name _____
2. Your position in the organization _____
3. Your area of specialization in the construction sector (for contractor, consultants, employers)
 Building sector Highway sector
 Water sector All infrastructure works
 Other, specify _____
4. On what discipline is your company engaged for in the construction sector?
 Contractor Consultant
 Employer Professional institutions
 Other, specify _____
5. For how long does your organization engaged in the construction sector?
 Less than 5 years 5-10 years
 10-15 years 15-20 years
 More than 20 years, specify _____

Section Two- General Questions

1. Do you participate on public projects for most of the time? [For contractors and consultants]
 Yes, How frequently (how many projection a year)?

 No, why? _____

Considering the contract conditions adopted for public works, how is your willingness to participate on public works currently and in the future?

- To participate with the same pace
- Decreasing, why (shifting to other business sector, being engaged in private works, etc)? _____
- Increasing, state your reason _____
- Other, specify _____

2. How do you see the capacity of domestic contractors in undertaking public construction projects?

- They deliver projects within time, cost and quality as specified in the contract
- They deliver projects with lower quality and with time/cost overrun than the contract prescribes
- They deliver projects with optimum quality and time/cost overrun that can be achieved
- Others, specify _____

3. How do you see the competence of public employers in carrying out their responsibilities and obligations set in the standard conditions of contract under a public works contract?

- Public employers do not fully carryout their responsibility, they rest mostly on the engineer
- They are competent enough to administer their projects (construction works)
- Most public employers are not well organized for construction works and hence they are fully represented by the engineer and other bodies
- Others, state _____

If you believe that public employers are not competent enough to undertake construction contracts in responding to engineer's determination (cost, time, etc); in responding to financial matters such as interim and final payments; in deducting liquidated damages as per the contract; in approving time extensions and variations that are beyond the engineer's authority, what do you suggest as a solution?

- Organizing a central staff for construction works to act on part of all public employers
- Vesting additional functions and responsibilities to the engineer than allocated on the conditions of contract
- Developing an organized staff in the employers organization
- Others, state _____

4. Close cooperation and team work between the employers, contractor, and engineer in a frame work of a public work contract with a mutual desire to produce a satisfactory end product is believed to reduce to a minimum of the risk of delay and misunderstandings.

to motivate contractors to undertake corrections and remedies for detective works taken as remarks at completion of works during maintenance (defects liability) periods

Others, specify _____

Does this amount of retention money, which is reduced to 5% from 10% in MoWUD, Dec. 1994 conditions of contract, be maintained as it is (i.e. 5%)?

Yes/No (underline), state reason _____

, to what percentage shall it be adjusted? _____

As described above, there is a view on part of professionals, consultants and employers that this percentage of retention (5%) will not motivate contractors to undertake remedial works during Maintenance or Defects Liability Period. What is your view to this statement?

Strongly agree Agree Neutral Strongly disagree Disagree

State your reason, _____

- 3.** The value of materials on site intended to form part of the permanent work can be included in the contractor's payment. However, considering wastages and protection from damages/weather etc, only 80% (depending on the particular requirement of the project) of its value is paid as material on site. In addition 5% retention will be deducted from the final value where only 76% is considered for payment.

As part of contractual arrangement and considering financial capacity of domestic contractors, do you think that this percentage be adjusted?

Yes, reason _____

, to what amount? _____

No, reason _____

Does retention money be deducted from material on site?

Yes/No (underline), reason _____

- 4.** In your opinion and practical experience, what period of time is sufficient for payment to be effected to the contractor from the date it is submitted to the engineer for checking and approval?

[Sufficient and practicable period of time to check the executed volume of work, to approve and to pass finance processes both in the consultant and employer offices.]

7 days 14 days 21 days 28/30 days 56/60 days
(Underline)

What is your reason? _____

If payment is not effected within the period specified in the contract, a bank rate for interest will be paid to the contractor. Do you think that this is a fair recompense as compared to the actual cost of financing the project in times of payment delays?

Yes, reason _____

No, reason (and state actual costs of financing in such cases) _____

If payment is delayed on part of the employer for a long period of time, how do contractors react for this in reality?

Suspend the progress Make the employer at default

Only claim for interest rate Absorb the consequence

Others, state _____

What do you think is the reason? _____

- 5.** Liquidated damages is to be determined by employers before tenders are invited as a reasonable assessment to the actual damages which he would suffer in the event of delay in completion. Also, maximum limit of liquidated damages is set in contracts where the contract will breach after this limit.

1/1000 of the contract price per day is applied as liquidated damages of the employer in public projects where depending on the nature of works, liquidated damages higher than this minimum limit may be fixed and 20% (reduced to 10% through amendment) is the maximum limit in MoWUD, Dec. 1994 conditions of contract.

Considering the level of implementation of public projects by employers after temporary and final acceptance, do you think that this value is a reasonable damage to public employers in our context?

Yes/No (underline),
state your reason _____

What about the maximum limit

Remain as 20%,

Decrease to 10%,

Reduce even from 10% (say 5%), specify percentage _____

Others, specify _____

state your reason _____

From a previous study on delays of public work projects, almost no liquidated damages is collected by employers for projects completed with delay from the original completion period. What do you think is the reason?

- Employer/engineer being responsible for delays (EOT is granted)
- Completion period being insufficient in reality
- Understanding of the capacities of domestic contractors on part of public employers and engineer (i.e. as the amount and maximum limit is too much, it may bankrupt the contractor)
- Others, specify _____

If the amount of liquidated damages is reduced, do you think that employers may deduct the liquidated damages reasonably that they suffered for delays, i.e. will they be motivated for deduction?

- Strongly agree Agree Neutral Strongly disagree Disagree
- state your reason _____
- _____

- 6.** Under sub-clause 52 (3) of MoWUD, Dec. 1994 conditions of contract, contract price adjustment is disregarded for the first 10% up or down of contract price. However, any increase or decrease beyond this percentage requires an adjustment to the contract price due to the contractor with regard to all material and relevant factors, including the contractor's site and general overhead cost of the contract.

In your practical experience, has a cost adjustment been made where its contract price increases or decreases beyond 10% in a public project?

- Yes, who initiates the adjustment? _____
- No, what do you think is the reason? _____

From the trend of domestic contract administration and international practice, which percentage amount do you recommend for such cost adjustment to be practicable?

- Remains 10% 15% (as for most international practices)
- 5%
- Others, specify _____

- 7.** For certain duration, advance payment provision has been omitted from public work contracts on the ground of misuse of the advance payment by domestic contractors for other purposes. What is your opinion for this statement?

- Strongly agree Agree Neutral Strongly disagree Disagree
- , state your reason _____
- _____

What do you think is the effect of this omission on the development of the domestic construction industry? _____

What do you suggest for the above as an alternative mechanism rather than omitting the provision of advance payment? _____

Section Four - Questions Related with Risk Allocation

1. What do you think on the fairness and realistic allocation of risks in our contracting practice?

- Fair May not be fair but realistic Fair and realistic
 Unfair and unrealistic Others, state _____

If not fair/realistic, which party do you think is favored for? _____
State the unfair provisions that you believe is unfair? _____

If unfair, unbalanced and unrealistic risk allocation is adopted in the domestic contracting procedure, who do you think will bear the consequences ultimately?

- Project owners/employers Project end users Contractors
 Consultants
 Others, specify _____

2. Do you think that contractors consider risks allocated to them by adding contingencies while pricing of public project bids and estimates?

- Yes, for what kinds of risks? _____

, what mechanism do they use in considering the contingencies for such risks?

- No, state reasons _____

In your practice, do domestic contractors inspect and examine the site and surroundings as to all necessary matters for their satisfactory performance of the contract before submitting their tender?

- Yes, for what kind of data? [You may select more than one]
 Form and nature of the site
 Geological, hydrological, subsurface and climatic conditions
 Locations and levels of all existing and projected utility and service (above and below ground)
 Nature of work, material and labour
 Others, state _____

No, what do you think is the reason? _____

If such risk is found to materialize on a contractor and if the contractor could not bear the consequence, what do you think will be the result?

- Contractor will attempt to pass it back to the employer through some strategy
- Contractor will terminate the contract through other provisions such as impossibility claims
- Contractor will terminate the contract at his default
- Others, state _____

In your opinion, what will be the impact of such consequences on the domestic contractors and construction industry in general? _____

Section Five-Questions Related with Claims and Disputes

1. How do you see the procedure adopted in our country for substantiation of construction claims with regard to time limits for notification, substantiation of claims, and recording of contemporary data?

Do you think that a clause for claim in standard conditions of contract should set out a procedure for disciplined manner of dealing with claims or can it be made without such detailed procedure?

What is the practice of claims substantiation in public work contracts? Does the contractor submit every month of all claims as per the provision in the standard conditions of contract?

What do you suggest for claim substantiation provision for our construction culture?

2. MoWUD, Dec. 1994 conditions of contract settles disputes in a way that the decision made by the Ministry of Works and Urban Development or its Authorized Representative will be final and binding. The dispute shall first be referred and settled by the engineer within 90 days and if the engineer fails to give decisions in 90 days or if one of the parties to the contract is dissatisfied with the engineer's decision, the party

may refer the dispute to the Ministry or his Authorized Representative within 90 days. There is no time limit for decision by the Ministry or his Authorized Representative.

Do you think that such a dispute settlement procedure is fair as the employer is a public body and the contractor is usually a private one?

Yes/No (Underline), state reason _____

How do you see the time limits set for dispute settlement as it may take more than 6 months?

Very long as compared to completion periods of most public projects
 Reasonable period of time
 Long period, better be reduced to _____ Days
 Others, state _____

What do you think about the non-availability of time limit for the Ministry or his Authorized Representative?

There should be time limit in order to facilitate the settlement of disputes
 No need of time limit, reason _____
 Others, state _____

Do you think that the provision for dispute settlement discourages domestic contractors to refer to the Ministry i.e. to accept the decision made by the engineer even if they are dissatisfied?

Yes/No (Underline), state reason _____

What do you think is the effect on domestic contractors and domestic construction industry if it is discouraging? _____

- 3.** According to the provision stated in Q.2 above, if a dispute is once referred to the engineer, there is no opportunity for the parties to negotiate and settle their disputes amicably.

Do you think that amicable settlement is favourable if it is embraced in the conditions of contract to give an opportunity to the parties?

Yes, reason _____

 No, what do you think is the negative impact? _____

Do you think that some form of alternative dispute resolution (ADR) systems shall better be embraced in standard conditions of contract?

DECLARATION

This thesis is a result of my original work and it has not been presented for a degree programme in any other university. Furthermore, all sources of material used for the thesis have been duly acknowledged.

Candidate

Name _____

Signature _____

SIGNED DELCARATION SHEET

Submitted by

Student

Signature

Date

Approved by

1. _____
Advisor

Signature

Date

2. _____
Chairperson, Dept's
Graduate Committee

Signature

Date

3. _____
Chairperson, Faculty's
Graduate Committee

Signature

Date

4. _____
Dean, Graduate School

Signature

Date