ADDIS ABABA UNIVERSITY
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ADDIS ABABA INSTITUTE OF TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING

Assessment of Conditions of Contract Problems in Ethiopian Construction Industry

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A Thesis Submitted to School of Graduate Studies in Partial Fulfilment of the Requirements for the Degree of Master of Science in Civil Engineering (Construction Technology and Management)

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DECLARATION

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in any other university. All sources of materials used for the thesis have been duly acknowledged.

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ABSTRACT

Construction industry is a major player in economy of any countries by generating employment and wealth to the nations through its forward and backward linkages with other sectors. However many projects in developing countries experienced extremely high cost overrun, time slippage and low quality. Problems of conditions of contract in the construction sector is one of the contributing factor among other things. As a result domestic construction management and contract administration practices lack the necessary quality to meet its standards.

In this respect, this study tries to identify shortfalls of the local construction conditions of contract in Ethiopia and to find out provisions that have negative implication for the development of the sector. The research focuses on provisions related to Engineer's power, duty and responsibility; price adjustment; termination; claim substantiation and dispute settlement procedures; conformity of selected clauses with Ethiopian law; understandability of contract forms and the practice of construction management in general and contract administration in particular.

The data collection method integrated questionnaire survey, interview and desk study. Samples for the study have been randomly selected from a clustered group of public employers, domestic consultants, and domestic contractors who are actively participating on construction works. In this thesis, a descriptive and inferential statistical analysis method has been used. Interpretation and discussions were made on the basis of results from the analysis.

The study covered some selected contract provisions that have an implication to deprive the development of the construction sector. Accordingly the research comes up with the following conclusions. To begin with the price adjustment clauses are not sufficient to compensate the current soaring prices. Besides, termination is not exercised as per the contract provisions where as claim substantiation and dispute resolution lack a balance of risk favoring the employer in most cases. In addition, another finding reveal that the civil procedure code Art. 315(2) hinders arbitration practices for administrative contracts. Some concepts such as experienced contractor need to be expressed in a more clear and concise manner to reduce subjectivity. Furthermore, local contract forms lack suitability to manage construction projects efficiently. The research finally concludes that performance of the local construction sector, construction management and contract administration practices do not meet the standards as stipulated in contract provisions. This study further provides recommendations on how to improve the existing prevailing situations of the local construction sector in general and construction management practices in particular.

Key Words: Claims, Conditions of Contract, Construction Industry, Construction Management, Construction Contracts, Contracts, Contract Administration, Contract Forms, Dispute Resolution, Price Adjustment, Termination

ABBREVIATIONS/ACRONYMS

AACRA	Addis Ababa City Roads Authority
ACE	Association of Consulting Engineers
ADB	African Development Bank
ADR	Alternative Dispute Resolution
AIA	American Institute of Architects
BaTCoDA	Building and Transport Construction and Design Authority
BOQ	Bill of Quantities
CDSC	Construction Design Share Company
CONS	Consultant
CONT	Contractor
CPA	Conditions of Particular Applications
CSA	Central Statistics Agency
DAB	Dispute Adjudication Board
DB	Design Build
DBB	Design Bid Build
DCI	Domestic Construction Industry
DRB	Dispute Review Board
DRE	Dispute Review Expert
E	Employer
ECC	Engineering and Construction Contracts
EEA	Ethiopian Economic Association
ERA	Ethiopian Roads Authority
ETB	Ethiopian Birr
FIDIC	Fédération Internationale des Ingénieurs-Conseils
GDP	Gross Domestic Product
GTP	Growth and Transformation Plan
ICB	International Competitive Bidding
ICE	Institution of Civil Engineers
ILO	International Labor Organization
ISIC	International Standard Industry Classification

JCT	Joint Contracts Tribunal
MDB	Multilateral Development Banks
MEDaC	Ministry of Economic Development and Cooperation
MoC	Ministry of Construction
MoCB	Ministry of Capacity Building
MoI	Ministry of Infrastructure
MoTI	Ministry of Trade and Industry
MoUDC	Ministry of Urban Development and Construction
MoUDH	Ministry of Urban Development and Housing
MoWUD	Ministry of Works and Urban Development
MoFED	Ministry of Finance and Economic Development
NCB	National Competitive Bidding
NEC	New Engineering Contracts
PPA	Public Procurement Agency
RIBA	Royal Institute of British Architects
RSDP	Road Sector Development Program
SDB	Standard Bidding Document
UN	United Nations

GLOSSARY

Conditions of Contract: general terms and clauses of the contract concerning the duties, obligations, liabilities etc. of both parties where it describes the guidelines to be employed in contract administration.

Construction Industry: a sector involved in the planning, execution and evaluation of all types of civil works.

Contract: a construction contract that comprise the letter of acceptance, contract agreement, conditions of contract (general and particular), specification, drawings, BOQ and any further documents (if any).

Engineer: a consulting firm or a person representing this firm appointed by the employer for the purpose of the contract i.e. contract administration, construction supervision etc.

Price Adjustment: refers to the partial adjustment of costs attributed to the rise and falls of material, equipment and labor prices.

Public Implementing offices: include all types of public offices directly or indirectly related to the construction industry such as Ministries, Authorities, Public Agencies, Municipalities and Sub-cities.

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1. INTRODUCTION

1.1. General

The role the construction industry plays in socio-economic development is significant. The industry is a distinct sector of the economy, which makes its direct contributions to economic growth (MoWUD, 2006). It provides the basis upon which other sectors can grow by constructing the physical facilities required for the production and distribution of goods and services. The industry has a significant multiplier effect on the economy as a whole (MoWUD, 2006; EEA, 2008).

According to Chitkara (2004) and Bhimaraya (2001) quoted in Tadesse (2009) the contribution of the construction industry to the GDP of many countries ranges between 6-9% and 10% respectively. The state of Ethiopian construction industry falls short of meeting domestic and international quality standards and the performance demand expected from the sector. Its percentage of GDP only amounts to 3%, considerably lower than the sub-Saharan average of 6% (MoWUD, 2006). On the other hand the percentage contribution of the industry to GDP in the same period recorded by MoFED is 5.7%. However, in line with the overall 5% average economic growth from 2001/02 to 2004/05, the Construction Industry has registered an 8.2% growth. Moreover, Public construction projects consume an average annual rate of nearly 60% of the Government's capital budget.

Despite the booming trend of the Ethiopian construction industry in recent years, its percentage contribution to GDP remains constant at 5.7% for three years spanning from 2005/06 to 2007/08. However, it showed a 5.8% contribution of the total GDP in 2008/09 (MoFED, 2010). Selected economic activities and their percentage share of GDP for ten years covering from 1999/00 to 2008/09 is presented in Table 1.1. The percentage contribution of construction is even higher should the renting of construction and demolishing materials with operator were considered under the industry based on the ISIC Rev.4 (2008). The detail construction industry classification is dealt with in Chapter 2.

Table 1.1: Percentage distribution of GDP by selected Economic Activity

Industry/Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
	1999/00	2000/01	2001/02	2002/03	2003/04	200405	2005/06	2006/07	2007/08	2008/09
Agriculture, Hunting and Forestry	49.8	50.9	49.1	44.9	47.0	47.4	47.1	46.1	44.6	43.1
Mining and Quarrying	0.5	0.4	0.5	0.5	0.5	0.4	0.4	0.3	0.3	0.4
Manufacturing	5.5	5.3	5.3	5.5	5.2	5.2	5.2	5.0	5.0	4.9
Electricity and Water	2.1	2.1	2.2	2.4	2.3	2.2	2.1	2.2	2.0	2.0
Construction	4.2	4.3	4.9	5.7	6.1	5.8	5.7	5.7	5.7	5.8
Whole Sale and Retail Trade	11.9	11.7	11.9	12.5	11.8	11.8	12.5	13.0	13.6	13.8
Hotels and Restaurants	2.1	2.1	2.2	2.4	2.3	2.3	2.4	2.8	3.1	3.4
Transport and Communications	4.7	5.0	5.2	5.9	5.7	6.1	5.8	5.6	5.7	5.6
Financial Intermediation	1.8	1.8	1.4	1.5	1.7	1.8	2.1	2.2	2.5	2.7
Real estate, renting and Business activities	6.3	6.4	7.8	8.7	8.1	7.7	8.0	8.2	8.6	9.1
Public Administration and Defense	6.6	5.5	4.6	4.8	4.3	4.2	4.0	4.0	4.1	4.4
Education	2.3	2.4	2.5	2.8	2.8	2.8	2.8	3.0	3.1	3.2
Health and Social Work	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0
Other Community, Social & Personal Services	1.8	1.8	1.8	1.9	1.8	1.7	1.7	1.6	1.6	1.6

Source: MoFED, National Accounts Statistics Department, 2010

Conditions of contract are the clauses or terms in the main body of the contract, between the Recitals and the Appendix. They are sometimes referred to as 'operative clauses' (Chappel, Powell-Smith and Sims, (Chapel et al., 2001; Note: for three or more authors, the first author and et al. is used). It contains general terms of the contract concerning the duties, obligations, liabilities etc. of both parties the employer and contractor. Besides, it describes the guidelines to be employed in contract administration.

Standard forms of contract exist to identify the roles and responsibilities of the parties, and their agents; and provide rules to protect and direct the parties should things go wrong (Brook, 2004). Clients have a wide choice of standard contracts for construction work; in particular the forms used for buildings and civil engineering construction works, which cover most of the common procurement systems.

Conditions of contract could be national (local) or international. Standard conditions in the domestic scene have been written by public implementing offices such as BaTCoDA, MoWUD and PPA. International practices show that either of the following entities can issue their own contract forms. For instance, financing institutions such as the World Bank, ADB, and European Investment Bank etc. prepare contract forms according to their financing guide lines. Besides, professional associations including AIA, FIDIC, ICE and JCT have their own conditions of contract.

The standard printed forms of contract have been developed over many years to take account of the many events which could occur during and after a construction project. Contract law will of course deal with many of the problems, but there are many matters peculiar to construction which needs clarification (Brook, 2004). Once these terms have been incorporated, they reduce the likelihood of disputes which can lead to arbitration or litigation. Contract conditions are outlined by a reference being made to the standard conditions in the tender documents, with amendments through CPA to suit the particular project.

The preparation of a contract document is vital and should be done carefully to undertake a construction activity. Ambiguous and unclear clauses and wordings overlooked while drafting a contract document result in claims and disputes. According to Tanaka (1988) defective contract documents are one of the main causes of claims in U.S.A. However, it is the party who drafted these documents responsible while a claim arises. The Ethiopian construction industry is

increasing in the last few years which therefore demand the serious handling of contracts to achieve the desired result i.e. to complete the construction project within budget, time and quality.

This research work is therefore meant to address the above issues attributed to the problems, suitability, and conformity of selected clauses of conditions of contracts commonly used in the Ethiopian construction industry with the domestic law.

1.2. Background of the study

The construction sector plays an important role in short term trends, annual and more frequent development not only for the sector itself but also for other economic activities. Construction activity generally contributes much to the country's total activity, at least with the corresponding demand for materials and labor inputs. The swings in the level of construction activity tend to both amplify and to lead the movements in the economy as a whole.

Construction is widely acknowledged as the most important single constituent in a developing country's investment program with about 50% of total capital formation realized through this particular sector (ERA, 2005). It corresponds to the 60% public capital investment in Ethiopia. With such a high contribution the construction industry has a major influence on the economic growth of a country and is, conversely, dependent on the state of the economy for the realization of its potential (ERA, 2005; Tadesse, 2009). An inefficient and ineffective construction industry will, therefore, adversely affect all other sectors of the economy.

Public implementing offices must have the executive capacity and capability to deliver programs and projects for which they are responsible as most of these are vital to national or sectoral development, and are funded from scarce resources for which there are ever increasing and competing needs (Ofori, 2007). The vital issue among other things to guide the construction industry is the provision of clear policy with general and specific targets to realize the nation's target in generating ultimate benefit. It is important to incorporate clear and well written contract conditions with an acceptable balance in apportioning the duties, responsibilities and risks of the parties involved in the industry. It is in this light that this thesis is initiated to review the current state of conditions of contract in the domestic construction sector.

1.3.Statement of the problem

Construction is the mobilization and utilization of capital and specialized personnel, materials, and equipment to assemble materials and equipment on a specific site in accordance with drawings, specifications, and contract documents prepared to serve the purposes of a client (Rickets, 1999). Construction involves a combination of specialized organizations, engineering science, studied guesses, and calculated risks. It is complex and diversified and the end product typically is nonstandard. Since operations must be performed at the site of the project, often affected by local codes and legal regulations, every project is unique. Furthermore, because of exposure to the outdoors, construction is affected by both daily and seasonal weather variations. It is also often influenced significantly by the availability of local construction financing, labor, materials, and equipment. These factors should be addressed and managed in a competent and professional manner to benefit from the industry.

Girmay (2003) states the Ethiopian construction industry seriously lacks qualified engineering professionals with an appropriate level of training in construction management, international contract administration and claims handling. As a result claims which could have been mitigated on their early stage have gone offhand costing the country several millions. The aim of this study is therefore to assess problems and the way in which the local conditions of contract are used in the construction industry, to assess their suitability, to review their developments with time, to see some selected clauses which are assumed to be unclear and trigger claims, to compare them with internationally used conditions of contract and to forward recommendations.

1.4. Significance of the study

As globalization is a phenomenon which is here to stay, and which will deepen in extent and effect in future, it is in the interest of the developing countries that research is undertaken on how their construction industries and firms can participate fully in, and benefit from, this 'inescapable and irreversible' process (Ofori, 2007). The situation in the Ethiopian construction industry is following an increasing trend in recent years. However, the domestic construction industry is not benefiting much as the most key players of major construction projects in the country are foreign construction companies and consulting firms. It is in the author's belief that this research work is conducted to contribute for domestic construction industry in general construction management and contract administration practices in particular.

1.5. Objective of the study

The main objective of the thesis is to assess the current state of standard forms of contract in the domestic construction sector i.e. conditions of contract currently employed in the country. Based on the problems stated, this study is undertaken with the following objectives:

1. To investigate and evaluate the existing practices of construction management in general and contract administration in particular.
2. To assess the suitability of available conditions of contract in the construction industry. To this effect, assessment of the General Conditions of Contract (PPA, 2006) and Standard Conditions of Contract for Construction of Civil Works (MoWUD, 1994) will be made.
3. To identify clauses which are unclear and ambiguous in respect of the current practices and the Ethiopian law i.e. in light of the civil code and civil procedure code as well in a way to propose possible improvements for future use.
4. To assess contribution of these conditions of contract in developing the construction industry in general and competence of construction management profession in particular.

To achieve and address the above stated objectives the study is framed by the following research questions:

i. Which types of conditions of contract are used currently in the domestic construction industry?
ii. How suitable are these conditions of contract for usage?
iii. Are the selected main clauses unclear or ambiguous in triggering claims?
iv. How is the conformity of selected clauses with the Ethiopian law?

1.6. Scope and delimitation of the study

1.6.1. Scope of the study

The domestic construction industry has been using local conditions of contract since 1959. However, the research focuses on conditions of contract currently applicable in the Ethiopian construction industry. The study mainly deals with local conditions of contract whereas FIDIC contract forms are discussed for comparison and supplementary purpose since it is used widely in the domestic construction sector.

This study mainly dwells on the traditional contracting method commonly referred as DBB. Therefore the contract forms mainly covered are those suitable for DBB which involve the three

main stakeholders i.e. Employer, Engineer and Contractor in construction projects. To this end, the main focus of the study include: readability and interpretation; powers, duties and responsibilities of the engineer; price adjustment; termination; claim procedures and dispute resolution clauses of contract forms commonly used in the Ethiopian construction industry.

1.6.2. Delimitation of the study

The research work is delimited to federal projects building and road projects. The issue of regional projects is stated to clarify the specific issue raised as a supplement. Besides, the study is also delimited to MoWUD 1994 and PPA 2006 conditions of contract. The FIDIC (1987, 1999 & 2006 MDB) conditions of contract also used for the case of completeness and to compare local practices with the international dimension of construction contracts. The discussion on MoUDH 1959 and BaTCoDA 1987 conditions of contract is only from historical development perspective through time of domestic conditions of contract.

Even though the study is delimited to building and road projects, questionnaires were distributed to organizations that undertake airport and water works projects and used as appropriate in the analysis. Conditions of contract applicable for DB and turnkey or engineering procurement contract contracting types such as the FIDIC 1999 Yellow Book for construction of process facilities are discussed for the case of completeness while discussing the FIDIC 1999 suite of contract forms.

1.7. Methodology of the study

The concept of knowledge and the methods of obtaining it have been under strong debate in the past many years. Walliman (2005) cited in Belew (2007) advises on the limited role of the young researcher in dealing with such strong and controversial debate. Berg (2004) quoted in Belew (2007) has pointed out a 'mistakenly' held view that quantitative approaches to research are better scientific than qualitative ones. The debates emanate from the quest that which type of research methods and approaches are better to arrive at a good result for a specific research question.

It is acceptable that every selected method may not guarantee the desired result. It is also acceptable that the method selected has a great impact on the validity of the result especially in the knowledge production process, where, it is usually complex to test the performance of the result in a short time (Belew, 2007). However, it is argued that different problems can be approached

differently. Hence, a bias to a single method to address the many complex problems around us may limit the knowledge production process.

This research started with unstructured literature review during proposal preparation: to get an in-depth knowledge of the subject area attributed to conditions of contract; to assess the level of existing knowledge and identify gaps to select thesis topic; and identify suitable research methods for data collection and analysis. Conceptual and contextual literature reviews were followed once the main research work is started with the objective to: identify a theoretical base to shape the study; identify strengths and agreements of the existing literature review to take lessons for the study; and to carry out further investigation on research methods to confirm or adjust the methods identified at proposal preparation stage.

The survey study focuses on major public implementing offices carrying out road and building projects. The main focus will be on ERA and AACRA concerning road projects while CDSC is considered for building projects. Some private owners undertaking large building projects were anticipated to be included to come up with a full depiction of the construction industry. However, private projects were left as the study progresses as they lack formal construction management and contract administration procedures that suit the scope of this research. The data collected from survey studies is analyzed and discussions made based on the findings of the analysis.

Finally, conclusions will be made and recommendations will be forwarded according to the findings of the analysis and discussions made.

1.8. Organization of the Thesis

The thesis is organized with eight chapters. The first chapter depicts the basic research information as an introduction part of the research. The construction industry of Ethiopia is dealt in chapter two as a contextual framework followed by the third chapter which covers the basic literature review on the construction industry and its contracts that make up the conceptual framework of the study. The fourth chapter encompasses Conditions of Contract as a research theme with selected focus issues. Research design and methodology followed by analysis of findings are presented in the fifth and sixth chapter respectively. Discussions are made on the basis of findings of the analysis and the researcher's perception in chapter seven. The last chapter comprises the conclusions made and recommendations forwarded.

2. CONSTRUCTION INDUSTRY OF ETHIOPIA

2.1.General

The rationale behind this research is not new for researchers and practitioners engaged one way or the other in the construction industry. However, the main task lies at having a contextualized concept as applicable as possible for further similar researches. Context in this research is focused on the Ethiopian construction industry, as the focus of the research lies in the problems of conditions of contract for construction projects especially on road and building projects.

2.2. Ethiopia and its Construction Sector

2.2.1. Ethiopia: - General Information

Ethiopia is located in the horn of Africa. It covers an area of about 1.13 million square kilometers and the topography of the country is rugged ranging with an altitude from 125m below sea level to 4,620m above sea level. The country has an elevated central plateau varying between 2,000 and 3,000 meters above sea level. The population of Ethiopia in 2007 was 76,511,887 (Population (2008) cited by Abraham (2008)). In that year approximately 3% of the population was over 65 years of age, with another 44% of the population under 15 years of age. However, the population reached some 84.9 million according to UN (2010) estimate. Table 2.1 shows the important facts about the country:

Table 2.1: County Profile of Ethiopia (BBC.com, 2011)

Full name	**Federal Democratic Republic of Ethiopia**
Population	84.9 million (UN, 2010)
Capital	Addis Ababa
Area	1.13 million sq km (437,794 sq miles)
Major languages	Amharic, Oromo, Tigrinya, Somali
Major religions	Christianity, Islam
Life expectancy	56 years (men), 59 years (women) (UN)
Main exports	Coffee, hides, oilseeds, beeswax, sugarcane
GNI per capita	US $330 (World Bank, 2009)

Figure 2-1: Map of Ethiopia

Economically, a new policy was adopted in 1992. The policy was based on the principle of free and market oriented economic exchange. With 85% of the population living in rural area, the Ethiopian economy has been dominated by peasant agriculture that accounts for 45% of the total GDP, 80% of the total employment and 85% of the country's exports (Wubishet, 2004). According to MoFED (2010) the contribution of agriculture is 43% of the total GDP is still considerable and a source of mass employment, but gave way its leading contribution marginally for the first time to the service sector which stands at 44% of GDP. Many irrigation schemes in many parts of the country: such as Koga Irrigation (Gojjam) and Tendaho (Afar) have been implemented to supplement the rain fed agriculture which is often affected by intermittent drought. This shows the shift of the economy that used to revolve around agriculture dependent on rainfall to scientific agriculture not to mention the evident growth of the service and manufacturing sector. Recent evidences have showed that the Ethiopian economy is one of the fastest growing in Africa.

2.2.2 Modes of the Ethiopian Construction Industry

According to CSA (2000) construction activity may be carried out not only by enterprises classified in the construction industry, but also a significant amount of construction in countries like Ethiopia is carried out by enterprises not classified to this sector. Such activity, incidental to the main activity of the enterprise will usually be predominantly force account construction, either for the enterprise itself or for its parent organization.

The annual sample survey of "construction industry proper" for the year 1998/99 (1991 EFY) conducted by CSA classified construction as comprised of five cluster components based enterprise engagement.

i. **Construction Industry Proper**: - construction units whose main activity is contract construction including unregistered units and self employed individuals carrying out construction for others.
ii. **Non-construction Units**: - carrying out construction but for which such construction is not the main activity.
iii. **Force Account Construction**: - units whose main activity is own/force account construction for their parent non construction enterprise. Some of the examples, rural road construction and irrigation works under the Ministry of Agriculture, construction works under ministries like: Education, Health, Water development; and construction of network systems for power and telecommunications etc.
iv. **Some Force Account Construction**:- non-construction enterprises carrying out some own account construction incidental to the main activity, this component includes government ministries and agencies engaged in public new construction work and capital repair and maintenance work for their small buildings, internal asphalt works and garages, etc. without contractor.
v. **Individual/Households/Co-operatives**: - individuals or co-operatives undertake own account construction or make capital repair and maintenance works without contractor by themselves.

In the researcher's view, this division is limited to be considered as a classification that fully portrays the construction industry. For instance, all groups except the construction industry proper are informal undertakings and can be grouped as an 'informal sector' within the industry. Besides, it also lacks the major prerequisite to be licensed in the industry such as: office and financial

capacity; personnel and equipment requirement, technical and professional competence from the responsible public implementing office currently i.e. MoUDC.

2.3. Construction Industry in Ethiopia

Ethiopia has a rich history of magnificent construction endeavors. The ruined palace of Queen Sheba at Yeha, the Obelisks of Axum, the rock hewn churches of Lalibela, and the castles of Gondar are few examples of these expertises. With the advent of modern civilization, especially during the late 19th and early 20th century, there have been some significant developments in this regard (Girmay, 2003; Wubishet, 2005).

2.3.1. Genesis of the Ethiopian Construction Industry

According to Wubishet (2005) the construction industry in Ethiopia has been in the process of transformation. This transformation is based on improving the competitiveness of the construction industry and enhancing its ability to fulfill the national development demands. To reveal such transformation is vital to understand the contextual realities and the development trends of the Ethiopian construction industry.

Researches showed different development stages of the Ethiopian construction industry. MEDaC (1999) and EEA (2008) presented four stages in line with regime changes. Wubishet (2005) on the other hand, presented six distinct development periods based on changes in policies, regulations and management process. Table 2.2 shows the above cited different development stages. However, the beginning of formal construction industry in Ethiopia considered in both cases dates back in the late 1960s. The reference time frame stated in both cases when the domestic construction industry commenced is in 1968. Construction works prior to this period have been fully occupied by foreign construction firms and professionals.

The approach followed by Wubishet as compared to MEDaC and EEA is more comprehensive depicting the detailed trends of the construction industry development. The industry is still striving to achieve the integration stage which still may take some years. These transformation stages of the domestic construction industry are briefly presented below.

Table 2.2: Ethiopian construction industry development stages

Stage	Year	MEDaC (1999), EEA (2008)	Wubishet (2005)
1	Pre 1968	Foreign companies dominated Construction Industry	Foreign companies dominated Construction Industry
2	1968-1982	Small scale domestic construction companies emerged	Small scale domestic construction companies emerged
3	1982-1987	State owned companies established	Parastatal companies domination
4	1987-1991		Fragmentation between design services & construction works
5	1991-2001	Private construction companies introduced	Re-emergency of private construction companies
6	2001-To date		Integration and capacity building

Stage 1: Construction industry dominated by foreign companies

The first period covers prior to the year 1968 when most civil works were financed and carried out by foreign contractors through ICB. Relevant skilled man power was also largely employed from abroad (MEDaC, 1999; Wubishet, 2005; EEA, 2008). These contractors and foreign experts did not help in retaining local capacity; hence, the establishment of indigenous construction contractors had generally been impeded (EEA, 2008).

Stage 2: Emergence of small scale domestic construction companies

The second era in the development of the construction industry in Ethiopia was that spanning the period 1968 to 1982 when some small domestic contractors started to emerge. In order to build capacity and enhance their competitiveness, the government took initiatives to help contractors participate in the construction of feeder road projects. In this connection three domestic contractors can be mentioned: BERTA Construction Company, National Engineers and Contractors (NEC) and the Ethiopian Building and Road Construction (ETBRC) (Wubishet, 2005; EEA, 2008). This has resulted in some of the foreign companies to establish their local branches to increase their competitiveness and contributed to knowledge, technology and skill transfer (Wubishet, 2005).

According to MoWUD (2001) this period was recognized for its domestic and foreign financial commitment towards building the capacity of the construction industry which led small scale domestic construction companies to flourish. Furthermore, conducive proclamations, rules and

regulations have been put into effect concerning contract administration, strengthening domestic construction with equipment and finance.

After the change of government in Ethiopia in 1974, the situation has been reversed which made the development of the private sector much more difficult due to major political shift from the Imperial state practicing free economic policy to a Socialist regime practicing command economy. Such a transformation negatively affected the development of small scale domestic construction industries and para-state construction companies started to dominate (Wubishet, 2005).

Stage 3: Parastatal companies dominated the construction industry

The third period in the evolution of the industry was the period of shift to command economy which had brought the then evolving domestic private construction companies under state control in 1982. In addition state-owned construction companies are established (EEA, 2008). MoC has then replaced the then Ministry of Public Works which became responsible to run the following established state owned enterprises (1982-1995) (Wubishet, 2005):

- Ethiopian Building Construction Authority (EBCA)
- Ethiopian Transport Construction Authority (ETCA)
- Blue Nile Construction Enterprise (BNCE)
- National Engineers and Contractors (NE & C)
- Batu Construction Enterprise (BaCE)
- BERTA construction

Construction projects were carried out without competitive bidding by awarding contracts directly to government construction companies. It was regarded as the lost opportunity for the creation of competitive construction industry in the country (Wubishet, 2005; EEA, 2008).

Stage 4: Fragmentation between design services & construction works

The construction industry used to follow the famous first order fragmentation of planning-implementation phases. In addition to this the implementation phase of construction works is further fragmented to Design services and Construction works which is stated as second order fragmentation by Wubishet (2005). This approach is well known by its DBB for procurement of construction works worldwide which is considered now as traditional, fragmented and adversarial in its performance.

The adoption of mixed economy policy in 1987, the construction industry was reorganized to form four independent contractual stakeholders; Financers, Employer, Consultant and Contractor. For instance, the overall responsibilities of EBCA and ETCA for construction processes including planning, designing, construction works and contract administration were believed to defuse these three contracting parties; hence, the importance of monitoring and controlling function in construction management was considered (Wubishet, 2005).

Following to these developments, Building Design Enterprise (BDE) and Transport Construction Design Enterprise (TCDE) has been established as autonomous enterprises for design and contract administration services. Besides, the then MoC has seized to operate as a sole entity for the entire construction process and give way for the establishment of BaTCoDA in 1987. These changes on the one hand enabled the development of consultancy services for the construction industry and improved its monitoring phases; it brought two levels of fragmentation and adversarial relationships in the construction process (TCDE, 1994 quoted in Wubishet (2005)).

Stage 5: Parastatal Domination diminished and re-emergence of privatization

This period begins with the change of government in May 1991. Economic management has shifted from command to a free market system. Various reform measures aimed at promoting the private sector including private construction companies have been introduced. As a result, the role of private contractors in the industry has started flourishing while that of public companies diminishing since 1991(EEA, 2008).

Stage 6: Integration dominated construction industry

The construction industry was reorganized in such a way to enable integration and capacity building in line with sectoral redefinition. In such a development, a wider MoI replaced MoWUD and new ministries i.e. Ministry of Federal Affairs and MoCB were also established to facilitate the various construction processes through integration and capacity building (Wubishet, 2005).

Furthermore, Wubishet (2005) predicted as construction project management consultancy will prevail to plan, organize, administer and monitor the overall construction process of the construction industry after analyzing the trend of industry at that time. As a result procurement of construction project management consultancy followed by sub consultancy and sub contracting for design, contract administration service and construction works will become the next transformation

stage to the construction industry in Ethiopia. This will largely reduce large fragmentation levels and enable clients to deal with one contract partner and promote private sector development.

Even though the last transformation stage stated in the construction industry is yet to achieve a full fledged integration and capacity building as predicted above. It is resulted from another sectoral redefinition and reshuffle of public ministries mandated to regulate, monitor and guide the construction sector in the country. For instance, MoI gave way back to MoWUD in October 2005 and MoWUD to MoUDC in October 2010. Furthermore; MoCB is outsourced in October 2010 that seemed a shift from capacity building stage. But the newly established MoUDC replacing the former MoWUD has a state minister and construction division that oversee, guide and monitor the construction industry. In the author's view, the capacity of this public office to transform the industry to meet the above predictions will be seen in the years to come taking the upcoming GTP of 2010/11 to 2014/15 into consideration.

2.3.2. Construction Policy

Construction industry in Ethiopia is still at an infant stage as it has not developed well even to the level of other developing countries. Therefore, efficient construction policy is vital to guide the construction industry. However, there is no any official construction policy ratified to date to guide the construction sector in the country. According to experts in the newly established MoUDC responsible for the construction sector, a construction policy is under preparation which is not materialized. In the researcher's view, the lack of this policy is impeding the anticipated development and growth of the construction industry. For instance, the ministry register's and issues plate numbers for construction equipments and machineries while the licensing of equipment and machinery renting companies is undertaken by a separate entity such as Trade and Industry Bureau.

Policy and Regulations are one of the causal related factors for low performances of Federal Road and Educational Building projects. Policy and Regulations have major effects on public projects starting from their identification and selections throughout their implementations and completions. Hence, policies identified for their contribution to low performances include: Fragmentation and compartmentalization of the construction industry; Procurement regulations, Contractual agreement arrangements; and Compensation regulations (Wubishet, 2004). However, some improvements were made regarding Compensation and Procurement related Regulations, and

Contractual Agreement Arrangement of the Policy and Regulatory related factors in recent years (Federal Negarit Gazeta, Proclamation No.430/2005; PPA, 2006; Federal Negarit Gazeta, Proclamation No.649/2009, which replaces Proc. No. 430/2005).

The situation of the construction industry currently is considered as a support to other sectors and its organizational arrangement was distributed accordingly. Above all these, its importance to development was acknowledged through other sectors. This fragmentation did not only make lose sight of its integration as a whole, but also the views of each sectors as a support element undermined the construction industry development and its contribution as well. Subsequently, the industry suffered continuous policy gaps for enhancing its domestic capacity.

The GTP (2010) indicates establishing Construction Industry Council as one of the main steps among other key targets in scaling up the construction industry. It is important to realize this council soon since it is the right direction in order to:

- Ensure and enhance the contribution of the construction industry to the development of Ethiopia in general;
- Create conducive environment and appropriate regulatory framework to all stakeholders and their capacity development involved in the construction industry in particular; and
- Enable to show the problem of administering the construction industry in a fragmented and compartmentalized nature and its effect at large in a way to devise a mechanism to remedy such problems.

However, considering the past first year of the GTP plan, it has showed no sign of progress in establishing the Construction Industry Council and other grand plans related to the construction industry as anticipated; hence, achieving the above stated goals seems far reaching.

2.3.3. Capacity of the Construction Industry

Basically, domestic construction capacity refers to the potential construction volume/value that could be undertaken by domestic construction companies in a given period of time. This, in turn, depends on number and quality of machinery and equipment that is available, and skilled man power, ranging from design to supervision (EEA, 2008).

The local construction firms are broadly classified based on trend of work as follows (Abraham, 2008): General Contractors, GC; Building Contractors, BC; Road Contractors, RC; Specialized Contractors, SC.

The first three categories are again divided into ten grades with different resource requirements. The former MoWUD has placed the basic human and equipment requirements to attain the different licenses with different grades. According to a data on 2007, there are 2,818 contractors on a federal level out of which only 54 are grade one with different specialties (Mendeke (2007) cited in Abraham (2008)). There are 27 Grade One General Contractors out of which only 9 have the real capacity to carry out road infrastructure projects (Abraham, 2008). The data from MoUDC (2011) reveals that there are 129 consultants of Grade V and above. In addition, the same data shows the number of contractors licensed by MoUDC at the end of June 2010 are 4280 out of which 85 are Grade I with different specialties. It is evident that the number of Grade I contractors has shown a sharp increase from 54 to 85 compared to 2007. However, many professionals in the field contest whether these contractors are fully capable on the basis of their capacity to undertake works as required from the grade licenses.

According to ERA (2005) some contractors in the higher grade categories are not staying in the industry due to unknown reasons. However this trend is quiet better for smaller category groups. For example from category group VII and VIII about two third of licensed contractors are involved in continuous and a sustainable manner in this industry. The reason might be due to low capacity requirement and that the smallest category contractors would have better opportunity to participate in smaller works and stay in the industry. However, high capital requirement and a relatively lower number of contracts in that level would make the higher category contractors difficult to stay in the industry.

2.4. Conditions of Contract: Previous Researches

Many practitioners and researchers in the construction industry have researched many aspects attributable to conditions of contract or contract forms. These studies include the problems related to forms of contract and other claim associated provisions. In line with this, Girmay (2003) suggested points to be considered in improving the FIDIC form of contract especially on matters related to substantial completion. However, there are two principal studies documented directly

related to these specific issues to the researcher's knowledge. These studies are a graduate thesis (Kasiem, 2008) and undergraduate thesis (Selamawit et al, 2006).

2.4.1. Study of the problems of construction conditions of contract for public works in Ethiopia

Kasiem (2008) worked to identify drawbacks and shortcomings of the local construction conditions of contract adopted for public works in Ethiopia to find out provisions that have negative implication for the development of the sector. He focused on provisions related to finance, risk allocation, claim substantiation and dispute settlement procedures.

Kasiem (2008) identified in his study the potential contract provisions that hinder the development of the sector. In addition the study concluded that: the financial provisions adopted for public works are not suitable and need further improvement; the risk allocation between public employers and domestic contractors need to address price escalation and unforeseeable shortage of materials fairly; claim substantiation and dispute settlement procedure should adopt modern methods and practices.

2.4.2. Conditions of Contract: Comparison between local and international conditions for construction works

Selamawit et al. (2006) identified differences in local and international standard conditions of contract and assessed their impact during application. Among the differences investigated: the powers and obligation of the engineer; alterations, additions and omissions; and procedures for claims and settlement of disputes are some of the relevant issues related to the current practices. The study suggested the harmonization of existing documents to minimize adversarial relationships, ambiguities and conflict that have been observed in practice.

3. BASIC LITERATURE REVIEW

3.1. General

Contracts are fundamental to the management of almost all engineering projects. There are a number of contract models (standard forms of contract) in practice to facilitate the contractual arrangements between actors in a project. These models or standard forms of contract are ready-made terms and conditions that are used when making a contract with possible modifications. Practices show that the terms of contract are seldom the last words. The fact that, the parties have agreed on common language (terms and conditions) does not guarantee an identical interpretation of every point and terms of their agreement (Tesfaye, 2004). In such cases, it is behavioral to come up with problems in many construction projects associated with the usage of contract forms. This research is, therefore, focused on problems of contract forms in Ethiopian Construction Industry giving more emphasis on provisions: Engineer's power and duty, Price Adjustment, Termination, and Claims and Dispute Resolution clauses. The literature review has been constructed to first define the basic concepts behind the research and then focus on detail thematic literature of related researches carried out around the world.

3.2.Construction and Construction Industry

3.2.1. Construction: Definition

Construction has narrow and broad definition. Those who define narrowly perceive construction mainly as the site activities that lead to the realization of a specific building or other infrastructure projects such as road, bridge or dam. This view is only a specific stage in the construction project cycle limited to those aspects under the direct control of the contractor. The broad definition covers the whole construction project cycle from inception and feasibility to demolition/decommissioning and disposal. Some selected definitions from both narrow and broad perspective are presented below.

Rickets (1999) defines construction as the mobilization and utilization of capital and specialized personnel, materials, and equipment to assemble materials and equipment on a specific site in accordance with drawings, specifications, and contract documents prepared to serve the purposes of a client. Likewise, ISIC, Statistics Division of UN defines construction as an operation limited to site activities. According to ISIC, (Rev.4, 2008) construction activity includes general construction and specialized construction activities for buildings and civil engineering works. It

includes new work, repair, additions and alterations, the erection of prefabricated buildings or structures on the site and also construction of a temporary nature. The renting of construction equipment with operator is classified with the specific construction activity carried out with this equipment.

Construction covers a broad scope that encompasses extensive activities carried out at earlier and later stages of site operations. These undertakings include a comprehensive cycle of a construction project, covering key stages such as feasibility, design, building/construction, operation, decommissioning, demolition and disposal. Irurah (2001) cited in Du Plessis (2007) interpreted construction at four levels as: site activity, comprehensive project cycle, everything related to the business of construction, and a broader process of human settlement creation. To capture this broad understanding of construction, Du Plessis et al. (2002) proposed the following definition:

> *'Construction is the broad process/mechanism for the realization of human settlements and the creation of infrastructure that supports development. This includes the extraction and beneficiation of raw materials, the manufacturing of construction materials and components, the construction project cycle from feasibility to deconstruction, and the management and operation of the built environment.'*

The above definition is comprehensive which addressed a broad scope other than site operations. It depicts the construction project cycle fully from the inception to demolition and other activities like material production and running built infrastructures. However, manufacturing activities of construction materials such as quarrying of stones, gravel crushing and manufacturing of bricks are not included in the construction activity in ISIC, Rev.4, 2008.

In the case of Ethiopia, although the definition adopted by the National Accounts department of MoFED is the same as that of ISIC, the activities actually covered under the industry are the construction and maintenance of: Residential Buildings in urban and rural areas; Non-residential buildings, i.e. factory buildings, ware houses, office buildings, garages, hotels, schools, hospitals, clinics etc. and construction works like roads, dams, dikes, athletic fields, electricity transmission lines, telephone and telegraph lines etc. (MoFED, 2005; EEA, 2008)

In principle the construction activities undertaken by the construction industry which do not fall under the industry such as the quarrying of stone, gravel crushing and manufacturing of bricks are not part of the industries' production and hence should, if possible, be allocated to separate

economic activities. This, however, is not possible in most cases and hence such output is also included in the construction sector (MoFED, 2005).

Unlike the National Accounts, the term construction is not defined directly by law in Ethiopia. The concept is known as "Works". According to Article 2(3) of Proclamation No.649/2009 i.e. the Ethiopian Government Procurement and Property Administration Proclamation, Works is defined as follows:

> *'Works will mean all work associated with the construction, upgrading, demolition, repair or renovation of building, road, or structure, as well as services incidental to works, if the value of those services does not exceed that of the works themselves and includes build-own operate, build-own-operate transfer, and build-operate-transfer contracts.'*

3.2.2. Features of Construction

Nunnally (2001) states construction as an exciting, dynamic process that offers many rewarding career opportunities. As a career it is especially appealing to those who enjoy a sense of physical accomplishment. While rewards can be great, construction is a cyclic, highly competitive industry with many risks. ILO (2001) argues that the construction industry has a poor image. Scenes of devastation were observed as buildings and major infrastructures like bridges, dams etc. collapse following earth tremors, due to poor construction and inadequate inspection. Reports of large-scale corruption involving contractors and governments are also commonplace.

According to Levy (2007) the Construction Management Association of America (CMAA), in collaboration with management consulting firm FMI, conducted a survey in 2004 to determine how the industry viewed the ethical practices of its peers. The survey was directed toward owners, architects, construction managers, general contractors, and subcontractors. Their responses were not heartening. 84% of respondents said they encountered situations that they considered unethical in their business dealings, while 61 % said the industry was "tainted" by unethical acts. 34%, meanwhile, claimed they had experienced unethical acts on several occasions. Of course, the construction industry alone can't be singled out for ethical lapses, it is vital to revisit the way how the majority of firms in the construction industry operate: ethically, conscientiously, and with a strict work discipline.

The poor image of work in the construction industry is generally thought to stem from the nature of the work, which is often described as "dirty, difficult and dangerous" ILO (2001). This idea is

shared by Nunnally (2001) as construction is inherently a dangerous process. Historically, the construction industry has had one of the highest accident rates among all industries. But the real reason why construction work is so poorly regarded in the ILO perspective has much more to do with the terms on which labor is recruited than the nature of the work itself.

It is widely recognized that construction as a discipline is a combination of art and science. While an understanding of technical aspects of construction is extremely important, it is also essential that construction professionals have knowledge of the business and management aspects of the profession. Close observation and participation in actual construction projects is very valuable in obtaining an understanding of the construction process as well (Nunnally, 2001).

Construction is traditionally been conservative industry. The industry is showing a remarkable leap with the application of increasing rate of sophisticated technological development of new construction methods, equipment, materials and management techniques. As a result, the coming years will see an increasing need for innovative and professionally competent construction professionals.

3.2.3. Construction Management

Construction management can be defined as a professional service that applies effective management techniques to planning, design and construction of a project from inception to completion for the purpose of controlling time, cost and quality (CMAA, 2003 cited by Wubishet (2007)). Construction management involves the planning, execution, and control of construction operations for any types of construction to optimize the interrelated primary objectives: cost, quality and time/schedule (Rickets, 1999; Abebe, 2003; Lock, 2004; Levy, 2007).

Abebe (2003) states major tasks of construction management in planning include: setting objectives, resource survey and forming strategy. According to Rickets (1999) Planning requires determination of financing methods, estimating of construction costs, scheduling of the work, and selection of construction methods and equipment to be used. Initially, a detailed study of the contract documents is required, leading to compilation of all items of work to be performed and grouping of related items in a master schedule. This is followed by the establishment of a sequence of construction operations. Also, time for execution is allotted for each work item. Subsequent planning steps involve selection of construction methods and equipment to be used for each work item to meet the schedule and minimize construction costs; preparation of a master construction

schedule; development of schedules for procurement of labor, materials, and equipment; and forecasts of expenditures and income for the project.

According to Abebe (2003) the management in execution stage should look in to allocate resources, guide execution, co-ordinate effort and motivate staff among other things. Rickets (1999) stress the importance to recognize that not only construction cost but also the total project cost increases with duration of construction in planning for execution. Hence, fast execution of the work is essential. To achieve this end, construction management must ensure that labor, materials, and equipment are available when needed for the work. Construction management may have the general responsibility for purchasing of materials and equipment and expediting their delivery not only to the job but also to utilization locations. Also, essential for execution of construction are layout surveys, inspection of construction to check conformance with contract documents. In addition, successful execution of the work requires provision of temporary construction facilities. These include field offices, access roads, cofferdams, drainage, utilities and sanitation, and design of formwork for concrete.

Control of construction requires up-to-date information on progress of the work, construction costs, income, and application of measures to correct any of these not meeting forecasts. Progress control typically is based on comparisons of actual performance of construction with forecast performance indicated on master or detailed schedules. Lagging operations generally are speeded by overtime work or addition of more crews and equipment and expedited delivery of materials and equipment to be installed. Cost and income control usually is based on comparisons of actual costs and income with those budgeted at the start of the project. Such comparisons enable discovery of the sources of cost overruns and income shortfalls so that corrective measures can be instituted (Rickets, 1999; Abebe, 2003).

3.2.4. Construction Industry

Construction industry is an industry which is involved in the planning, execution and the evaluation of all types of civil works. It is among the leading industry in producing employment and contributes to the overall national development. According to EEA (2008) construction industry is the most enabler for social, economic and political development of countries. Specifically this fact is true for least developing countries like Ethiopia because projects are inter-sectoral and demand huge capital budget.

The construction sector acts as a motor for macroeconomic development of a country. Its economic significance and its role in development cannot be neglected. It is attributed to the interaction between the construction sector and other sectors of the national economy, such as agriculture, mining, manufacturing, trade, transportation and services (MoWUD, 2006; Yorucu and Keles, 2007; EEA, 2008).

3.2.4.1. Classification of Construction Industry

Many authors and researchers follow different approaches in classifying the construction industry. According to Nunnally (2001) the major divisions of construction industry consists of Building Construction also called ("vertical construction") and Heavy Construction (also called "horizontal construction"). The building construction category sub divided into public and private, residential and non residential building construction. Heavy construction includes highways, railroads, bridges, canals, harbors, dams and other major public works. Other specialty divisions of the construction industry sometimes used includes industrial construction, process plant construction, marine construction and utility construction. The ISIC (Rev. 4, 2008) categorizes construction activity as General Construction and Specialized Construction activities for buildings and civil engineering works.

Rickets (1999) classified the sector based on specialization of organizations that perform construction. The reason for such specialization is that construction methods, supervisory skills, labor, and equipment are considerably different for each of the categories. In light of this, the construction firm usually specialize in one of four categories into which construction is usually divided: Housing, including single-family homes and apartment buildings; Non-residential building, such as structures erected for institutional, educational, commercial, light-industry, and recreational purposes; Engineering construction, which involves works designed by engineers and may be classified as highway construction or heavy construction for bridges, tunnels, railroad, waterways, marine structures, etc.; and Industrial construction, such as power plants, steel mills, chemical plants, factories, and other highly technical structures.

It is apparent that the last two classification approaches by ISIC and Rickets tend to generally categorize construction as a building and civil engineering works. There are also similar inclinations by some recent literatures of FIDIC form of contract (1999, 2006) as quoting 'building' and 'civil engineering' works as though they are distinct categories of construction. It is

clear from the outset that building construction is one of the engagements of civil engineering profession. However, the way used to differentiate building construction from other heavy engineering construction is creating a misunderstanding as if it is an independent activity of its own, which is not conceptually backed with an evident sound school of thought. In this regard, the approach followed by Nunnally is logically and conceptually acceptable.

3.2.4.2. Role of the Construction Industry

Through planning, design, construction, operation, and maintenance activities, the construction industry transforms resources of labor, capital (money, materials, & equipment), and knowledge into the physical facilities required to meet a broad range of social and economic needs.

Construction is a vital sector of any economy because of both its size and the potential role it can play in the development efforts of that economy. The construction industry has always been closely related to the national economy. The role of construction in the national economy has been addressed by a number of researchers. The construction industry generates one of the highest multiplier effects through its extensive backward and forward linkages with other sectors of the economy (Rameezedeen and Ramachandra, 2008). Ofori (1990) noted the importance of construction in the national economy and attributed it to the high linkages with the rest of the economy. The construction industry is regarded as an essential and highly visible contributor to the process of growth. It is stated that the importance of the construction industry stems from its strong linkages with other sectors of the economy (World Bank, 1984).

The importance of employment in construction brings with it significant social and economic impacts. As economic activity and investment expands, construction activities create considerable employment opportunities. Moreover, the multiplier effect is such that one job in construction gives rise to further jobs in the economy as a whole. Not surprisingly therefore, investment in construction is sometimes used by governments to reduce unemployment in the economy.

Construction industry makes significant contributions to the socio-economic development process of a country. Its importance emanates largely from the direct and indirect impact it has on all economic activities. It contributes to the national output and stimulates the growth of other sectors through a complex system of linkages. It is noted that about one tenth of the global economy is dedicated to constructing and operating homes and offices (UNEP, 1996). UNEP further observes that the industry consumes one-sixth to one half of the world's wood, mineral, water and energy. It

creates employment and creates income for the population and has multiplier effects on the economy. The construction industry employs large unskilled labor. Throughout the developing world, the majority of the employees in the industry are unskilled. However, the employment in the industry is temporary in nature and once the job is over, the workers are obliged to find other jobs or return to their place of origin (EEA, 2008).

Empirical researches support the strong linkages between the construction industry and other economic sectors. For instance, Rameezdeen et al. (1989) cited in EEA (2008) has confirmed that the construction industry generates one of the highest multiplier effects through the extensive backward and forward linkages with other sectors of the economy.

3.2.4.3. International Construction Industry

According to Ofori (2003b) industry experts of the construction sector suggest that the definition of an international construction project as one undertaken by an enterprise outside its home-country (for example, 'firms from one country building under contract in another') is out of date, and that the definition must now include projects in a home-country involving foreign firms as competitors. Bon and Crosthwaite (2000) cited in Ofori (2003b) estimate that the global construction market is over US$3000 billion annually. According to Drewer (2001) cited in Ofori (2003b), US$800–1000 billion of the global construction output is undertaken by the 'international construction system' comprising firms operating throughout the world.

Ofori (2003b) highlighted that international construction forms a significant proportion of the total global volume, and has implications for the construction industries in all countries. Nunnally (2001) states the construction industry as one of the largest industries in the United States, historically accounting for about 10% of the nation's gross national product and employing some five million workers. According to European Commission report on sustainable construction (2001) the construction industry is Europe's largest industrial employer, accounting for 7.5% of total employment and 28.1% of industrial employment in the European Union, EU. It also accounted for 9.7% of GDP and 47.6% of gross fixed capital formation in 1999.

According to ILO (2001) the total construction output worldwide was estimated at just over $3,000 billion in 1998. Output is heavily concentrated (77%) in the high income countries (Western Europe, North America, Japan and Australasia). The high income countries of Europe alone are responsible for 30% of total world output. The United States and Japan constitute the largest

national construction markets with 22% and 21% of total world output respectively. China, despite its huge size and rapid economic growth in recent years, lags a long way behind with only 6% of total output; India has 1.7%.

This report further computed per capita investment in construction in a number of countries using the construction output and population data. In 1998 for instance, India invested the equivalent of $52 per capita in construction, China invested $148 per capita and Japan $4,933. In Ethiopia per capita investment was less than 0.1 per cent of the Japanese figure, only $4.7 per capita. This highly uneven distribution of construction output is, of course, a reflection of global inequality in income. Construction goods are expensive which means that they can be financed most easily by countries, or individuals, with large savings or the capacity to borrow.

International construction projects are still booming in an increasing trend. The current intensive construction activities in China, India and Gulf countries especially in Dubai are remarkable. For instance, a construction of the world's tallest tower that stands tall above clouds is made possible that showed the achievement of innovative engineering design and construction technologies.

3.2.4.4. Local Construction Industry

Ethiopia has an ancient and rich history of magnificent construction endeavors. With the advent of modern civilization, particularly during the reign of Emperor Menelik, there have been some significant developments in this regard. The Addis-Djibouti railway line is one example where such a venture has been successfully carried out. During the Italian occupation of the 1930's there were some construction activities, particularly in the development of long trunk roads. After the Italian occupation and before the 1960's, expatriate contractors generally dominated most of the medium and small civil and building projects. The experiences, as well as the financial benefits were almost exclusively in the hands of foreigners. Eventually local construction companies owned by Ethiopian professionals developed. It was however a long time before such companies were able to penetrate the international construction market or to be accepted by international financers for ICB (Girmay, 2003).

The construction industry in Ethiopia consists of various sectors. These are the building and residential development sector, civil engineering sector, professional services sector and self-building sector. The construction sector consists of different types and size of firms as explained in Chapter 2. These operate in the different sub-markets characterizing the construction industry.

Construction firms must be registered and licensed in order to undertake any construction work in Ethiopia. The firms are classified according to size, expertise and financial capability by MoUDC. However, it is common to come across self declared contractors without any professional competence and license registration in many construction sites.

The self-building sector is characterized by an informal sector, consisting of informal groups that supply materials and labor. These informal groups are not licensed or registered. However, they employ a great number of people. The professional services sector consists of architects, civil engineers, electrical engineers, sanitary engineers, and mechanical engineers, quantity surveyors and surveyors who provided the design expertise. The services of these consultants are not utilized in the informal and self-build sectors. There exists a great separation between the design consultants and the contractors. This generates conflict in the construction process and results in project delays and cost escalations due to claims.

3.2.5. Stakeholders in Construction Industry

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 (Kasiem, 2008).

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 namely employer/client, consultant/engineer and contractor. 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. These stake holders include public authorities, financiers and users (Abebe, 2003; Kasiem, 2008).

3.2.6. Problems of the Construction Industry

A comprehensive study was made in the U.S. construction industry following the decline of productivity. Completed in 1982, the resulting construction industry Cost Effectiveness (CICE) study identified a number of construction industry problems and suggested improvements in the areas of project management, labour training and utilization and governmental regulations. It concluded that while much of the blame for industry problems should be shared by owners, contractors, labour and government, many of the problems could be overcome by improved management of the construction effort by owners and contractors with the cooperation of the parties (Nunnally, 2001).

Some of the major factors identified for the high rate of bankruptcy in the construction industry include lack of capital, poor cost estimating, inadequate cost accounting, and lack of general management ability. All of these factors can be categorized as elements of poor management. Such studies indicate that at least 90% of all construction company failures can be attributed to inadequate management (Nunnally, 2001).

Ofori (1993) outlined the causes of construction industry problems in developing countries in a different view which include: the difficulties inherent in socio-economic under development (poor transportation, inadequate resource base, low level of skills within the local population, and low level of indigenous industry); and the adoption of inappropriate design, contractual procedures (such as the use of competitive tendering where the contractor does not contribute to the design development) and industrial structures (such as the separation of design from construction) and techniques.

According to Ofori (1993) the main components of efforts needed to improve the construction industries of developing countries include: resource development, enterprise development, documentation and procedures development and appropriate policies. For instance, under documentation and procedure development the following tasks such as: improving contract documents; rationalizing administrative and procurement practices; revision of statutes, regulations and codes are vital for the betterment of the industry.

Some of the major trends noted in the construction industry worldwide in recent years include increasing international competition, rapid changes in technology, and increasing governmental

regulation, particularly in the areas of safety and environmental protection. As a result of these developments, the larger well-managed firms are capturing an increasing share of the total construction market. These trends are also producing an increasing demand for technically competent and innovative managers.

The Ethiopian construction industry also shares similar situations. A study by SMEC International (an Australian company), 1999; MoWUD, 2001; and ERA, 2002 all cited by (Wubishet, 2004) concluded that the general state of the domestic construction industry in Ethiopia is low attributed to the following deficiencies:

- An inadequate capital base, specifically to construction contractors,
- Old and limited numbers of equipment and their low level of utilization,
- Deficiencies in human resources with regard to technical, managerial, financial and entrepreneurial skills, and
- Very limited experience and participation in private sector for road, bridge and water related construction works and provisions of consulting services.

ERA (2005) also stated in agreement with the above short comings as: Lack of enough experience in project management, the type of contract selected (for instance: turnkey, lump sum/ without having the necessary expertise) and their low price offered for construction were among the various reasons for the unsatisfactory performance of contractors. It causes a loss to some contractors which resulted in making them move away from the industry shortly or after some time. The local construction industry is weak and could not play an effective role as expected due to those constraints. If the local contractors were given additional assistance from government and international donors to help ease the constraints they are facing, their performance would be even better and could transform themselves into the level of international contractors.

The government must take some measures to improve the capacity of the construction industry to play its part in the development of the nation. The following points are worth to consider in a way to facilitate the participation of local contractors and consultants by introducing contracting out works, improving regulations, identify the problems of the industry, reforming the contract documents of government financed projects as required, etc.

3.3. Contracts

The earliest recorded reference to a building contract comes from one of the laws of Hammurabi, the Babylonian conqueror: *'If a contractor builds a house for a man this man shall give the contractor two shekels of silver as recompense. If a contractor builds a house and does not build it strong enough and it collapses and kills the owner the contractor shall be put to death'*(Uher and Davenport, 2002). This ancient law explicitly express the rights, obligations and penalties for non compliance of contracting parties.

A contract is a commitment. It is an agreement between two parties which gives rise to obligations that are enforceable at law. The basic purpose of a written contract is to define exactly and explicitly the rights and obligations of each party thereof (Clough (1975) cited in Selamawit et al (2006)). Uher and Davenport (2002) state an agreement that is legally binding is a 'contract'. But lawyers usually use the terms 'agreement' and 'contract' interchangeably. To confuse the matter more, lawyers often call an agreement that is not a contract a 'void contract'. A void contract is not a contract at all.

Contracts establish rights and obligations of the parties and procedures for administration. Contract law is the name given to the sum of legal principles, established by decisions of judges, and statutes that deal with contracts. The law recognises the bargain as being central to the contract. If two parties exchange promises in relation to a course of conduct or the transfer of property, the law will, subject to certain requirements, enforce that agreement or award damages for its breach (Uher and Davenport, 2002; Bunni; 2003, 2005).

3.3.1. Contracts from Legal Perspective

In law a 'contract' can be defined as follows: *'A valid contract is an agreement made between two or more parties whereby legal rights and obligations are created which the law will enforce'*. Contracts have no existence outside a legal system. They are a product of the law. They are promises that the courts will enforce, usually by an award of damages for breach. There can be agreements which may be 'morally' or 'socially' binding (binding in conscience), for example agreements to come to a party, but these are not contracts (Uher and Davenport, 2002).

Art. 1675 of the 1960 Ethiopian Civil Code defines a contract as an agreement whereby two or more persons as between themselves create, vary or extinguish obligations of a proprietary nature. The provision of a contract lawfully formed shall be binding on the parties as though they were

law; that is, when parties make a contract agreement, a legally binding accord is concluded between them.

A contract shall depend on the consent of the parties who define the object of their understanding and agree to be bounded thereby (Civil Code, Art. 1679); and the parties subject to the mandatory provisions of the law shall determine the content of the contract (Civil Code, Art. 1731).

Agreement of the parties is outlined in the civil code article 1680 as:

1. A contract shall be completed where the parties have expressed their agreement thereto,
2. Reserves or restrictions intended by one party shall not affect his agreement as expressed where the other party was not informed of such reserves or restrictions. That is, agreement made between parties shall be knowledgeable to the other party with all conditions of the contract they made among themselves. Any condition intended to be reserved by one party but not revealed to the other party shall not affect the contract on which they have agreed.

3.3.2. Elements of Contracts

The basic elements of valid contract are stipulated in the Civil Code Art. 1678. Thus the fundamental elements of contract include:

- Capacity and Consent of the contracting parties
- Object of the contract
- Form of contract

Some writers and researchers extend the above essential elements taking the negotiation process in to consideration (Uher and Davenport, 2002; Abdissa, 2003; Selamawit et al, 2006). In such cases the elements of valid contract essential to its formation include:

- Offer and acceptance
- Competent parties
- Reasonable certainty of terms
- Object
- Form, and
- Consideration

3.3.3. Types of Contracts

3.3.3.1. Special Contracts

There are many contract types specified in the Civil Code of Ethiopia. These special types of contracts include: contract of services, donation, loan, hiring sale, and supplies. The relevant part considered in this study is included under contract of services.

Contracts for the performance of services encompass the following forms:

- Contract for works and labor (Art. 2610-2631) which sets out for construction services.
- Hiring of intellectual work (Art. 2632-2638) for professional services such as design and engineering consulting services.
- Contract of work and labor relating to immovable (Art. 3019-3040) specifically for building contracts.

3.3.3.2. Administrative Contracts

Administrative contracts (Art. 3131-3306) are also dealt with in addition to the above contract types to carry out public projects.

According to Art. 3244 (1) of the Civil Code, "*A contract of public works is a contract whereby a person, the contractor, binds himself in favor of an administrative authority to construct, maintain, or repair a public work in consideration of a price"*. The foregoing is not only a circuitous definition but also fails to specifically indicate what really 'public works' are. For a better definition, therefore, one can allude to Art. 2(c) of the Federal Public Procurement Proclamation No. 430/2005 which is repealed by Proclamation No. 649/2009.

According to Tecle Hagos (2009) the Civil Code of Ethiopia introduced into the Ethiopian legal system the concept of administrative contracts law. The injection of the administrative contracts provisions into the legal system empowered government departments to choose between two types of contracts: a private law contract or a public law contract (administrative contract). Thus, contracts that are concluded by Government Departments are not necessarily administrative contracts. According to Art.3132 of the Civil Code:

A contract shall be deemed to be an administrative contract where:

a. It is expressly qualified as such by the law or by the parties, or

b. It is connected with an activity of the public services and implies a permanent participation of the party contracting with the administrative authorities in the execution of such service, or
c. It contains one or more provisions, which could only have been inspired by urgent considerations of general interest extraneous to relations between private individuals.

Whether or not a contract that is concluded by a government department is an administrative contract, is to be determined in light of the criteria set under Art. 3132 of the Civil Code. The law categorizes some contracts as administrative contracts, *ipso jure*, as per Art. 3132(a). These are:

i. Government concession contracts: Art. 3207-3243,
ii. Public construction contracts (Public works contracts): Art. 3244-3296, and,
iii. Government supplies contracts (Public supply contracts): Art. 3297-3306.

3.4. Construction Contracts

Construction contracts may be formed between a contractor and a proprietor, between a contractor and subcontractors, between a principal and a designer, and so on. The relationships, both contractual and otherwise, between the various parties in the building process have become complex and in many cases quite obscured. It is likely that some co-ordination and contractual problems are bound to occur, resulting in claims and disputes (Uher and Davenport, 2002). Construction contracting has its own terminology, its own doctrines (legal and otherwise) and its own body of legislation

A variety of factors make a construction contract different from most other types of contracts. These include the length of the project, its complexity, its size and the fact that the price agreed and the amount of work done may change as it proceeds.

Because the contractual relationships between the parties to a construction contract are not likely to become less complex in the future, every effort should be made to minimize the number of claims and disputes and the impact they may have on the cost of the project. To achieve this, the parties to a contract should know the legal principles governing the formation of contracts. They should also have better appreciation of contract conditions and their interpretation and a greater awareness of the implication of inequitable allocation of risks and the need for more efficient and effective procedures for administering contracts (Uher and Davenport, 2002). Nunnally (2001) agrees and elaborates it further. According to him, construction professionals are not lawyers and therefore

should not attempt to act as their own lawyers. However, construction professionals must have a thorough understanding of the customary practices and underlying legal principles involving contract construction. Virtually every action taken by a contractor, construction manager, or engineer/architect in a construction site has legal implications. Thus construction professionals must understand the contractual consequences of their activities and be able to recognize when legal advice should be secured (Nunnally, 2001).

3.4.1. Types of Construction Contracts

There are many types of contract forms in the administration of civil engineering projects. According to Girmay (2003) the most common ones and those widely used in the Ethiopian construction industry include the following format:

Re-Measurement form of Contract: In this form of contract, the contractor is paid based on the amount of work executed, as compared to the prices detailed in the BOQ. This is the most widely used form of contract in Ethiopia for both local and international contracts.

BOT form of Contract: This is a form of contract where the contractor builds, operates and turns over (BOT) the project to the Employer for a fee.

Turnkey Projects: This form of contract, also called EPC-contract (Engineer, Procure, Construct-Contracts) is a form of contract where the contractor is responsible for the design and building of the project. Such forms of contract are particularly suitable for electro-mechanical contracts.

Lump Sum form of Contract: In this form of contract, the contractor agrees to do the job for a fixed sum. In this case the contractor is responsible for the preparation of all details.

3.4.2. Challenges of Construction Contracts

Provisions provided in the contract well drafted and written may not be a problem on paper. The problem arises when these provisions are set to apply directly which breed conflict of interest among contracting parties. One of the major problems encountered in many cases is the interpretation of construction contract provisions.

The interpretation of contract clauses is the obvious cause of dispute between contracting parties. The interpretation of contracts has its own rules. Art. 1732-1739 of the Civil Code provide

interpretation rules. These rules include among other things: interpretation in accordance with good faith and context; positive interpretation; limit of interpretation and general terms.

According to Horgan and Roulston (2005) when two parties have made a reference to the courts for a legal interpretation of a point in their contract, the courts resort to a number of rules by which their decision is determined. Some of the most important of these rules include the following:

- Words are given their ordinary, every-day meaning and not esoteric or abstruse one.
- Odd phrases by traditional usage can be supported.
- Obvious errors or absurdities in a document must be corrected before a judgment is made.
- A special clause, written by the parties, takes preference over a 'standard' model clause with which it is not consistent; it is at least 'thought out'.
- If the meaning of a word is doubtful, it may be assumed to belong to the same class as an associated word in the phrase.

According to Abdissa (2003) the rules for contract interpretation can be split in to two major divisions: procedural and operational. Procedural rules are the rules within which the court must operate. Operational rules are applied to assist in the interpretation of the facts in the case. Procedural rules establish the objective of interpretation, measures for the admissibility of evidence, controls on what interpretation can be adopted, and standards for evaluating interpretations. The objective of interpretation focuses on determining the intent of the parties and the true meaning of words or phrases in the contract. Operational interpretation rules are primarily those applied to ascertain the meaning of the contract. The "plain meaning rule" establishes the meaning of words or phrases that appear to have on an ambiguous or unclear meaning.

The other function of interpretation control is to incorporate existing law. Generally, the laws where the contract was made will govern the contract. However, in the construction business the performance of the contact is governed by the law where the contracted work is performed.

3.4.3. Components of Construction Contracts/Contract documents

According to FIDIC 1987 and MoWUD 1994, "contract" means the Contract Agreement, the Letter of Acceptance, the Letter of Tender, Conditions of contract(General and Specific), the Specification, the Drawings, the Schedules, and further documents (if any) which are listed in the Contract Agreement or in the Letter of Acceptance.

In construction contracts, express terms take the following forms:

The agreement: This is the written details of the project and the agreed sum payable for its completion.

The conditions of contract: These are the detailed provisions governing the execution and administration of the project.

Drawings: This is a document delineating the plan shape of the project as well as its design details.

Specification or bill of quantities: A document describing the quality of the materials/workmanship as well as the quantity of works required.

As the main focus of this research is Conditions of contract, the main focus area will be dealt with in the following thematic literature review.

4. CONDITIONS OF CONTRACT

4.1. General

In any democratic society, the freedom of individual to contract has been deemed the supreme facet of freedom since the beginning of social intercourse. The extensive growth of commercial activities in the nineteenth and twentieth centuries produced some abuse of this freedom, necessitating intervention by the State in the form of legislation to prevent monopoly and its harmful effects on society. This intervention, however, has not always been by way of legislation. In some cases, it has been initiated by specific groups of people interested in preserving the concept of fair play in a certain commercial activity. Others have done the same to prevent one-sided agreement in which the strong might impose their will on the weak. The result was the Standard Form of Contract consisting of a standardized set of conditions presented in an already printed form best suited to the particular use for which it was envisaged (Bunni; 2003, 2005).

This research work is therefore focused on problems of Conditions of Contract in general covering their Readability and Interpretations; and Conformity of some clauses with the Ethiopian law. Some selected thematic issues related to provisions on Powers, Duties and Responsibilities of the Engineer, Price Adjustment, Termination, and Claim Procedures and Dispute Resolution in particular are also dealt. The new and old Red Books of FIDIC issued in 1987 and 1999 will be considered for this work wherever applicable in conjunction with the MoWUD 1994 and PPA 2006 domestic contract forms.

4.2. Conditions of Contract/Forms of Contract

In construction contracts, where the obligations and responsibilities of the contracting parties can be extremely complex but to a large extent remain unchanged from one project to another, the Standard Form was developed by the relevant professional institutions in order to help make the contracts fair and equitable. This development was extremely suitable for the tendering system usually adopted in construction contracts as it ensured a common basis for the comparison and evaluation of tenders (Bunni, 2003; Rameezdeen and Rajapakse, 2007; Kasiem, 2008). Murdoch and Hughes (2000) and Kwakye (2000) quoted in Rameezdeen and Rajapakse (2007) noted the perceived benefit of working to standard forms of contract is that they represent a degree of fairness in contracting between the two parties, the conditions having been drafted by experts beforehand and away from the heat of the particular project, with the balanced representation of all

relevant industry participants, and representing a fair allocation of risk between the contractor and the employer.

According to Perry (1995) cited in Rameezdeen and Rajapakse (2007) the use of standard forms of contract also helps to manage and mitigate project risks, as risks which may be overlooked under the pressure of tight project deadlines are likely to have been addressed during the multitude of document reviews by industry experts. Such standard forms of contract are intended to reduce the inefficiencies associated with the repeated drafting and reviewing of contracts, and to facilitate a greater sense of partnership between contractors and employers. In theory, cost and time are saved because it should no longer be necessary for parties to carry out a full contractual review on each and every tender (Atkinson, 1992; Murdoch and Hughes, 2000; Rameezdeen and Rajapakse, 2007). Kasiem (2008) supports the above arguments 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. After a considerable use, such standard contract forms will generally have been proved by experience to be satisfactory and any errors will have been continuously improved and remedied.

4.2.1. Introduction

In the commercial activities of today's highly complex society, standard forms of contract have become an essential part of the day-to-day transactions of most agreements. The majority of standard forms have been developed by commercial organizations for the purpose of efficiency, to build on the experience gained from the repeated use of these forms, but most of all for the optimum protection of one or both parties' interests (Atkinson, 1992; Bunni, 2005; Glover, 2007).

According to Atkinson (1992) and Bunni (2005) standard forms of contract developed for construction activities, however, have mostly been drawn up by independent professional organizations, rather than by one of the parties to the contract, in order to establish or to consolidate a fair contract. Knowledge accumulated through experience and recurrent use over a long period of time has brought about revisions and modifications in construction standard forms with the aim either of achieving greater certainty in the intention of the wording or of providing a response to the needs of the parties and/or society.

Given such socio-cultural variety, it may, therefore, be easier and more acceptable to reach international agreement on the basic concepts and rules which should govern contractual

relationships in an international field, such as, construction. In a simple form, this is what is attempted by a standard form of contract for civil engineering works. However, the fact remains that as soon as one specifies in an international contract the applicable law of the contract as the law of the locality of the project, one automatically introduces a diversity of laws governing the relationship between the parties to the contract (Bunni; 2003, 2005).

4.2.2. International Contract Forms

In order to streamline the diverse activities in the construction sector there have been a number of attempts to produce a standard form of contract for civil engineering works. These standard forms of contract were initially drawn up by independent professional organizations (Bunni; 1991, 2003, 2005; Glover, 2007). In Europe, and more particularly in the United Kingdom and in Ireland such forms were produced as early as the nineteenth century. A standard form for building contracts was used under the aegis of RIBA, some time towards the end of the nineteenth century. This led to what became known as the 'RIBA Form', which was published in successive editions between 1909 and 1957. It later developed into what became known as the JCT form (Bunni; 1991, 2003, 2005; Girmay, 2003).

4.2.2.1. ICE Contract Form

In civil engineering contracts, various forms which were used by different employers prior to the Second World War were combined by ICE and the Federation of Civil Engineering Contractors in the United Kingdom into an agreed standard document. This was published in December 1945, and the document was thereafter known as the General Conditions of Contract and Forms of Tender, Agreement and Bond for Use in Connection with Works of Civil Engineering Construction, in short the ICE Form. In January 1950 it was revised and issued with the added agreement of the Association of Consulting Engineers, London. Subsequent revisions followed in March 1951 (Third Edition); in January 1955 (Fourth Edition which was later amended in 1969); in 1973 (Fifth Edition); and in 1991 (Sixth Edition). These revisions reflected some changes in the law and in the practice of civil engineering (Eggleston, 2001; Bunni, 2005).

It is applicable to all civil engineering construction works. It is particularly suitable for general civil engineering work which is predominantly either in the grounds or in, or adjacent to, water, and caters for the attendant risks and claim situations. These include a wide range of works, such as navigable canals, irrigation schemes, roads, railways, docks, harbors, dams, bridges and tunnels.

It is also used, sometimes, for building works, and for mechanical and electrical works where such works are included in a civil engineering or building contract (Atkinson, 1992; Murdoch and Hughes, 2000).

The seventh edition of the ICE conditions of contract is published in September 1999. Like all previous editions of the ICE conditions of contract, the seventh edition is based on the traditional pattern of Engineer-designed, Contractor-built Works. The conditions create a 're-measurement' contract, formerly known as 'ad-measurement' or 'measure and value'. This means that the contractor is paid at the contract rates (which may be subject to variation) for the actual quantities of work carried out. The traditional role of the engineer in advising his client, designing the works, supervising construction, certifying payment and deciding matters of dissatisfaction is maintained (Murdoch and Hughes, 2000; Eggleston, 2001).

4.2.2.2. ACE Contract Form

To the credit of those responsible for drafting the ICE Form, many professional institutions all over the world modeled their own conditions of contract on its text, making only minor amendments to accommodate differences in local matters of law and nomenclature. The ICE Form was, however, drawn up mainly for the domestic scene in the United Kingdom. The obvious need for a similar form in the international construction field prompted ACE in the UK, jointly with the Export Group for the Construction Industries in the United Kingdom, and with the approval of the ICE, to prepare a document for use in other parts of the world. It was published in August 1956 and became commonly known as the Overseas (Civil) Conditions of Contract (the ACE Form) (Bunni; 2003, 2005).

The ACE Form as published in 1956 included a standard Form of Tender, an Appendix and a standard Form of Agreement. It was published in a blue cover which helped to distinguish it from the ICE Form. It was, perhaps, the first standard form of international conditions of contract for civil engineering works. In concept and style, however, it remained faithful to the original domestic form in UK. The ACE Form had only been used for a short period of time until August 1957 when the first FIDIC international contract form is published (Bunni, 2005).

4.2.2.3. FIDIC Contract Forms

The FIDIC organization was founded in 1913 by France, Belgium and Switzerland, now with membership from over 60 countries. The first edition of the Conditions of Contract (International) for Works of Civil Engineering Construction was published in August 1957 having been prepared on behalf of FIDIC and the Fédération Internationale des Bâtiment et des Travaux Publics, FIBTP (the International Federation of Building and Public Works, now known as the International European Construction Federation, FIEC) (Bunni, 2005; Glover, 2007). Gradually further sponsors were added including the International Federation of Asian and West Pacific Contractors Associations, the Associated General Contractors of America, and the Inter-American Federation of the construction industry (Glover, 2007; Rameezdeen and Rajapakse, 2007).

The Conditions of Contract (International) for Works of Civil Engineering Construction was based on the ACE Form, described above, and was also published in two parts. Perhaps because of its long title, in a very short time it became popularly known as the 'Red Book' as its cover was printed in red. This form of the early FIDIC contracts followed closely the fourth edition of the ICE Conditions of contract (Bunni, 2005; Glover, 2007).

The Second edition of the Red Book was published in 1969, while it was in March 1977 that the Third Edition of the Red Book was published, incorporating some significant changes. The Second and Third Editions of the Red Book proved to be successful in many projects throughout the world. The Third Edition in particular coincided with the major economic growth which took place in developing countries towards the end of the 1970s and the major part of the 1980s and, particularly, in the Middle East and the Far East (Bunni, 2005; Glover, 2007; Rameezdeen and Rajapakse, 2007).

The Fourth Edition of the Red Book was published in 1987. It was first subjected to minor editorial amendments in 1988 and was later amended more significantly in 1992. The 1992 form was such a success that the World Bank adopted it in its Standard Bidding Documents in January 1995. Part II of the Red Book which is referred to as the 'CPA' was expanded and produced in a separate booklet. It is linked to Part I by the corresponding numbering of the clauses, so that Parts I and II together comprise the conditions governing the rights and obligations of the parties. Part II must be specifically drafted to suit each individual contract. In November 1996, FIDIC published a document entitled 'Supplement to Fourth Edition 1987 Conditions of Contract for Works of Civil

Engineering Construction Reprinted 1992 with further Amendments'. It is intended to provide the user with alternative arrangements in three controversial areas of the Red Book, thus giving him a choice in the method to be used for: settlement of disputes; payment; and preventing delay in certification for the purpose of payments (Bunni, 2005; Glover, 2007).

The one difficulty with the first FIDIC contracts was that they were based on the detailed design being provided to the contractor by the employer or his engineer. It was therefore best suited for civil engineering and infrastructure projects such as roads, bridges, dams, tunnels and water and sewage facilities. It was not so suited for contracts where major items of plant were manufactured away from site. This led to the first edition of the "Yellow Book" being produced in 1963 by FIDIC for mechanical and electrical works. This had an emphasis on testing and commissioning and was more suitable for the manufacture and installation of electrical and mechanical plant (Bunni, 2005; Glover, 2007).

Although the 1992 Fourth Edition of the Red Book with the 1996 Supplement formed an excellent combination in providing a standard form of contract that answered most of the criticisms at the time, and although its good and bad points were understood by its users, FIDIC decided in 1999 to replace it with a different form rather than introduce a fifth edition that could have simply tackled some of the issues that had developed in the meantime (Bunni; 1991, 2005).

In a way to accommodate developments through time, the different forms of contract within the FIDIC suite are organized around the extent of design and other responsibilities assumed by the Employer and the Contractor. The suite is therefore now aligned with common procurement strategies rather than the nature of the construction works. According to Bunni (2005), Glover (2007) and Rameezdeen and Rajapakse (2007), FIDIC produced a totally new set of standard forms of contract in October 1999 alongside those that were in use at that time to incorporate these dynamic changes. The new set comprises the following four suites of contract forms:

1. ***The Construction Contract*** (Conditions of Contract for Building and Engineering Works, Designed by the Employer) – General Conditions, Guidance for the Preparation of the Particular Conditions, Forms of Tender, Contract Agreement, and Dispute Adjudication Agreement, 'FIDIC 1999 Red Book';
2. ***The Plant and Design-Build*** Contract (Conditions of Contract for Electrical and Mechanical Plant, and for Building and Engineering Works, Designed by the Contractor) –

General Conditions, Guidance for the Preparation of the Particular Conditions, Forms of Tender, Contract Agreement and Dispute Adjudication Agreement, 'FIDIC 1999 Yellow Book';

3. ***The EPC and Turnkey Contract*** (Conditions of Contract for EPC Turnkey Projects) – General Conditions, Guidance for the Preparation of the Particular Conditions, Forms of Tender, Contract Agreement and Dispute Adjudication Agreement, 'FIDIC 1999 Silver Book'; and
4. ***The Short Form of Contract*** – Agreement, General Conditions, Rules for Adjudication and Notes for Guidance, 'FIDIC 1999 Green Book'.

Where works are predominantly designed by the Employer, then the Red Book is the appropriate form of contract. Where works are predominantly designed by the Contractor the Yellow Book is appropriate regardless of whether the works were heavy civil or electrical and mechanical plant. The Silver Book is clearly intended for use on Turnkey projects.

According to Bunni (2005) and Glover (2007) the principles that led to the publishing of the FIDIC 1999 suite include among other things:

- More consistent wording, with improved clarity; user-friendly format and layout.
- Balance between legal precision and practicability; compatible with both common and civil law concepts.
- Manuals of good engineering practice.
- Prepared by engineers for practical use.
- Traditional role of 'the Engineer' to make impartial determinations modified to reflect current practice.

The FIDIC contract forms have been revised repeatedly to address timely situations. In such developments, FIDIC 1987 i.e. the fourth edition has been amended in 1992 and with the 1996 supplement edition. However, the FIDIC 1999 suite of conditions of contract is a paradigm shift both in its content and structure. In addition to this, FIDIC has published MDB contract form in 2006 to suit financing criteria of these banks and institutions.

Amendments to the standard published FIDIC contracts are incorporated by the inclusion of Particular Conditions and guidance on how to prepare the Particular Conditions is published by

FIDIC. Where Particular Conditions are incorporated into the contract care must be taken to ensure that no ambiguity is created, either with the General Conditions or between the clauses in the Particular Conditions. It is essential that all these drafting tasks, and the entire preparation of the contract documents, are entrusted to personnel with the relevant experience of the contractual, technical and procurement aspects of the project.

4.2.2.4. NEC Contract Forms

The NEC was developed by the ICE in 1991 with the aim of introducing a non adversarial form of contract strategy, which would contribute towards an effective and smoother management of projects. The NEC originated under this name in 1991 and changed to its current name, the Engineering and Construction Contract (ECC) with the publication of the second edition in 1995.

According to Murdoch and Hughes (2000) and Gerrard (2005) the most popular form of the NEC contract used is the NEC ECC, which is the contract between the Employer and Contractor. The ECC has been developed to meet the current and future needs for a form of contract to be used in all types of construction, which improves upon the existing standard contracts in a number of ways. As a result, this new style of contract is developed to meet the following three key objectives: clarity and simplicity; flexibility of use; and stimulus to good management.

Eggleston (1996) quoted in Rameezdeen and Rajapakse (2007) and Gerrard (2005) believe that the ECC has much more recent origins and probably reflects more closely current procurement routes and needs. The contract is not only for civil engineering construction, but is intended to be used for any construction work. There is a range of payment options within the contract, which deal with the level of physical uncertainty often found in many construction projects. Since the original launch of the main engineering and construction contract and subcontract, the NEC has been extended to include a professional services contract (NEC PSC), an adjudicator's contract and a short contract (NEC ECSC). All contracts under NEC are revised and launched as 'NEC3' in June 2005.

Partnering in construction contracting started getting earnest attention in the UK through the Latham report "Constructing the Team" of 1994. This report also recommended the use of NEC which was released that same year, and proposed improvements to it. This gave rise to more research into partnering in construction on the one hand, and the updated NEC 2nd edition (1995) on the other.

According to Bauwmans (2009) the characteristics of NEC3 support the principles of long term strategic partnering that would herald a new beginning in construction contracting. NEC3 is also a more flexible form of contract and is suitable for international use through its many combinations of options and "Contract Data" that allow customization of the document for engineering and construction related projects in all industries, across most legislatures around the globe.

4.2.3. Local Conditions of Contract

Standard forms of contract developed for construction activities have mostly been drawn up by independent professional organizations, rather than by one of the parties to the contract, in order to establish or to consolidate a fair and just contract as cited above. However, there are cases where financial institutions, commercial organizations and public agencies issue standard forms of contract suitable for their own terms. For instance, the World Bank and other financing institutions used to have their own standard forms until they issued the MDB harmonized standard forms jointly with FIDIC in 2006. In Ethiopia; however, the responsible entity for drafting and issuing standard forms of contract for construction still remained as the exclusive mandate of public authorities, ministries and agencies.

The evolution of conditions of contract in Ethiopia dates back to 1959. The first ever conditions of contract prepared by MoUDH in July 1959 was entitled 'General conditions of Construction Contracts'. The Standard Conditions of Contract for Construction of Civil Works Projects was endorsed by BaTCoDA in December 1987 after three decades since the first one comes into effect. The Standard Conditions of Contract for Construction of Civil Works Projects by MoWUD enacted in December 1994. There was another condition of contract with a title 'General conditions of Contract and Tender Procedure document' drafted by MoWUD in 1995 which was not put into effect. The PPA General Conditions of Contract for the procurement of works is the recent contract form issued in January 2006 as part of SDB for international and national competitive bidding.

In Ethiopia the condition of contract used are fair to both parties if properly administered. In fact some irregularities happen sometimes due to human factor, which is common all over the world (Abera, 2005). Significant changes have been taken place in developing and using contract conditions. For instance, standard conditions of contract of MoWUD in 1994 have been in use for more than a decade until it is replaced in 2006 by the PPA conditions of contract.

The choice of contract condition depends on owner and international agencies involved in the work. FIDIC is widely used in construction works funded by international agencies more significantly for public projects such as roads and hydro electric power. MoWUD 1994 is mostly employed for domestic building projects especially sponsored by private owners. PPA 2006 is employed for public building projects as the provisions fairly satisfy for the nature of building works compared to large infrastructure projects. The problem in most cases is not contracting document but the understanding and interpretation, which require trained personnel in contract administration. Domestic contract forms published by different public agencies in time are discussed below.

4.2.3.1. MoUDH 1959 Contract Form

Historical back ground of standard conditions in Ethiopia tells us the first standard conditions was published by MoUDH in 1959 with a title "General Conditions of Construction Contract". The contract form has 54 clauses which tried to fill the gap in the country as the major players of the construction industry were foreigners as discussed in sub heading 2.3.1 under the genesis of the local construction industry. Some of reflections in this contract form are dealt herein under.

The MoUDH 1959 contract form expressly states in clause 1(c) as the Employer is the Government through the Ministry of Public Works represented by the Contracting Officer. According to this contract form the contracting officer representing the employer also bears the duty of the Engineer which is a dual and mixed responsibility.

According to clause 1(h) Substantial Completion is best described under this contract form in a better way (at least in a quantified amount) than subsequent editions of local contract forms. It is cited as 98% completion of the works where the latter forms fail to set a threshold. Girmay (2003) also suggested the need to address substantial completion in FIDIC contract forms to clear its varying interpretation among the industry professionals currently.

The contract form allows modifying the contract in writing based on changes and changed conditions stated in clauses 3 and 4. This may result in the change of scope in the contract while varying it may trigger claims which may end up in disputes. Instead of modifying the contract itself the later contract forms entertain these changes in using additional cost and time extension clauses. In addition, proposal for changes by the contractor is also addressed which came in to picture in the latest versions of FIDIC.

4.2.3.2. BaTCoDA 1987 Contract Form

BaTCoDA issued the second version of local contract form "Standard Conditions of Contract for Construction of Civil Work Projects" in December 1987. It has 74 clauses and forms of Agreement, Performance Bond and Bank guarantee for Advance Payment. This contract form is much similar to the FIDIC 1987 4th edition Red Book except some slight modifications to suit the domestic practices. For instance, those clauses entitle the contractor additional payment and time extension are modified omitting the payment component and allowing extension of time only which is not fair from the balance of risk point of view.

4.2.3.3. MoWUD 1994 Contract Form

MoWUD issued in December 1994 the third generation of local contract forms, "Standard Conditions of Contract for Construction of Civil Work Projects". It has 75 clauses and forms of Agreement and Performance Bond. It is almost a reprint of the preceding BaTCoDA 1987 contract form, with two major changes regarding Advance Payment and Price Escalation which are deleted from this contract form. Another major addition to this contract form which was not addressed in the BaTCoDA 1987 contract form is the provision of Warranty in respect of the defects of construction (Clause 71).

According to experts of MoWUD, the omission of advance payment in this contract form is attributed to mis-use in siphoning the advance payment other than the specific work it is meant for by contractors which is resulted from government change at the time. MoWUD assumed that the market is stabilized at the time to disregard price escalation from the contract form; however, it used to amend and ratifies price rise/falls from time to time to address adjustments attributed to price escalation. However, these provisions were later put in to effect through 'Construction Conditions Amendment 001/1996 E.C' by MoI in March 2004. The directive comprises nine amendment clauses where provisions on advance payment and price escalation are dealt with among others.

4.2.3.4. PPA 2006 Contract Form

The latest contract form put in place is released by PPA in January 2006. PPA issued two sets of SBD for the Procurement of Works for NCB and ICB. The General Conditions of Contract is covered under section 7 which has 62 clauses with five parts: general, time control, quality control, cost control, and finishing the contract. This contract form is similar to the World Bank short

contract forms which is unsuitable for large and complex projects. The contract form has no provision in respect of suspension which is one of the remedial rights of the parties in a contract.

PPA 2006 conditions of contract is the first ever undertaking done by the Ethiopian government to systematically regulate the construction industry. The issuing authority is a special public institution legally (first by Pro. No. 430/2005(known as PPA) and latter on by Proc. No. 649/2009 (now known as, Public Property Procurement and Administration Agency (PPPAA)) established for this purpose. Proc. No 430/2005 has been now repealed after the enactment of the latter proclamation.

The PPA 2006 conditions of contract have also been issued not only for works but also for consultancy services, for goods and for non-consultancy services. Unlike the MoWUD 1994 conditions of contract, the PPA 2006 conditions of contract for works are also accompanied by other supportive documents including User's Guide. These are important developments in the history of local conditions of contract.

Employers may also use FIDIC conditions where the local standard conditions of contract are not suited to the procurement route and where there is a need to avoid the risks and expense of preparing a bespoke contract. The PPA 2006 user's guide expressly states the SBD (ICB) for the procurement of works is not suitable for the following situations:

- Complex works under US$10 million, such as large water treatment plants;
- Works over US$10 million;
- Works designed by the contractor, including turnkey contracts.

For any of these requirements, the PPA user's guide suggests the procuring entity to find an alternative, more appropriate document, such as an appropriate FIDIC standard form of contract. This still shows the visible gap in utilizing the local contract forms for international projects executed in the country. However, it is mandatory to use the PPA 2006 SDB (NCB) for those projects sponsored by the federal government from the national treasury.

4.3. Comparison and Developments of Local Contract Forms

The local contract forms have been published with public agencies having different scope of responsibility related to the construction industry from time to time to date. The major scopes of each contract forms in light of this research work have been explained briefly in the above section.

The contents and general scope of these conditions of contract, especially BaTCoDA 1987 and MoWUD 1994, are similar with minor changes in their wording and some slight differences in handling issues expressed in terms of percentages.

Selamawit et al, (2006) have done comparison of local and international contract forms. Some selected comparison and developments among local contract forms with time in light of the thematic issues of this research work are presented below.

4.3.1. Duties and Powers of the Engineer

In MoUDH 1959 contract form, the government is an Employer and acts also as an Engineer through its representative (government department, individual or firms named in the special conditions of contract where the powers and functions are described).

According to BaTCoDA 1987 the Engineer requires the specific approval of BaTCoDA for the execution of his duties in connection with:- Sub-clause 2-1(d) Variations exceeding 15% under clause 52(3); Sub-clause 2-1 (i) Time Extension under clause 44 where the cumulative Time Extension granted under the clause 44 exceeds 15% of the Contract Time.

MoWUD 1994 requires the Engineer to have the specific approval of MoWUD for the execution of his duties in connection with:- Sub-clause 2-1(d) Variations exceeding 10% under clause 52(3); Sub-clause 2-1 (i) Time Extension under clause 44 where the cumulative Time Extension granted under the clause 44 exceeds 25% of the Contract Time. It is evident that the clause numbers and wording are similar to BaTCoDA 1987 except their difference in percentage limits.

According to sub-clause 4.1 of PPA 2006, the engineer will decide contractual matters between the Employer and the Contractor in the role representing the Employer. The Engineer also given powers to approve drawings and specification submitted by the contractor (sub-clause 28.1) and extension of extended completion time (sub-clauses 28.1, 28.2).

4.3.2. Price Adjustment

Price escalation is not mentioned in MoUDH 1959 contract form. In case of BaTCoDA 1987, Price escalation is entertained. The only adjustments to be allowed are on the difference between the basic prices and market prices of the materials and goods listed in the appendix to the bill of quantities after the bid pricing date. These provisions try to address the inconsistency of the market prices and are relatively better (Sub-clause 70-1(e, f)).

MoWUD 1994 conditions assume the market to be a stable one. In the absence of such an adjustment, contractors are obliged to cover the incurred extra expenses offsetting the balance from their profit margin. These conditions do not explicitly address an increase or decrease in cost of labor or materials with respect to the country's market but rather dealt with only increase or decrease of rates of wages and other emoluments and expenses subsequent to change in legislation. Most local contractors have been discouraged because of this wrong assumption. However, the issue is brought to attention according to clause 4 of the construction condition amendment of 2004. According to the amendment (2004) the price adjustment is based on correctly recorded price rise/falls against the basic material price indices stated in the contract i.e. appendix to the BOQ.

PPA 2006 allows price escalation adjustments through the provision of price adjustment formula using price indices (clause 47). However, since there is no any established local price indices, the contracts use foreign indices for imported goods and materials.

4.3.3. Termination

According to MoUDH 1959, the Government may terminate the contract on the following grounds: if the contractor fails to execute the work or any separable part thereof (clause 5(a)); if the contractor fails to replace rejected materials and/or the correction of defective workmanship (clause 10(a)); and if the Governments finds wages paid to laborers and mechanic working directly on site employed by the prime contractor or sub-contractor are below the wages agreed by the contract (clause 39(b)). However, this contract form failed to cite the grounds on which the contractor may terminate the works.

Sub-clause 63.1 of BaTCoDA 1987 and MoWUD 1994 state the right of the employer to expel the contractor after giving fourteen days notice on account of default. On the other hand sub-clause 69.1(d) of BaTCoDA 1987 and MoWUD 1994 provide the contractor to terminate the contract on the employer's default after giving thirty days notice.

Termination provisions are given under clause 59 of PPA 2006 for both parties on account of fundamental breach of contract. Reasons which qualify as a default by one of the contracting parties are listed under sub-clause 59.2. In addition the Employer is enshrined a right to terminate the contract for convenience according to sub-clause 59.3.

4.3.4. Claim Procedures and Dispute Resolution

All domestic contract forms considered for comparison do not have clearly defined claim procedures unlike clause 53 of FIDIC 1987. The provision with regard to dispute resolution in MoUDH 1959 state the decision of the Ministry of Public Works or his duly authorized representative is final and conclusive, unless determined by a court of competent jurisdiction to have been fraudulent or capricious or arbitrary or so grossly erroneous as necessarily to imply bad faith or not supported by substantial evidence (clause 51(a)).

Clause 67 of BaTCoDA 1987 state, if the decision of the Engineer is not final and referred to BaTCoDA, the decision given by BaTCoDA or his representative is final and binding. Likewise, MoWUD 1994 expressly state under clause 67 that the decision by MoWUD or his representative is final and binding, which contravenes the fundamental right of a claimant to appeal against the decision. On the other hand, clause 25 of PPA 2006 provides a better platform compared to its previous contract forms in allowing adjudication and arbitration as a means of dispute resolution.

4.4. Structure of Contract Forms

The basic scope of coverage of conditions of contract is similar in both local and international general conditions of contract for construction works. Selamawit et al. (2006) have grouped the contents of these conditions in to eight on the basis of their scope and relevance as follows: Definitions and interpretations; Contract Documents; Rights, Obligations and defaults of parties to the contract; Construction Works; Measurement, Certificates and payment; Alterations and Claims; Remedial Rights; and Others

As discussed above the PPA (2006) general conditions of contract followed a structure on the basis of control inclined grouping. Accordingly structure of the PPA 2006 contract form is structured in five groups as follows: General; Time Control; Quality Control; Cost control; and Finishing the Contract. The control inclined structure, which is evident from the above grouping, in the Researcher's view might induce confrontational contract administration that undermines the smooth progress of construction projects. Besides it results in breeding claims and disputes; hence, mutual understanding involving partnering is advisable with the ever changing dynamic industry such as construction projects.

FIDIC 1987 has been used for several years in the domestic road construction projects. As a recent development the current 20 clauses FIDIC new Red Book is being used in many federal road

projects. These contract forms include the FIDIC 1999 new Red Book and FIDIC 2006 MDB harmonized edition for those projects sponsored by international funding institutions. In the researcher's view, until the next revisions are due, these recent editions will be utilized widely, even though the FIDIC 1987 old Red Book gained wide acceptance through the past two decades. This research therefore proposes to classify the structure of contract forms in to six groups on the basis of the 20 clauses FIDIC 1999 new Red Book as follows:

1. General Provisions
2. Parties Obligation
    - The Employer
    - The Engineer
    - The Contractor
    - Nominated Subcontractors
    - Tests on Completion
    - Employer's Taking Over
    - Defects Liability
3. Parties Remedial Rights
    - Termination by Employer
    - Suspension and Termination by Contractor
    - Risk and Responsibility
    - Insurance
    - Force Majeure
    - Claims, Disputes and Arbitration
4. Resources and Construction Works
    - Staff and Labor
    - Plant, Materials and Workmanship
5. Progress and Payment
    - Commencement, Delays and Suspension
    - Contract Price and Payment
6. Changes and Valuation
    - Measurement and Evaluation
    - Variations and Adjustments

4.5. The Research Issues in Focus

This research work is aimed to address the following target issues in the conditions of contract and related matters as the main thematic focus with respect to their problems, applicability and suitability of usage in the Ethiopian construction industry:

- Readability and Interpretation of contract forms
- Powers, Duties and Responsibilities of the Engineer
- Price Adjustment
- Termination
- Claims Procedure and Dispute Resolution
- Conformity of Contract Forms with Ethiopian Law

4.5.1. Readability and Interpretation of Contract Forms

4.5.1.1. Readability of Contract Forms

In the construction industry, where many parties are involved in different capacities in the process of delivering the product, proper communication between them becomes essential for the success of the project. The standard form of contract plays a significant role in this process as it communicates the procedures to be adopted in executing the project including the determination of the rights and obligations of contracting parties. Hence, an acceptable degree of commonality in interpretation of construction contracts by different contracting parties is a prerequisite for the smooth functioning of a construction project (Rameezdeen and Rajapakse, 2007).

There are many internationally recognized standard forms of contract developed for the construction industry by a number of independent professional organizations and these are intended to be used in different contractual arrangements. Most of the time, the content of the different standard forms of contract developed for a particular contract situation is similar irrespective of the document. But the clause wording, which is connected with the readability, is usually different from one standard form to another (Rameezdeen and Rajapakse, 2007). One important aspect in contracting is that of achieving that the parties fully understand their rights and obligations as arise from the contract. Language has often been a problem: contracts have tended to be written in legal jargon that has in itself been the cause of misinterpretations and disputes. Efforts are being, made to simplify the language in which contracts are written, so that both parties can understand more clearly the intent of their clauses (Henroid and Lantran, 2000).

According to Rameezdeen and Rajapakse (2007) readability is concerned with the complexity of words and sentences of text and it is commonly assessed by readability formulas, which have been developed for different types of text. They ascertained the relationship between readability and interpretation of construction contract clauses through a research in Sri Lanka conducted in 2007. The hypothesis of this study was "*When the readability of a particular clause in a standard form of contract is low, the chance of that clause being interpreted with less degree of commonality by different readers is high."* The survey undertaken for the research measured the ability of construction contract clauses having different readability values according to Flesch Reading Ease Score (FRES), to convey a common understanding to all categories of respondents in terms of the degree to which risk was apportioned between the Employer and the Contractor. The study found that the NEC 1993, which is having a higher overall FRES score, is more readable than the FIDIC 1999 standard form of conditions of contract.

The length of paragraphs and the connection between them are also very important in presenting to the reader a simple, logical and clear text. With repetition, this limit in the number of words in a sentence increases of course but is still far below the average number of words per sentence in the two standard forms of contract referred to above. Thus, complaints about the complexity of the legal language used in these forms have been made even by lawyers and judges who are repeatedly exposed to them (Henroid and Lantran, 2000; Bunni, 2005; Horgan and Roulston, 2005).

According to Bunni (2003) there has been further research into the psychology of language and it is now understood that ease of comprehension of a sentence depends not only on the number of words contained in that sentence, but also on other factors, including: the number of ideas presented; the number of words which have more than one meaning; and structure and coherence of the text.

Language as a means of communication has its limitations. For example, it is accepted that comprehension of sentences read for the first time, depends mainly on the length of a sentence, the number of ideas expressed in it, the complexity of these ideas and the intelligence quotient (IQ), of the reader. Long sentences often contain complex ideas that would be more clearly expressed in several sentences. Whilst sentences of around 18 words are direct and can be readily understood, informative and technical text may require sentences of 35 to 45 words for the expression of a complex idea or a number of ideas. It is calculated that sentences with 28 words or more, 86% of

the contents representing a multiplicity of statements read for the first time can only be easily and readily understood by 4% of the population (Henroid and Lantran, 2000; Bunni; 2003, 2005).

Local contract forms suffer with incomplete ideas and sentences while adopted from international ones. For instance, the BaTCoDA 1987 and MoWUD 1994 contract forms are evident from such drawbacks on which clauses involving time extension and additional payment in FIDIC 1987 contract forms are presented in a distorted manner where the additional payment component are curtailed. It can be seen as a public policy consideration not to give financial compensation without correcting related issues that raise both time extension and additional payment. This practice ultimately affects the readability and understandability of the provisions. It also shows the unfair risk transfer to the contractor which later trigger claims and disputes that impair smooth project progress.

4.5.1.2. Interpretation of Contract Forms

The relevance of the provision of language has been recognized from the early days of civilization. Confucius said: 'If language is not correct, then what is said is not what is meant, if what is said is not what is meant, then what ought to be done remains undone. If this remains undone, morals and arts will deteriorate. If morals and arts deteriorate, justice will go astray. If justice goes astray the people stand about in helpless confusion. Hence there must be no arbitrariness in what is said. This matters above everything' (Bunni, 2005). But, in order to formulate a fair contract, it is not sufficient to use simple, logical and clear wording. What is equally important is to recognize the different interpretations which might be placed on that wording, not only by the average person but also by a clever advocate who would attempt to argue for an interpretation suitable to his case (Henroid and Lantran, 2000; Bunni, 2005). Some main points need to be considered for interpretation includes avoidance of ambiguity, express terms and implied terms.

a. Avoidance of Ambiguity

Clear contracts, as legal documents enforceable at law, must be unambiguous. Everybody who has to read or interpret them must do so in the same way. A contract may continue in force for several years before everything is cleared up and the statute of limitations has ceased to be a factor. During this period many who drafted or negotiated a contract originally may have disappeared from the scene, but their intentions must still be accurately deduced in their absence. The wording not only needs to be unambiguous, but meanings attributed to individual words must be specific, especially

if their definitions are not the ones found in standard dictionaries. Each contract should therefore be provided with its own glossary of terms defining any doubtful words (Horgan and Roulston, 2005; Rameezdeen and Rajapakse, 2007).

Complex sets of words (instead of the ones commonly used) and long, unbroken sentences devoid of punctuation were purposely chosen to give increased precision and avoid any chance of ambiguity. Whosoever may have occasion to read them later, long after the compiler has become 'unavailable', must be accurately affected in the desired way and in no other (Horgan and Roulston, 2005).

Absence of ambiguity is the hallmark of a well-drafted legal document such as a contract. Not only is the form of words carefully chosen, but it will frequently appear at first sight to be unnecessarily repetitive; on deeper reflection, it will be realized that the description defines more closely what the writer intended. The choice of words and phraseology is necessary if the draughtsman is to be sure of including every ramification he requires in his final term (Hourgan and Roulston, 2005).

b. Express Terms

A contract may be made up of written words, spoken words or conduct, or a mixture of these. Any words (whether written or proved to have been spoken) which the parties are agreed shall form part of the contract (or the whole) are known as the express terms (Atkinson, 1992; Murdoch and Hughes, 2000; Bunni, 2005; Horgan and Roulston, 2005).

Where a contract is wholly in writing, its terms may be either in the contract itself, or in some other document which is referred to and identified, and hence automatically becomes a part of the contract documents. It may still be held by a court of law that an unidentified document must be considered to be a part of a contract, but this is solely a matter for the court, and the document concerned must be one which affects the contract as it stands and ought properly to have been introduced by a suitable reference.

Express terms in the local and international contract forms are subject to varied interpretations from project to project. For example, the terms 'Substantial Completion' and 'Experienced Contractor' expressly stated in these contract forms lack consistent interpretation even within the industry experts.

c. Implied Terms

Terms which naturally follow as part of a contract, even though they may not have been uttered: these are the implied terms. The terms written into a contract may not show everything, especially when every-day matters such as might be assumed by both parties are concerned. Sometimes disagreements may arise which hinge on a term which was not included, and it is then necessary for the correct interpretation to be introduced (Murdoch and Hughes, 2000). In such cases, the disagreement can be taken to the courts to come to a decision as to how the missing term should be legally brought into an 'agreement' between the two parties; it is then referred to as an 'implied term'. Art. 1731(3) of the Civil Code governs implied terms as it clearly states '… such provisions are of a mandatory nature or their application has not been set aside by the parties'; hence, the law of contract plays a gap filling role.

4.5.2. Powers, Duties and Responsibilities of the Engineer

As in the ICE Form of Contract for civil engineering works, the FIDIC Red Book is drafted on the basis that when a project is initiated by a developer or a promoter, the duties related to feasibility, design and supervision during construction of the project are entrusted to an independent consulting engineer who is referred to as the 'Engineer' in the contractual arrangements between the developer and the contractor. The developer of such a project is referred to in these forms as the 'Employer' (Bunni, 2005). According to Ribeiro (1996) the expression 'the Engineer' is the one most commonly used in engineering contracts to describe the person who is to act on behalf of the employer for the purposes of the performance of the contract. Such persons may also be described in some engineering contracts as employer's representatives or as project managers.

The role of the engineer is central to the contract under the Red Book. Indeed, the engineer has many, sometimes what appear to be conflicting roles. The Engineer assumes the following roles, duties and authority under the contract as: designer, employer's agent, supervisor, certifier, and adjudicator or quasi-arbitrator (Atkinson, 1992; Ribeiro, 1996; Murdoch and Hughes, 2000; Bunni, 2005; Ndekugri et al., 2007).

The concept of engaging a consulting engineer stems from the idea that when a promoter initiates a construction project he is faced with a multiplicity of technical, commercial and legal considerations with which he is not familiar, or at least in which he is not an expert. In civil engineering construction, in order to transform the promoter's ideas into reality, the traditional

method, and also the method adopted by FIDIC, has been to engage the services of a consulting engineer to carry out the following functions (Murdoch and Hughes, 2000; Bunni, 2005; Ndekugri et al., 2007):

1. To complete a skilful design of the project sought by the promoter. Such design includes, but is not limited to, the preparation of drawings which should express and communicate the details of every aspect of the project to be constructed; to draft a specification of the materials to be used and of the standard of the workmanship to be achieved; and to prepare the bill of quantities;
2. To prepare all documents necessary for obtaining a competitive price for carrying out the work by a competent contractor and to advise the promoter on the tenders received and on the selection of the contractor;
3. Once work starts on the project, to supervise or to inspect the work carried out by the contractor in order to ensure conformity with the design requirements; and
4. To administer the contract, to deal with situations as they arise, to certify and to act as an adjudicator of disputes.

In carrying out the duties set out in steps (1) and (2), the consulting engineer acts as an adviser and consultant to the promoter. Once a contract is placed with a contractor, the developer is called an employer under the Red Book and the consulting engineer is referred to as the engineer for the purposes of steps (3) and (4). During these steps the engineer acts as agent of the employer which also plays a protecting role of the 'best interest of the client' as per Art. 2636(1) of the Civil Code.

For the purposes of the construction of a civil engineering project, two contracts are traditionally formed, one between the Consulting Engineer and the Client and another between the Employer and the Contractor (Bunni, 2005). Contracts forming a construction project are between the Employer and his Contractor. However important he sees himself, and however much responsibility the contract gives to him for managing it, the Engineer is not a party to the contract. His duties are strictly limited to those set out for him in the contract's terms (Hourgan and Roulston, 2005). There is an independent contract between the Client and Engineer which is regulated by standard conditions of agreement for consultancy services. The FIDIC white book is an example for such conditions governing consultancy services. PPA 2006 conditions of contract also include standard agreements applicable for consultancy services.

Many employers and commentators unfamiliar with either the ICE Form of Contract or the Red Book find the position and the role of the engineer under these two forms of contract confusing and abnormal. This is particularly so when they find that the engineer may act, on the one hand, as an agent of the employer during the construction of the works, and on the other hand, as an adjudicator of disputes between that employer and the contractor. They consider it even more unusual when some of these disputes relate to the engineer's own design, specification or instructions (Bunni, 2005; Hourgan and Roulston, 2005; Ndekugri et al., 2007).

4.5.2.1. Powers and Duties of the Engineer

The Engineer, whilst not a party to the contract between the employer and the contractor, is in fact empowered under various clauses of the MoWUD 1994, PPA 2006, FIDIC 4th edition and FIDIC 1999 conditions of contract to give instructions, to make decisions, determinations or variations, which are binding on the parties to the contract unless and until they are subsequently rescinded or varied by DRB, ADR or an arbitrator.

The role of the 'Engineer' in the international field has come under attack from both employer and contractor on the question of bias. Bunni (2005) states the reason that the 'Engineer' has been accused by the contractor of being biased in favor of the employer because:

- His fee is paid by the owner or developer, referred to as employer under the Red Book;
- He has acted as adviser to the employer prior to construction and may wish to continue this role upon completion of the construction stage;
- He is required to consult with the employer prior to making certain decisions.

Therefore, the engineer has been suspected of colluding with the employer. The case is even stronger against the engineer where he is an employee of the employer, as his future employment might well depend on his actions. On the other hand, he has been accused by the employer of being biased towards the contractor during the administration and execution of the contract in areas such as awarding extensions of time and in determining amounts of claims, etc., in favor of the contractor. In general, it is sometimes claimed that he is too lenient towards the contractor thereby relieving him of certain of his obligations under the contract (Bunni, 2005). Some employers from developing countries expressed doubts as to the ability of the engineer to act impartially, as both

the engineer and the contractor are usually from the developed world and may have developed relationships working together on previous projects (Ndekugri et al., 2007).

Most of the Standard Conditions of Contract allot space for the naming of the Engineer and their subsequent clauses spell out his duties. Clause 2 of FIDIC 1987 and MoWUD 1994 deals with the engineer and the engineer's representative. Whilst there are many clauses which regulate the role and authority of the engineer to act as the employer's representative within the contract between the employer and the contractor, clause 2 in conjunction with clause 67 of FIDIC 1987 and MoWUD 1994 contains the main provisions by which this role and authority are regulated. These have already been accepted by the contractor when signing the contract. Some selected roles and duties of the Engineer are discussed below.

a. The Engineer as Employer's Agent

When the employer appoints a contractor to construct a project, certain duties are generally created which must be performed by the employer, or on his behalf, in order to ensure that the project is completed on time, within the budget and, perhaps more importantly, with qualities as designed and specified. Whoever performs these duties is called the employer's agent (Ribeiro, 1996; Bunni, 2005). The agency role of the engineer is governed by Art. 2636(1) of the Civil Code which expressly state the protecting role of the Engineer to keep the Client's best interest as part of his care and responsibility.

Agency is an important legal concept, so it is important that the contract should not only make it clear who that person is, but also: whether or not duties may be delegated; how the engineer is to be replaced, if ever it is necessary; what functions are to be carried out by the engineer; and what limits there are to the authority of the engineer (Atkinson, 1992; Ribeiro, 1996; Murdoch and Hughes, 2000). As far as the engineer is concerned, his authority is contained in his appointment, his allocation to a particular project, and his instructions from his employer. As far as the contractor is concerned, the authority of the engineer is to be found by a careful reading of the contract (Ribeiro, 1996). Examples of duties to which the agency status applies include provision of drawings and other information and issue of payment certificates (Ndekugri et al., 2007).

These agency duties are, in general, concerned with the following functions described below (Bunni, 2005):

Design: The process of design continues during the construction period and many questions could arise during this period which would relate to matters of design. The philosophy and practical calculations of the design process are best known by the engineer. Design, being more of an art than a science, could best be modified or changed, should it be required, by the original designer.

Quality control: The design is expressed through drawings and specifications which set out the required quality to be achieved. Quality must be monitored by someone familiar with the original concepts and parameters of the design.

Administration and management: Progress on site depends to a large extent on the availability of information required by the contractor. This information may involve queries as to how a certain provision of the contract should be interpreted or how problems encountered on the site should be dealt with promptly and properly. It may involve questions relating to whether or not a certain item is necessary for the completion of the work; whether or not an item should form a variation to the contract; whether or not a specific contractual obligation has been fulfilled; whether or not a certain item of the work is properly measured; etc. When such information is required, it is necessary that the employer's agent be familiar with the details of the project in order to deal with it promptly.

Cost accountancy and certification: The contract is based on interim payments being made periodically, mostly on a monthly basis, by the employer to the contractor. The employer's agent must possess the necessary knowledge to evaluate the work carried out by the contractor, periodically and ultimately in a final certificate.

b. The Engineer as Independent Professional

The Engineer is a neutral and independent third party professionally trained in holding the balance fairly between the contractor and the employer. The independent and professional role of the Engineer in Ethiopia is regulated by the civil Code Art. 2636(2) cum Art. 2616.

The independence of the engineer under FIDIC 1987 was given contractual expression in sub-clause 2.6, which required the engineer to be impartial in exercising professional discretion in decision making. The concept of the engineer as an independent and impartial party is unknown in continental and other civil law systems under which the contract administrator is an agent for the employer in all aspects. The main argument against the concept is that many factors create an

unavoidable conflict of interest in most of the situations where the engineer is required to act as an independent and impartial third party. The most commonly cited aspects of this conflict include (Ndekugri et al., 2007):

- The engineer is usually also the designer of the works (optional in DBB);
- The engineer is often the author of the problem being dealt with, such as delay in providing design and other information and variations to resolve design errors;
- The employer is the engineer's paymaster and can terminate the appointment at any time;
- The engineer may be looking for future work from the employer.

Some attempt at movement away from the independent role of the engineer is discernible in the FIDIC 1999 contract form. There would appear to be now no requirement for the engineer to 'act impartially' although it is questioned whether this duty has not been reinstated by a 'new' duty to make 'fair determinations'. Clause 3.1 of FIDIC 1999 provides, *inter alia*, that 'except as otherwise stated in these Conditions, whenever carrying out duties or exercising authority, specified in or implied by the Contract, the Engineer shall be deemed to act for the Employer'. It may therefore be concluded from the highlighted text that the duality in the role of the engineer has not been abandoned completely. One area of decision making where it is clear that the engineer does not act as the employer's agent is where the engineer is required to proceed in accordance with sub clause 3.5 of FIDIC 1999. Most the matters subject to the sub-clause 3.5 determination procedure are claims by the employer and the contractor against each other.

Under the FIDIC 1987 the engineer also had responsibility for deciding the matters now subject to the sub-clause 3.5 of FIDIC 1999. In making such determinations the engineer was obliged to do so after 'due consultation' with both parties. A party dissatisfied with the engineer's decision could refer the matter back to the engineer as a dispute under clause 67 of FIDIC 1987 for a decision within 84 days after such referral (Ndekugri et al., 2007).

Under the FIDIC 1999 the engineer's duty is to 'consult with each party in an endeavor to reach agreement'. Failing agreement the engineer is to make a fair determination of the matter. For parties and engineers steeped in the use of the earlier editions of the Red Book the importance of knowing the differences in the way the engineer is to make decisions as an independent third party cannot be overstated. In particular, they need to know the following points (Ndekugri et al., 2007):

i. the differences between the engineer making 'fair determinations' as required by the FIDIC 1999 and exercising professional discretion impartially as required under FIDIC 1987;
ii. the steps required of the parties and of the engineer to discharge the engineer's duty to 'consult with each party in an endeavor to reach agreement';
iii. the timetable for sub-clause 3.5 determinations;
iv. whether there is a duty to determine fairly matters not expressly subject to the sub-clause 3.5 procedure.

c. The Engineer as a DAB

It is contemplated in the Guidance to the Preparation of Particular Conditions, provided as part of FIDIC 1999, that contractual parties from common law jurisdictions may opt to retain the traditional concept of the engineer as contract administrator by appointing the engineer as a sole-member DAB where the engineer is an independent consulting engineer. The contract is to be amended accordingly. The sample clause provided requires the engineer, when acting as DAB, to act 'fairly, impartially and at the cost of the Employer' (Ndekugri et al., 2007).

The Engineer plays a central role in the administration of the contract and dispute settlement. As a widely used form of contract in the international contracts in Ethiopia, the FIDIC form of contract endows the Engineer to settle differences, or in some cases to give decisions on disputes that may arise. Therefore as a primary administrator of the contract the Engineer is the mediator between the owner and the contractor, which form the parties to the contract (Girmay, 2003).

In response to criticism and modern developments some attempt has been made by FIDIC to move away from the traditional concept of the engineer in three directions. First, it is provided expressly in the contract that the engineer is deemed to act as an agent of the employer unless in relation to any particular duty or power a different capacity is indicated. Second, parties who wish to contract on the basis of further reduced independence of the engineer may do so by stating in CPA the powers the engineer is not to exercise without the employer's approval. Third, the contract provides for a DAB to which the parties may refer any dispute, including any dissatisfaction with the engineer's determinations. The DAB's decision must be implemented pending final resolution of the dispute by arbitration (Ndekugri et al., 2007).

4.5.2.2. Responsibilities of the Engineer

The contractor may treat any default by the engineer in the performance of such duties as a default by the employer. The employer is not answerable to the contractor for defective performance of the engineer on duties in relation to decision making although the contractor may, by invoking the applicable dispute resolution procedure, challenge the engineer's exercise of discretion in the performance of such duties. Examples are assessment of claims, valuation of variations, measurement and valuation for payment. It is the employer's breach of contract only if the engineer fails totally to perform these duties. However, it is not a breach if the engineer performs them wrongly or even negligently (Murdoch and Hughes, 2000; Ndekugri et al., 2007).

Under the conditions of the contract with his employer, the engineer is responsible for the duties he undertakes. If these duties are related to a contract between the employer and the contractor under the Red Book, the engineer is responsible in his role as a designer, and during the construction of the project, as employer's agent, supervisor, certifier and adjudicator.

Failure to perform these duties properly in accordance with the provisions of the contract would result in the engineer being liable to the client under the provisions of the law of the contract applicable to his agreement with the client. However, in certain jurisdictions, and in some circumstances, the engineer may be found to be concurrently liable in respect of a particular event and in respect of the resultant damage both in contract and in contract law under the applicable law (Bunni, 2005).

The first is the duty of reasonable skill and care and the second, which is of a higher standard, is the fitness for purpose. It is important to distinguish between these two standards, because in the first, negligence of the defendant has to be proven by the claimant party, whereas for fitness for purpose there is a strict obligation to achieve the objective in respect of negligence (Murdoch and Hughes, 2000; Bunni, 2005).The above duties might well include exercising skill and care in, amongst others, designing and issuing design drawings and specifications; in making valuations and in certifying; and in making statements and giving instructions. The precise nature of which duty is owed and which is not will depend not only on the applicable law of the contract, but also on the contractual structure and the circumstances of the event leading to loss or damage. In Ethiopia, the civil code Art. 2636(1) outlines the required skill, scare and duty to carry out the work in the best interest of the client.

4.5.3. Price Adjustment

A research conducted in 2009 by Texas Transport Institute showed construction cost inflation is affecting many state highway agencies in USA. Some of this increase can be attributed to factors such as soaring cost of energy; reports of large variations in cost of bid items among different districts indicate that the problem is more complex. Indeed, there are many other factors affecting the recent increase in construction cost including design requirements, work restrictions, bidding procedures, and competition.

One of the most fundamental factors determining the prices of any products or services including construction is the relationship between demand and supply in which the market prices are determined by the equilibrium conditions. In construction market, such equilibrium is determined by the demand/supply of materials and services in sectors such as residential, commercial, industrial, and heavy construction (Damnjanovic et al., 2009).

Damnjanovic et al. (2009) states that the cost increase factors can be classified based on two broad classification methods. The first classification considers who can control the factors; hence, there are internal and external factors. While the owner can control planning, procurement, development of designs and specifications, selection of contractors, contract administration, and allocation of risk, some factors are beyond the owner's control. For example, the prices of material and labor, availability of labor, contractors' overhead costs, overall number of projects in the market, and resources of the contractor are some factors over which the owner has no control. In addition to the above intuitive classification method, factors can be grouped based on the process and market forces as a second classification. This classification is broader and includes five categories as follows:

1. Cost of materials, or factors affecting increases in cost of materials;
2. Design and specifications, or factors that relate to effects of design requirements and specifications;
3. Project-specific factors, or factors that are limited to specific locations or type of projects;
4. Competition and market conditions, or factors that relate to market and contracting and letting procedures; and
5. Macroeconomic factors or factors that relate to effects from changed macroeconomic conditions.

Owing to its complex nature, domestic construction projects are accompanied by frequent price escalation due to rises of prices of materials, labor and equipment. There are two alternative methods commonly employed in the local context to determine such variations practiced in the construction industry. The first adjustment method is "Basic Prices" or "Base Date Prices" and the second is based upon "Price Indices".

4.5.3.1. Basic Prices/Base Date Price method

In using base date prices, the difference between the current date prices and base date prices will be established for each items allowed for adjustment. The increased/decreased cost is then calculated by multiplying the quantity of each item subject to adjustments with the price rise/fall between the base date and current date prices. In order to carry out adjustments on this method, the basic material price lists need to be attached as an appendix to BOQ with their agreed rates between the Engineer and the Contractor.

4.5.3.2. Indices/Adjustment Formula

The amount payable to the contractor shall be adjusted for rises or falls in the cost of labor, goods and other inputs to the Works, by the addition or deduction of the amounts determined by the adjustment formula.

To address these problems, the FIDIC 1999 and PPA 2006 form of contracts provide an adjustment formula for price escalation as follows:

$$P_n = a + b\frac{L_n}{L_o} + c\frac{E_n}{E_o} + d\frac{M_n}{M_o} + ... \Rightarrow a + b + c + d + ... = 1.00 \quad \text{..... [4.1]}$$

Where;

"$\mathbf{P_n}$" is the adjustment multiplier to be applied to the estimated contract value in the relevant currency of the work carried out in period "n";

"**a**" is a fixed coefficient representing the non-adjustable (fixed) in contractual payments;

"**b**", "**c**", "**d**", … are coefficients representing the estimated proportion of each cost element (specified/basic materials) related to the execution of the works; such tabulated cost elements may be indicative of resources such as labor, equipment and materials;

"**L_n**", "**E_n**", "**M_n**", … are the current cost indices or reference prices (of the specified/basic materials) for period "**n**", expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element (specified/basic materials) in the tender and contract documents on the date 15 days prior to the last day of the period (to which the particular Payment Certificate relate); and

"**L_o**", "**E_o**", "**M_o**", … are the current cost indices or reference prices (of the specified/basic materials) for period "n", expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element (specified/basic materials) on the Base Date (15 days prior to the submission of bids).

If the contractor fails to complete the works within the Time for Completion, adjustment of prices thereafter shall be made using either (i) each index of price applicable on the date 15 days prior to the expiry of the Time for Completion of the works, or (ii) the current index or price: whichever is more favorable to the Employer.

The weightings (coefficients) for each of the factors of cost stated in the table(s) of adjustment data shall only be adjusted if they have been rendered unreasonable, unbalanced or inapplicable, as a result of variations. Additional correction factor Z_o/Z_n is applied to P_n according to sub clause 47.2 of PPA 2006 (ICB) for two different currencies involved in the payment structure. However, it is omitted from the NCB version of this contract form.

Price adjustment based on indices is usually recommended whenever suitable indices can be obtained due to its ease of execution. On the other hand, base price is prone to manipulation. However, the National Bank of Ethiopia (NBE) and CSA supposed to study and establish price indices do not have issued to date.

4.5.4. Termination

Termination is legally an act to bring an existing contractual relationship to an end between contracting parties. It can be resulted from breach of contract, prolonged suspension, and remedial right for breach of contract by another contracting party. Termination can be viewed from different dimensions such as: notice, ground, from party's right and its effects perspectives.

Termination may take place with or without notice. Mostly conditions of contract provide for serving a notice of termination before taking an act of termination. Termination without notice

shall be governed by applicable law as provided in Art. 1775 of the Civil Code. Conditions of contract mostly provide ample grounds that result in termination. This is evident from the PPA and FIDIC conditions of contract. As far as the effect of termination is concerned, it may apply against the contractor (especially in case of default perspective) or the employer. Termination could be categorized in to the following types from the rights/prerogative of the party perspective:

i. termination for default; (by the employer or the contractor) regulated by conditions of contract;
ii. termination for convenience;(by the employer-prerogative); mostly regulated by law; also sometimes supported by conditions of contract;
iii. termination on request; (by the contractor; mostly provided by law)
iv. optional termination; (the right available to the contractor, for the employer-regulated by conditions of contract; also by applicable law)

Therefore, for this research, termination is studied from the default perspective by one of the contracting parties. The party terminating especially on default is showing an intention not to carry out his part of the bargain. However, these basic principles need to be heavily qualified, since most modern engineering contracts contain complex provisions about suspension and termination, and in many cases give to either one or both of the parties the right to suspend or to terminate, in certain circumstances (Ribeiro, 1996). However, the PPA 2006 contract form remains silent regarding the suspension of works by either of the parties.

The most likely example of the right to suspend performance of the contract is where such a power is given to the engineer by the terms of the contract. If such a power is given, contractors should ensure that the contract also contains provisions for additional costs to be paid to the contractor. Good contracts will also recognize that a contractor's cash flow could be seriously affected by suspension of important works and of the delivery of expensive plant. Provisions which entitle the contractor to payment for plant which has been affected for longer than an agreed time by the suspension will greatly assist the contractor. Provisions which entitle the contractor to treat the contract as ended due to the employer's default, if suspension continues for longer than an agreed maximum period, will be needed by the contractor as a last resort, if the suspension of works becomes a matter of serious commercial inconvenience to the contractor. It cannot be stated too strongly that clear provisions on all of these points should be identified by the contractor before the contract is made (Ribeiro, 1996; Kasiem, 2008).

Many engineering contracts, particularly those drafted by purchasers, contain only the express grounds for termination by one of the parties. In such cases, this fact does not entirely deprive the other party of the right to terminate the contract, but it does leave that party to rely upon implied terms, or upon the applicable law relating to breach of contract. As this puts a party at a disadvantage, it is normal to find in forms of contract drafted by institutions, clauses entitling both the contractor and the employer to terminate the contract in different circumstances. Even in administrative contracts, it should be noted, these provisions are not necessarily exactly reciprocal, nor are they identical in different forms of such contracts. A list of possible grounds for termination of an engineering contract is shown in Table 4.1, but it is not exhaustive, and each particular contract must be looked at carefully to see precisely which grounds for termination have been stated. Apart from any express formulation of grounds for termination, general principles of the law of contract apply, and termination would be possible by one party on grounds of a serious breach or a repudiation of obligations by the other party (Ribeiro, 1996; Bunni, 2005).

Table 4.1: Grounds for termination of Engineering contracts (Ribeiro, 1996)

No.	Ground for termination by Employer (Contractor's default)	Grounds for termination by Contractor (Employer's default)
1	Insolvency of the contractor	Insolvency of the employer
2	Failure to execute the work in accordance with the contract; failure to proceed with due diligence; neglect in carrying out obligations under the contract	Failure of the employer to make payment within the time stated by the contract
3	Abandoning the contract	Obstructing or interfering with the issue of any certificate by the engineer
4	Assigning the contract	Replacing the engineer against the reasonable objections of the contractor
5	Suspending the execution of work.	

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 labor and his materials might be ground for the employer to terminate the contract at the default of the contractor (Kasiem, 2008).

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 (Kasiem, 2008).

Practical applications of termination in domestic road projects showed that it takes long and extended time to finalize it as per the provisions stated in the conditions of contract, hence, results in too much cost and time overruns.

4.5.5. Claim Procedures and Dispute Resolution

Unless the contractor wishes to be placed in the unhappy position of having to sue the employer, if there is an irreconcilable dispute with the engineer, the contract ought to contain clear and workable procedures for dealing with a dispute between the Contractor and the Employer. Such procedures should give as much opportunity as is possible for the parties to resolve the dispute or difference of opinion without the need to call upon the services of an arbitrator, but arbitration may well be needed to be provided for as a final impartial view on an issue in dispute (Ribeiro, 1996).

The FIDIC 4th edition Red Book is a balanced document providing an excellent standard form of conditions of contract with sufficient rules for a construction contract. Should disputes arise between the parties to a contract, and some disputes are perhaps inevitable in a complex contract, then the Red Book provides a three-tier mechanism for their resolution: the engineer, as a quasi-arbitrator; amicable dispute settlement procedure; and ultimately arbitration is used as a last resort. Whilst many contracts do end in arbitration, it must be noted that for every such contract, there are many others where disputes are resolved without the need to resort to arbitration. Unfortunately, only those contracts which end in arbitration are noted and become part of the statistics (Bunni, 2005).

Areas of potential conflict include: the erosion of the relationship of trust between the employer and the engineer, the role of the engineer and his independence in relation to both the employer

and the contractor, attempts by a party to offload risk to others and in particular in matters relating to design, absence of a developed legal system, distrust and conflicts between the concepts embodied in the conditions of contract and the applicable law of the contract (Bunni, 2005).

4.5.5.1. Claim Procedures

Construction claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment, or interpretation of contract terms, payment of money, extension of time, or other relief with respect to the terms of the contract. The causes of claims in construction projects are many and varied. Depending on the particularities of the site and geographic location they may have differing causes and impacts. In a nutshell claim components include entitlement, damages and relief. The rejection of whole or part of the claim by one of the contracting parties or initiating a counter claim against the claim triggers dispute.

In order to avoid ambiguity in the handling of claims, the FIDIC 4th edition sets out in clause 53.1 detailed procedures for claims. These include:

- The contractor gives his intention to claim within 28 days after the event give rise to the claim has first arisen,
- The contractor keeps contemporary records on the claim issue,
- The engineer examines such contemporary records,
- The contractor submits detailed particulars of the amount claimed and the grounds upon which the claim is based,
- The engineer to make determination based on the available contemporary records.

The above procedures are also treated under sub-clause 20.1 of FIDIC 1999 and 2006 MDB harmonized edition for contractor's claim. Sub-clause 2.5 of FIDIC 1999 and 2006 MDB govern procedures of Employer's claims. However, it remain silent on its time frame on which the Employer should submit his claims except for extension of defects notification period to submit before its expiry.

4.5.5.2. Dispute Resolution

Dispute resolution mechanisms are not new in the Ethiopian construction industry whether it is local or international construction contract (Abdisa, 2003; Girmay, 2003; Abera, 2005). FIDIC gives all steps throughout the way from Engineer's decision or judgment then amicable solution

and finally arbitration. However, the condition of contract of MoWUD 1994 does not give chance for involvement of neutral body either in amicable or judgmental ADR mechanism. The destiny of a contractor is at the mercy of the Engineer and the Minister or his representative. These are in one way or another partisan to the employer, the public authority. Furthermore, at certain projects, such as regional projects, it is impossible to differentiate the public authority who is the client, the consultant and at the same time who acts as third party, the judgmental role. The PPA 2006 contract form provides a better option unlike MoWUD 1994 as it allows ADR and arbitration.

4.5.6. Conformity of some selected clauses with the Ethiopian law

Some legal aspects of a contract are embodied in Acts of Parliament, by the words they use or the requirements they specify. Such a form is known as statute law, and to avoid or contravene it is to break the law. Other matters may have become common usage by tradition or the results of earlier cases heard by the judiciary. Such findings have built up what is known as the common law, which has been established as good and proper by earlier case law (Horgan and Roulston, 2005; Tecle Hagos, 2009).

According to Bunni (2003, 2005) a certain minimum basic knowledge of the law governing the areas of professional activity is necessary for the engineer. Furthermore, for the engineer in international contracts, it is essential for him to understand the implications of the applicable law of the contract in a particular project since it is accepted that ignorance of the law is no excuse for mistakes. From the point of view of construction, it is suggested that a simple classification should suffice in any study of comparative law, at least as a beginning, since a large number of the relevant basic concepts are similar in many potential subdivisions of legal systems.

The construction industry in Ethiopia is regulated by various legislative enactments which mainly come under two different domains; namely, *civil construction laws*, and *government construction laws*. The former laws apply where a private individual or company usually referred to as 'employer' (otherwise known as 'owner' or 'client') enters into a construction contract with a contractor. And the latter involves a government department which intends to have construction works carried out on behalf of the government for public interest. Thus, depending on whether the construction contract involves a private civil/business-to-business engagement or a government-to-business, separate set of rights and obligations apply in the construction industry (Tecle Hagos, 2009).

Abera (2005) argues that it may not be necessary to sign an agreement to refer a dispute to a court, because the courts have inherent jurisdiction to hear and resolve disputes. An arbitration clause in an agreement is a foundation for arbitration. If the parties do not agree for arbitration, it is implied that they have agreed to refer the resolution of their dispute to courts, if not resolved amicably. In MoWUD 1994 there is no arbitration clause or alternative dispute settlement on clause 67. The disputants' final and binding resort is the decision of MoWUD or its representative. It has a legal implication in unbalanced footing where the owner of the works acts as a final and binding decision maker.

The other important feature is an arbitrability of administrative contracts. When national contractors enter a contract agreement for public construction work with public agencies, it is an administrative contact. This implies that they agree to be administered by contract administration of Art. 3132 of the civil code.

The civil code has both amicable solution process with conciliation as stated in Art. 3318 to 3324 and the judgmental procedure with arbitration as in Art. 3325 to 3346. However, Art. 315(2) of the Civil Procedural Code states that administrative contracts are non-arbitral. On the other hand, Art. 315(4) states this procedure applies to the civil code Art. 3325 to 3346, without demarcation for either public or private. Michael (2000) cited in Abera (2005) elaborates this fact as "It is surprising to note that the civil procedure code whilst prohibiting arbitrability of disputes in relation to administrative contract (Art. 315(2) civil procedure code) confirms that its provisions do not affect the provisions of the Civil Code (Art. 3325 – 3346) dealing with arbitration (Art. 315(4) Civil Procedure Code). The Civil Code on the other hand expressly permits arbitrability of contractual disputes (Art. 3328 Civil Code).

There is no indication in the Civil Code which indicates the intent of the legislator to exclude disputes in relation to administrative contracts from the domain of arbitrable disputes. It is unclear therefore how the Civil Procedure Code providing for inarbitrability of disputes arising from administrative contracts could be given effect without affecting the Civil Code that provides for arbitrability of contractual disputes. The confusion surrounding the procedural code and the apparent contradiction between the two codes on the question of arbitrability of disputes relating to administrative contracts invites extensive debate" (Abera, 2005; Tecle Hagos, 2009)

Tecle Hagos (2009) states that construction contracts for public works are part of the administrative contracts legal regime in Ethiopia and those administrative contracts, with all the privileges bestowed upon them, do exist in Ethiopia. It should also be underlined that more often than not administrative bodies do qualify their contracts as an administrative contract. It should also be borne in mind that Art. 315(2) do prohibit the arbitrability of disputes arising from administrative contracts. A sacrosanct policy consideration is manifestly expressed under Art.315(2) that invests any litigation on disputes arising from administrative contracts exclusively in the sovereign -appointed judges and expressly deprives party-appointed arbitrators of same!

Currently, disputes arising out of public works construction contracts in Ethiopia are being arbitrated, domestically and internationally, because of any of the following three grounds (Tecle Hagos, 2009). The case in point is the Ethiopian Roads Authority, ERA; a major public employer which settled some of its disputes in international arbitration.

a. The use of the funding agencies' standard bidding documents when and if they are approved by the legislature as concomitant conditions of grants and loans for projects;
b. The judges' passivity in raising, *sua motu*, the defense of nonarbitrability of disputes arising from the public works construction contracts; and,
c. The various legislative enactments (otherwise known as 'enabling clauses') entitling the administrative bodies to settle their disputes out of court.

4.6. Summary of Literature Review

The literature review was conducted in such a way to provide an in depth contextual and conceptual understanding on recent developments of the Ethiopian construction industry, its management aspects, contracts in general and construction contracts in particular, contract documents with due emphasis on the problems of conditions of contract and their usage in the industry.

The first part of the literature review is designing the contextual framework which encompasses the target of the research context i.e. conditions of contract problems and their usage applicable to contract construction with a special emphasis on road and building projects. It helped to guide in shaping the research end target in a nut shell.

The detailed literature review was conducted in two stages. The first part of the basic literature review introduces the general idea depicting the detailed attributes of the construction industry and

its contracts as a conceptual framework. Once having a clear understanding of the nature of construction contracts and contract documents, the second part dealing with conditions of contract is carried out thoroughly as a thematic literature review. In doing so, conditions of contract/contract forms in use locally and internationally are dealt as a theme of the research. Having a clear vision on domestic and international contract forms, the literature further focused on the identified causes and effects of provisions of contract forms/conditions of contract problems in section 4.4 as a theme issues fairly described under sub headings 4.4.1 to 4.4.6 which are the basis to establish the questionnaire supplemented with the previous parts.

Through the in depth literature review processes from the contextual frame work to the thematic literature review, the researcher realized the problems of conditions of contract and their poor usage has serious quality, cost and time implications in construction projects. It is also the reflection of the poor performance of the domestic construction industry and in fact the practices of construction management especially contract administration; hence, the problems substantiated with the literature review in line with the questionnaire will assess the current state of conditions of contract problems and contract administration practices in the domestic scene in such a way to draw conclusions and forward recommendations for the betterment of the local construction industry in the future.

5. RESEARCH DESIGN AND METHODOLOGY

5.1. General

Progress in almost every field of science depends on the contributions made by systematic research; thus research is often viewed as the cornerstone of scientific progress. Broadly defined, the purpose of research is to answer questions and acquire new knowledge. Research is the primary tool used in virtually all areas of science to expand the frontiers of knowledge (Marczyk et al., 2005). Kumar (1999) defines research as a process, that is undertaken within a frame work of set of philosophies, uses procedures, methods and techniques that have been tested for their validity and reliability; and designed to be unbiased and objective. Research can either be a deductive, theory based to prove or disprove the already existing knowledge; inductive, a problem initiated for theory/knowledge contribution; or a mixed approach to research.

Research methodology is a way to systematically solve the research problem and research methodology shall identify the research basis, research hypothesis or questions, research design and research analysis (Kothari (2004) quoted in Abraham (2008)).

According to Marczyk et al. (2005) citing Kazdin (1992, 2003a), research methodology and research design are sometimes incorrectly used interchangeably, they are distinct concepts with well-defined and circumscribed meanings. Research methodology refers to the principles, procedures, and practices that govern research, whereas research design refers to the plan used to examine the question of interest. “Methodology” should be thought of as encompassing the entire process of conducting research (i.e., planning and conducting the research study, drawing conclusions, and disseminating the findings). By contrast, “research design” refers to the many ways in which research can be conducted to answer the question being asked.

Accordingly this chapter covers the research methodology followed to achieve the ultimate goal of the research to draw up findings in a way to make conclusions and to forward recommendations.

5.2. Research Approach

The research started as two staged study. Problem identification has been done through a preliminary unstructured literature review and informal discussion with colleagues and professionals in the sector. As an output of this initial phase Assessment of conditions of contract problems in Ethiopian construction industry was identified as a proposed problem to be studied where research questions were developed in lieu of investigating this problem.

Contextual and conceptual literature reviews have been done once the problem is identified to have an in depth understanding on the research topic. The review includes books, journal articles, internet sources and archival document search such as issues related to termination of projects in ERA, AACRA and CDSC. The document search was mainly intended to collect how termination issues were handled practically and to check their compliance as provided in the contract provisions.

A suitable research design and methodology was considered, once the specific question to be answered has determined, operationalized the variables and research question into a clear measurable hypothesis. This study is therefore a mixed research which adopted both qualitative and quantitative research. It should be noted that a mixed approach of quantitative and qualitative is possible (Kumar, 1999). Bazeley (2004) states mixed methods research has regained not just acceptability, but popularity, with a significant number of studies arguing its virtues in terms of greater understanding and/or validation of results. Working with mixed methods raises a range of issues above and beyond those encountered within a particular methodology. Bryman (2006) states that research that involves the integration of quantitative and qualitative research has become increasingly common in recent years.

Qualitative and quantitative approaches have been distinguished (and thereby defined) on the basis of the type of data used (textual or numeric; structured or unstructured), the logic employed (inductive or deductive), the type of investigation (exploratory or confirmatory), the method of analysis (interpretive or statistical), the approach to explanation (variance theory or process theory), and for some, on the basis of the presumed underlying paradigm (positivist or interpretive/critical; rationalistic or naturalistic) (Bazeley, 2004). Naoum (1998) cited in Kasiem (2008) also states the division of qualitative and quantitative researches 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.

According to Sale et al. (2002) the arguments for integrating qualitative and quantitative approaches are the reasons given for legitimately combining them. Two reasons for this are

prevalent in the literature. The first is to achieve cross-validation or triangulation – combining two or more theories or sources of data to study the same phenomenon in order to gain a more complete understanding of it. The second is to achieve complementary results by using the strengths of one method to enhance the other. The former position maintains that research methods are interdependent (combinant); the latter, that they are independent (additive). Although these two reasons are often used interchangeably in the literature, it is important to make a distinction between them.

To this effect, a questionnaire was designed following an in-depth contextual and conceptual review of literature, and distributed to randomly selected stakeholders including domestic contractors, consultants and employers actively participating in the local construction industry. To supplement the questionnaire, a semi structured interview was conducted involving senior and prominent professionals in the field. Checking, sorting and coding of gathered data has been done for the selected method of analysis. It enabled to obtain the result followed by comprehensive discussions in order to draw a conclusion and to forward recommendations based on the finding of the research.

5.3. Limitations

A study of conditions of contract problems is a complex undertaking owing to its comprehensive and vast nature. Besides, the legal implication attributed to the actions of each stakeholder calls the attention of those in the field of construction management in general and contract administration in particular which is less in the Ethiopian context.

The research is focused on the traditional delivery system which is known as DBB. In doing so the targeted stakeholders for the research include the main players in construction contracts i.e. employer, engineer/consultant and contractors that actively participate in the domestic construction industry.

While distributing the questionnaire, professional institutions and associations were among the stakeholders assumed to be included. However, professionals in this category were not sufficiently in a position to complete and return the questionnaire. To fill this gap, questionnaires were sent to senior Ethiopian professionals working in international financiers such as the World Bank and ADB representatives in Addis Ababa where only one respondent out of five managed to return a completed questionnaire.

Foreign consultants and contractors in the local construction industry were not included in the questionnaire survey as it involves domestic legal aspects associated in construction contracts.

The major limitation of the study was the lack of willingness of professionals to complete and return the questionnaire which took too long than expected. A series of briefings on the questionnaire was conducted to motivate respondents in completing the questionnaire as its findings are for academic purpose.

The background of the researcher, a Civil Engineer by profession, may be considered as limitation to give some reflections and opinions on complex legal issues. However, the writer tried his best to avoid such limitations by including a construction lawyer as an interviewee for the research work.

5.4. Data Sources and Data Collection

Nurul (2000) and Brukley et al. (1976) both quoted in Tadesse (2009) grouped the methodology of data collections under four headings, namely opinion research, empirical research, archival research and analytical research. According to Brukley each method has its own strength and limitation none of the above methods is superior that of the other. The choice which one to use is decided based on the research/survey objective, the nature of the information and resources available (Jobber, 1991 quoted in Nurul, 2001 cited in Tadesse (2009)).

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 renowned civil engineering journals those especially in project and construction management, internet sources, as well as reviewing related archival documents (such as termination issues) on contractual issues of various construction 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.

5.4.1. 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 (Kasiem, 2008). 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 questionnaire survey respondents were randomly selected from employer's organization, contractors and consultants who have been involved in the domestic construction sector. The questionnaire which consists of both open and close ended question was distributed among these professionals.

5.4.2. 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. 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 seven reputed professionals of the sector. From these interviewed professionals, three of them are from contractor side, the three others are from consultant sides and the remaining one is a construction lawyer well versed with conditions of contract to cover the legal aspect of contract forms.

5.4.3. Desk Study

Desk studies on termination 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 (Naoum (1998) cited in Kasiem (2008)). For this reason, desk studies under this research are used to supplement the findings obtained through questionnaire and interview in a way to bridge the gulf, hence termination cases of two road projects and one building project is covered.

5.4.4. Secondary Data Sources

In addition to books, journals and internet sources, archival document, and correspondences have been reviewed to understand the background of contract provisions, problems and practices in the construction sector. 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.

5.5. Method of Analysis

In this research both descriptive and inferential statistical method has been used for analysis of data collected from various sources. For summarizing of the collected data and to determine the number of responses belonging to each category, frequency tables by SPSS 17 have been used together with Excel frequency analysis for a cross check for the reliability of analysis output. In addition, SPSS 17 is also used to investigate the level of association (agreement) in response among any pairs of respondent groups by cross-tabulation of their responses.

The test of association (agreement) is done item by item so that no any response and respondent variability is missed during the analysis stage as the survey questions measure different issues and even in different response scales. For a nonparametric measures of association for ordered (i.e., ordinal) variables, there are several choices. Kendall's tau-b is used for this research for 3*3 or more variables. The results are statistically significant or that they are significant at the 0.05 level or that $\rho \leq 0.05$; hence, the null hypothesis of no difference or no relationship is rejected. The Chi-Square tests table is also used to determine if there is a statistically significant relationship between two dichotomous or nominal variables (Morgan, 2004).

The research hypothesis (H_R) in the analysis is: 'there are significant association in perception of conditions of contract problems among employers, consultants and contractors.' and the null hypothesis (H_O) is: 'there is no association in perception between two categories of respondents with regard to conditions of contract problems.'

6. ANALYSIS OF FINDINGS

The results from the desk study; interview and questionnaire survey will be presented, interpreted and analyzed in detail in this part. In light of the results obtained from the analysis limitations of the local contract forms will be reviewed. Finally discussions will be made on the basis of the findings and limitations observed.

6.1. Questionnaire Response and Quality of Respondents

6.1.1. Questionnaire Response Rate

The study has focused on the major construction stakeholders participating in the local construction industry. Organizations were selected on a cluster basis on their category i.e. Consulting firms of category III and above; domestic contractors who are of class II and above where their list is obtained from MoUDC a public regulatory body in charge of registering and licensing construction companies and consulting firms; and major public employers such as ERA & AACRA together with a public consultant CDSCo. The survey included organizations mainly involved in building and road projects. In addition, the survey also included firms carry out airport (Addis Ababa Bole International Airport) and water works construction projects for the case of fulfillment to depict the prevailing situation of the construction industry. The survey included randomly selected organizations from the cluster category where the questionnaire was distributed to professionals directly involved in contract administration.

Out of the 60 questionnaires: 18 were distributed for Employers, 20 for consultants, 17 for contractors and 5 for senior Ethiopian engineers working in international financiers such as the World Bank and ADB regional offices in Addis Ababa. The survey was conducted between 20 April 2011 and 15 June 2011. Out of the distributed 60 questionnaire, 43 professionals responded to the survey which is 15(83%), 14(70%), 13(77%), 1(20%) from Employer, Consultants, Contractors, and International financiers respectively.

Before starting the analysis, the returned questionnaires were checked for their reliability. Two questionnaires from Employers and one questionnaire from contractors were rejected for the case of incompleteness; hence, out of the 43 questionnaires 40 were found to be suitable for data analysis. This yields a response rate of 66.67%. The response from the international financiers was not considered during analysis as it is not plausible to analyze a single response alone unlike other respondent groups. Besides, questionnaire responses were coded with their respondent groups as E

for the Employer, CONS for Consultants and CONT for Contractors for the purpose of analysis to differentiate among them so that the analysis underway smoothly. The details of respondent responses and its rate are summarized in Table 6.1.

Table 6.1: Questionnaire survey response rates

Respondents Category	Questionnaires		Percentage	Valid Responses	Percentage
	Distributed	Returned			
Employers	18	15	83	13	72
Consultants	20	14	70	14	70
Contractors	17	13	77	12	71
International Financiers	5	1	20	1	20
Total	**60**	**43**	**71.67**	**40**	**66.67**

It is evident from the table that employers (35% of returned) have the highest percentage followed by consultants (34%). Contractor have the least response rate (30%) compared to employers and consultants. The response from international financiers is almost negligible to be considered in the analysis. The percentages of returned questionnaires were shown in the figure below.

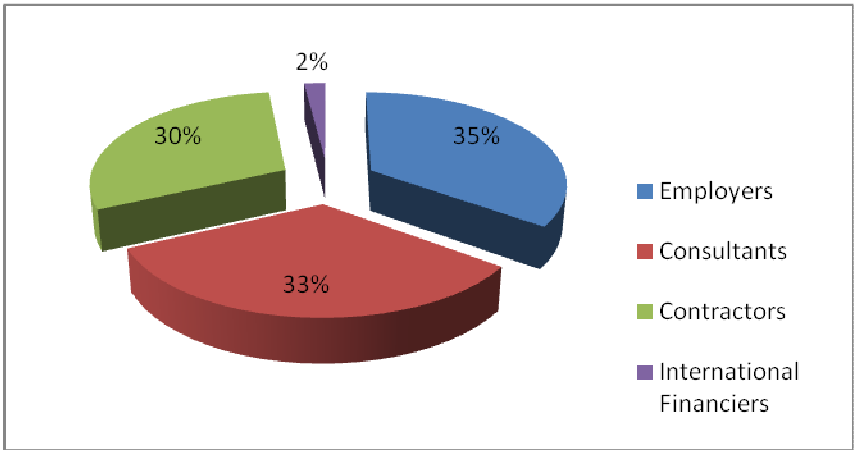

Figure 5-1*: Returned questionnaire response*

6.1.2. Quality of Respondents

Professionals directly involved in contract administration activities were considered for questionnaire survey. 54% of professionals are from organizations of more than 20 years of establishment while 23% and 21% of them are from organizations of more than 15 and 10 years of experience respectively. Accordingly 53.5% and 37.2% of them have more than ten years

experience in construction projects and contract administration respectively. Tables 6.2 and 6.3 illustrate respondent experiences in construction projects and contract administration.

Table 6.2: Experience of respondents in construction projects

Experience (yrs.)	Employer		Consultant		Contractor		Int'l financier		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
<5	5	33	1	7	2	15	-	-	**8**	**18.6**
5-10	3	20	5	36	4	31	-	-	**12**	**27.9**
>10	7	47	8	57	7	54	1	100	**23**	**53.5**
Total									**43**	**100**

Table 6.3: Experience of respondents in contract administration

Experience (yrs.)	Employer		Consultant		Contractor		Int'l Financier		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
<5	9	60	4	28	4	31	-	-	**17**	**39.5**
5-10	1	7	5	36	4	31	-	-	**10**	**23.3**
>10	5	33	5	36	5	38	1	100	**16**	**37.2**
Total									**43**	**100**

Table 6.4: Organization's Experience and year of establishment

Establishment (yrs.)	Employer	Consultant	Contractor	Int'l Financier	Total
<5	-	-	-	-	**-**
5-10	-	-	1	-	**1**
11-15	1	7	1	-	**9**
16-20	-	2	8	-	**10**
>20	14	5	3	1	**23**
Total	**15**	**14**	**13**	**1**	**43**

Even though the majority of Employers organization have more than 20 years of establishment, a higher percentage (33%) of professionals directly involved in contract management have less than five years of experience compared to construction (15%) and consulting (7%) firms. However, 60.5 % of professionals over all have more than five years experience in contract administration and construction supervision. It is believed that the result from the survey is relatively accurate and

reflects the prevailing actual situation in the domestic construction industry with respect to the focused contract provisions on the standard condition of contract together with its implications. Therefore, the result obtained from the survey is endowed with a wealth of knowledge and expert information that can help to draw reliable conclusions and recommendations.

6.2. Competence of Domestic Construction Industry

To deal with the competence of domestic construction industry, one needs to have a standard or parameter as a basis to compare with. However, it can be seen in respect of the three critical parameters: cost, time and quality. It is apparent that to compare the domestic construction industry with best international practices is far reaching.

In this part, the results obtained on issues such as: performance of the domestic construction industry; construction management practices in general and contract administration in particular; commonly used contract forms in the local construction industry; and awareness of parties in using contract forms are analyzed.

6.2.1. Performance of the Ethiopian Construction Industry

The majority of contractors (58%) together with 38% and 36% of employers and consultants respectively, believe performance of the domestic construction industry is good. The contractors perception may arise from their direct engagement on the works in which they believe they are fulfilling in executing the works as prescribed in the contract. Surprisingly, more contractors (42%) compared to employers and consultants (38% and 36% respectively) feel the local construction industry is performing badly. This can be viewed from the prevailing scenario of the sector which is uploaded by complains from stakeholders. Two consultant professionals interviewed on this issue also agree that the domestic construction industry is not performing as expected from it. Almost a quarter of employers (24%) and 14% of consultants consider the performance of the sector as fair. Three professionals from contractors and one from consultants interviewed also believe the local construction sector is performing fairly. Few respondents from consultants (14%) label the sector very bad.

Hypothesized factors were forwarded for respondents as possible reasons for the poor performance of the domestic construction sector. The majority of respondents (46% E, 43% CONS and 42% CONT) believe scarcity of resources including capital, material and equipment as a major contributing factors. Lack of competent and experienced professionals in the field is considered a

second factor by respondents (46% E, 43% CONS and 33% CONT). Inappropriate and malpractices in the industry (fraud, corruption etc.) is also revealed by considerable respondents (42% CONT, 38% E and 36% CONS) behind the reason for the bad performance. Even though there are regulations to guide the domestic construction sector, absence of clear policy and regulations to properly guide the industry is critical compared to the above two reasons. However, only few respondents (29% CONS, 25% CONT and 15% E) consider it as a possible reason.

The majority of professionals interviewed agree on the associated problems that hinder the performance of local construction sector such as: continuous price escalation of materials, labor and equipment which is shared by one respondent from employers. All interviewee and one respondent from contractors suggest problems attributed to the prevailing major stakeholders' adversarial relation and mistrust also contribute a great deal to the bad performance. All interviewee from contractors and one respondent from consultants indicate that the continuous price hike over the assumed escalation, limited availability of equipment spare parts, fuel, electric power, obsolete construction equipment and machinery coupled with few equipment rental facilities in the sector are critical short falls. All interviewee from consultants and another survey respondent from consultants stressed poor implementation of policy and regulation by regulatory public bodies should not be overlooked as a contributing factor towards the inefficient performance of the domestic construction sector.

6.2.2. Construction Management Practices in Ethiopia

As a profession, construction management is at its infant stage in Ethiopia. Proper administration of construction contracts is vital to optimize cost, time and quality of a construction project. A little over a three quarter of contractors (77%) and considerable majority of consultants and employers (64% and 54% respectively) feel construction management practices are incompetent to achieve the desired goals of cost, time and quality parameters. The highest dissatisfaction showed by contractors may be emanated from their adversarial relationship with consultants/engineers in charge of contract administration and supervision. The response of employers and consultants also reveal that, there is still a long way to come up with a competent construction management practices for the betterment of the construction sector. On the other hand, a little less than half of employers (46%), one third of consultants (36%) and few contractors (8%) consider construction management practice is fairly competent. All interviewee professionals are in agreement as the profession is fairly competent owing to its infant stage of perceptions in the field. Only 15% of

contractors indicated construction management practices are competent contrary to the highest percentage of contractors who feel otherwise.

The majority of contractor and consultant respondents (67% CONT and 57% CONS respectively) and 46% of employers stressed lack of professional, technical and managerial skill is the main reason for the incompetence of construction management practices. Limited professionals/firms for too many construction projects and negligence to provide the service as per the specified conditions are also equally agreed by respondents (43% CONS, 36% CONT and 31% E) for the incompetency of such practices. It has to be noted that all interviewee also acknowledge these factors that hinder the profession.

One contractor respondent suggested: lack of adequate resource, long chain for decisions on matters and design revision as a major draw back of the profession. On the other hand, three consultant respondents stressed: lack of staged career development; lack of qualitative educational requirements; low budget allocated for the service; and theoretical knowledge of professionals whereby they do not have hands-on experience in most cases as the root cause for incompatibility of construction management to meet acceptable standard at the international level.

6.2.3. Local Contract Administration Practices

The majority of contractors and consultants (67% and 57% respectively) with 42% of employers, showed their disagreement to the point that 'local contract administration meets the acceptable standard.' It is the manifestation of the current state of the domestic construction sector. Considerable respondents of consultants and employers (43% and 42% respectively) and 25% of contractors agree on the issue. Few employers (8%) strongly agree while equal percentages of contractors strongly disagree on the proposition.

Some reasons were indicated from the hypothesized factors forwarded for respondents. Accordingly, problems attributed to the contractor are agreed by the majority of contractors (67%), 38% and 29% of employers and consultants respectively. According to all interviewee professionals, contractors do not even look in to contract documents let alone to understand them except the BOQ. Besides, the bidding documents offered by contractors are done by par timer professionals who are not available to execute the works accordingly once the contractor is awarded the contract. This situation is showed to have been also a problem of consultants. Half of contractors, with 36% consultants and 31% employers feel the problem of contract administration

is attributed to the employer and consultants. Lack of timely response for contractors request, lack of execution within the contract provisions, too much influence on contractors etc. among other things were singled out by the majority of interviewee. Few respondents (21% CONS, 17% CONT and 8% E) believe the contract itself and the contract forms used are also hindering contract administration practices locally. All the three consultants and one contractor interviewee believe contract documents are not clear. In addition, mostly designs are incomplete which calls for latter design revision and changes.

6.2.4. Conditions of Contract used in the Domestic Construction Industry

Domestic contract forms have been used since 1959 as stated in section 4.2.3.1. Currently a fourth domestic contract form is put in place for use especially for those public ministries and offices financed from federal government budget. However, international contract forms especially FIDIC has been intensively used for the last two decades on major infrastructure projects such as road projects. The survey tried to show the degree of usage of local contract forms in the Ethiopian construction industry vis-à-vis different FIDIC red book editions. For this purpose, three subsequent editions (FIDIC 4th edition, FIDIC 1999 and FIDIC 2006 MDB) were forwarded with MoWUD 1994 and PPA 2006 which are currently applicable locally.

According to the survey result, 69% of employers, around a third portion of consultants and contractors (36% and 33% respectively) use FIDIC 1987 (4th edition). The same percentage of employers and few contractors and consultants (17% and 14% respectively) use FIDIC 2006 MDB harmonized edition. FIDIC 1999 a.k.a 20 clauses is employed by 38%, 29% and 8% of employers, consultants and contractors respectively. The highest preference of employers towards FIDIC 1987 is its wide acceptance world wide. FIDIC 2006 MDB harmonized edition is used especially in public projects mainly compared to FIDIC 1999 as many international donors, financial institutions and banks have ratified jointly to use it for projects financed by them contrary to their previous stringent requirements to use their individual guidelines and conditions of contract.

When it comes to the local contract forms, the majority of consultants and contractors (64% and 58% respectively) and 46% of employers use MoWUD 1994. PPA 2006 is used by the vast majority of contractors (92%) and few consultants and employers (21% and 15% respectively). The result showed that the use of MoWUD 1994 is limited to private employers in recent years due to the introduction of PPA contract form in 2006. The limited use of FIDIC contract forms by

domestic contractors depicts their limited capacity to take part and compete in international projects undertaken by the government. However, 92% usage of PPA 2006 contract form by contractors also proves that the government is still the major source of construction works. Besides, one consultant respondent suggested in consideration of exaggerated shortfalls of local contract forms, indicating to look into introducing tripartite responsibility for construction contracts.

6.2.5. Stakeholders Level of Awareness to use Contract Forms

The employers' level of awareness and understanding of using contract forms is rated as very good by 23% of employer and 15% of consultants. Besides, it is rated good by 54% employers, 21% consultants and 42% contractors. It is rated fair by 15%, 43% and 42% of employers, consultants and contractors respectively. However, 8%, 21% and 16% of employers, consultants and contractors respectively believe the employers' understanding to use contract forms is poor.

When it comes to consultants' level of awareness, fewer respondents (29% CONS, 17% CONT and 16% E) believe it is very good. 50% of consultant and contractor respondents and 38% of employers state consultants' understanding to contract forms is good. Further more, 38% of employers, 21% of consultants and 25% of contractors respectively rated fair. On the other hand, some respondents of employers and contractors (8%) consider consultants' awareness is poor.

The contractors' level of awareness is relatively perceived as fair by the majority of employers (62%), half of consultants and 25% of contractors. The majority of contractors (58%), 29% of consultants and 23% of employers are in favor of good understanding. Few respondents (15% E, 14% CONS and 17% CONT) consider contractors awareness and understanding of contract forms is poor where as only 7% of consultants feel very good.

The survey result showed that, consultants have a better understanding of contract forms compared to employers and contractors. Employers on the other hand understand contract forms in a better way than contractors. Most interviewee stress that contractors are not aware of the full documents that makes up the contract. What they are interested is making money and to that effect they only concentrate on the BOQ. One interviewee of consultant professional further commented that stakeholder's awareness is limited on contract forms. Stakeholders have no or little knowledge of legal aspects of contracts, especially related to the Civil Code.

Respondents were asked to indicate their choice on measures to improve the level of understanding of contract forms. As a result, the majority of respondents (77% E, 71% CONS and 67% CONT) showed agreement that creating awareness using peer discussion and experience sharing among professionals as a vital step followed by organizing forum between major stakeholders, public authorities, professional originations, and academic institutions for the betterment of the industry (75% CONT, 71% CONS and 62% E). In addition to the above measures, conducting on job training in individual firms/projects also agreed by many respondents (71% CONS, 62% E and 58% CONT).

Two employer respondents and one contractor respondent suggested formal short term trainings. Besides, one respondent from employer commented the need for more proactive involvement of professional associations. Another employer respondent stressed the importance to assign the right person in contract administration and encouraging specialization of disciplines. One respondent from contractors comment the need to implement the contract strictly so that the parties may give attention to the issues.

6.3. Readability and Interpretation of Contract Provisions

Readability is the degree of understandability of an idea presented in a sentence. In some literatures, readability is referred as intelligibility to mean how concise a sentence is to convey its idea clearly to a reader. Interpretation refers to clarification of ambiguous and conflicting points in a sentence.

6.3.1. Clarity of Concepts and Ideas in Contract Provisions

The majority of respondent groups 75%, 64% and 54% of contractors, consultants and employers respectively rated the provisions in contract forms as good in terms of clarity and their understandability. It is rated fair by 29%, 23% and 17% of consultants, employers and contractors respectively. Few contractors (8%) believe the understandability of ideas of contract provisions in contract forms is poor. 23% of employer and 7 % of consultants believe contract provisions are best understandable rating it very good. Many professionals believe the ideas embodied in contract forms are full of legal jargons and complex concepts. However, one consultant interviewee believes local contract forms are literally readable. A contractor interviewee argues contract forms of local origin are unclear and not full. The reason forwarded is that, local contract forms create ambiguities as they are copied in a distorted manner from foreign contract forms.

To improve contract provisions to convey their intention in full respondents were asked to rate among the hypothesized options. Accordingly, referring the issue to the party publishing the contract forms (36% CONS, 17% CONT and 15% E) and providing glossary for contract forms (25% CONT, 23% E and 14% CONS) are indicated an important measures. Only 8% of employers and contractors consider the matter as a sole responsibility of the Engineer.

One respondent each from employers and contractors stressed the need of commentary and the importance of publishing user's guide to contract forms especially for MoWUD 1994 and PPA 2006. On the other hand, writing conditions of contract in simple language is a solution according to one of the employers. Besides, another employer believes referring contract issues and interpretation to firms/professionals renowned on the matter. One respondent from the employer further commented some provisions in PPA 2006 are not practicable in most cases, hence, revision is required.

6.3.2. Phraseology and Conciseness of Local Contract Forms Compared to FIDIC

Vast majority of employers (75%) and half of consultants with 33% of contractors consider the phraseology and conciseness of domestic contract forms as fairly compatible compared to commonly used FIDIC contract forms. Almost a quarter of consultants and contractors (29% and 25% respectively) and few employers (8%) feel local contract forms are compatible with international ones. On the contrary, a considerable portion of contractors (42%), 21% of consultants and 17% of employers believe it is incompatible with FIDIC contract forms.

Some measures to be taken to balance the incompatibility of domestic contract forms are suggested in the hypothesized factors are considered by respondents as follows:

- Revise the current contract forms to address recent developments in the field (21% CONS, 15% E and 8% CONT)
- Use FIDIC contract forms (17% CONT, 8% E and 7% CONS)
- Apply current contract forms by providing clarifications in special conditions (21% CONS and 17% CONT)

Two respondents each from employers and consultants suggest the revision of domestic contract forms while another respondent from the employer believes there is no major incompatibility as domestic conditions were basically adapted from FIDIC contract forms.

6.3.3. Who Interpret Contracts?

When ambiguity encountered in contract provisions, there is a need for interpretation to come up with agreements on such matters. There are many types and rules of interpretation, to deal them here will be out of the scope of this thesis. However, interpretation needs legal knowledge and support from the applicable law. In Ethiopia the applicable law is the Civil Code where construction contract is regulated by Art. 1676 (applicable to contract in general), Art. 2610-2631 and Art. 3019-3040 (applicable to private construction contracts) and Art. 3131-3146 (applicable to administrative contracts). In Anglo-Saxon common laws interpretation is done objectively in most cases i.e. mainly according to the legal conviction of the community.

In relation to interpretation of contracts, the majority of employers and consultants (69% and 64% respectively) and 33% of contractors believe such matters shall be referred to the Engineer. According to 15% of employers and consultants each and 25% of contractors, it shall be referred to DAB. On the contrary, 7% and 33% of consultants and contractors respectively believe it shall be submitted for arbitration. 16% of the employers consider referring it to DAB and Arbitration. Few (7%) consultants suggest referring the issue to the source of the contract form as a solution. Besides, 9% of contractors suggest referring the issue to regulatory bodies. To take the issue further, 7% of the consultants believe interpretation need to be referred to the court; however, both employers and contractors are against it.

6.3.4. Experienced Contractor and Substantial Completion

It is explained in previous sections that contract forms are loaded with complex legal jargons difficult to understand. Some words are too subjective and given different interpretation from person to person. The case in point are the words experienced contractor and substantial completion.

The level of clarity of terms such as ‘Experienced Contractor’ and ‘Substantial Completion’ in contract forms is considered very good by 15%, 7% and 25% of employers, consultants and contractors respectively. Half of contractors, 31% of employers and 29% consultants rated the clarity of these words as good. It is rated fair by 39%, 43% and 17% of employers, consultants and contractors respectively. Besides, 21% consultants, 15% employers and 8% contractors believe the clarity of such terms is poor.

Experienced contractor is stated in Sub-clause 12.2 of FIDIC 1987, Sub-clauses 1.1 and 4.7 of FIDIC 1999 and FIDIC 2006 MDB. In these contract forms, the concept of 'experienced contractor' is related to foreseeablility i.e. ability to forecast eventualities associated to risks. Except labeled in these contract forms as unforeseeable conditions by an experienced contractor, he is assumed to incorporate risks other than these conditions while entering a contract.

Substantial completion is another contested idea in contract forms. Sub-clause 48.3 of FIDIC 1987 states attributable issues of substantial completion without any clarification the parts of the permanent works that need to be completed to qualify for a work substantially completed. Recent editions of FIDIC (1999 and 2006 MDB edition) distanced from the term 'substantial completion' in a move to minimize ambiguities from the very subjective nature of the word. The subjectivity of the issue creates a loop hole for further claims and disputes. In the UK, a work is substantially completed if there are no patent defects where latent defects can be rectified in the defects liability period. In some literatures a work is substantially completed in relation to its occupancy i.e. if it is habitable. However, the work occupied and habitable does not necessarily mean it is substantially completed. All interviewee agreed the need to quantify the major components of works to be completed for the Works to be substantially completed. To avoid such confusions, ERA listed the major integral parts of a road project that need to be completed for a work to qualify for substantial completion in Sub-clause 80.1 of CPA for its projects.

Some of the suggestions to enhance clarity of these terms were forwarded by respondents. Two respondents each from employers and contractors believe describing these terms in more quantifiable terms so that it will be measurable to avoid subjectivity. One contractor comment using understandable words may help to minimize the problem. One consultant believes work items can be clearly listed in relation to substantial completion, regarding experienced contractor it may not require the use of the term at all. One consultant suggests elaborating in detail the intents implied in CPA for each project is of a great help.

6.3.5. Sufficiency of Interpretation Provisions in Contract Forms

Interpretation provisions in many conditions of contract include: the definitional provisions (sub-clause 1.1 of MoWUD 1994, PPA 2006 FIDIC 1987, FIDIC 1999 and FIDIC 2006 MDB); interpretation guidance (sub-clause 1.2 of MoWUD 1994, FIDIC 1999 and FIDIC 2006 MDB; sub-clause 1.3 and 1.4 of FIDIC 1987; sub-clause 2.1 and 2.2 of PPA 2006); and the order of

priority of contract documents that make up the construction contract. Sub-clause 2.3 of PPA 2006, Sub-clause 5.2 of FIDIC 1987, Sub-clause 1.5 of both FIDIC 1999 and FIDIC 2006 MDB only state the priority of documents in case of ambiguities and discrepancies after stating both documents are mutually explanatory. However, when the contract is silent and come across with conflicting and ambiguous ideas interpretation of such matters is vital.

In light of this, half of the employers and 36% of consultants and contractors each believe provisions related to interpretation in contract forms are sufficient. On the contrary, the majority of consultants and contractors each (64%) and half of employers believe provisions related to interpretation in contract forms are insufficient.

6.4. Powers, Duties and Responsibilities of the Engineer

Even though not party to a contract, the Engineer is endowed with a range of power to give various instructions, certify payment, determine claims. In recent developments of contract forms the independence of the engineer is under scrutiny. Some of the problems of contract provisions in relation to the engineers' power and duty are analyzed below.

6.4.1. Limit of Engineer's Power

The Engineer is assumed impartial according to Sub-clause 2.6 of FIDIC 1987. Sub-clause 2.1 of this form states the duties of the engineer and expressly states in paragraph (b) as such authorities need prior approval to be stated in the CPA. However, it further states any requisite approval shall be deemed to have been given by the employer which gives a considerable freedom to the Engineer to carry out his duties. These authorities are further clarified in Sub-clause 3.1 of FIDIC 1999 and FIDIC 2006 MDB edition in paragraphs (a, b and c). Contrary to the impartiality of the Engineer, Clause 4 of PPA 2006 expressly states that the engineer will decide on contractual matters representing the Employer. This provision fully makes the engineer as the Employer's agent. Therefore, credibility of the Engineer's decision on claims is questionable from the contractor side.

The majority of respondents (72% CONS, 69% E, and 67% CONT) showed their disagreement on the effect of recent trends limiting the power of the engineer to act before securing a prior approval from the employer. On the contrary, 23%, 21% and 17% of employers, consultants and contractors respectively showed their agreement to limit engineer's power. Besides, 7% of consultants and 8%

of contractors strongly agree on the issue. Only 8% of the employer and contractor each strongly disagree on the effect of limiting the engineer's power.

One respondent from the contractor suggest that the engineer should be authorized to decide by himself so that the work progresses smoothly. One of the consultants responds in the contrary stating that the engineer shouldn't be left to roam free; hence, the engineer need to perform under control. In such cases a 'Management Consultant' can supervise consultants. Three respondents from the employer commented that except giving approval on major issues the employer need to rely on the engineer. On the other hand, one consultant suggests on the position that one could have in respect of this issue would depend upon the capabilities of the employer.

6.4.2. The Engineer as Employer's Agent

It is explained in the above section 6.4.1 that the engineer was assumed impartial in previous contract forms such as FIDIC 1987 and MoWUD 1994. However, in recent FIDIC 1999 and PPA 2006 expressly state the engineer as Employer's agent. On the other hand the same engineer is expected to determine on claims between the employer and contractor impartially. The majority of consultants (57%), a little below half of employers and contractors (46% and 45% respectively) showed their agreement as it is humanly possible to be an agent and impartial at the same time. All interviewee also support that it may not be a problem as impartial third party (DRE/DRB/DAB) is introduced to handle claims and disputes. A little over half of contractors and employers (55% and 54%) and 43% of consultants disagree as it is impossible to entertain agency and impartiality simultaneously.

A construction lawyer interviewed commented that the engineer is not expected both under the law and the contract to be impartial. The engineer is expected to determine or decide on contractual issues under FIDIC or PPA contract forms professionally. The notion of impartiality, at least, suggests being neutral to the parties involved and having no conflict of interest. However, the engineer is neutral neither to the employer nor to the contractor as he is not devoid of any conflict of interest. It has to be remembered that the engineer is serving the client; hence, expects something from the completion of the project. In some cases he is the designer of the project himself. Impartiality, in its strict sense, is expected from an arbitrator or a judge at the court of law, in decision making process. The engineer is neither an arbitrator nor a judge where he is simply a professional agent to the client.

Suggestions to balance and compromise agency with impartiality were also forwarded by respondents. Three respondents from the employer, four respondents from the consultant and two respondents from the contractor believe in referring the duty to an independent third party as the case can be further reviewed by DRE/DRB/DAB or arbitrator; hence, it may not be a critical problem. Two respondents from the consultant indicate that the engineer should adhere to the code of ethics and professionalism. One respondent from the contractor commented that the contract should provide freedom for the engineer so that he will be impartial for both parties. Impartiality of a person depends on his integrity and competence. One contractor revealed that as long as the engineer adopts/follow the contract terms between the parties, it is possible to be impartial in his judgment. Besides, one respondent from the consultant believe as long as the engineer is made accountable, it is possible to assume impartiality while dealing with claims.

6.4.3. Foreign Contractors and Consultants

Sub-clause 2.1 (c) of FIDIC 1987 expressly state the engineer have no authority to relieve the contractor of any of his obligation in the contract. In some cases, both the contractor and the engineer are foreign; hence, the engineer might be reluctant and waive some obligations of the contractor against what the contract stipulates. Few (18%) contractors strongly agree on the proposition. The majority of contractors (64%), half of consultants and 31% of employers agree to the point. The majority of employers (54%), 33% of consultants and 18% of contractors disagree on the issue while few of consultants and employers (17% and 15% respectively) strongly disagree on the proposition.

Control mechanisms have been also proposed by respondents to minimize the problem. Three respondents from the employer stress that the employer's staff need to be competent contractually and closely follow up the project activity and site works. One employer feels that their being from developed countries alone would not be a source of the problem unless there are corrupt or other unethical practices. Besides, another employer comments assigning competent consultants, providing better weight for technical competency and strict performance monitoring of the engineer by employer is a better solution towards the problem. Two employer respondents suggest to put in place performance evaluation and monitoring system for engineer/consultants as a control mechanism. One employer advised to take administrative measures for those who act illegally and give detail responsibility to act as per the contract form. Three respondents from the consultant and five respondents from the contractor revealed that the employer should assign a representative who

controls the action of the engineer and contractor in a way and follow up the progress of the work. One consultant suggest construction management consultant should be in place to monitor the services of both the engineer and the contractor. One consultant and contractor each stressed that the employer should assign qualified local representative on site and force the consultant to get in to joint venture with local consulting firms. One respondent from the consultant further suggest strengthening the local consultants through training and other mechanisms. One contractor advises to introduce special provisions to limit the engineer's authority.

6.4.4. Engineers Determination on His Own Fault

The Engineer is given a power to determine on claims of contractual issues in Sub-clause 4.1 of PPA 2006, Sub-clause 67.1of FIDIC 1987 and Sub-clause 3.5 of FIDIC 1999 and FIDIC 2006 MDB edition. In some cases the engineer himself might be at fault where the contractor initiate claim on such matters. All of employer respondents and the majority of consultants and contractors (67% and 62% respectively) disagree to the point that the engineer can determine fairly on claims involving him. Many interviewee support the above point. There is an old legal maxim or doctrine which states that "no one is a judge for his case!" On the contrary, 38% consultants and 33% employers showed their agreement on the possibility of the engineer to partially determine on contractual issues involving him.

Those respondents who consider the engineer's determination on claims involving him proposed some measures to hold the engineer accountable. Three respondents from the employer stressed the need of a mechanism where the engineer can be penalized for justifiable faults he has made, then others and he will start to be committed more. One employer and consultant each commented that employer shall strictly review such claims and make the consultants accountable although the consultant might have determined otherwise. Three employers and two contractors suggest clearly stipulating the responsibilities of each party and provide enforceable remedies in contract provisions. Besides, two consultants and contractors each showed their opinion that the engineer should be accountable for the consequences of his faults. However, the bad thing is, his ability will not exceed his service fee. One contractor stressed that there should be professional indemnity insurance to secure the employer from such engineer related causes of claims and disputes. Two consultants and one contractor on the other hand stressed it is logical for the engineer to determine claim cases related to his problems as the case may be referred to the DAB which will ultimately uncover the engineer's problems.

6.4.5. Contractors Entitlement in Contract Provisions and Practical Situations

Sub-clause 42.2 of FIDIC 1987 and Sub-clause 2.1 of FIDIC 1999 (late procession of site), Sub-clause 65.8 of FIDIC 1987 and Sub-clause 19.6 of FIDIC 1999 (termination by employer) and Sub-clause 69.3 of FIDIC 1987 and Sub-clause 16.4 of FIDIC 1999 (termination by contractor) are some of the provisions that entitle the contractor cost plus profit or reasonable damage. Dereje (2003) assessed the implications of some amendments made in FIDIC 1999 in comparison to FIDIC 1987 in relation to aspects affecting compensation entitlements of contractors. The article also suggested research in respect of local Standard Conditions of Contract, indicating as it obviously requires further improvements.

Contractors in some cases refrain from pursuing their rights stipulated in the contract provisions. Possible reasons for respondents were forwarded to choose from. Accordingly 15% and 14% of employers and consultants respectively consider lack of awareness for the problem. On the other hand, 50% contractors and 7% consultants respond: even though they understand their rights, they are reserved in fear of jeopardizing their future work relation with the employer and consultants. 7% of consultants revealed unfavorable industry environment (take long time, fraudulent practices etc.) as a problem. However, 36%, 23% and 17% of consultants, employers and contractors respectively believe all the above three factors concurrently contribute to the problem. In addition, 25%, 23% and 7% of contractors, employers and consultants respectively feel both lack of awareness and fear of affecting future work relation simultaneously contribute to the problem. On the other hand, 29%, 15% and 8% of consultants, employers and contractors respectively consider fear of affecting future work relation and unfavorable industry environment as a reason. Besides, 8% of employers consider lack of awareness and unfavorable industry environment as a root cause for contractors deterring them from pursuing their legal entitlements.

One employer further commented that contractors have also limitations in fulfilling their obligations where as one contractor believes that contractors also trade off quality issues. One of the consultants believe that in most cases, their rights are compromised by their own non-performance, delay etc.

6.4.6. Engineer's Responsibility

In some cases, damage in construction works resulted from the engineer's fault may encounter, either providing inappropriate design or lack of stringent supervision and monitoring of the

contractor. To avoid such occurrences, employers ask engineers/consultants professional indemnity insurance to enable the engineer work with duty of care and responsibility towards the employer. However, the maximum professional indemnity is equivalent to the total professional fee. In relation to this effect, the vast majority of employers (77%), 33% contractors and 31% consultants believe the indemnity is insufficient compared to the subsequent damage sustained by the employer on the negligence of the engineer. On the other hand, 25%, 23% and 15% of contractors, consultants and employers respectively consider the amount is sufficient. 46%, 42% and 8% of contractors, consultants and employers respectively revealed it is fairly sufficient. However, increasing the liability of the Engineer may create difficulty to render their professional service. On the contrary, it may make them curious so that they undertake their professional service properly; hence, minimize their negligence and irresponsibility.

As far as accountability of the Engineer for his action and inaction, Art. 2636 of the Civil Code introduces the concept of liability based on professional negligence. Therefore, legally or theoretically if the employer establishes the requirements of the article, the consultant/engineer is legally liable/accountable for his professional negligence, done by act or omission.

Owing to the insufficiency of the penalty, 17%, 8% and 7% of contractors, consultants and employers respectively want it to be twice the maximum service fee. From the employer's perspective, 15% and 8% of them suggest the damage penalty to be two half, and one half of service fee respectively.

Amount of professional indemnity compared to the loss incurred due to Engineer's default i.e. loss of contractor and employer is dealt below. According to one consultant and one construction lawyer interviewee, the issue of contractor's loss becomes a legal issue since there is no contractual relationship between the contractor and the engineer/consultant. In the law of tort or negligence, the contractor takes legal action for personal injury while he cannot for economic loss. However, the contractor is required to prove in order to recover his unliquidated damage or economic loss. With respect to a loss to the employer, it becomes a contractual issue. The extent of compensation possibly to be recovered from the engineer/consultant by the employer is also governed by their contract. However, the extent of compensation under the professional indemnity insurance may fall considerably below the extent of loss sustained by the employer, if that is the case under the circumstances. Even if the employer may want to recover his loss outside of the

indemnity insurance, under the law of contract, the general practice dictates not to recover beyond the consultant's fee under their agreement which is also a loss to the employer. The reason behind limiting the liability of the consultant to its fee is protecting the consulting industry from destruction.

Some of the respondents stressed that comparison should not be made between the penalty of the engineer and contractor as their work/service greatly differs. However, the current professional Indemnity Insurance is too low that the engineer do not take due care. Accordingly, two respondents from the employer, one respondent from the consultant and contractor each believe that the penalty should not be tied with service fee at all, instead penalty in the form of barring from participating in the client's future tender for some time and even as far as revoking their professional and business license. On the other hand, two respondents from the employer consider the penalty should commensurate with damages that may occur as it will be difficult to compensate in monetary terms and suggest to established other ways of ethical and professional accountability. One contractor suggests the coverage to be equivalent to performance bond amount i.e. 20% of the total cost which is impossible considering especially the capital base of domestic consulting firms.

6.5. Price Adjustment

It is common to come across construction projects experiencing cost overruns as a result of multitude factors related to basic construction materials price hike. Fairness of current price adjustment practices and its method are discussed below on the basis of the survey response.

6.5.1. Components Allowed for Price Adjustment

The major components of construction cost directly involved consist of material, labor and equipment costs. While there is a change in cost rise or fall of these direct cost components, provisions provide price adjustment clauses. However, only four material components comprising, cement, bitumen, reinforcement bar and fuel are allowed for price adjustment in the local context. Owing to limited capital base of domestic contractors, they are at a disadvantage position resulted from this limited adjustment. Recently ERA allowed adjustment for foreign labor and equipment cost components. In light of this, the majority of contractors (58%) and 33% of consultants strongly agree on such limited adjustment scheme as affecting domestic contractors. In addition, 42%, 34% and 20%, of, consultants, contractors and employers respectively agree to this point. On the contrary, the majority of employers (70%), 17% and 8% of consultants and contractors

respectively disagree to the proposition stating that the current practices of price adjustment do not affect local contractors. Besides, 10% and 8% of employers and consultants respectively strongly disagree on the issue of allowing only for limited components of cost structures.

6.5.2. Price Adjustment Methods Used in Domestic Construction

There are two methods of price adjustments; base price (proxy/document proof) and indices normally used in the domestic construction industry. Sub-clause 70.1 of FIDIC 1987 refers price adjustment on account of price rise and falls to the particular conditions. Previous projects using these contract forms have been using document proof or base price adjustment methods. However, it is subject and open to manipulation. Sub-clause 47.1 of PPA 2006, Sub-clause 13.8 of FIDIC 1999 and FIDIC 2006 MDB edition provide indices method or adjustment formula.

The majority of consultants and contractors (64% and 58%) and 31% of employers believe the use of base date (proxy) price adjustment method is better. Two interviewees from consultants, suggest the need of widening limited inputs other than cement, bitumen, fuel and reinforcement bar. The majority of employers (69%), 42% and 36% of contractors and consultants respectively respond in favor of price indices method of adjustment. One interviewee from consultants and all professionals interviewed from contractor advice the importance of reasonable and fair weighting which is representative of both adjustable and nonadjustable inputs.

It is known that there are no established domestic price indices. Therefore among those respondents in favor of price indices; 62%, 50% and 36% of employers, contractors and consultants respectively showed the need of establishing local price indices and revise it periodically. On the contrary, 23% and 7% of employers and consultants suggest the use of foreign indices. However, using foreign indices have its own drawback which is attributed to its reliability and credibility. Foreign indices are used for inputs from a foreign source. However, the source must be declared and agreed while concluding the contract. One consultant interviewee suggests, if the agreed source of input cease to produce or supply the material, change of source of indices is acceptable. On the contrary, if the change of source is on the contractor's preference, the engineer need to consider the previous and the new price indices and choose which ever is advantageous to the employer.

One respondent from the contractor suggest in relation to credibility of foreign indices to use reliable and recognized institute indices and verify from local banks or statistics offices. One

respondent from the employer believe to establish list of well known sources of indices and use from the list. Another employer showed that for foreign inputs such as bitumen, foreign indices can be used. However, for local inputs there is no choice than using proxy prices by ensuring that they are quoted from reliable sources if local indices are not available or use a correction factor of Z_o/Z_n as a last resort.

6.5.3. Adjustment Coefficient, Z_o/Z_o

There is a provision in contracts to handle when currency of payment is different from currency of index/price. With regard to inflation of local currency compared to some other foreign currencies stated in the contract, Z_o/Z_n will be included as appropriate to be used as a multiplier for price adjustment coefficient. This additional multiplier coefficient is stated in Sub-clause 13.8 of FIDIC 1999 and FIDIC 2006 MDB as follows, 'in cases where the "currency of index" is not the relevant currency of payment, each index shall be converted into the relevant currency of payment at the selling rate, established by the central bank of the country, of this relevant currency on the above date for which the index is required to be applicable.'

All employer respondents and the majority of contractors and consultants (60% and 57%) showed the need for adopting Z_o/Z_n where as 43% and 40% of consultants and contractors respectively respond against using this alternative adjustment coefficient. An interesting difference between the ICB and NCB version of PPA 2006 shows that, Z_o/Z_n is included in Sub-clause 47.2 of ICB while it is omitted in the NCB version.

6.6. Termination

Termination of construction contract can be resulted from completion of performance; default of either the contractor or employer, when the contract becomes onerous etc. In this part termination caused by default of either party to a contract is dealt with by compiling the survey result and desk study covering two road contracts and one building contract.

6.6.1. Termination Procedures and Actual Practices

Termination conditions are clearly stipulated in contract forms. The survey showed to what extent contracts are terminated following the procedures of contract provisions. Accordingly, half of the employer respondents, 42% and 38% of contractors and consultants respectively showed their agreement that termination is carried out as per the conditions stated in contract forms. The remaining half of employers and the majority of consultants and contractors (62% and 58%

respectively) believe termination is not done as per the procedures provided under contract provisions.

All interviewee professionals also believe termination is not done according to the contract provisions. One consultant interviewee further commented, if it is inevitable to terminate a project it is advisable to make it on the early stages of the project. For example, terminating a three year project after two and half years brings unbearable loss to the employer. When the employer terminating a contract, it is important and need to be confident to hold the contractor on default. The reason behind this is that either the employer or engineer may have done a contributing factor for the contractor's default. If the contractor repudiate the contract expressly or implied (i.e. abandoning the site, withdrawing equipment etc.) the employer can bring a court order (specific performance order).

Possible reasons for the problem to exercise termination as per the provisions were also selected from the hypothesized factors. Financial loses attributed to termination is identified by many respondents (50% CONT, 43% CONS and 31% E) among the major assumed three contributing factors followed by long and cumbersome re-tendering process from the resulting termination (42% CONT, 29% CONS and 31% E). In addition, Lack of awareness by parties regarding termination clauses was seen from the respondents view (31% E, 29% CONS and 8% CONT) as the least contributing factor compared to the above two reasons.

One respondent from the consultant believes handling termination issues is complex by itself. Another consultant stressed people usually use local knowledge or procedures used on other sites, whose procedures do not necessarily work on the site in question. One of the employers commented, the stage of the industry itself is the reason while one of the consultants said development of bad relations is another problem. One consultant suggested the mighty of employers is not limited in the local context i.e. clients are not following the contract. On the contrary, one contractor believes it is not applicable in fear of initiating litigation process.

The desk study conducted on two road projects and one building project strengthens that contract provisions are not followed during termination. The detailed analyses of desk studies are presented below.

Desk study 1: Road project 1 (Private Contractor)

Table 6.5: Basic Contract Data of desk study 1

Employer	**Ethiopian Roads Authority, ERA**
Date of Contract Signature	December 16, 2004
Length	106.5 km
Contract Time	1278 calendar days
Commencement Date	January 17, 2005
Original Completion Date	July 17, 2008

At the end of June 2010, 80% of the contract has been completed with 153% of time is elapsed. The Employer and Engineer claim they have been giving a number of warnings following the contractor's poor performance inline with the contract provisions and even considered termination. However, the contractor appealed to ERA to give him a chance indicating his commitment to finish the project, which prolonged the inevitable termination. However, the contractor declared through his letter dated January 28, 2010 his suspension of the works due to the bankruptcy of his whole business stating 'failure to compensate financial shortcomings from bank loans and other financial sources that makes him critically in no position to continue the operation due to serious financial problems.' The contractor's declaration calls for Clause 63 of MoWUD 1994 for ERA to exercise his Employer's right, to terminate the contract.

The reasons for the problem include:

- Contractor's unit rate are too low to cover even his direct cost;
- Contract's price adjustment consideration could not compensate the soaring price increase;
- Contractor's acute cash flow problem has severely undermined his resource supply, like shortage of spare parts and repeated break down of equipment, shortage of fuel, cement, reinforcement bar and formworks;
- Absence and/or very high turnover of project manager, construction engineer, office engineer, operator, foremen and surveyors as the contractor is unable to pay salary timely which resulted in inefficient output,
- Lack of adequate number of earth moving equipment, dump trucks and water trucks;
- Frequent break down and inefficiency of available machineries and equipment such as crushers and dozers.

According to the termination proposal of July 2010 by the Engineer, 'the contractor is not in a position to resume works and complete the project'; hence, ERA was left with no alternative but terminating the contract with associated economic loss of about ETB 51.84 million. From the resulted termination, the Employer negotiated and gave the site in order to complete the works to another contractor executing the adjacent section.

Desk study 2: Road project 2 (State Owned SCo. Contractor)

Table 6.6: Basic Contract Data of desk study 2

Employer	**Ethiopian Roads Authority, ERA**
Date of Contract Signature	September 19, 2006
Length	52.4 km
Contract Time	1095 calendar days
Commencement Date	February 08, 2007
Original Completion Date	February 07, 2010

According to the termination proposal by the engineer in August 2010, the contractor's overall accomplishment until end of July 2010 is only 25% against 100% schedule and above 115% of contract time elapsed showing a slippage of 75% as compared to the work program and 90% with respect to time respectively.

The employer and the supervision engineer have expressed their dissatisfaction with the progress by sending frequent warnings and reminders as per Clause 46 of MoWUD 1994 where the contractor failed to comply with his work program even for a single month. In addition the employer warned as he will be forced to call upon clause 63 to take all possible actions. However, the contractor totally suspended the works due to his own problem.

Main reasons for the problem among other things include:

- Lack of sufficient number of earth moving equipment;
- Frequent break down and inefficiency of the available machinery such as crasher and dozers and failure to maintain them timely;
- Shortages of dozers, loaders, dump trucks, graders, water trucks and rollers;

- Absence and high turn over of construction engineers, office engineers, foremen and surveyors as the contractor is unable to pay attractive salary and incentives like other private contractors;
- Contractor's serious cash flow problem which is reflected by repeated shortage of fuels, cement, reinforcement and formworks;
- Contractor's failure to offer competitive price during tendering (too low unit rate).

Owing to the contractor is state owned Share Company; ERA terminated the contract and propose an amicable settlement.

Desk study 3: Building project (Private Contractor)

Table 6.7: Basic Contract Data of desk study 3

Employer	**Ministry of Trade and Industry, MoTI**
Date of Contract Signature	September 19, 2006
Contract Time	450 calendar days
Commencement Date	October 19, 2006
Original Completion Date	January 14, 2007

According to the archival document reviewed, the contractor was subsequently warned by the Engineer and Employer, MoTI through letters dated May 09, 2006 and July 05, 2006 stating their dissatisfaction with the progress of the work. However, the contractor failed to comply and a final warning is given to the contractor through the letter dated August 24, 2007 stating the progress is only 30.89% of the works with 75% of the contract time elapsed stressing to take action as per Sub-clause 59.1 of PPA 2006. However, the contractor failed to materialize its commitment to complete the works until May 2011. The employer finally terminated the contract through a letter dated May 25, 2011. From the situation, it can be seen that the project has suffered more than four years.

Reason for the problem:

- Lack of cement;
- Frequent design changes too many times;
- Extreme soaring price of construction materials;
- High turnover of project manager and office engineer.

As can be seen from the three desk studies too much patience against the contract provision is seen from the employer and engineer side. The patience can be viewed from the point of supporting domestic contractors; however, failing to fulfill the objective of getting the project completed even after too much time slippage. It is evident from the above analysis that termination is not carried out as outlined in the contract provisions.

6.6.2. Prolonged Suspension as a Ground for Termination

The engineer may instruct the contractor to suspend some or all of the works as appropriate. However, Sub-clause 8.11of FIDIC 1999 and FIDIC 2006 MDB expressly state for a suspension continued for more than 84 days, the contractor ask the engineer permission to proceed with the works. If the engineer fails to respond within 28 days, the contractor may treat the issue as omission or even terminate the works. The survey showed that prolonged suspension has a minimal effect to end up in termination. The majority of contractors (55%), 43% of consultants and 36% of employers feel the possibilities of prolonged suspension to result in termination is low. Half of consultant respondents and 36% of employers and contractors each showed its degree of possibility very low. On the contrary, 9% of employers and contractor each believe the degree of prolonged suspension end up in termination is very high while 19% and 7% of employers and consultants respectively agree its possibility is high.

If termination comes in to picture due to negligence of the engineer, the employer bears the responsibility towards the contractor. In such cases, one of the employers suggests that the engineer shall be made responsible for its actions. One of the consultants believe that a counter part engineer can solve this problem where as one of the contractors stressed that taking the necessary precautions during design and tender preparation is vital to avoid suspension.

If termination is due to the Employer's default, the contractor shall be compensated for forced demobilization, idle equipment, anticipated profit etc. In such cases, the employer's loss is immense. To avoid such occurrences, some comments were forwarded by the respondents. Accordingly, two respondents from the employer argue that the wastage of capital and resource due to employer's default is high and some times this wastage arises from engineer's negligence; hence, the employer need to act timely and as per the contractor's request while another employer suggests that the employer should not give or approve suspension order unless there is a pressing need. One employer state the wastage of resources could arise when termination was due to the

contractor's default as equipment and properties of the contractor are held by the employer until completion of the project by another contractor. According to two consultants, even if such clauses are provided in conditions of contract, it is not practicable in current construction trend. So, this has to be practiced to compensate the contractor. One consultant advice the employer to consider the advantage and disadvantage before terminating the contract whereas another consultant feels the claim industry in Ethiopia is not well organized. Contractors are not often compensated for the damage caused by the employer; hence, one of the contractors believes it is almost impossible actually in Ethiopian context. Even if the employer defaults, the contractors do not want to claim in fear of damaging future relation, bear in mind that almost 90% of works employer is the government.

6.6.3. Termination as an Option for too much Cost Overruns and Time Slippage

It is a common understanding that most of construction projects in Ethiopia suffer too much cost overruns and time slippage. Some projects might have been better off should they have been terminated instead of letting them to proceed. Half of employers, 36% and 33% of consultants and contractors respectively disagree to the point allowing troubled projects to continue where as the remaining half of employers, 36% and 33% of consultants and contractors respectively showed their strong disagreement. Considerably few respondents i.e. 10% and 9% of employers and contractors respectively strongly agree projects need to be continued irrespective of their cost and time overruns while 29% consultants and 10% of employers respectively agree on the issue. Besides, 14% and 8% of consultants and contractors respectively showed their neutrality.

Comments were forwarded to improve such practices. Two respondents from the employers and three consultants comment to have better design input to increase the quality of design services and close follow up of contract administrations while three employers and one consultant stress follow up the project very closely. If the project is believed to be delayed due to the contractors default, it is good to terminate at the early stage and re-tender out the project could be better. The other three employers, two consultants and two contractors believe employers shall exercise evaluation of performance of contractors before awarding the contract and assist contractors to perform better through training and other assistance, create employer awareness on time value of money. However, if this fails termination could do the client good by saving resource and time. One consultant stresses improve capabilities of engineers employed by employers and consultants in order to minimize such occurrences. Each case shall need to be considered on its merit for

proceedings. Another consultant believes political interference is the major factor that affects decision on termination. A more solid political system helps to avoid unnecessary loss due to unsuccessful construction. One contractor suggests timely decision on clarification matters, availability of price escalation, and smooth relationship between stake holders.

6.6.4. Employer to Takeover Contractor's Equipment during Termination

According to Sub-clause 63.1 of FIDIC 1987, the employer may use contractor's equipment for completion of the works as he thinks proper after termination on the contractor's default. On the contrary, Sub-clause 61.1 of PPA 2006 expressly state that contractor's equipment on site are deemed to be the property of the employer if the contract is terminated due to the contractor's default. Almost three quarter of contractors (73%), 44% of consultants and 25% of employers believe it is not logical to take over contractor's equipment. On the contrary, the majority of employers and consultants (75%, 56%) including 27% of contractors feel it is logical to take over contractor's equipment due to termination on the contractor's default. However, sub-clause 61.1 of PPA 2006 need to address issues; for instance, transferring (by contractual presumption) the ownership rights of the contractor on all project related properties to the employer in case of fundamental breach of contract.

The logic behind such clauses especially in the FIDIC context is to use the equipment and finish the works which in effect minimize the cost to the employer. Two employers, four consultants and three contractors comment that the employer's loss should be first assessed instead of just confiscating contractor's property. Three contractors suggest the employer should only recover from the contractor his advance payment balance and any extra payment effected to the contractor not to go beyond that. On the other hand two contractors propose the employer to get protection from legal authority not to remove the equipment and materials from the site is a better option.

6.7. Claims, Dispute Resolution Procedures and Conformity of Some Provisions with the Ethiopian Law

6.7.1. Domestic Arbitration Institution Practices

Arbitration of construction projects have been started locally in recent years. To this effect, there are two domestic arbitration institutions in Addis Ababa. The practice of local arbitration is at its infant stage. Most of industry professionals in the construction sector are not even aware of their existence. Interviewed professionals also stressed the fact that these institutions are not known

widely in the sector. Half of consultants, and few employers and contractors (14% and 12% respectively) agree that local arbitration practice is good while 44%, 30% and 29% of contractors, consultants and employers respectively believe it is fair. On the contrary, the majority of employers (57%), 44% and 20% of contractors and consultants consider domestic arbitration is poor. A construction lawyer interviewed on this issue admitted that the institution is not yet fully developed as expected to handle arbitration.

To improve the practices one employer commented the need to have well experienced professionals and establishments whereas two employers suggest capacity building, training, case study, and experience sharing from expatriates. One of the consultants revealed that most people are not aware about the two institutions and an open awareness program has to be conducted for all professionals in the industry. one consultant respondent stressed the importance of training of lawyers with construction/engineering background. One contractor feels arbitration institution should be well organized and well recognized by stakeholders in the construction industry. It needs to have qualified professionals. Contractors should also take claims to the arbitration so that the capacity of local arbitration can be tested.

6.7.2. Contribution of Adjudicator for Smooth Contract Administration

Appointment of adjudicator at the start of the project helps for a smooth progress of projects through handling claims right away on the outset. Sub-clause 25.1 of PPA 2006 states that the adjudicator to give decision within 28 days. It is a good move compared to Sub-clause 67.1 of FIDIC 1987 and Sub-clause 20.4 of FIDIC 1999 which gives the Engineer/DAB 84 days to give his decision on claims. It also helps to avoid issues related to the engineer being agent to the employer. Accordingly, 42%, 31% and 21% of contractors, employers and consultants respectively strongly agree on the appointment of adjudicator on the start of the project to closely follow up claims handling. The majority of employers and consultants (58% and 50% respectively) and 44% of contractors agree on the issue. On the other hand, 21, 18% and 8% of contractors, consultants and employers respectively showed their neutrality while only 7% of consultants are in a position to disagree with the proposition where adjudicator is necessary at the start of a project.

6.7.3. Claim Procedures

A claim procedure is vital to substantiate claims and guide their handling. In respect of this Sub-clause 52(5) of MoWUD 1994 and Sub-clause 53.1 FIDIC 1987 contract forms expressly state the

procedures to be followed and the time frame on which these claims will be submitted. However, the current PPA 2006 contract form do not have claims handling procedures on which respondents show the degree of impact due to the absence of claim provisions. The vast majority of respondents (100% CONT, 78% CONS, and 72% E) agree the absence of claim procedure clauses has high degree of impact on the dispute resolution of projects. Few respondents, 14% and 11% of employers and consultants respectively reveal the omission of claim provisions have only low impact on dispute resolution. On the other hand, 14% and 11% of employers and consultants believe such matter have no significant effect.

Most respondents from employers in favor of the high drawback feel that it is difficult to accurately establish the sources of the disputes and obtain sufficient particulars to analyze the claim while one of the employer believe if there is no such procedure the dispute will be more complicated. Another employer commented that no clear reference is set to the DRE to make his own judgment and it will lead to Anglo-Saxon type of law through common use of cases; hence, no specific dispute resolution is acquired. On the other hand, most of consultants feel the claimant could not state a specific clause upon which the claim is based; hence, the engineer or adjudicator or arbitrator(s) could not decide rightly since no clause could be cited. Some consultants further comment that it will cause ambiguity and create gap during contract administration and will complicate claim handling process even more. Most of the contractors believe lack of sufficient, complete and procedurally flown evidences and documents will affect the resolution process. In addition to this, there might be lack of contemporary records and undefined time to respond for the claim will become a problem.

One employer in favor of low impact suggests it should be better dealt in revisions for the future if PPA 2006 is to be used in order to clarify how dispute shall be dealt. However, one consultant believes PPA 2006 presumes that the contractual parties are already aware of their possibilities in detail in respect of claim handling and dispute resolution. Such may not always be true in the local context of employers and contractors.

One employer reveals unless there is misinterpretation of provisions while claim the right for either of the parties, the absence of claim provisions have no significance effect on claims initiation, submission and dispute resolution. One consultant further comments as it is not significant as long as there is a dispute resolution mechanism.

6.7.4. Time Frame to Submit Claims

The contractor is given limited time frame to initiate claim and to submit particulars in Sub-clause 53.1 of FIDIC 1987 while the Employer is free from such limitations to initiate claim according to Sub-clause 53.2 of FIDIC 1987, Sub-clause 20.1 of FIDIC 1999 and FIDIC 2006 MDB. On the other hand sub-clause 2.5 of FIDIC 1999 and FIDIC 2006 MDB state procedures for Employer's claims without stating a time frame except to submit claims before its expiry for extension of defects notification. Not only the contractor is limited by time, Sub-clause 20.1 further state as the contractor waives his right and loses his rightful entitlement if he is not comply with such provisions. However, FIDIC 1987 contract form is silent on the issue. According to an interviewee from consultants, the contractor do not lose his substantive rights in the law of tort, but his negligence to submit on time will be considered. Half of employers and consultants each and 25% of contractors believe it is fair to leave the employer free of time frame. The remaining half of employers and consultants each and three quarter of contractors (75%) feel it is unfair.

The reason those who feel it is fair to leave the employer without any time frame to submit his claim further suggested that the employer is the owner of the work and submission of claim any time will not hinder the contractor's performance and it does not affect the work progress. Two of the employers commented that the contractor is the one building the project and can see the risk immediately while the client is not and the consequence could be seen after some time. Another two of employers state that the employer 'generally' has no interest of making money by such claims; his interest is quality work as specified in the contract within specified time. Hence, unlike the contractor, the employer is thought to claim in fair and reasonable situations. One of consultants believe it could have been fair only if local contractors were 'experienced' and 'informed' adequately in respect of claims and pertinent procedures thereto. Another consultant stressed the nature of claims by the contractor are mostly time related and numerous, which shall be addressed as soon as possible; while claims by the employer are not. Two other consultants assume it shall be to the advantage of the client in successful completion of the project while one consultant feels the employer may not have qualified personnel to follow claims daily unlike the contractor. One contractor believes it is the employer that has selected the conditions of contract type recommended and drafted those clauses.

Those who feel it is unfair to leave the employer with out time frame also forward their comments. Accordingly three employers and two consultants are in favor of more time than the contractor

whereas two employers, five consultants and nine contractors believe the employer should be bound with equal time frame with the contractor to initiate claim. Only one employer revealed the employer should submit with less time than the contractor.

6.7.5. Arbitrability of Administrative Contracts

Administrative contracts are not arbitrable according to the civil procedure code article 315(2) while it is not restricted in the civil code. However, public contracts are being arbitrated locally and internationally in recent years. In respect of such contradiction all respondents of employers, consultants and contractors unanimously respond in favor of administrative contracts to be referred to arbitration. A thorough discussion is made in section 7.3 on the issue of arbitrability of administrative contracts.

Two employers, four consultants and two contractors suggest amending Art. 315(2) of the civil procedure code in a way to make administrative contracts arbitrable. On the other hand, two employers and one contractor reveal that it is possible to refer administrative contracts to arbitration should the establishment proclamation of a public office allow it to use arbitration as specific laws govern general laws. The case in point stated by respondents is ERA, a public implementing agency of road construction as its establishing proclamation allows settling disputes outside a court.

6.8. General Perception of the Survey

6.8.1. Suitability of Local Conditions of Contract

As stated in section 4.2.3 of this thesis, local conditions of contract have been used for over 50 years with revisions with time. Currently PPA 2006 is used for public projects using government budget. Almost three quarter of contractors and consultants (76% and 72%) and half of employers agree that local contract forms are suitable for the domestic construction industry. Few contractors and consultants (8% and 7% respectively) strongly agree on the issue. Considerable portion of employers (34%) and few contractors and consultants (8% and 7% respectively) showed their neutrality. On the contrary, 8% employers and 7% of consultants disagree on the suitability of local contract forms while 8% of employers and contractors each strongly disagree with the proposition.

Those who respond in favor of disagreement recommended some comments to apply local contract forms in a better way. One employer and one consultant suggest that these contract forms need to be revised participating contracting parties and stakeholders. Another employer feels the current forms are suitable for small contracts; hence, they have to be developed for larger contracts. On the other hand, two contractors believe it needs to be more explanatory and elaborative to avoid ambiguity.

6.8.2. Domestic Construction Management Practices in light of Contract Administration

Construction management in general and contract administration in particular is at its infant stage as far as its practice is concerned. Fewer respondents i.e. 17%, 14% and 8% of contractors, consultants and employers respectively feel construction management practices are good. The majority of consultants (65%), 46% employers and 33% of contractors believe the practices of construction management is fair whereas half of contractors, 46% employers and 21% of consultants consider it is poor. Discussion is made on section 7.1 of this thesis.

Some of the reasons for the poor practice of construction management were forwarded. Accordingly, seven, five and three respondents of the employer, contractor and consultant respectively believe lack of competent and seasoned professionals in the field. In addition, five, four and three respondents of the contractor, consultant and employer respectively feel lack of conducive environment for practice is behind the reason for poor performance. On the other hand, six, five and four respondents of the employer, consultant and contractor respectively believe lack of awareness of stakeholders is the major contributing factor for the problem.

In a measure to improve local construction management practices, seven respondents of consultants, six employers, and five contractors comment that professionals in the stream are not well experienced and well trained where capacity building, training, awareness creation and peer discussion through workshops of construction management professionals is mandatory. One employer feels all stakeholders should work together by arranging forum for discussion for the betterment of construction management practices. One employer and contractor each further commented that the government has to take initiative to establish strong and active professional associations, promote civil societies working in the area, and take lessons from developed countries in directing the practice. One consultant stressed the need of opportunities for well planned training courses with emphasis on studied actual cases of local construction management

while another consultant revealed that qualified construction professionals should incorporate on all construction projects. Two consultants and one contractor suggest experience sharing from other countries with more developed industry, associating with international firms and establish code of ethics for construction management. One respondent advises the need to improve impeding contract conditions, especially with respect to risk allocation. One contractor showed the importance of firms to be organized with competent professionals.

6.8.3. Competence of Public Employers

To lead contract administration of public offices efficiently there must be experienced and qualified professionals in various management departments. However, as stated in the respondent back ground, critical infrastructure projects are being handled by experts having too low experience to deal with them. It is resulted from the lack of experienced engineers in these offices and their high turnover in search of a better working condition and benefit. Accordingly, the majority of employers and contractors (64% and 56%) with 22 % of contractors believe the capacity building of public offices in charge of project management or administration in field of Project/Construction Management by giving training to existing staff, employ qualified engineers and managers. On the contrary, the majority of consultants (64%) and some 22% of contractors are in favor of outsourcing construction management tasks. Fewer respondents of contractors and consultants (22% and14% respectively) with 36% of employers consider competitive salary and attractive benefit package will help to retain experienced professionals which enable these offices to handle contract administration issues by their own staff.

Respondents in favor of competitive salary and benefit package also advice to create better condition in remuneration of professionals and make the selection process transparent if the professional is engaged in bidding process. Besides, experience should be given due attention whereby well experienced engineers should be paid to the level of their service and provide scholarship benefits to pursue further education.

Respondents in favor of capacity building through training and education also commented to systematically control; improve the performance of the administrator by training; to award administrators for good performance; prepare a more comprehensive and accurate contract documents; and create awareness on technical specification preparation.

Respondents in favor of outsourcing contract administration to Construction Management firms also commented: employ 'Expert Assistance' as appropriate, eventually it will end costing less; minimizing wastage of resources, will be ascertained by improving the Construction Management sector of the industry; using technologically advanced method of construction, systemic construction techniques; assigning well seasoned and honest professionals and enhance the institutions which give training of Construction Management practices; hire qualified consultant; letting other public organization to take over as employer representative such as MoUDC should follow closely big projects; and finally to minimize such wastage, any infrastructure should be designed with utmost care and the works should be qualified carefully before making an agreement.

6.8.4. Awareness of Parties on Legal Aspect of Contract

Consultants/Engineers and contractors are regular stakeholders in issues involving contractual matters. However, they are not aware of the legal implications of their action and inaction in most cases especially when their action resulted in claims and disputes. Respondents revealed their feelings towards improving the awareness of stakeholders concerning the legal implication arise from contracts. In light of this, few respondents i.e. 14%, 11% and 8% of, consultants, contractors and employers respectively suggest employing legal advisors or consultants as a solution to minimize adverse effects in relation to contract mishaps. Same percentage respondents (14% CONS, 11% CONT and 8% E) consider developing interdisciplinary practices as a measure to minimize unnecessary legal proceedings and litigation resulted from lack of awareness. A vast majority of respondents (84% E, 78 CONT and 72% CONS) believe capacity building through elaborate training programs with emphasis on well studied local experiences and (may be) make the attendance of such a course a requirement for obtaining professional certification to the posts of resident engineers and project managers.

Respondents in favor of employing legal advisor or consultant further comment: involve legal consultancy services to assist in interpretation of contract clauses; involvement of lawyers, carry out joint risk analysis by engineer and contractor; most consultants and contractors have lawyers which advise them on matters related with claims and disputes; they always work closely with their lawyer on issues which lead to claims and disputes, hence they have to work with their lawyers closely; and finally conditions of contract basically do not contradict with the laws, in addition consultants/engineers should have their legal advisors.

Respondents in favor of capacity building suggest: short term trainings and seminars. Besides, include basic contract law courses and legal aspects of construction for engineers at under graduate level in universities and academic institution incorporating in their curriculum; training concerning on legal issues related to construction has to be conducted for professionals; basic contract law shall be given in all higher institutes in line with the conditions of contract and legal point of reference; provide tailor-made training covering the issue emphasizing the sensitivity of the issue to create better awareness among professionals; give trainings to those already on job, and experience sharing program is vital on legal perspective as most of the engineers are not well aware of this issue.

Respondents in favor of interdisciplinary practices advice: to provide training for contract engineers, owners, consultants on how the legal part considers civil contracts and extra contractual matters.

6.8.5. Problems Attributed to Drafting CPA

Even though it addressed some latest dispute resolution mechanisms such as ADR, the PPA 2006 contract form is not exhaustive according to some industry experts compared to its preceding contract forms such as MoWUD 1994 and BaTCoDA 1987. Detail procedures addressed in these contract forms are referred to CPA in the PPA 2006 contract form. Respondents comment on the inherent risk of possible contradiction and ambiguity while drafting CPA. In respect of this problem, the majority of respondents (78% CONS, 67% E and 66% CONT) showed their agreement on the possibility of high inherent risks of ambiguity and contradiction while drafting CPA. Fewer respondents (22%) of employers and consultants each and 17% contractors believe there is only low risk of the stated problem. On the contrary, 17% and 11% of contractors and employers respectively feel no risk on the possibility of ambiguity and contradiction in drafting CPA.

Respondents in favor of the possibility of high risk of ambiguities and contradiction further commented: special conditions must be drafted by experienced professionals to minimize contradictions and ambiguities; take the maximum care while drafting particular conditions to reflect real specific project condition; such risk can be minimized substantially by adopting such provisions from other countries experiences and use of provisions from the standard documents such as MDB SBDs, World Banks SBDs etc.; incorrect or poor condition might be drafted and it is

better to standardize it rather than leaving it open; the best practice of dispute resolution shall be listed in the general conditions with their limitation and where could be applicable (like the condition of lump sum and time based contract) and the employer only select the one applicable for him rather than adding further discussions in specific conditions; the PPA 2006 contract conditions have to be re-developed; and much effort and resource should be allotted during the drafting stage of contract conditions since the gain (during contract implementation) from a well prepared conditions of contract will be worth all the effort and resources.

Respondents in favor of the possibility of low risk of ambiguities and contradiction further believe: special conditions of contract need to address only the specific aspects of an individual project and not such general pertinent issues as ADR etc; it gives flexibility but requires a one time standard procedure development per consultant that can be adapted for all projects, proper validation of the developed standard may help avoid the risk; the whole contract documents must be redrafted in view of recent developments in the Ethiopian construction industry; and prepare addendum on the issue making it adoptable to different projects.

Respondents in favor of the possibility of high risk of ambiguities and contradiction forward: in case of ERA it is prepared by very experienced engineers not by limited professionals; suggest leaving the choice of the type of ADR to be applied on particular project to the parties in contract where they are signing the agreement.

6.9. Test for Agreement among Respondents

Test of agreements or association by the three construction contract parties was carried out by a cross tabulation using the Kendall's tau-b and Chi-square (for 2*2 cross-tables). The SPSS out put is summarized from Tables 6.8 to 6.14.

It is evident from the tables, that a relatively better agreement/association on the responses of employers and consultants which is resulted from their work relation as consultants are working as employers agent.

There is relatively disagreement between employers and contractors, consultants and contractors. The possible reasons could be adversarial relationship and hostility as a result of miscommunication and the general feeling of apprehension that exists between especially consultants and contractors.

Table 6.8: Summary of test of association (agreement) on General Questions

No.	Problems	Survey participant Pairs	Kendall's tau-b Or Chi-square	R1	Reject Ho	Significance, (p-value, <0.05
1	Performance of the Ethiopian construction industry	Employer and Consultant	-0.196	0.261	No	Not Significant
		Employer and Contractor	0.074	0.298	No	Not Significant
		Consultant and Contractor	0.314	0.244	No	Not Significant
2	Construction management practices in Ethiopia	Employer and Consultant	-0.220	0.272	No	Not Significant
		Employer and Contractor	-0.248	0.260	No	Not Significant
		Consultant and Contractor	-0.394	0.132	Yes	Significant
3	Contract administration current status	Employer and Consultant	0.557	0.197	Yes	Significant
		Employer and Contractor	-0.317	0.194	No	Not Significant
		Consultant and Contractor	-0.592	0.124	Yes	Significant
4	Employer's level of awareness to use contract forms	Employer and Consultant	0.070	0.246	No	Not Significant
		Employer and Contractor	-0.161	0.250	No	Not Significant
		Consultant and Contractor	-0.125	0.299	No	Not Significant
5	Consultant's level of awareness to use contract forms	Employer and Consultant	0.150	0.269	No	Not Significant
		Employer and Contractor	-0.125	0.250	No	Not Significant
		Consultant and Contractor	-0.070	0.255	No	Not Significant
6	Contractor's level of awareness to use contract forms	Employer and Consultant	0.227	0.255	No	Not Significant
		Employer and Contractor	0.026	0.236	No	Not Significant
		Consultant and Contractor	-0.372	0.254	No	Not Significant

Table 6.9: Summary of test of association (agreement) on Readability and Interpretation

No.	Problems	Survey participant Pairs	Kendall's tau-b Or Chi-square	R1	Reject Ho	Significance, (p-value, <0.05
1	Clarity and understandability of Concepts and ideas in local contract forms	Employer and Consultant	0.000	0.258	No	Not Significant
		Employer and Contractor	-0.522	0.187	Yes	Significant
		Consultant and Contractor	0.241	0.233	No	Not Significant
2	Conciseness of domestic contract Forms compared to FIDIC Contract forms	Employer and Consultant	0.027	0.084	No	Not Significant
		Employer and Contractor	-0.220	0.299	No	Not Significant
		Consultant and Contractor	0.000	0.227	No	Not Significant
3	To whom shall interpretation is Referred to?	Employer and Consultant	0.000	0.278	No	Not Significant
		Employer and Contractor	-0.522	0.160	No	Not Significant
		Consultant and Contractor	0.296	0.195	No	Not Significant
4	Degree of clarity of 'experienced Contractor' and 'Substantial Completion'	Employer and Consultant	0.084	0.278	No	Not Significant
		Employer and Contractor	0.081	0.323	No	Not Significant
		Consultant and Contractor	-0.082	0.276	No	Not Significant
5	Sufficiency of interpretation Clauses (Chi-square)	Employer and Consultant	0.314	1	No	Not Significant
		Employer and Contractor	0.429	1	No	Not Significant
		Consultant and Contractor	2.143	1	No	Not Significant

Table 6.10: Summary of test of association (agreement) on Powers, Duties and Responsibility of the Engineer

No.	Problems	Survey participant Pairs	Kendall's tau-b Or Chi-square	R1	Reject Ho	Significance, (p-value, <0.05
1	Limiting power of the Engineer	Employer and Consultant	-0.154	0.267	No	Not Significant
		Employer and Contractor	-0.306	0.326	No	Not Significant
		Consultant and Contractor	0.028	0.229	No	Not Significant
2	The engineer as employer's Agent (Chi-square)	Employer and Consultant	1.741	1	No	Not Significant
		Employer and Contractor	0.100	1	No	Not Significant
		Consultant and Contractor	0.711	1	No	Not Significant
3	To whom shall interpretation is Referred to?	Employer and Consultant	-0.389	0.221	No	Not Significant
		Employer and Contractor	0.373	0.203	No	Not Significant
		Consultant and Contractor	-0.307	0.209	No	Not Significant
4	Foreign contractors and Consultants in a project (Chi-square)	Employer and Consultant	0.319	1	No	Not Significant
		Employer and Contractor	No stat is comp	-	No	Not Significant
		Consultant and Contractor	No stat is comp	-	No	Not Significant
5	Responsibility of the engineer	Employer and Consultant	0.132	0.162	No	Not Significant
		Employer and Contractor	-0.190	0.224	No	Not Significant
		Consultant and Contractor	0.000	0.286	No	Not Significant

Table 6.11: Summary of test of association (agreement) on Price Adjustment

No.	Problems	Survey participant Pairs	Kendall's tau-b Or Chi-square	R1	Reject Ho	Significance, (p-value, <0.05
1	Limited component allowed For price adjustment	Employer and Consultant	-0.332	0.221	No	Not Significant
		Employer and Contractor	-0.577	0.204	No	Not Significant
		Consultant and Contractor	0.000	0.332	No	Not Significant
2	Price adjustment methods (Chi-square)	Employer and Consultant	0.442	1	No	Not Significant
		Employer and Contractor	0.157	1	No	Not Significant
		Consultant and Contractor	1.518	1	No	Not Significant
3	Adoption of multiplying Coefficient Z_o/Z_n (Chi-square)	Employer and Consultant	No stat is comp	-	No	Not Significant
		Employer and Contractor	No stat is comp	-	No	Not Significant
		Consultant and Contractor	No stat is comp	-	No	Not Significant

Table 6.12: Summary of test of association (agreement) on Termination

No.	Problems	Survey participant Pairs	Kendall's tau-b Or Chi-square	R1	Reject Ho	Significance, (p-value, <0.05
1	Is termination done as per The provisions in contracts (Chi-square)	Employer and Consultant	0.711	1	No	Not Significant
		Employer and Contractor	2.012	1	No	Not Significant
		Consultant and Contractor	0.048	1	No	Not Significant
2	Prolonged suspension as a Ground for termination	Employer and Consultant	0.185	0.290	No	Not Significant
		Employer and Contractor	-0.120	0.402	No	Not Significant
		Consultant and Contractor	0.174	0.223	No	Not Significant
3	Allowing troubled projects Instead of termination	Employer and Consultant	-0.418	0.212	No	Not Significant
		Employer and Contractor	0.189	0.289	No	Not Significant
		Consultant and Contractor	0.333	0.215	No	Not Significant

Table 6.13: Summary of test of association (agreement) on dispute resolution and conformity with Ethiopian law

No.	Problems	Survey participant Pairs	Kendall's tau-b Or Chi-square	R1	Reject Ho	Significance, (p-value, <0.05
1	Practices of domestic Arbitration institutions	Employer and Consultant	-0.828	0.151	Yes	Significant
		Employer and Contractor	-0.289	0.487	No	Not Significant
		Consultant and Contractor	0.000	0.369	No	Not Significant
2	Importance of adjudicator	Employer and Consultant	0.415	0.176	Yes	Significant
		Employer and Contractor	0.306	0.268	No	Not Significant
		Consultant and Contractor	0.136	0.264	No	Not Significant
3	Time frame to initiate and Submit claim (Chi-square)	Employer and Consultant	0.314	1	No	Not Significant
		Employer and Contractor	0.681	1	No	Not Significant
		Consultant and Contractor	2.619	1	No	Not Significant

Table 6.14: Summary of test of association (agreement) on General Reflections

No.	Problems	Survey participant Pairs	Kendall's tau-b Or Chi-square	R1	Reject Ho	Significance, (p-value, <0.05
1	Limitation of local contract forms	Employer and Consultant	-0.381	0.116	Yes	Significant
		Employer and Contractor	0.165	0.281	No	Not Significant
		Consultant and Contractor	-0.296	0.224	No	Not Significant
2	Performance of domestic Construction management	Employer and Consultant	-0.137	0.318	No	Not Significant
		Employer and Contractor	-0.071	0.261	No	Not Significant
		Consultant and Contractor	0.402	0.137	Yes	Significant

7. DISCUSSIONS

The research questions on problems of conditions of contract in Ethiopian construction industry raised in the thesis were investigated through questionnaire survey supported by interview and desk study and analyzed as appropriate. From the result obtained and researcher's perception: construction management practices in Ethiopia; suitability of available local conditions of contract; conformity of some clauses with Ethiopian law; contribution of conditions of contract for construction management profession; and interaction of construction industry and academic institution in the local context are discussed below.

7.1. Construction Management Practices in Ethiopia

To investigate construction management practices in Ethiopia, the prevailing scenario of the performance of local construction sector need to be reviewed. To assess the efficiency and performance of the construction industry, there need to be a standard or parameter which helps as a basis. For instance, to compare the domestic construction sector with some other developed countries especially with best international practices is difficult.

7.1.1. Performance of the Domestic Construction Industry

However, it can be seen from the famous cost, time and quality parameters point of view. It is a common understanding that the domestic construction sector is characterized by excessive cost overrun, time slippage (delay) and quality problems. Many reasons can be listed as contributing factors for such poor performances such as: lack of competent professionals, weak construction and consulting firms, lack of state of the art practices, shortage of materials and equipment and absence of adequate hire lease companies.

In addition, the performance of the domestic construction sector can be weighed in terms of satisfaction as a base parameter. It is apparent that both the employer and contractor are not satisfied. The employer complains mostly on cost increments, delays and low quality issues, contractor competency problem. On the other hand, the contractor complains on regulatory environment, market environment (supply chain), untimely responses from the employer and consultant, late payment, additional costs etc. The paradox here is too much resource especially cost is spent mostly for reworks to rectify quality problems associated with the dissatisfaction of both parties. Domestic contractors further complain with the different method of treatment

(attitude bias) by regulatory bodies and employers compared to foreign contractors operating in Ethiopia.

The domestic construction industry compared to international construction firms operating in the country can be comparable with respect to cost, time and quality. The possible reasons for such comparable performance in the researcher's view include: the rules and regulations, procurement strategy and contracting system. Rules and regulations enacted in the country affect both on equal grounds.

The procurement strategy also has same effect whether it is competitive or direct contracting. Competitive procurement is advantageous to choose the least bidder; however, it is also associated with adverse consequence which results in project failure (excessive delay, termination etc.) resulted from lack of capital to execute the works, cross financing and contractor cutting corners to make profit through unjustified claims. DCI (2005) and Tadesse (2009) also state that many of the domestic contractors could not survive due to financial problems even though the government tried to build their capacity by allowing 20% advance payment without collateral. Contractors like, Baro Construction, Ajeco Construction, African Engineers were among the various contractors who were affected and they are not functioning now and some more are still striving for their existence. In response to avoid such occurrences, once a bracketing system was used i.e. reject bids ±20% of the engineers estimate.

As far as contracting system is concerned, it is vital to look in to which method best suitable for the local conditions. For instance, the commonly used traditional system, DBB has been used for the last decade. It needs to be addressed whether it is appropriate for the local situation or not owing to its adversarial nature of contract management. Design-Build is just started recently on the Addis-Nazareth (Adama) toll road project. It has to be seen whether it is good to go in to it intensively for other projects. Partnering is another contracting method where the western world is using it in the best way as it avoids the adversarial relations in the traditional method. It also has to be assessed to consider it for the domestic construction sector.

The domestic construction industry is poor as compared to best international practices. In the researcher's view, the major reasons attributed to the poor performance include: unclear contract

documents and design, poor competency of public implementing offices and poor competency of contractors.

The contract documents used in the domestic construction industry are not clear. In most cases, these documents are distorted while adopted from foreign sources. Incomplete designs that are not appropriate to fit the ground conditions call for design changes while the project is on progress which in turn affects the time schedule and the cost structure of the project.

Poor competency of public implementing offices affects the performance of the local construction sector. Public implementing offices established for the provision of service and infrastructure facilities such as: MoUDC, MoE and MoH are poor with the exception of ERA considered as a competent institution with many respondents of the questionnaire survey and interview. For instance, MoE outsource the implementation of its university capacity building program to GIZ GmbH on its behalf to undertake the construction of thirteen universities throughout the nation. However, there is no indication so far on the monitoring scheme of the performance of such company whether it achieved the desire goal as per the contract.

Poor competency of contractors is mostly the manifestation of the procurement strategy attributed to least bidder as explained above. The government does not go through much work to build the capacity of domestic contractors. It is related to how the public implementing offices undertake to capacitate contractors to meet the end result to fulfill and deliver works within budget, scheduled time and good quality. Besides, low professional competence (turnover of highly qualified professionals), low financial competence (low capital base, lack of adequate finance source, cross financing of advance payment etc.), lack of technical competency (lack of modern and state of the art constructional methods, lack of equipment, no or limited machinery hire lease companies for equipment, lack of skilled and semi-skilled manpower) are some of the major shortfalls behind the poor competency of contractors.

7.1.2. Domestic Construction Management Practices

Development of construction management practices in the Ethiopian construction industry is at its infant stage. Construction management is practiced side by side with construction supervision, design services and feasibility study. There are only few construction management consultancy services which depict the low awareness of stakeholders in the sector. Such low performance and

practices of construction management is a reflection of the domestic construction sector and even known as a profession in recent years. It is the employer who trains and supplies the industry which should have been the other way round. Construction management is done traditionally mostly not supported by information technology systems. For instance, stake holders lack proper recording systems and tracking mechanisms of claims, payment and other contractual issues. Some of the shortfalls in practicing construction management as a profession is dealt from the contractors, consultants and employers point of view.

a. Contractors

Construction management is seen by contractors as management applied to construction business contracting. Local contractors lack modern management techniques. The first point is, are contractors aware of modern management techniques? If they are aware of it, then are they willing to use it? If they are willing are they ready and capable to do it? must be some of the questions to be raised for further discussion. Besides, many contractors lack proper record of cost, equipment, and resource management. They also lack trust in professionals. They prefer semi-professionals to minimize their expense which compromise their capacity and quality of work.

b. Consultants

Lack of proper understanding of contractual issues attributed to lack of experience and knowledge. Lack of knowledge results in lack of confidence; it may further make consultants to be influenced by either the employer or the contractor. Consultants also fail to interpret contractual issues correctly arising through day to day project life. They also lack prompt action even with their capacity as there is nothing to lose as the project delays. The consultant gets its remuneration as the project delays; hence, either or both employer and contractor lose from the consequence. Some industry experts believe the quality of domestic consultancy services including construction management are decreasing as many of consulting firms recently in the market are one man or two men offices.

c. Employers

Lack of seasoned professionals in many public implementing offices is a major problem as far as construction management is concerned. It is due to low pay rates compared to consultants and

contractors where many professionals deserted from public implementing offices for a better salary and benefit packages.

7.2. Suitability of Available Local Conditions of Contract in the Construction sector

As explained in the analysis part of this thesis, domestic contract forms have been used in various degrees for the last five decades. The current available and applicable local contract forms in use are MoWUD 1994 and PPA 2006.

i. MoWUD 1994 contract form

Even though adopted mainly from FIDIC 1987, MoWUD 1994 is believed by many as one sided meant for helping totally the interest of the employer i.e. the government at the time. Among other things, curtailing advance payment and price adjustment clauses, increasing the percentage of liquidated damages to 20% compared to its preceding BaTCoDA 1987 contract form, Absence of financial claims and stating MoWUD as a quasi-arbitrator and final and binding decision maker on claims are some of the major drawbacks of MoWUD 1994. These problematic provisions were later addressed through construction conditions amendment consisting nine clauses by the defunct MoI in 2004.

Some of the provisions among the clauses included in construction conditions amendment by MoI in 2004 consist: reduction of liquidated damage from 20% to 10 %, reinstating 20% advance payment, reducing retention money from 10% to 5% and allowing price adjustment/escalation. The intervention by MoI is to integrate these percentages with international practices. However, many players of the construction sector are not aware of the amendment owing to its limited current use especially in private sector.

ii. PPA 2006 contract form

PPA 2006, the latest local conditions of contract in use is mainly copied from the World Bank's standard bidding document for small works with minor modification. The PPA 2006 conditions of contract for works has its own limitations from the outset for reasons stated in section 4.2.3.4.

For instance, Sub-clause 44.1 of the World Bank's conditions of contract for small works state "the amounts certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due in each

currency." Contrary to the World Bank's provision, Sub-clause 47.1 of PPA 2006 of ICB states that price adjustment will be made after deducting for advance payment without stating the logic behind. The employer may argue that the advance payment is given to the contractor without interest; hence, need to minimize his expense attributed to price escalation. However, it is apparent that contractors always lose 20% of the prices adjustment subject to escalation.

In addition, Sub-Clause 47.2 of PPA 2006 of ICB allows a correction factor Z_o/Z_n for price adjustment factor to payments made in a currency other than the currency of the source of the index for a particular indexed input. However, it is curtailed from the PPA 2006 NCB which affects domestic contractors. Besides, it does not even have a suspension clause which is a critical provision of many contract forms. Generally, the provisions of PPA 2006 contract forms are too short to deal with the complex nature of construction contracts.

7.3. Conformity of Selected Clauses with Ethiopian Law

Provisions of contract forms need to conform to applicable law of a country. As far as conformity is concerned, contract provisions stipulate the maximum penalty for engineers is the total amount of his professional fee which is too minimum compared to the damage suffered by the employer. However Art. 2636 of the civil code introduce the concept of liability based on professional negligence.

In respect of dispute resolution, Clause 67 of MoWUD 1994 expressly states the decision given by MoWUD is final and binding. In doing so the Ministry assumes dual roles, the owner of works representing the government and an arbitrator. However, it contravenes the law as MoWUD is not mandated to work as a court. Legally, it is not possible to imagine such kind of arrangement; the decision of such institution cannot be taken as a "decision", let alone to be designated as final and binding decision. Again, denying a right to appeal against or potentially excluding the review of such decision by courts is doing double injustice to the other disputing party.

Contract forms recently used locally in the construction sector i.e. PPA 2006 and FIDIC red book subsequent editions (FIDIC; 1987, 1999 and 2006 MDB) have arbitration clauses. The major employer of works in Ethiopia is the government with more than 90% share of all construction works. Construction contracts entered with public implementing offices is considered as administrative contracts. Administrative contracts are not arbitrable according to article 315(2) of

civil procedure code where as the civil code do not restrict in its arbitration articles. However, administrative contracts are submitted for arbitration in recent years as opposed to the procedure code.

Such procedural provision (article) is highly controversial even among the lawyers. The basis for their argument may base itself on the following grounds; jurisprudential ground and public policy ground.

1. ***Jurisprudential ground (i.e. based on the philosophy or science of law)***

Rights/powers and limitations to those rights/powers are created by substantive law and not by such adjective law i.e. like procedural law. According to a construction lawyer interviewed for this thesis, there is no any limitation on the rights/powers of the administrative authority under the law of administrative contract under the civil code, which is a branch of law classified under the substantive law; whereas the procedural law, like the civil procedure code, is an adjective law. Therefore it cannot create limitations which are not in existence under the said substantive law. The conclusion from this analysis is that Art. 315(2) being inoperable; the cases being arbitrable!

2. ***Constitutional/public policy ground***

Administrative authorities are part of the (executive) branch of government; hence, the government is a sovereign public entity. Besides, the government has established a public justice system through courts or the judiciary where cases related to government or public interest shall be tried and decided by courts of competent jurisdiction.

On the contrary, arbitration is a legal institution which exists in the realm of private justice system. Thus, submission of government cases/disputes to such private justice system is contrary to the sovereign power of the government and contrary to public interest. Therefore, from this analysis, irrespective of the status of the procedural law, the government has taken a clear and an important public policy decision by declaring the submission of disputes arising out of administrative contracts being non-arbitrable;

If allowed through their establishing proclamation to settle their dispute out of court. To the researcher's knowledge ERA a public implementing agency of road construction case is in point. According to article 10(3) of Proclamation No. 80/1997 (Re-establishment Proclamation of the

Ethiopian Roads Authority), "The General Manager may, with the specific permission of the Board, settle disputes out of court."

7.4. Construction Industry and Academic/Research Institution Relations

It is evident from the Latham (1994) and Egan (1998) reports in the UK that the construction sector and leading academic and research institutions work hand in glove for the betterment of the industry. Continuous studies and researches are carried out by collaboration of government and industry in the developed world.

In Ethiopia, such practice is not yet started which can be stated as the major problem of the domestic construction industry. The reason behind such problem is attributed to those in the industry. Some of the factors that lead to this miscommunication include:

- The construction industry is not theoretically, technically and conceptually backed by academic and research institutions;
- Many players in the construction sector especially contractors act only as a business entity rather than working towards scaling up the sector;
- Stakeholders in the industry (Employers, Consultants and Contractors) not used to apply academic research output which might be resulted from lack of trust and confidence.

Therefore, the responsible public implementing office for the construction industry in Ethiopia i.e. MoUDC need to facilitate the way forward to engage the industry and research institutions to work together for the betterment of the domestic construction sector in the future.

8. CONCLUSIONS AND RECOMMENDATIONS

This chapter presents conclusions that conform to the research objectives stated in the introduction part. Recommendations will also be forwarded to improve contract forms for the better usage of these forms to benefit the domestic construction industry, to point out amendments if there is any to come out from the research and highlighting topics for future study.

8.1. Conclusions

The objective of the thesis, as clearly stated in section 1.5 of the introduction part, is to assess the current state of standard forms of contract in the domestic construction sector i.e. problems attached to conditions of contract currently employed in the country. In light of this, the research is meant for to investigate the existing construction management practices followed by suitability of available conditions of contract in the domestic construction sector, assessing conformity of some selected clauses with the Ethiopian law especially in light of the Civil Code and contribution of contract forms for construction management profession. To achieve these objectives, the study use questionnaire survey, interview and desk study as a research instrument where frequency analysis and a descriptive statistics of cross-tabulation of problems item by item methods of analysis to find out the result through the analysis. The result obtained in this processes have been presented and discussed in the previous two chapters. In this chapter the major findings of the research which have been discussed before will be briefly summarized in accordance with the objectives of the research.

The first general objective of the research is to investigate and evaluate the existing practices of construction management in general and contract administration in particular. From the results of questionnaire survey the majority of respondent groups; 75%, 57% and 46% of contractors, consultants and employers respectively, showed their verdict as there exists an incompetent local construction management practices currently. However, the remaining 54% employer, 43% consultant and 8% consultant respondents feel the practice is fairly competent. The result from the interview showed that, regardless of its visible shortfalls and its infant stage, construction management practice in the local construction sector is fairly competent. As far as contract administration is concerned, the questionnaire survey and interview showed that contract administration do not meet the acceptable standard. According to the questionnaire survey result, the majority of contractors and consultants (67% and 57% respectively) and 42% of employers

showed their disagreement to the point that 'local contract administration meets the acceptable standard.'

The second specific objective was to assess the suitability of available conditions of contract in the construction industry. To achieve this objective, assessment of MoWUD 1994 and PPA 2006 was made. According to the findings, both contract forms have limitations to fully guide construction contracts. The concepts embodied in MoWUD 1994 are complex as it is adopted from FIDIC in a distorted way. PPA 2006 is relatively clear and too short to address complex contractual issues.

The third specific objective of the research was to identify clauses perceived to contravene the applicable law of the country. To this effect, termination, dispute resolution and arbitration clauses were studied in light of the civil code and civil procedure code of Ethiopia. Even though it is amended latter, the popular shortfall in Clause 67 of MoWUD 1994 stating the decision of MoWUD is final and binding denying the disputant for appeal is not legally sound. However, the amendment is not known by many of the players in the domestic construction sector. Sub-clause 61.1 of PPA 2006 stating the contractor's equipment is deemed to be the employer's property during termination on contractor's default. The questionnaire survey, interview and desk study showed that the clause is not logical where it is against the applicable law.

The last specific objective was to look in to the contribution of these contract forms in developing the construction industry in general and competence of construction management profession. It is apparent from the analysis and discussion parts of the thesis that the problems substantiated were not carried out as per the provisions and due to lack of awareness of stakeholders. The researcher believes local contract forms have a positive contribution to the domestic construction industry, even though they have limitations as described in the findings such as distorted adoption from foreign documents, and full of complex concepts and legal jargons. In a way it helps to improve domestic construction management practices in the local context with the prevailing situation.

The study also revealed that the Engineer's responsibility is overlooked in many instances. Respondents and interviewee professionals unanimously agreed that the Professional Indemnity Insurance of the Engineer is insignificant compared to the damage should there be any wrong doing. Further more, the relation of stakeholders in the domestic construction sector lack trust among each other. Besides, the construction industry lacks collaboration with research and

academic institutions which might have been benefited much from the integration with these institutions. Furthermore, the survey also showed that price adjustment and claim procedures are not practiced as per the procedures expressly stated in provisions of conditions of contract applicable in the domestic construction industry

8.2. Recommendations

The objective of this research was to generate findings from the hypothesized problems addressed in the literature review through questionnaire survey, interview and desk study. In addition, one of the specific objectives of this thesis was to forward recommendations based on the finding of the study. Therefore the recommendation will focus in addressing the major problems identified through the research processes.

8.2.1. To improve local construction management and contract administration

To improve the existing practices of local construction management in general and conditions of contract in particular, stakeholders need to take further steps as stated below.

A. Expected from the Regulatory body

1. Revise the current MoWUD 1994 and PPA 2006 in such a way to address current developments of the construction sector, especially the PPA 2006 need to come to MoWUD 1994 as applicable considering current developments in the domestic construction sector.
2. Provide a clear regulation and construction policy to guide the industry.
3. Establish a construction industry council in a bid to properly lead the industry by promoting collaborative research and development with higher institutions.
4. Assist the domestic construction industry by organizing a forum from every stakeholders of the sector such as interdisciplinary associations.
5. Assist public employers to strengthen themselves in staffing their planning, monitoring, evaluation and construction management unit to control their projects.
6. Consider accreditation of professionals and firms to engage in the construction sector.
7. Assist professional associations to lead their respective professions on the basis of their prescribed professional ethics required in their own respective field.

B. Expected from Employers

1. Employers need to equip their staff with competent and seasoned professionals as it's vital to handle contractual issues of huge and complex construction projects.
2. They need to check the financial health of contractors during evaluation of tenders, as shortage of cash flows ultimately impairs project progress and completion.
3. They need to strengthen their construction management team by setting up modern management techniques to evaluate and monitor reports of Engineers/supervision consultants goes in line with the actual situation in the ground.
4. Employers need to work to achieve timely response for issues forwarded from the engineer and Contractor.
5. It is vital to act on the early stages of the project to decide whether the project is suffering too much to consider termination before it is too late.
6. Adhere to the contract provisions and procedures of termination as appropriate instead of letting troubled projects to proceed.
7. They need to strengthen the procurement strategy for the future; hence it helps to award projects only for competent contractors.
8. Review the importance of traditional contracting system with the current trend in the international arena as compared to the domestic scene; for instance, considering design build.
9. Even though there is lack of trust among stakeholders it is vital to consider partnering contracting system for the future.
10. Carry out capacity building for local contractors to meet cost, time, quality and safety standards required by the construction sector.
11. Consider outsourcing of complex contractual issues to construction management consultants in a way to contribute for the development of the field.
12. Establish qualification and accreditation criteria for those to be assigned as resident engineer and project manager positions in projects.

C. Expected from Consultants

1. They need to have adequate knowledge and education at least to match that of the contractor so as to manage the project.
2. Set up modern management techniques supported by information technology systems where keeping the interest of the client (cost, time quality and safety) is vital.

3. They need to have state of the art check and balance, tracking mechanism and professional ethics as a quality index.
4. Avoid suppressing contractors out side their authority implied from the contract.
5. Be aware of the legal implication of their action and inaction in respect of the contract.
6. Act as per and only as the contract provisions as they only stand for their profession even though they represent employers in most cases.

D. Expected from Contractors

1. Contractors need to offer in their tender the actual scenario instead of offering least prices as it ultimately back fires on them even to bankruptcy.
2. Contractors need to improve their equipment, machinery and human resource to increase their capability to enhance their comparative advantage.
3. They need to concentrate on the works instead of cutting corners to make up their cost by unnecessary claims.
4. Contractors must respect their Employer and adhere to the ethics of construction business for the well being of the construction sector in general and the Works in particular.
5. Establish construction management and contract administration team within their company to handle day to day contractual issues.
6. They need to look in to carefully and properly each and every contract documents before signing the contract to remedy any mishap therein.
7. They need to have trust in professionals so that it will help boost their efficiency.
8. They need to have modern recording techniques of their cost structure, resources, equipment etc.
9. Improve their awareness towards contractual issues instead of dwelling only on the BOQ.

E. Expected from Universities (Higher Institutions)

1. Include some legal aspects of contracts in their under graduate courses especially in engineering management course.
2. Organize a forum with professional institutions to carry out researches to catch up with the current state of the art developments in the field internationally.

F. Expected from National Bank of Ethiopia and Central Statistics Agency

1. Establish a fair, reasonable and representative price indices for construction related inputs.
2. Periodically revise these indices so that their usage will be fair to any party using them.

8.2.2. Recommended Changes to Civil Procedure Code and PPA 2006 Contract Forms

It is apparent from the discussion made that local contract forms lack comprehensive elaboration of concepts embodied therein. The following suggestions were forwarded to improve them.

1. Article 315(2) of the civil procedure code need to be amended to avoid the obstacle it impedes on the arbitration proceedings of administrative contracts.
2. Sub-Clause 62.1 of PPA 2006 need to amended in a way that only the loss of the employer shall be recovered, hence the remaining balance need to be returned to the contractor instead of confiscating the contractor's equipment/property.
3. Clause 25 of PPA 2006 need to be elaborated in respect of dispute resolution procedures. It needs to be expressly stated including their chain of ladder up to arbitration and litigation.
4. Sub-clause 47.7 need to be corrected to adjust prices before deducting the advance payment as per many international practices.
5. PPA 2006 is not fit for large projects; hence it need totally be revised by integrating with MoWUD 1994 in lieu of the current state of the domestic construction industry.

8.2.3. Suggestions for Future Studies

This study tried to substantiate some of the problems associated with the local construction industry with respect to conditions of contract. The researcher believes a further work on the area is vital in order to guide the construction industry through the efficient use of contract forms.

1. Assessment of efficiency of the Ethiopian construction industry considering cost, time and quality parameters as compared to international standards.
2. Study of local construction management practices as compared to best international practices.
3. Assessment of Contract Administration of stakeholders in the domestic construction sector.
4. Study of construction contracts from the legal perspective in Ethiopia.
5. Study of termination clauses as applicable in the domestic construction sector.
6. Assessment of termination impacts on stakeholders: emphasis on Employers and Contractors
7. Assessment of development of local arbitration institutions and their way forward.
8. Study of Engineers Responsibility towards the Employer and the Contractor.
9. Study of price adjustment in the construction sector as compared to best international practices.
10. Contribution of international project construction management procedures for the domestic construction sector in Ethiopia.

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Appendix A - Questionnaire

Dear Participant,

I am undertaking a research study entitled **"Assessment of Conditions of Contract Problems in Ethiopian Construction Industry"** as part of my MSc. Study in Construction Technology and Management at Addis Ababa University, Addis Ababa Institute of Technology.

As you well understand there has been a remarkable construction boom in Ethiopia in the last decade especially in recent years. These construction activities encompass residential housing schemes, commercial and industrial establishments, and extensive infrastructure developments (roads, dams, etc.). However, the Ethiopian construction industry faced great challenges attributed to the complex nature of the sector. Problems related to contract administration and construction supervision, misunderstanding between stakeholders etc. are some of the challenges. These problems have their own adverse impact on progress of projects. The aim of this research is therefore to assess the practices of conditions of contract/contract forms usage in such a way to forward recommendations based on the findings.

The questionnaire is developed to assess the practice of major stakeholders in a construction project in using contract forms with the main focus on provisions related to powers, duties and responsibilities of the Engineer, price adjustment, termination and dispute resolution procedures.

Your response will be kept strictly confidential, where only my academic advisor and I will have access to the information you provided and it will be exclusively used for the research. You may kindly aware of time constraints in such academic requirement researches; hence, I sincerely request you to complete and return the questionnaire in a week time to enable me finalize the research on time to meet the deadline.

Thank you for your invaluable time and cooperation.

Kind Regards,

Getaneh Gezahegne/Researcher

The following survey questions are designed to assess the usage of contract forms in the domestic construction industry. Please consider each question in terms of your organization's experience and/or your personal knowledge. Please indicate your response by ticking (X or √) mark at the appropriate box (es) or by filling the blank spaces provided, as appropriate. You may kindly use the back side of the paper if the blank space (s) is/are not sufficient.

1. Personal and Organization Profile

1.1. Name of Organization (*Optional*): _____

1.2. Type of Organization:

☐ Client/Employer ☐ Consultant ☐ Contractor ☐ Professional Institution

Other (*Please specify*) _____

1.3. Years since establishment:

☐ <5 years ☐ 5-10 years ☐ 10-15 years ☐ 15-20 years ☐ >20years

1.4. Organization's area of specialization:

☐ Building ☐ Highway ☐ Water Works ☐ All infrastructure

Other (*Please specify*)_____

1.5. Your work experience in construction projects and construction project related works:

☐ <5 years ☐ 5-10 years ☐ >10 years

1.6. Your participation in contract administration, construction supervision and project management:

☐ <5 years ☐ 5-10 years ☐ >10 years

1.7. Your Name, title and contact address:

Name (*Optional*): _____

Job Title: _____

Contact address (*Optional*):

E-mail: _____

Tel: _____

2. General Questions

2.1. In general, how do you describe the performance of the Ethiopian Construction Industry?

☐ Very Good ☐ Good ☐ Bad ☐ Very Bad

Other (*Please specify*) _____

If your answer is bad, what challenges may have contributed in your opinion for the poor competence? *(Please check all that apply in your point of view)*

☐ Lack of competent and experienced professionals in the field

☐ In appropriate and malpractices in the industry (fraud, corruption etc.)

☐ Absence of clear policy and regulations to properly guide the industry

☐ Scarcity of resources (capital, material, equipment etc.)

Other (*Please specify*) _____

2.2. Proper administration of construction projects is vital to optimize cost, quality and time. How do you rate construction management practices in Ethiopia to achieve these goals?

☐ Competent ☐ Fairly Competent ☐ Incompetent

If it is incompetent, what factor(s) do you believe behind the problem?

☐ Lack of professional, technical and managerial skill
☐ Limited professionals/firms for too many construction projects
☐ Too many consultant and management firms for few construction projects
☐ Negligence to provide the service as per the specified conditions
Other (*Please specify*) _____

2.3. Contract administration is critical for smooth progress to execute the project according to the planned schedule. Do you feel contract administration meet the acceptable standard?

☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree

If you are in disagreement, where do you think the problem arises?

☐ The contract/contract forms used
☐ Problems attributed to the Employer/Engineer
☐ Problems attributed to the Contractor
Other (*Please specify*) _____

2.4. Conditions of contract is one of the main integral part of contract document in construction contracts. Which contract form you/your firm use currently?

☐ Ministry of Works and Urban Development, MoWUD 1994 contract form
☐ Public Procurement Agency, PPA 2006 contract form
Fédération Internationale des Ingénieurs-Conseils, FIDIC Red Book contract form
☐ FIDIC 1987 ☐ FIDIC 1999
☐ FIDIC 2006, MDB (Multilateral Development Banks) Harmonized edition
Other (*Please specify*) _____

2.5. Understanding the provisions in conditions of contract by stakeholders is necessary to perform their duties. How do you rate the level of awareness of parties to use contract forms appropriately?

Employer	☐ Very Good	☐ Good	☐ Fair	☐ Poor
Engineer/consultant	☐ Very Good	☐ Good	☐ Fair	☐ Poor
Contractor	☐ Very Good	☐ Good	☐ Fair	☐ Poor

What do you recommend to improve understanding of parties in using contract forms?

☐ Conduct on job training in individual firms/projects
☐ Organize a forum between major stakeholders, public authorities, professional originations, and academic institutions for the betterment of the industry
☐ Creating awareness using peer discussion and experience sharing among professionals
Other (*Please specify*) _____

3. Readability and Interpretation

3.1. How clear and understandable are the concepts and ideas presented in the clauses of the conditions of contract currently used in the construction industry?

☐ Very Good ☐ Good ☐ Fair ☐ Poor

If the provisions are not clear enough, what do you recommend to improve them in a way to convey the intention of clauses clearly?

☐ Provide glossary for contract forms
☐ Refer the issue to the party publishing the contract forms
☐ Refer the matter as a sole responsibility to the Engineer
Other (*Please specify*) _____

3.2. How do you rate the phraseology and conciseness of domestic contract forms compared to the commonly used FIDIC contract forms?

☐ Compatible ☐ Fairly Compatible ☐ Incompatible

If it is incompatible what measure should be taken by major players in the industry?

☐ Apply current contract forms by providing clarifications in special conditions
☐ Revise the current contract forms to address recent developments in the field
☐ Use FIDIC contract forms
Other (*Please specify*) _____

3.3. Interpretation is essential when ideas in clauses come across with ambiguity. To whom in your opinion shall such matters related to interpretation be referred to?

☐ Engineer ☐ Dispute Adjudication Board
☐ Arbitration Institution ☐ Courts

3.4. The terms 'Experienced Contractor' and 'Substantial Completion' are subject to varied interpretation. How is the degree of clarity to your view in respect of these terms?

☐ Very Good ☐ Good ☐ Fair ☐ Poor

If it is poor, what is your reason and recommendation to enhance its clarity to come up with a common agreeable terms _____

3.5. Provisions on interpretation in contract forms only deal with the order of priority of documents. Is it sufficient to interpret implied terms in the contract?

☐ Yes ☐ No

4. Powers, Duties and Responsibilities of the Engineer

4.1. The concept of independent Engineer is changed in recent developments (PPA, 2006 & FIDIC 1999) through the provisions that restrict him to act before prior approval. Isn't this trend affect the Engineer to carry out his duties especially decisions/determination on contractual matters between the Employer and the Contractor?

☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree

If you are in agreement what leeway do you recommend enhancing the Engineer's duty in a better way? _____

_____

4.2. FIDIC 1999 and PPA 2006 contract forms expressly stipulate the Engineer as an agent to the Employer while the same Engineer given an independent duty to settle claims between Employer and Contractor. Is it humanly possible to come out impartial on such cases?

☐ Yes ☐ No

What do you recommend to compromise the agency and impartiality issues?

_____

_____

4.3. In major public infrastructure projects in Ethiopia, both the consultant and contractor come from the developed world. In the Employer's point of view the Engineer might be reluctant and relieve the contractor some of his obligations. What is your opinion on the issue?

☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree

What control mechanism is possible in your point of view to minimize such occurrences?

_____

_____

4.4. In some cases the Engineer may try to cover his failure in executing his duties by averting his fault towards the contractor. Is it logical for the Engineer, the source of such problems to determine on such claims?

☐ Yes ☐ No

If it is not logical, what is your opinion to hold the Engineer accountable? _____

_____

_____

4.5. Contractors in some cases refrain from pursuing their rights stipulated in the contract provisions. What possible reasons might be behind?

☐ Lack of awareness

☐ Even though they understand their rights, they reserved in fear of jeopardizing their future work relation with the Employer and consultants

☐ Unfavorable industry environment (take long time, fraudulent practices etc)

Other (*Please specify*) _____

4.6. The Engineer is responsible to the Employer through the duty of care in performing his tasks; however, the maximum professional indemnity is the amount equivalent to the total professional fee. Is it sufficient compared to the damage penalty imposed on contractors?

☐ Sufficient ☐ Fairly Sufficient ☐ Insufficient

If it is insufficient how much shall be the penalty as a professional indemnity?

☐ Twice maximum service fee ☐ One and half of service fee

☐ Two and half of service fee

Other (*Please specify*) _____

5. Price Adjustment

5.1. Price adjustment is allowed for labor, materials and equipment in conditions of contract. However, adjustment is only allowed for materials comprising cement, bitumen, reinforcement bar and fuel in Ethiopia. As a result, domestic contractors are in disadvantage due to their limited capital base.

☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree

5.2. The two methods widely practiced for price adjustment are Base Price and Price Indices. Which method you prefer as suitable for the Ethiopian construction industry?

☐ Base Price/Base Date Price ☐ Price Indices

If you are in favor of Price Indices method of adjustment, how best is it to apply without any established price indices by the responsible public bodies in the country?

☐ Establish new local price indices and revise periodically

☐ Use foreign price indices

Other (*Please specify*) _____

If you favor the use of foreign indices, what control mechanism do you recommend on its credibility, unbalanced inflations of local currency and those currencies the indices are taken as the source?_____

_____

_____

5.3. Price adjustment formula uses an alternative adjustment coefficient using foreign indices through Z_o/Z_n. Shall this method adopted?

☐ Yes ☐ No

6. Termination

6.1. Termination of a contract is the last resort where one or both parties fail to perform their obligations. Grounds for termination are provided in clauses of contract forms. Is termination on account of default done following the procedures as per the conditions stated in contract forms in Ethiopia?

☐ Yes ☐ No

If it is not applicable in a way as cited in the provisions, what do you think the possible factors that hamper its application?

☐ Lack of awareness by parties regarding termination clauses

☐ Long and cumbersome retendering process

☐ Financial loses from the resulting termination

Other (*Please specify*) _____

6.2. Prolonged suspension is one of the major grounds for termination. How do you rate the potential of suspension instructed by the Engineer to end up in termination?

☐ Very High ☐ High ☐ Low ☐ Very Low

If you believe it is high, the Employer bears the responsibility due to the negligence of the Engineer. What measure is advisable to minimize such risks? _____

_____

_____

If the termination is due to the Employer's default, the contractor shall be compensated for idle equipment, anticipated profit etc. how do you comment on this in light of wastage of capital and resources? _____

_____

_____

6.3. Many public infrastructure projects suffer too much cost overruns and delays. Such projects are allowed to proceed where terminating them might have been a better option to optimize the scarce resources. Does such practice need to be maintained for future projects?

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

If you believe such practice need to be improved, what will be your recommendation?

_____

_____

_____

6.4. According to clause 61.1 of PPA 2006, the Employer is entitled to take over the Contractor's property and equipment on site during termination. How logical in your opinion from legal perspective?

_____

_____

7. Dispute resolution procedures and Conformity of some clauses with the Ethiopian Law

7.1. There are two domestic arbitration institutions in Addis Ababa. How do you rate local arbitration practices compared to international ones?

☐ Very Good ☐ Good ☐ Fair ☐ Poor

If arbitration practices are poor, what measures need to be taken to scale up their capacity so as to meet the international standards?_____

_____

_____

7.2. Adjudicator is being appointed at the start of public projects in recent years to handle claims and disputes on the outset while memories that give rise to the incident are still fresh. Is such practice help for the smooth progress and efficient contract administration?

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

If you are in disagreement what alternative dispute resolution do you recommend? _____

_____

_____

7.3. Claim initiation procedures are best listed in MoWUD 1994 and FIDIC 1987 contract forms while it is not as such dealt in PPA 2006 contract form. What draw back does it have in dispute resolution?

_____

_____

_____

7.4. The contractor is given limited time frame to initiate claim and to submit particulars while the Employer is free from such limitations to initiate claim in recent PPA 2006 and FIDIC 1999 contract forms. How do you see its balance of risk?

☐ Fair ☐ Unfair

If it is fair what do you think the reason behind not to restrict the Employer to submit his claim any time unlike the contractor? _____

_____

_____

If it is unfair how much time shall be given to the Employer to submit claim?

☐ More time than the contractor ☐ Equal time to the contractor

☐ Less time than the contractor

7.5. Public administration contracts are not arbitrable according to the civil procedure code article 315(2) while it is not restricted in the civil code. However, public contracts are being arbitrated locally and internationally in recent years. What is your opinion on this contradiction?

_____

_____

_____

8. General Reflections

8.1. Even though there are some limitations, local conditions of contract are suitable for use in the construction industry. What is your view in the statement?

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

If you disagree with the point, what will be your recommendation to apply these contract forms in a better way? _____

_____

8.2. Construction management is vital to guide the construction industry in order to optimize cost, time and quality. How is the performance of domestic construction management practices especially in light of contract administration?

☐ Very Good ☐ Good ☐ Fair ☐ Poor

If it is poor, what are the reasons behind?

☐ Lack of competent and seasoned professionals in the field

☐ Lack of conducive environment for practicing

☐ Lack of awareness of stakeholders

Other (*Please specify*) _____

What measures shall be taken to improve the current state of local construction management practices? _____

_____

_____

8.3. Public employers lack seasoned engineers to administer too many development projects on progress and on the pipe line. This may lead to maladministration of these projects, for instance allowing inappropriate variation orders which ultimately increase project costs while the quality is compromised. What do you recommend to minimize such wastages of resources?

_____

_____

_____

_____

8.4. Consultants/Engineers and contractors are regular stakeholders in issues involving contractual matters. However, they are not aware of the legal implications of their action and inaction in most cases especially when their action resulted in claims and disputes. What measure shall be taken to create awareness concerning legal perspectives arise from construction contracts?

_____

_____

_____

_____

8.5. Even though it addressed some latest dispute resolution mechanisms such as Alternative Dispute Resolution (ADR), the PPA 2006 contract form is not exhaustive according to some industry experts compared to its preceding contract forms such as MoWUD 1994 and BaTCoDA 1987. Detail procedures addressed in these contract forms are referred to special conditions in the PPA 2006 contract form. What is your comment on the inherent risk of contradiction and ambiguity while drafting special conditions given limited professional input in such tasks?_____

_____

_____

_____

Please kindly check no points are escaped!

Thank you very much for your time!

Would you like to have a soft copy of the study? ☐ Yes ☐ No

May you be contacted to discuss your replies further? ☐ Yes ☐ No

If you check in "Yes" for either of the two, please fill herein under

Name (*Optional)*: _____
e-mail: _____
Tel No. _____

Appendix B – Frequency Analysis by Percentage (SPSS output summary)

A. General Questions

Qn. No.	Response	Respondent Group Variables (%)			Remark
		E	CONS	CONT	
2.1	Very Good	-	-	-	
	Good	38	36	58	
	Bad	38	36	42	
	Very bad	-	14	-	
	Fair	24	14	-	Respondents choice
2.2	Competent	-	-	17	
	Fairly Competent	54	43	8	
	Incompetent	46	57	75	
2.3	Strongly Agree	8	-	-	
	Agree	46	43	25	
	Disagree	46	57	67	
	Strongly Disagree	-	-	8	
2.4	MoWUD 1994	15	21	92	Excel output: each respondent group uses more than one contract forms
	PPA 2006	46	64	58	
	FIDIC 1987	69	36	33	
	FIDIC 1999	38	29	8	
	FIDIC 2006 MDB	69	14	17	
2.5	Very Good	23	15	-	Employer
	Good	54	21	42	Employer
	Fair	15	43	42	Employer
	Poor	8	21	16	Employer
	Very Good	16	29	17	Consultant
	Good	38	50	50	Consultant
	Fair	38	21	25	Consultant
	Poor	8	-	8	Consultant
	Very Good	-	7	-	Contractor
	Good	23	29	58	Contractor
	Fair	62	50	25	Contractor
	Poor	15	14	17	Contractor

B. Readability and Interpretation

Qn. No.	Response	Respondent Group Variables (%)			Remark
		E	CONS	CONT	
3.1	Very Good	23	7	-	
	Good	54	64	75	
	Fair	23	29	17	
	Poor	-	-	8	
3.2	Compatible	8	29	25	
	Fairly Compatible	75	50	33	
	Incompatible	17	21	42	
3.3	Engineer	69	69	36	
	DAB	31	15	28	
	Arbitration Institution	-	8	36	
	Courts	-	8	-	
3.4	Very Good	15	7	25	
	Good	31	29	50	
	Fair	39	43	17	
	Poor	15	21	8	
3.5	Yes	50	36	36	
	No	50	64	64	

C. Powers, Duties and Responsibilities of the Engineer

Qn. No.	Response	Respondent Group Variables (%)			Remark
		E	CONS	CONT	
4.1	Strongly Agree	-	7	8	
	Agree	23	21	17	
	Disagree	69	72	67	
	Strongly Disagree	8	-	8	
4.2	Yes	46	57	45	
	No	54	43	55	
4.3	Strongly Agree	-	-	18	
	Agree	31	50	64	
	Disagree	54	33	18	
	Strongly Disagree	15	17	-	
4.4	Yes	33	38	-	
	No	67	62	100	
4.5	Lack of awareness	15	14	-	More than one choices also done using Excel
	Fear of work relation	-	7	50	
	Industry environment	-	7	-	
4.6	Sufficient	15	23	25	
	Fairly Sufficient	8	46	42	
	Insufficient	77	31	33	

D. Price Adjustment

Qn. No.	Response	Respondent Group Variables (%)			Remark
		E	CONS	CONT	
5.1	Strongly Agree	-	33	58	
	Agree	20	42	34	
	Disagree	70	17	8	
	Strongly Disagree	10	8	-	
5.2	Base Price	31	64	58	
	Price Indices	69	36	42	
5.3	Yes	100	57	60	
	No	-	43	40	

E. Termination

Qn. No.	Response	Respondent Group Variables (%)			Remark
		E	CONS	CONT	
6.1	Yes	50	38	42	
	No	50	62	58	
6.2	Very High	9	-	9	
	High	19	7	-	
	Low	36	43	55	
	Very Low	36	50	36	
6.3	Strongly Agree	10	14	8	
	Agree	10	29	17	
	Neutral	-	14	8	
	Disagree	50	36	33	
	Strongly Disagree	30	7	33	
6.4	Fair	75	56	27	Open ended response modeled by Excel
	Unfair	25	44	73	

F. Dispute Resolution Procedures and Conformity of some Clauses with Ethiopian Law

Qn. No.	Response	Respondent Group Variables (%)			Remark
		E	CONS	CONT	
7.1	Very Good	-	-	-	
	Good	14	50	12	
	Fair	57	30	44	
	Poor	29	20	44	
7.2	Strongly Disagree	34	21	42	
	Agree	58	50	42	
	Neutral	8	21	16	
	Disagree	-	8	-	
	Strongly Disagree	-	-	-	
7.3	High Impact	72	78	100	Excel output
	Low Impact	14	11	-	
	No Impact	14	11	-	
7.4	Fair	50	50	25	
	Unfair	50	50	75	
7.5	Shall be arbitrable	100	100	100	Open ended response

	Be inarbitrable	-	-	-	modeled by Excel

G. General Reflections

Qn. No.	**Response**	**Respondent Group Variables (%)**			**Remark**
		E	**CONS**	**CONT**	
8.1	Strongly Disagree	-	8	8	
	Agree	50	76	76	
	Neutral	34	8	8	
	Disagree	8	8	-	
	Strongly Disagree	8	-	8	
8.2	Very Good	-	-	-	
	Good	8	14	17	
	Fair	46	65	33	
	Poor	46	21	50	
8.3	Benefit and salary	36	14	22	Open ended response modeled by Excel
	Capacity building	64	21	56	
	Outsource to CM	-	75	22	
8.4	Employ legal advisor	8	14	11	Open ended response modeled by Excel
	Capacity building	84	72	78	
	Interdisciplinary practice	8	14	11	
8.5	High risk	67	78	66	Open ended response modeled by Excel
	Low risk	22	22	17	
	No risk	11	-	17	