CLAIMS IN ETHIOPIAN CONSTRUCTION INDUSTRY

A THESIS

PRESENTED TO SCHOOL OF GRADUATE STUDIES

ADDIS ABABA UNIVERSITY

FACULTY OF TECHNOLOGY

IN PARTIAL FULFILLMENT OF THE REQUIREMENT

OF THE DEGREE OF MASTER OF SCIENCE IN

CIVIL ENGINEERING (structures)

BY

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FEBRUARY 2003

INSTRUCTORS' PROVISION OF WRITTEN RESPONSES TO

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

CLAIMS IN ETHIOPIAN CONSTRUCTION INDUSTRY

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APPROVED BY BOARD OF EXAMINERS

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Acknowledgements

I would like to express my sincere thanks to my advisor Dr:-Ing. Abebe Dinku, Addis Ababa University, Technology Faculty, for his supervision, guidance and valuable advice during the study period.

I am deeply grateful to all who have given me assistance in obtaining the information and data related to this work. Ethiopian Road Authority and Construction Design Share Company merit particular thanks for their cooperation and willingness for providing me the cases of Lalibela to Sekota rural road project and the 500 special housing projects respectively.

Finally I would like to acknowledge the encouragement and support given to me by my mother W/o Tirfe Duressa and my father Ato Dessa Garba.

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ABBREVIATIONS

FIDIC = Fédération International des Ingénieurs Conseils

ICE = Institute of Civil Engineers

BaTCoDA = Building And Transport Construction Design Authority

BDE = Building Design Enterprise (now called Construction Design Share Company)

TCDE = Transport Construction Design Enterprise (now called Transport Construction Share Company)

ERA = Ethiopian Road Authority

ORRA = Oromiya Rural Road Authority

BOT = Build, Operate and Transfer

BOOT = Build, Own, Operate and Transfer

MoWUD = Ministry of Works and Urban Development

ECA = Ethiopian Contractors Associations

DBFO = Design, Build, Finance and Operation

ABSTRACT

Claim in general term is defined as a demand or request for some thing, which one has right to have. In the context of this thesis claim means a demand by a contractor for extension of time or for an extra payment of an item or items of work carried out by him on behave of employer for which a readily identifiable amount can not be ascertained under the term of contract. The right of entitlement for a contractor to his intention depends on the provision of condition of contract on which the contracting parties depend for their agreement. These conditions could be FIDIC, BaTCoDA, ICE or others. The conditions of contract provide specific clauses for making and settlement of claims for extra cost and for grant of extension of time.

In Ethiopian construction industry, claims are normally inevitable because of the traditional project procurement system widely practiced in the country. Moreover, majority of local construction organizations manage their construction projects by employing engineers who have little or no training on construction project management. This results in improper claim administration. In addition to the complexity of projects being undertaken, these days, the type of project procurement system and improper claim administration raises more problems. For instance, among 15 completed projects studied during the thesis work, project delay up to 500 % of its contractual time and cost increase of greater than 80 % of its contractual sum were encountered. The main causes for these problems are thought to be the improper project management and claim administration.

Therefore, the research is aimed to describe the general nature of claims and to identify the type of claims widely raised by local contractors.

In addition the thesis is expected to create awareness with the major construction parties i.e. contractors, owners and consultants about the level and significance of claims in Ethiopian construction industry. Even though, there are many bases on which claims may be raised legally, claims that are based on contractual provisions are emphasized in this research work.

Contractual claims in the industry can be raised due to variations, breach of contract from contractor(s) or employer(s) side, delay/disruption and third party.

The thesis is mainly devoted to identify the main causes of claims in Ethiopian construction industry, among the aforesaid types of claims. For this purpose different data collection techniques like constructive interviewing and questionnaires were designed and utilized. Conclusions and recommendations are forwarded based upon statistical analysis of data collected during the study period.

For the sake of comparisons of the experience of local contractors and foreign (international) contractors in processing claims, case studies were conducted.

The cases are: Lalibela to Sekota rural road project undertaken by local contractor called SUR construction Share Company, Sodao to Chida access road project undertaken by international (foreign) contractor called Salini construttori S.P.A and the 500 special housing project undertaken by international (foreign) contractor called C.M.C-di- Ravenna. The detail analyses of the case studies along with copies of questionnaires are annexed in the appendix of the thesis.

1.0 INTRODUCTION

1.1 Claims Background

Claim is defined as a demand or request for something, which one has a right to have. Claims in construction industry are associated with cost overruns, mismanaged jobs, legal entanglements, and wrong practices on the part of various contractors. They are often viewed by owners and engineers as the contractor's strategy to cover bidding errors or omissions. This is a misconception, however, as claims are an integral part of the construction processes, and good claim administration principles are as important as good engineering, safety, and business principles [7].

There is perhaps no greater area of controversy in Ethiopian construction industry to day than that arising from the 'claims situation', especially delay and variation claims. Even though, the advancement of claims is gradual by local contractors, it is appreciably increasing by international contractors. Some of the factors influencing the serious and substantial increase in the number of claims for additional compensation is the complexity of the projects being undertaken, the price structure of the industry, which does not permit the absorption of the unanticipated additional cost by the contractor, and the super legalistic approach taken by many owners and contractors.

1.2 Objective of The Thesis

The purpose of this research work is to describe the general nature of claim problems encountered in Ethiopian construction projects and to study the attitude and awareness of major construction parties toward claims management.

It also tries to identify and bring in to view the main causes of claim in Ethiopian construction industry. The thesis is believed to make the construction manager feel comfortable with claims and help him know what approach to take for each situation encountered.

1.3 Policies and Procedures for Claim Administration

1.3.1 Necessity of procedures for administrative relief

The constraint of budget, time, and environment leave little room for perfect contract documents or perfect construction conditions. The contractor is committed to build the project within the constraint of budget, the contract documents, and good construction practices. Any variance from these constraints will cause variations in time and cost, and as such, remedies are sought through contract claims and change orders. Changes in contract time or cost must be instituted through formal contract modifications, which are the end result of claims and change orders.

1.3.2 Basic procedures

To protect themselves and to maximize the chance of adequate and profitable recovery in claims and change orders, it is imperative that contractors should have sound, systematic policies and procedures for the administration of all claims and change order situations. The basic procedures for claims administration are:

a. Identification and notification

b. Analysis of time and cost impacts

c. Systematic and accurate documentation; and

d. Preparation, pricing, and negotiation

1.3.3 Active claim policy

Some contractors avoid an active and aggressive policy for claims administration. This is due in part to the history of construction contracts and public records for litigation and costly overruns. This should not be seen as a deterrent, but rather should signal the importance of claims administration.

It is the contractors contractual and legal right to pursue the recovery of increased costs and attributed to valid claims. Most local contractors wishfully think he/she can establish better relations with the consultant or owner by downplaying claims and change order problems. He/she only creates a false sense of security neither recognizing the owner's need to be informed nor allowing for discontinuities due to personnel changes, and therefore, often contributes to costly settlement of claim.

1.3.4 Active claims program

Active familiarity with and awareness of potential claim situation is a prerequisite to successful project management [3]. That means the contractor should be aware of the

potential risks associated with claims and that one of his highest priority should be proper management of those risks. The contractor must be able to recognize and to identify a claim situation when it first develops, not after it has become a controversy [15].

An active program of claims and change order identification and notification is the only way the owner can be made aware of adverse or potentially adverse job conditions. An active program of claims also help the owner to be aware of the potential magnitude of cost and time effects early enough to secure adequate funds and make appropriate and timely adjustments. The owner will respect the contractor's effort to keep the job organized and to isolate changed conditions and difficulties encountered. This is especially valuable when the owner participates in effecting remedies.

Ample notification gives the owner opportunity to take proper steps and institute special procedures. It also forces the owner to commit his interpretation early rather than after the work is completed. Thus, the owner need not resort to defensive tactics and the contractor is spared unfavorable surprises later. Organized procedures form the backbone of a strong construction company and for successful claims and change order problems [15].

1.3.5 Procedural roadblocks and how to overcome them

Contractor laxity toward claim administration policies until the job is well underway or complete creates great problems. These problems are widely seen in Ethiopian construction

industry because of lack of experience in the processing of claims, lack of awareness of claims situation and lack of knowledge of legal and contractual right. These make it difficult for the contractor to develop the habit of including good claims administration with his other procedures.

This thesis work will try to bring together much of the contemporary information on the subject and highlights the important elements of each topic. It may enable the construction manager to successfully administer the claims on his project even though he is not a claims expert or does not want to hire a claims engineer for the project.

1.4 Project Procurement System

The main reason for liability of Ethiopian construction industry to claim is the procurement system practiced in the country. In today's world of construction and infrastructure projects, there are essentially three types of procurement systems. These are: Traditional procurements, BOT procurement or one of its derivatives, and Partnering [8].

1.4.1 Traditional procurement

Traditional procurements mean the procurement of a construction or infrastructure project by an employer (be he a government ministry, individuals or private company). The employer may provide the design of the project himself, procuring it through a separate firm of design consultants or he may look for a turnkey procurement whereby the contractor will design and build the project on a single point of responsibility basis.

However, what distinguishes a traditionally procured project from the BOT form of project procurement is that it is the employer who will provide the finance for the project –either in the form of his own funds or in the form of funds that he has borrowed or which have been supplied to him by a funding agency [8].

The form of contract used in traditional procurement usually contain a number of clauses entitling the contractor to claim for extra time and/or money or both, and entitling the employer to claim in certain circumstances, for example, for executing delay by the contractor.

1.4.2 BOT procurement

The second type of project procurement is BOT type. It can be found under a considerable variety of different acronyms such as BOT, BOOT, DBFO and then in particular sub-species such as public private partnerships (PPP) or private finance initiative (PFI), and so on. Whichever form of initial is used, this type of project procurement is characterized by the fact that it is non-recourse finance. In other words, the finance of the project is undertaken not by the employer but by the concessionaire for the project who will normally operate the project, once completed, for a period ranging between 15 and 40 years. Under this form of project procurement, the funders will be lending to the special purpose profitable company and will be paid back by way of the income generated by the project once it has been completed.

Precisely because the funders stand to lose their money if the project is a failure, they will be very concerned to ensure that a great majority of risk placed upon the Project Company is passed through to the contractor under the construction sub contract. At the same time the

contractor in such projects will find that the opportunity for him to claim for extra time and extra money are extremely limited. The reason for this is that what the funders want above all else is certainty of project out-turn.

They don't wish to be faced with claim for extra time and costs from the contractor. Under this form of procurement, the contractor will face more risks than under traditional project procurement and his opportunity to make claims will be very limited.

1.4.3 Partnering

The third part of project procurement system is the partnering or alliancing. This is a form of project procurement that originates in the offshore oil and gas sector, and has increasingly found popularity in the United States and Europe as a form of non-confrontational project procurement.

A variety of means of avoiding claims and confrontation are undertaken in a partnering contract. These include the use of partnering charter, which sets the joint aim of the employer and the contractor in undertaking the project. In addition it is normal for all parties to the project to go away for a think-tank style long weekend where the parties bond through the agency of specially trained professional partnering facilitators. These help them to identify the likely problem areas of the projects and explore ways in which they will jointly deal with such problem areas in a non-adversarial and constructive manner.

Normally in a partnering contract, the parties will share in any cost saving that is achieved by the contractor. This is done to give the contractor the incentives to work in a most cost-

effective manner whilst maintaining his standard, and to encourage him to develop value-engineering techniques to be applied to the project.

In Ethiopia, because most projects are funded by funding agencies such as the European investment bank and the World Bank, the projects are traditionally procured. That is to say that the relevant government ministry, the employer, invites tenders, and award, to lowest responsive price.

Under traditionally procured contracts such as those, which are procured in Ethiopia, claims by contractor are inevitable. They are not indicative of a collapse of the project but they are the result of the nature of procurement process.

Such claims are inevitable for the following reasons.

(i). Because the form of contract that the various funding agencies use are themselves contract forms that allow for contractor's claims.

Both the European investment bank and the World Bank have forms of contract, which are modeled to a greater or lesser extent on the FIDIC forms of contract. The fourth edition FIDIC red book is itself a claim based form of contract. For instance, the FIDIC red book form of contract for use on civil engineering works is a re-measurement form of contract. There are many clauses entitling the contractor to make claims.

Some of these clauses are:

1. Adverse physical obstructions or conditions (clause 12(2))
2. Errors in setting out which are based on incorrect written data supplied by the engineer (clause 17)
3. Loss or damage due to employer's risks (clause 20)

4. Indemnities that the employer has contractually undertaken to assume (clause 22(2))

5. Fossils or discovery of things of geological or archaeological interest (clause 27)

6. Delays caused by other interfering contractors (clause 31), etc.

This, when coupled with a tender evaluation process which values lowest price highly, means that there is an in-built dynamic towards the contractor bringing claims.

(ii). Because funding agencies tend to let contracts on a lowest responsive price bases

There are essentially two bases for the letting of contracts in any procurement. These are either lowest price or the most economically advantageous proposal (or its equivalent). The merit of using the most economically advantageous proposal is that in addition to evaluating price, there is an opportunity for other facts such as competence and experience to be given a high evaluation. It is by no means the case that the contractor who submits the lowest price on a bid will actually perform the work in such a manner as to give the client or employer the best value. If the contract is awarded on a FIDIC or BaTCoDA based form of contract, to a contractor who has bid a markedly lower price than the other bidders, then it may be the case that the winning contractor will be looking to make a claim before he has turned the first spade of earth. This is because the claims that he makes on his contract will constitute his profit.

However as long as funding agencies regard the critical factor in choosing the winning tenderer to be the lowest price, they are liable to find that the project in question is the subject of claims.

(iii). Because contracts let in Ethiopia by funding agencies are required to be subject to Ethiopian law.

Funding agencies have historically made the logical, international social policy decision that infrastructure projects carried out in any particular country are to be governed by the law of that country irrespective of where financing is obtained.

This policy decision extends to many projects undertaken in Ethiopia. The application of Ethiopian law, as does the application of any law, inevitably gives rise to an ability to claim. By way of example, the Ethiopian civil code indicates, “the provision of contract lawfully formed shall be binding on the parties as though they were law” (article.1731 (1)).

While such import of provisions of contract is “subject to the mandatory provision of law”(article.1731 (2)), it does open up a claims mechanism through the code and all parties must be prepared for such an event.

2.0 CONTRACTS

2.1 Definition of Contract

According to Ethiopian law a contract is defined as an agreement where by two or more persons as between them selves create, vary or extinguish obligations of proprietary nature (Art.1675of civil code of Ethiopia).

It is necessary to further illustrate the above definition as follows:

'A contract is an agreement'

The contract being an agreement is not the paper on which it may be written and signed only. Such a paper is a means of proving that agreement was expressed (Art.1680 (1) of civil code).

'Where by two or more persons……'

There must not be only one person; one cannot contract with him self. This seems obvious but it is not always so. (Art.2180 of the civil code)

'Of a proprietary nature'

This excludes contracts of "status", such as betrothal of marriage, adoption (Art.560, 570,796), which create obligation of "status" predefined by law, of primarily non-patrimonial nature and except for betrothal. Others are not susceptible of being freely varied and extinguished.

Generally, Ethiopian law gives autonomy to contracting parties to choose the substantive content of their contracts, since most contracts are economic exchanges, giving parties autonomy allows each to value the other's performance.

To a large degree autonomy assumes and supports a market place where participants are free to pick the parties with whom they deal the terms upon which they will deal.

The most common contract relation ships created by modern construction projects are:

- The owner and the contractor(s)
- The owner and design professional
- The contractor and sub contractor(s)
- The contractor and the surety

If the owner hires a construction manager, this creates an additional contract layer between the owner and the designer or contractor. These contracts form the primary basis of the relationship among the parties. It is important that project level personnel as well as corporate managers understand the importance of the contract and how to interpret properly the contract as a whole. Contracts are generally written, but unless there is statutory requirement that prohibits their use, oral contracts are also valid agreements.

2.2 Elements of Contracts

The basic elements of valid contracts are:

a) Competent parties

b) Offer and acceptance

c) Reasonable certainty of terms

d) Object

e) Form

f) Extinction of contracts, and

g) Consideration

2.2.1 Competent parties

Competent parties must be of a proper age to enter into a contract and must have sufficient mental capacity to understand the nature of the agreement. According to article 192 of Ethiopian civil code, capacity of the physical person is deemed to be capable of performing

all acts of civil life unless he is declared incapable by law. People who are considered incapable by the law are, children who have not reached the age of eighteen, judicially and legally interdicted persons (Art.193).

2.2.2 Offer and acceptance

Offer and acceptance indicate that there has been meeting of the minds or mutual consent. The debtor and creditor have to agree through proper procedure of offer and acceptance. Moreover, there should not be any defect in consent. Defects which can vitiated the consent of the parties and permit them to request the invalidation of the contract are mistakes, fraud and duress (Art.1696-1707 of civil code)

2.2.3 Reasonable certainty of terms.

The term of contract should be clear enough that an independent third party could determine whether the two parties performed as promised. While this is rarely a problem in public construction contract, the private industry sectors have a greater potential for problems due to more informal exchanges in determining boundary of contract.

2.2.4 Object

Contracts require an object. The object of the contract can be a positive or a negative act or a thing that is susceptible of pecuniary evaluation. The act or the thing must be neither prohibited by law, nor offensive to the morality of the society (Art.1716). The contracting

parties have to sufficiently define the obligation that each undertakes to perform. A contract whose object is not sufficiently defined does not give rise to legal consequences (Art.1714). And moreover, the object of the contract must be possible.

2.2.5 Forms

In the overwhelming majority of cases, contracting parties are free to draft their contract in anyway they wish. But in certain exceptional cases, the law provides that a contract made in the specified form (Art.1719-1730).

2.2.6 Extinction of contracts

In the preceding sections from '2.2.1' to '2.2.5' the rules and requirements necessary for the formation of a valid contract have been discussed. The main questions that may arise in connection with the formation of a contract are: How long does a contract maintain its validity? How does it loss its validity? . The simplest and the most direct answer to both questions may be to say a contract remains valid until it is extinguished.

A contract is extinguished for any of the following cases:

i) Obligations Performed

If a contract is performed in accordance with the anticipation of the parties the obligation will be extinguished.

ii) Invalidation And Cancellation

A contract can be invalidated for defects in consent, incapacity, immorality or unlawfulness (Art.1808). Defects in consent and incapacity are personal defects such that they may be invoked by the party whose consent has been vitiated or by the incapable person. But if the object of the contract is immoral or prohibited by law, any interested party can request its

invalidation. This is the general rule as the question of invalidation is concerned.

iii) Termination and remission

Termination of a contract can be made

a. By agreement of the parties

b. In situation where a contract is made for an indefinite period of time and

c. When a special relationship that was the base of the contract disappears (Art.1819-1825). This type of termination usually happens on a contract agreement between prime contractor and sub contractor, when the sub contractor is employed on special work of the project.

For example, the contract agreement made between Foster Whilliam of Italy and Ministry of Works and Urban Development of Ethiopia for consulting purpose for the construction of 500 special housing project, around Kotebe (Ethiopia) was signed on 24th Nov.1987 and was terminated on 9th Sept.1991 before completion of the project. The reason of termination was the political unstability during the period in the country. However the consultant was invited to continue his work afterwards, but denied.

Eventhough, the dispute was settled amicably, it can be considered as breach of the agreement. Therefore, breach of agreement can be considered as the cause of termination of the contract.

iv) Novation

An existing contract can be extinguished by substituting it with another. A contract is said to be novated when either the object or nature of the obligation is affected by the new agreement. Unless the parties unequivocally express their intention to novate their

obligations contract that are formed later are presumed to be independent contract (Art.1808 of civil code). Novation shall not occur unless the parties show the unequivocal intention to extinguish the original obligation (Art.1828 of civil code)

v) Set Off

When the creditor and debtor owe debts to each other the debts could mutually cancel each other extinguishing obligations.

vi) Merger

The union in the same person of the qualities of the debtor and creditor for the same obligation is known as merger. This coincidence orderly takes place where the creditor succeeds the debtor by the universal title (Art. 1844 of the civil code).

vii) Expiry of period of limitation (Art.1806 and 1807)

Period of limitation is one mode of extinction of an obligation. The law doesn't permit claimant to bring state cases before courts. Under Ethiopian law different time limitations are provided for initiating different suits.

2.2.7 Consideration

The last element of valid contract is consideration. Contracts are generally economic exchange; therefore, some thing of value must be exchanged. Consideration need not be an equal exchange. Courts will uphold seemingly unbalanced consideration if all the elements are met and there is no evidence of fraud or similar problems

2.3 Forms of Agreement

The actual form of agreement, which describes the contracting parties, authority, the work in general, the consideration to be paid, penalties or bonuses, and the time for performance is often a very brief document. This document is seldom the issue of concern in a dispute. More commonly the documents that detail the relationship and project requirements are the sources of disagreement. Primarily, these documents for a construction project are the general condition, special conditions, technical specification, and plans.

Contract types require a division or separation among the wide variety of contracts in the industry. In keeping economic exchange concept contracts can be identified as either fixed price or cost reimbursable.

i) Fixed price contracts

Fixed price contracts establish a fixed sum of money for the execution of a defined quantity of work. Fixed price contracts fall in to two major categories: Lumped sum and unit price. Lumped sum contracts require the contractor to assume all risks assigned by the contractor for their stated price.

Adjustments to costs and extensions of time require a modification to the original agreement. Unit price contracts permit more flexibility by establishing costs relative to a measurable work unit.

ii) Cost reimbursable contracts

Reimbursable contracts allow for contract adjustments relative to project scope as determined by the cost and do not, generally, address a final fixed price. Fixed price contracts allocate more risk to the contractor and thus require more effort, money, and time on design documentation before construction is initiated. Cost reimbursable contracts require greater risk sharing between the owner and contractor and require more owners personal for contract

administration during the construction phase to enforce cost and schedule. They are more easily used for fast tracking of design and construction. Reimbursable contracts are also very flexible for changing design or scope of work and establish the basis for a less adversarial relationship between the owner and contractor [14].

Often both forms of contracts exist on a project simultaneously. Prime contractors will often have cost reimbursable contracts with the owner and fixed price contracts with their subcontractors. In the Ethiopian construction industry fixed price contract is widely practiced.

2.4 Contract Administration

The contractor must concentrate on contracting the project and concurrently attend to the terms of the contract documents. Contract administration involves numerous daily decisions that are based on interpretation of the contract documents. A record of these deliberations is important to both parties. The primary tools for controlling a project contract are the cost and schedule report updates. In addition, quality and safety reports are indicative of project administration success.

Administration of the contract requires that accurate records be maintained as permanent records of contract process. In the event that the project manager would need to negotiate a change order, prepare a claim, or reconstruct specific events, the project data from record and correspondence are often needed.

The following lists highlight the importance of information management.

1. Appropriate documentation permits future users to verify how the project was built.
2. Lessons learned on the project are recorded for the benefit of future projects.

3. Continuous contemporary documentation reduces the chance of misunderstanding of day-to-day concerns.
4. Records prevent the loss of information otherwise left to memory.
5. Project personnel turnover problems can be reduced with a complete project history.
6. Written reports are the best means of keeping multiple parties informed of project progress.
7. Written reports reduce oral communication and number of meetings.
8. Documentation and monitoring of the project are supported by information management.

9. Establishing defined documentation requirements assists the manager in focusing on the most important aspects of the project.

2.4. 1 Progress report

Performance documentation covers a wide variety of reports and charts. The project schedule is essential for determining the status of the project at any given point in time, and it can also be used to estimate the time impact of disruptions at the project site. It is important, therefore, that the schedule be updated at frequent intervals to ensure that the actual start dates, finish dates and percent complete are recorded

Progress should be recorded in daily and weekly reports. Daily reports should be prepared by personnel who can report on field and office activities. Weather information, subcontractor performance, workforce data, equipment use, visitor data, meeting notations and special or unusual occurrence are entered in to a standard dairy form, which is filed on site and in the

home office.

Progress reporting should include a photographic progress journal. A log of photograph dates and locations are needed to preserve the specific nature of the photograph. Photographs provide strong visual evidence of the site conditions reported in the progress reports. The personal project diaries of superintendents also record daily activity. This record summarizes key events of the day including meetings, oral agreements or disagreements, telephone discussions, and similar events.

Diaries also record drawing errors, provide notation on differing site conditions observed on the site, and other discrepancies. Personal project diaries should be collected at the end of the project and stored with project records.

2.4. 2 Quality records

Complete records of all quality tests performed on materials and reports from inspection reports should be retained as an integral part of the quality recording and documentation (Clause36 of BaTCoDA). Rework should be noted, and the retest result should be noted. Problems with quality and notes on corrective procedures applied should be evident in the records.

2.4.3 Change order records

Changes should be tracked systems separate from other project records. Careful attention is needed to ensure compliance with notice requirements, proper documentation of costs, and estimation of the anticipated time impact. An understanding before hand of the change order process and the required documentation will reduce the risk of a change order record not

being approved. Change orders can have significant impact on the progress of remaining works as well as on the changed work. Typical information included in a change request includes, the specification and drawings, the contract clauses that are appropriate for filing the change, and related correspondence. Once approved, the change order tracing system resembles traditional cost and schedule control.

2.4.4 Correspondence files

Correspondence files should be maintained in a chronological order. The files may cover the contract, material supplier, subcontracts, minutes of meeting, and agreements made subsequent to meetings. It is important that all correspondence, letters, and memorandums be used to clarify issues, not for the self-serving purpose of a claim position.

If the wrong approach in communications is employed, the communications may work against the author in the eventual testimony on their content. Oral communications should be followed by a memorandum to file or to the other party to ensure that the oral communication was correctly understood. Telephone logs, fax transmissions, or other information exchanges also need to be recorded and filed.

2.4.5 Drawings

Copies of the drawing released for bidding and those ultimately released for construction should be achieved for the permanent project records. A change log should be maintained to record the issuance or receipt of revised drawings. Obsolete drawings should be properly stamped and all copies should be recorded. Without a master distribution list, it is not always possible to maintain control of drawing distribution. Shop drawing should also be filed and

tracked in similar manner. Approval dates, release dates, and other timing elements are important to establishing the status of the project design and fabrication process.

2.5 Reasoning With Contracts

The contract determines the basic rules, which apply to the contract. However, unlike many other contracts, construction contracts usually anticipate that there will be changes.

Changes or field variations are created from many different circumstances. Most of these variations are successfully negotiated in the field and once a determination is made on the cost and time impact, the contracting parties modify the organizational agreement to accommodate the change. When the change order negotiation process fails, the change effectively becomes a dispute. The contractor commonly will perform a more formal analysis of the items under dispute and present a formal claim document to the owner to move the negotiation forward. When the formal claim analysis fails to yield results, the last resort is to file the claim for arbitration and then litigation.

Even during these stages, negotiation often continues in an effort to avoid the time and cost of arbitration or litigation. Unfortunately, during the maturation from a dispute to claim, the parties in the dispute often become entrenched in position and feelings and lose their ability to negotiate on the facts alone. Contract wording is critical, and fortunately, most standard contracts have similar language. It is important to understand the type of dispute that has developed.

2.6 Changes

Cardinal bilateral changes are beyond the scope of the contract. Cardinal changes describe

either a single or an accumulation of changes that are beyond the general scope of the contract.

Exactly` what is beyond the scope of a particular contract is a case-specific determination based on circumstances and the contract; there is no quick solution or formula to determine what constitutes a cardinal change. Cardinal changes require very thorough claim development.

A bilateral change is generated by the need for a change that is recognized as being outside the contract scope and therefore, beyond the owner's capability to issue a unilateral change. A bilateral change permits the contractor either to consent to performing the work required by the change or to reject the change and not perform additional work. Bilateral changes are also called contract modifications.

Obviously, the gray area between what qualities as a unilateral change and bilateral change require competent legal advice before a contractor refuses to perform the work. Several distinctions can be made among unilateral changes. Minor changes that do not involve increased cost or time can be ordered by the owner or owner's representative. Disputes occasionally arise when the owner believes that the request is minor change, but the contractor believes that additional time and/or money is needed. Minor changes are also determined by the specific circumstances.

Change orders are those changes conducted in accordance with the change order clause of the contract, and unless the change can be categorized as a cardinal change, the contractor is obliged to perform the requested work. Constructive changes are unilateral changes that are

not considered in the design clause, they can be classified as oral changes, defective specifications, misrepresentation, contract interpretation, and differing site conditions.

However, before constructive changes can be considered in more detail, contract notice requirement must be satisfied.

2.7 Notice Requirements

Clause 52(5) of BaTCoDA requires the contractor to notify the owner as a precondition to claiming for additional money or time extension. The reason for a written notice requirement is that the owner has the right to know the extent of the liabilities accompanying the bargained for project. It is usually agreed that the notice should allow the owner to investigate the situation to determine the character and scope of the problem. It is also useful to develop appropriate strategies to resolve the problem, monitor the effort, document the contractor recourses used to perform the work and remove interferences that may limit the contractor in performing the work [15].

Contracts often have several procedural requirements for filing the notice. Strict interpretation of the notice requirements would suggest that where the contract requires a written notice, only informal writing would satisfy the requirement.

The basic elements in most contract change order clauses are the following

- Only persons with proper authority can direct changes
- The directive must be in writing
- The directive must be signed by a person with proper authority
- Procedures must communicating the changes are stated
- Procedures for the contractor response are defined

The application of the clause should be at issue only if the contract has been written such that notice clause is only effective for certain specific situations. Written notice implies that a formal letter has been delivered that clearly defines the problem, refers to the applicable contract provisions, and states that the contractor expects to be compensated for additional work and possibly given additional time of completion. However, notice can also be delivered in other ways. Verbal statements have been found to constitute notice to satisfy this requirement. The principal issues are owner knowledge of events and circumstances; owner knowledge that the contractor expects compensation or a time extension under some provision of the contract; and timing of the communication.

Owner knowledge is further divided in to actual knowledge and constructive knowledge. Actual knowledge is knowledge that is clear, definite, and unmistakable. Constructive knowledge can be divided in to implied knowledge and imputed knowledge [1]. Implied knowledge is communicated by deduction from the circumstances, job site correspondences, or conduct of the parties. While this may not be complete, it is generally sufficient to alert the owner that additional investigation is warranted.

Evidence of owner knowledge is more compelling if it involves a problem that is caused by the owner or that is within the owner's control. Imputed knowledge refers to situations in which proper notice is given to an individual who has the duty to report it to person affected.

Knowledge that the contractor is incurring additional expense is not sufficient to make the owner liable for the costs. If the owner is unaware that the contractor expects payment for the additional cost, the owner may not be held liable for payment.

2.7.1 Notice timing

Timing of the notice is important. If the notice is given too late for the owner to control the extent of its liability for additional costs, it may not be found that the notice requirement was satisfied. Generally contracts will specify a time limit for submission of the notice. Slippage of time may not be meaningful if the character of the problem cannot be ascertained with out the passage of time. However, in some cases the passage of time obscures some of the information or controlling costs.

2.7.2 Form of notice

If notice was not given and evidence of constructive notice is not clear, the remaining recourse is for the contractor to show that the requirement was waived. The owner cannot insist on compliance with the contract where the owners' actions have conflicted with the same requirement. If a statute requires written notice; the requirement cannot be waived. Waiver can only occur by the owner or the owner's representative.

The form of communication is usually a formal letter. Notice can occur in job site correspondence, letters, memos, and other site documents. Project meeting minutes that summarize discussions about project situations may be sufficient, provided they are accurately drafted.

In some instance CPM (critical path method) updates that show delay responsibilities have been found to constitute notice of delay, since they kept the owner fully informed of progress.

2.8 Contract Interpretation

The interpretation of contract clauses is the obvious cause of dispute between contracting parties. The interpretation of contracts has its own rules. 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 in the contract.

The other function of interpretation controls 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.

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.

Generally, the words will be assigned their common meaning unless the contracting parties had intended to use them differently.

A patent ambiguity is an obvious conflict within the provisions of the contract. When a patent ambiguity exists the court will look to the parties for good faith and fair dealing.

Where one of the parties recognizes an ambiguity a duty to inquire about the ambiguity is imposed on the discovering party. Practical construction of a contract's term is based on the concept that the intentions of the contracting parties are best demonstrated by their actions during the course of the contract.

Another common rule is to interpret the contract as a whole. A frequent mistake made by contract administrators in contract interpretation is to look too closely at a specific clause to support their position. It should not be approached with the same narrow viewpoint. All provisions of the contract should be read in a manner that promotes harmony among the provision [17].

Isolation of specific clauses may work in a fashion to render a part of the clause or another clauses inoperable. When a provision may lead to more than one reasonable interpretation, the court must have a tiebreaker rule. A common tiebreaker is the court to rule against the party that wrote the contract, since they failed to clearly state their intent.

When the primary rules of interpretation are not sufficient to interpret a contract, additional rules can be applied.

When language is ambiguous, the additional interpretation guides suggest that technical words be given their technical meaning with the viewpoint of a person in the profession and that all words be given consistent meaning throughout the agreement.

The meaning of the word may also be determined from the words associated with it. In the case of ambiguities occurring because of a physical defect in the structure of the contract document, the court can reconcile the difference looking at the entire contract. And interpret

the contract so that no provision will be treated as useless, and where unnecessary term was omitted inadvertently, supply it to aid in determining the meaning of the contract. Some additional guidance can be gained by providing that specific terms govern over general terms, written words prevail over printed words, and written words are chosen over figures. Generally, where words conflict with the drawings the words will normally govern. It is possible, in some cases, that the drawings will be interpreted as more specific if they provide more specific information to the solution of the ambiguity.

The standards of interpretation for choosing between meanings are the following [17].

- A reasonable interpretation is favored over unreasonable one
- An equitable interpretation is favored over inequitable one
- A liberal interpretation is favored over a strict one
- An interpretation that promotes the legality of a contract is favored
- An interpretation that upholds the validity of a contract is favored
- An interpretation that promotes the legality of a contract is favored
- An interpretation that promotes performance is favored over one that would hinder performance.

3.0 CLAIMS

3.1 Definition

Claims are a general term for the assertion of a right to money, property or a remedy. In the context of construction industry, claims means, a demand by a contractor for extension of time or for an extra payment of an item of work carried out by him on behalf of the employer for which a readily identifiable amount can not be ascertained under the term of contract [17].

3.2 Legal Basis of Claims

There are five bases on which a claim may be made in law.

a). Under contract conditions

b). For breach of contract

c) Claims in tort

d). On a quasi-contractual or restitionary basis, often called a quantum merit claim.

e). Ex –gratia claim.

Each of these types of claim will be examined in the following sections.

3.2.1 Contractual claim

An important feature of conditions is the provisions of contractual machinery for dealing with monetary claims under the term of contract themselves. These claims arise out of specific provision of the contract and are dealt with under it by the engineer. Since they arise under the contract, they are commonly called contractual claim.

An example is a claim under clause 12 of BaTCoDA which entitles the contractor, in limited circumstances to claim in respect of delay and extra cost should he encountered certain adverse physical conditions or artificial obstructions as the work progress. The right to payment of any extra cost is dependent on the contractor complying with the notice and

related provisions of clause 52(5). This is a general provision, which applies to all claims for refixing of rates or any other additional payment or grant of extension of time.

Clause 52(5) is read as:

Claims

> *The contractor shall send to the engineers representatives once in every month an account giving particulars, as full and detailed as possible, of all claims for any additional payment to which the contractor may consider himself entitled and all extra or additional work ordered by the engineer which he has executed during the preceding month. No final or interim claims for payment for any such work or expense will be considered which has not been included in such particulars. Provided always that the engineer shall be entitled to authorize payment to be made for any such work or expense, not with standing the contractors failure to company with this condition, if the contractor has at the earliest practicable opportunity, notified the engineer in writing that he intends to make a claim for such work.*

Provision of this sort is one of the benefits to both parties of using a negotiated form of contract. The standard form can lay down events, which give, rise to extra payment and provide procedures for settling them.

In the example quoted above, there is no blame on the party of the employer or of the engineer; adverse physical conditions are a natural event. The issue of an instruction suspending the work is merely the exercise of a contractual right. However, in both instances the contracts provide for the employer to bear the consequences of delay and extra cost.

Another benefit of these standard form contracts is that both provide procedures for the grant of extensions of time for causes outside the contractor's control, including defaults for which the employer is responsible in law. In addition the contactor can use clauses: 17,20(1), 22(2), 27,31,40(1), 42(1), 49(3), 58 and 70 of BaTCoDA as a bases of his claim.

3.2.2 Claims for breach of contract

Apart from contractual claims, the contractor may have a claim for damages for breach of contract at law. In Ethiopian construction industry breach of contract is widely seen from both contractor and employer side. Contractors' breach of contract is that they simply try to win the tender with out having sufficient resources to perform the contract and face problem afterwards. On the other hand, employers' breach of the contract is by late issue of drawings, late possession of site, change of their idea etc.

This is an entirely different type of claim. The success which depend upon the contractor providing on the balance of probabilities, that the employer is in breach of some express or implied term of the contract and that he has suffered loss as a result.

In that case, the contractor can recover damages to compensate him. Claims of this type must in principle be perused in arbitration or litigation, with all the inherent uncertainties involved.

3.2.3 Claims in tort

The law of tort is that part which imposes a court delay generally, and breach of that duty may give rise to a claim for damages. The contractor here is alleging breach of a duty arising at common law other than in contract. In practical civil engineering terms, the most important tort is that of negligence, which has developed rapidly in recent years, although recent cases have tended to a narrowing of negligence liability [17]. In claim situation, any contractor's claim in tort will normally lie, if not at all, against the engineer and not the employer. Claims for misrepresentation is also come under this head.

3.2.4 Quasi –contractual claims.

Quasi –contractual claims can arise in a number of ways, and the most common example is a claim on quantum merit ('as much as it is worth'). This is a claim for the value of services rendered or works performed where there is no contractual entitlement to payment. A quantum merit claim may arise, for example, where work is done on the basis of a letter of intent and there is no contractual liability. It can also arise where work has been done by a contractor under a contract without there being any express agreement as to the price.

3.2.5 Ex-gratia claims

Ex-gratia or out of kindness is one of those, which the employer has no obligation to meet. Contractors often put forward this type of claim merely because they are losing money. Some times ex- gratia payments are made to settle or compromise a claim rather than go to the expense of consenting it in litigation or arbitration.

If exercised, clause 44(5) of ICE provides:

If up on determination of the contract under this condition the contractor is of the opinion that he has suffered hardship by reason of the operation of this condition, he may refer the circumstances to the authority who on being satisfied that such hardship exists, or has existed shall make such allowance, if any, as in his opinion is reasonable and his decision on the matter shall be final and conclusive.

In effect, what this entire sub clause appears to do is to enable the employer to make ex-gratia payment if he so decides. The purpose of the provision is not at all clear, except that the contractor's financial entitlement under earlier sub-clause is very limited indeed.

3.2 Identification and Notification of Claims

3.3.1 Identification

Active familiarity with and awareness of potential claim situation is a prerequisite to successful project management. Proper claim management begins with identification of claim. The contractor must be able to recognize and to identify a claim situation when it first develops, not after it becomes controversy. The experience of local contractors in identification of claims, in Ethiopian construction industry will be discussed in chapter five of this thesis.

Prompt identification and notification is imperative for the foregoing contractual requirements. If the contractor does not recognize a situation or waits too long to take action, he can lose any and all rights to claim. Fore example, clause 52(5) of BaTCoDA limits the time for notification of claim to one month. This implies the contractor can lose the opportunity to claim after expiry of one month.

Early identification is also important for the following reasons.

1. It enables the owner to verify, confirm, and possibly remedy the situation at the earliest opportunity.
2. Some times new designs, new materials or equipment or different construction methods may be required by a changed condition. It is to the mutual benefit of all parties to solve time consuming and costly problem as early as possible. Eventhough, equitable adjustments are ultimately made, it is to the contractor's benefit to complete his work and move out as soon as possible, which implies making every effort to expedite the resolution of all changes and claims situation.
3. Early identification allows the contractor adequate time to study the problems, analyze different proposal and notification technique, and best prepare him self for claims that might prove troublesome.

Identification of a claim situation is the first and the most important phase of entire claims process. One cannot remedy a problem unless it is known to exist [14].

There are two basic requirements for identification of claim. These are: knowledge of contract document and knowledge of legal concept and right.

a) Knowledge of contract documents

The first requirement of identification of claim is knowledge of contract document. The construction project staffs must have a good working knowledge of the contract documents. Familiarity with pertinent technical and general terms is essential for project personnel to recognize contract rights and duties. If these key personnel have a thorough and detailed picture of the entire job, they will be in the best position to recognize claims situations as soon

as they occur. It is very important to anticipate what would follow from the work and to predict potential problems.

b) Knowledge of legal concepts and rights

The second requirement for identification of claims is familiarity with legal concepts and rights. The project staffs are expected to have a working familiarity with legal concepts and rights, which will affect the outcome of potential claim situations. With a firm background in these legal percepts, the contract manager is in a position to sense and appreciate the significance of events that may lead to later problems. In addition to the above knowledge requirements, the construction project staffs have to easily identify the warning signs of claims situation, which form a foundation for claims management. Listed below are warning signs of claims situations [15].

1. Additional work not specified in the contract documents.
2. Work different from that specified in the contract document.
3. Work in a particular manner or method, which varies from that originally expected.
4. Work resulting from contract drawings or specifications which have been changed, amended revised, amplified or clarified.
5. Unanticipated work, which results from insufficient details in the plans and specification.
6. Work required to be performed in one particular method when specifications allow two or more methods.
7. Work out of sequence.
8. Stop, disrupt, or interrupt work; wholly or partially; directly or indirectly.
9. Owner furnishes equipment late, in poor condition, or not suitable for the intended use.

10. Accelerate performance in any way, to regain schedule, to add men or materials, or to work overtime or extra shifts.
11. Follow any new, different, or shorter schedule.
12. Relocate existing work because of lack of coordination, information or other factors.
13. ''Differing ''site condition
14. Differences in contract interpretation
15. Defective specifications
16. Delay from the owner's act or failure act.
17. Unwarranted work rejection.
18. Increased inspection requirements, tests or quality control program.
19. Owner's failure to disclose information
20. Strikes and;
21. Forces of nature.

3.3.2 Notification

As soon as possible after the event giving rise to a claim the contractor should identify the clause or clauses under which the claim is to be made, or the other expressed or implied terms of the contract to be relied upon as the bases of the claim.

The owner or his representative must be formally notified of a claim if the contractor intends to seek equitable adjustment for additional time or cost. Notification allows both parties to verify conditions, to assume facts and to resolve disputes while the items are fresh in their minds. When encountering differing site conditions as well as errors or omissions on drawings, the contractor should stop work on that portion of his work until a satisfactory response is obtained from the owner [15]. Continued work on affected portion

could result in a contractor's obligation to correct at his own expense any defective work already completed. In giving notice, the contractor should always stress his urgency to resolve a dispute and should request acknowledgement of the situation. In general failure to notify the owner of problems or potential problems can put the burden of responsibility on the contractor for extra cost or damages.

3.4 Preparation of Claims

3.4.1 Basic requirements

From the viewpoint of claimant, the objective in any claim situation is to obtain the payment or extension of time to which he believes himself to be entitled, whether under the contract or otherwise. To achieve this objective, it is necessary for the claimant to produce evidence to support his claim.

It is for the claimant to establish that the claim is legally valid, and he must substantiate the amount claimed, figures can not plunked out of air. The claimant must be able to prove the legal validity of the amount claimed.

In practical terms, the contractor must establish the contract provision on which he relies that he has compiled with the contractual requirements as to the giving of notice, and that the additional cost or expense has been incurred as a direct result of the event relied on. Claims are not a means of turning a loss-making contract in to a profitable one although investigation of the causes of loss may some times indicate where a claim may lie.

The standards of prove required is the same as that civil action and in arbitration, i.e. on the balance of probabilities. This is of course a lower standard than that required of the prosecution in a criminal case. In exercising his independent role in dealing with contractual claims, the engineer should take this standard as his criterion. Proof of the balance of probabilities means that there is more in favor of the claim than there is against it. The claimant must also recognize his contractual obligation to carry out and complete the work in accordance with the terms of the contract and with in the time prescribed by it.

After making sure the problem is outside his control of and in fact the situation is explicitly identified and notified pursuant to the contractual requirement, the contractor can prepare the claim indifferent approaches.

3.4.2 Approaches to claims preparation

Claim preparation involves the sequential arrangement of project information and data to the extent that the issue and cost of the dispute are defined. Assuming that it has been determined that there is entitlement to a recovery, as determined by consideration of interpretation guidelines, the feasibility of recovery should be determined.

Once these determinations are complete, either a total-cost (global) approach or an actual-cost (discrete) approach generally prepares claims.

a) Actual-cost (Discrete) approach

The actual-cost (discrete) approach will relate to specific instances of modifications, delays, revisions, and additions where the contractor can demonstrate a cost increase. Actual-costs are considered to be the most reliable method for evaluating the claims.

b) Total-cost (Global) approach

The total-cost approach is often used when the cost overrun is large, but no specific item or area can be identified as independently responsible for the increase. Stacked changes and delays often leave the contractor in a position of being unable to relate specific cost fully to a particular case. The total–cost is not preferred approach for demonstrating costs. In line with this, most of our construction organizations like ERA; TCDE etc do not allow claims prepared by this approach. Eventhough, conditions force us to use total-cost approach, good project information management will improve the likelihood that the contractor can submit an actual-cost claim rather than a total-cost claim [17].

3.5 Evaluation and Submission of Claims

Detailed evaluation of claim should commence as soon as information needed becomes available, in order that the claim may be included in interim valuation.

This is desirable for several reasons:

- The inclusion of a claim, which may be initially, be continuous in principle in an interim valuation, draw attention to the contractor's intention to peruse that claim. It provides an opportunity for the engineer to challenge its validity, either in principle or in the method used for its evaluation. If it is found that there is some shortcoming in either aspect of the claim as submitted, early submission provide an opportunity to remedy the defect and of presenting information in a form acceptable to the engineer in subsequent valuations.
- The interim valuation help the engineer to foresee, and the employer to budget for the likely amount of the claim, and if necessary enable a variation order to be issued so as to keep the project with in the employers' budget.

- Inclusion of the claim interim valuation is advantageous for the contractor because it provides a commencement date for calculation of interest should the claim is disputed.

Sometimes the engineer objects to the contractors' inclusion of interim valuation claims that have not been agreed; where the contractor should maintain his right to do so. If he does not, he may find his entitlement to payment reduced or challenged. If the reason underling the engineer's objection to the inclusion of claims that have not been agreed is administrative convenience, the matter may be resolved by the contractor submitting with his monthly valuation, a separate schedule of claims, which have not been agreed.

4.0 METHODOLOGY

The methodologies applied to achieve the objective of the research are: literature survey, problem identification, design of data collection methods, data collection, data analysis and draw conclusion from the result of data analysis and forward recommendations. The surveyed reference materials include: recent journals related to construction claims, text books of project management emphasizing claims, hand book of civil engineering claims, internet exploration etc.

Collection of information related to construction claims from governmental and non-governmental firms were done by the designed methods of data collection techniques like constructive interviewing and discussion with selected individuals in the industry, distribution and collection of questionnaires, and observations. Much of the information was collected

using interview and questionnaires. The questionnaire survey was conducted among large-scale construction organizations in the Ethiopia from November 2001 to October 2002.

The organizations chosen were large scale with long histories of construction business. The organizations were assured that the purpose of the study is purely for academic purpose i.e. to conduct comprehensive study on claims management in the industry, rather than to check mistakes or misconducts. The interview for in depth discussions were undertaken with selected professionals at top managerial level in their respective organizations.

The questionnaires were designed in three categories to study the awareness and attitude of the three major construction parties, i.e. contractors, consultants, and employers towards construction claims. A copy of each questionnaire is included in the appendix of this thesis.

This study covers Grade 1 and 2 contractors and consultants and major owners. 15 contractors, 12 consultants and 5 clients responded to the questionnaires. The intended number of consultants, contractors, and employers were more than what was stated. Un fortunately not all requested parties were willing to respond to the questionnaires and give their opinion on the subject matter (Table 4.1).

All individuals who filled the questionnaire and who were interviewed were those working at the senior manager level ranging from project manager, general engineer to managing director. At least one person from where the questionnaires were collected was interviewed. Also individuals from, MoWUD, Ethiopian Association of Civil Engineers, and Ethiopian Contractors Association were interviewed and gave detail information on the subject matter.

Table 4.1 Summary of distributed and collected questionnaires

Construction Party	Distributed questionnaires	Collected questionnaires	Return rate %
Contractors	20	15	75.00
Consultants	18	12	66.67
Clients	9	5	55.56

5.0 CLAIMS IN ETHIOPIAN CONSTRUCTION INDUSTRY

5.1 Introduction

The free market economic policy practiced in Federal Government of Ethiopian creates good opportunity for participation of local and foreign investors in the sector of construction industry. Using this opportunity, many new contractors were registered under MoWUD and the existing contractors also strengthened their capacity since 1992.

Accordingly, before1992 the total number of local contractors were 399. This number is increased by 939 and presently the total number of local contractors is 1338 (Table5.1). In addition to this figure about 436 contractors of different grades ranging from G-7 to G-10 were registered under Works and Urban development of regional governments.

Table 5.1 Licensed contractors under MoWUD (GC, BC, RC and SC)

Grade	Up to 1991	From1992-1998	Sum	Annual performance capacity (In million)
1	11	12	23	More than 20
2	6	-	6	Up to 20
3	14	9	23	Up to 15
4	34	4	38	Up to 10
5	48	52	100	Up to 5

6	65	302	367	Up to 2.5
7	106	282	388	Up to 0.5
8	19	128	147	Up to 0.25
9	96	146	242	Up to 0.10
10	-	4	4	Below 0.10
Sum	**399**	**939**	**1338**	

Source: Bulletin of Ethiopian Contractors Association 1999.

In Ethiopia, construction licensing of contractors has four categories, namely: General Contractors (GC); Building Contractor (BC); Road Contractor (RC) and Special Contractor (SC).

Depending on human and material resource requirements each category is then sub-divided in to various classes, which lead to determine the maximum cost of project value they can bid for. For instance, general contractors of class one (GC-1), can bid for projects worth greater than 20 million Birr. The last column of Table 5.1 shows the cost of projects for which each contractor can bid for. Considerable measure is also taken to improve the number and capacity of local consulting firms. For instance, before 1992 supervision of large-scale construction projects were done only by two governmental organizations i.e. BDE and TCDE. However, after 1992, using the free market economic policy many private consulting firms are emerging. Based upon office facilities, qualification and number of staffs, experience and the type and cost of the project they can supervise, consulting firms of different grades are registered under MoWUD. Thus 2 governmental and 57 private local consultants of different grades are giving service in the industry.

Due to limited capacity of local contractors, it becomes normal practice to offer multi-million Birr worth projects to foreign contractors. This fact indicates that some means has to be devised to raise the capacity of competent local contractors; so that they can engage

themselves in major construction undertakings. Considering this problem, the Federal Government of Ethiopia is taking some measures. For instance, advance payment is allowed for projects financed by the Federal Government. Other possible ways of up grading local contracting firm capacity could be: merging of two or more contracting firms or joint venturing, permitting contractors to use their machineries and other equipments to use as collateral for bank loans.

The above paragraphs clearly show that the Federal Government of Ethiopia is taking encouraging steps to improve the capacity of local contracting firms. However, no comprehensive work was done for improvement of construction project managements, especially on claim administration.

Among the steps that could have been taken some could be: giving short and long term on job training for peoples working around this area, arranging different seminars on claims for different contracting parties, encouraging academic institutions to focus on project management particularly on claim administration etc.

Hence, it is unquestionable to conduct comprehensive study on claims management to supplement the rapid increase of our construction industry. Therefore, it is the writer's hope that this thesis could be a good start to draw attention toward and to devise ways for proper construction claims management.

5.2 Project Procurement System and Contract Administration

As discussed in Chapter 1 of this thesis, the traditional procurement system is usually used in developing countries. The same applies to Ethiopia. In principle implementation of

construction projects in traditional procurement system require bidding procedures and condition of contract, which are fair to both owner and contractor.

In Ethiopia the condition of contract used are fair to both parties if properly administered. In fact some irregularities happen some times due to human factor, which is common all over the world.

The major contract conditions used in Ethiopian construction industry are:

1. Standard condition of contract for construction of civil works projects. (BaTCoDA), December 1987)
2. Ethiopian Road Authority (ERA), standard specification, 1968 (mainly for road projects)
3. Condition of contract for civil engineering construction. FIDIC, 1987

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. The problem in most cases is not contracting document but the understanding and interpretation, which require trained personnel in contract administration.

Unfortunately little or no on the job training is given to the people working on projects on this subject. The only way one can learn is working with a boss having good experience, which is usually a rare case. This problem causes delay of decisions and disputes, which may ultimately, result in claims and delay projects.

The average Ethiopian contractors are small-scale organization, which lack experience in construction management. This indicates that there is high demand for training both public

and private sectors personnel involved in construction for the efficient implementation of projects. Government support to establish training facilities for this purpose is very important. The construction industry in developing countries cannot develop without government's commitment and long-term active support.

This implies that proper contract administration require experienced and highly trained personnel to effectively implement the contract. However, it was possible to identify during the study through the questionnaire survey and interview that one of the main problem of local contractors is that they couldn't properly administer the contract. This is because of the experience and training they have. That is to say, most of them are not properly trained to prepare: cost and schedule reports, quality records, safety reports, change order records, claims records, progress reports, payment requisition etc.

5.3 Types of Claims in Ethiopian Construction Industry.

Different data collection techniques, as mentioned in Chapter four were applied to identify which one is the main cause of construction claims in Ethiopian construction industry. For this purpose different organizations were contacted. The organizations covered in the study are large-scale firms of having long history of construction business. Some of them have working experience up to half a century (50 years) and they have undertaken more than 1,091 different projects in the country in the last 15 years. 23% of them respondents say that claims issue is not great problem in their industry. On the other hand 77% of the respondents say that claim administration is one of the main problem in their performance. The detail analysis of the questionnaires is discussed in the subsequent sections.

As discussed in Chapter 3 of this thesis much emphasize is given to claims raised under contractual provisions.

Hence, contractual claims in Ethiopian construction industry can be divided in to the following four categories:

a) Claims due to employers or contractors breach of contract

b) Claims arising out of variation

c) Claims for disruption and delays and,

d) Third party caused claims

The questionnaires for major construction parties are prepared and distributed as mentioned in chapter four of this thesis. One of the main aim of the questionnaires is to identify which one is the main cause of construction claims, among the possible causes listed from 'a' to'd' in the industry. The outcomes of the questionnaires are summarized in Table 5.2 below.

Table 5.2 Summary of the response of respondents to causes of claim

Item No.	Types of claims	Number of Respondents	Percentage of respondents
A	Breach of contract	5	26.3
B	Delay and disruption	15	78.95
C	Variation	11	57.89
D	Third party	4	21.05

5.3.1 Claims due to breach of contract

Claims may evolve when the employer or the contractors break the express/implied terms of general conditions of contract. The basic principle upon which any claim must be founded is the same as that which applies to any other claim for damages.

This is to say that the claimant is entitled, once the breach has been proved to be placed, so far as money can do it, in the same position as he would have been had the contract been performed.

According to the study 26.3% of the respondents to the questionnaires indicate that breach of the contract is the cause of construction claim in their industry. The study also reveals that both parties i.e. contractors and clients sometimes breach the contract agreement. Some causes for employers breaching their contract agreement observed during the study period were: by late issue of drawings, delaying site handover, late approval of payment certificates, delaying payment for completed works, changing the scope of the work, delaying (denying) delivering of resources which the employers have to deliver according to the bargained condition etc.

The recent case of 500 special housing projects implemented by C.M.C di Ravenna as contractor and Ministry of Work and Urban Development of Ethiopia as employer can be taken as an example of employer's breach of contract. According to the agreement the employer had to pay $594,365.48 sum of money on 25/10/1989 but the payment was delayed up to 20/12/1989. The case was totally proved that it was employer's breach of contract condition clause 69 of their agreement. The contractor was, in fact, claimed and entitled for interest for delayed payment.

Breach of contract by local contractors during execution of work is also the widely seen fact in the industry. The contributing reasons are: because of biding error, insufficient resources, contractors try to win bidding of many projects at the same time with out having enough resources to deploy, lack of knowledge in competitive bidding etc.

5.3.2 Claims due to delay and disruption

Referring Table 5.2 the largest percentage of causes of claims in the industry is delay and disruption. That is 78.95% of the respondents replied that delay and disruption is the main cause of construction claim in their industry.

Some of the reasons contributing to this effect are the following:

a) The very nature of constructional contract carried out, as they largely are, on open sites and with the uncertainties necessarily attached to works involving execution below ground.

b) Failure of pre contract planning both by the employer with the advice of his consultant and by the contractor in the preparation of his tender. This is due largely to an unwillingness to spend the time and money necessary for proper investigation of site conditions and construction methods, to provide the firms tendering with the fullest information on consultants intentions regarding design and allow an adequate time for tendering.

c) Inadequate attention paid to the pre-qualification and selection of firms to be invited to tender and to the analysis of their bids not just in relation to the over all price but to all other data required to be submitted.

d) Extensive variation ordered during the contract period and;

e) Underestimations of production rate, inadequate scheduling and management, construction mistakes, equipment break down etc.

The detail of this concept is discussed in section 5.4 of this chapter.

5.3.3 Claims arising out of variation

Next to claims due to delay and disruption, claims arise out of variation is the significant cause of construction claims in Ethiopian construction industry. Engineers make any variation, which they think is important using their power to make variation under clause 51(1) of BaTCoDA or similar clauses of other standard conditions.

Clause 51(1) of BaTCoDA is read as:

The engineer shall make any variation of the form, quality or quantity of works any part there of that may, in his opinion, be necessary and for that purpose, or if for any other reason it shall, in his opinion be desirable, he shall have power to order the contractor to do and the contractor shall do any of the following.

a. Increase or decrease the quantity of any work included in the contract

b. Omit any such works,

c. Change the character or quality or kind of any such work.

d. Change the level, lines, position and dimension of any part of the work, and

e. Execute additional work of any kind necessary for the completion of the works and no such variation shall in any way vitiate or invalidate the contract, but the value, if

any, of all such variations shall be taken in to account in ascertaining the amount of contract price.

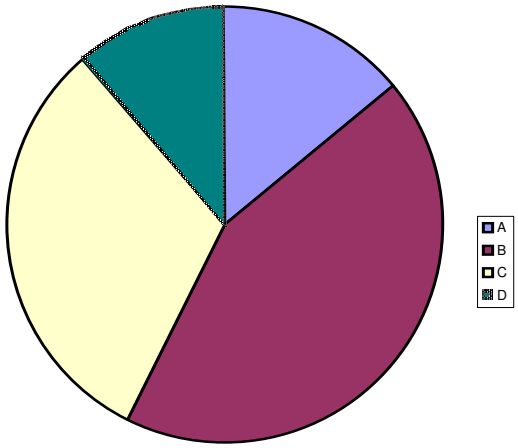
As it can be seen in the above clause, the engineer/consultant has power to order variation as per the provision of the contract. On the other hand the contractor has no power to deny as far as the agreement is based on this standard condition. But the contractor has right to claim for extra amount of money or extension of time using clause 52(5) of this condition. The result of the study shows that 57.89% of the respondents indicate that variation is the cause of construction claims in their industry.

5.3.4 Third party caused claims

These types of claims are neither party's sole responsibility. They are caused by third party, which is beyond the control of the owner or the contractor. These can be special risks like, war, hostilities, invasion, act of foreign enemy, ionizing radiations, radio-active toxic explosive, pressure waves, rebellion, revolution, insurrection, civil war etc. The claim caused by this type is normally excusable and compensable. The case of 500 housing project under taken around kotebe area of Addis Ababa can also be taken as an example of this type of claim. The project was delayed for 136 days due to gulf war during the change of government. As both parties easily understood the case the claim was settled amicably by negotiation between parties.

According to the information gathered during the study 21.05% of the respondents cite third party as the cause of claim in their industry. This type of claim can be easily settled by following the contract provisions.

Figure 5.1 Causes of claims



Note: **A=** Breach of contract

B= Delay and disruption

C= Variation

D= Third party

In general Table 5.2 shows that, delays and/or disruptions are the main causes of construction claims in Ethiopian construction industry.

5.4 Construction Project Delays in Ethiopia

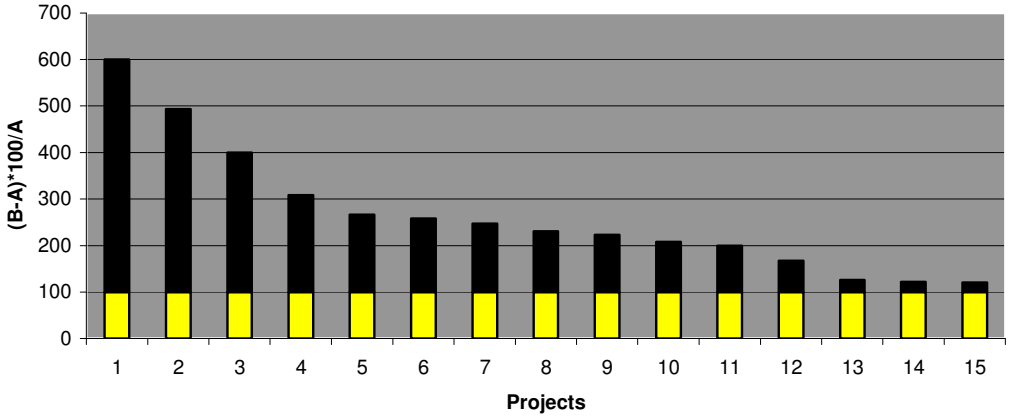
Delays are endemic to the construction projects in Ethiopia. By examining 15 completed projects in different region of the country (Table 5.3), the delay encountered in most projects range from 20.66% to 500% of original contract time. Project delays are the major causes of claims for time extension and associated cost.

Table 5.3 Construction project delays collected using questionnaires.

No.	Name of the project	A	B	[B-A]/A*100	Source
1	Dawnt-lalibela road project	1080	6480	500	BERTA construction
2	Complex 'e' apartment No.14 block1 &2 (A.A)	487	2401	393	Housing construction enterprise
3	40720 code compound road project (Debrezeit)	365	1096	300.3	Lalibela engineering &construction
4	Brigade camp residenence 1 (Mekelle)	365	1125	208.22	Awash construction
5	Brigade camp residence 2 (Mekelle)	365	972	166.3	Awash construction
6	Education &health science college maintenance project (Dilla)	180	465	158.3	Housing construction enterprise.
7	Bole apartment No.17	720	1781	147.4	National Engineers
8	Semera supreme court project	540	1245	130.5	Awash construction
9	Arbaminch air port terminal	365	813	122.74	Batu construction
10	Shakiso-soda road project	885	959	108.4	ORRA
11	Lalibela - Sekota road project	1080	2160	100	ERA
12	Pedestrian building(Dire Dawa)	260	1136	67.69	BDE
13	Chagni-wonbera road project	920	1160	26.1	TCDE
14	Yabello-Teltele road project	960	1080	22.2	TCDE
15	500 special housing project	731	882	20.66	BDE

Note: A= Contract time (days) B= Actual completion time (days)

Fig.5.2 Percentage delay



In addition to the information collected on construction project delays using questionnaire surveys (Table 5.3), the problem of project delay in Ethiopian construction industry can also be justified by using the report of Ethiopian Road Authority on September 2001. The authority reported the progress status of road civil works projects under construction industry news. The projects were funded by different funding agencies such as IDA, EU, ADF, the government of Japan, the government of Germany and the government of Ethiopia. The report includes completed projects, projects on progress and projects at tender stage. For the sake of this thesis only four completed and fifteen projects on progress are taken from the report. From nineteen projects, delays ranging from 11.11% to 173.33% were reported (Table 5.4). The delay percent is calculated as the ratio of delay to contract time.

$$\text{That is } \%\text{delay} = \frac{\text{Delay} * 100}{\text{Contract time}}$$

Table 5.4 Reports of the progress status of road civil work projects

No.	Project name	Contract time	Delay (Month)	Contractor	Consultant	%Delay	Remark

		(month)					
1	Awasharba-Gewane	30	52	Keangnam	ICT	173.33	On progress
2	Addis-Ghion-Jima	36	51	Dragados g&p	DIWI&TYPSA	141.67	On progress
3	Semera-Elidar	36	50	ERA	TCDE	138.89	On progress
4	Gewane-Mille	30	39	LTA/CCC/BB	Shelladia	130.00	On progress
5	DireDawa-Harar	30	38	CRBC	PANAF.	126.67	On progress
6	Debremarkos-Merawi	36	39	Wanbeo	BVA/CC	108.33	On progress
7	Addis - Gohatsiyon	42	42	Kajima	CPCNKJV	100.00	On progress
8	Woldia-Alemata	36	30	China Wanbao	Dar AL Handas	83.33	On progress
9	Betemariam-Wukro	36	25	China Wanbao	BCEOM	69.44	On progress
10	Awash-Hirna	36	24	CRBC	CES	66.67	On progress
11	Kulubi-Dengego	30	18	Keangnam	Scot Wilson	60.00	On progress
1 2	Mille-Assab contract (1)	36	16	SOGEA	DIWI	44.44	Completed
13	Ginte-Metema	12	4	ERA	TCDE	33.33	On progress
14	Mille-Assab contract (3)	36	9	SOGEA	DIWI	25.00	Completed
15	Mojo-Awasharba	36	9	Keangnam	Carl bro.int.	25.00	On progress
16	Indesellassie-Humera (Sec.2)	33	6	SUR	TCDE	18.18	On progress
17	Addis-Mojo-Awassa	40	6	Dragados g&p	DHV	15.00	On progress
18	Mille-Assab contract (2)	41	6	SOGEA	DIWI	14.63	Completed
19	Chida-Sodo	36	4	Salini	Gauffi	11.11	Completed

Source: - EACE Bulletin Vol.3 No. 1,September 2001

The associated costs are significant and need due attention in the industry.

Table 5.5 summarizes the cost increase of some projects due to different causes.

Table 5.5 Financial claims of four projects

No.	Name of the project	Contract amount (Birr)	Increased amount (Birr)	% Increased amount
1	Bole apartment No.17	10,718,922	8609700.49	80.32
2	Dawnt-Lalibela road project	71 million	56 million	78.87
3	Sodo-Chida road project	190 million	110 million	57.89
4	Dire-dam	200 million	140 million	70.00

The additional costs in some of the projects were due to indirect and overhead costs, loss of productivity and cost associated with extensions of various bonds.

The most common causes of delays and their associated costs were:

i) Shortage of spare parts

ii) Untimely payment

iii) Poor planning and control

iv) Increase in scope (design changes/extras)

v) Differing soil and site conditions

vi) Limited access to the site (partially or totally) not ready for work to progress

vii) Unusual and long rainy weather condition

viii) War and instability

ix) Poorly equipped contractors and

x) Public sector agencies lack of motivation, and lack of experience in project management.

Most of the delays were concurrent delays. That is to say that delays occurred by contractor, owner and third party at the same time. Some delays are sole responsibility of either contractor or employer. The overlapping of the causes of delays makes difficult to identify which portion of delay is which party's sole responsibility. Poor record keeping of events makes the problem even worse.

It is obvious that delays result in additional cost to both the owner and the contractor.

Some of major costs incurred by the owner are:

- Cost associated with delays if the delay is caused by the owner
- Loss of revenue or benefit that could have been gained if the project was completed on time.
- Consultant fees which are mostly based on time
- Cost associated with head office support of the project.

On the other hand some major costs incurred by the contractor are:

- Time related project indirect cost such as operation and maintenance of temporary facilities and general administrative costs.
- Head office overhead costs related to the project.
- Loss of revenue
- Cost of extension of various bonds such as performance bond, bank guarantee for advance payment etc.

This shows that costs associated with substantial delays encountered on projects affect both contractor and client.

5.5 Dispute Settlement System in Ethiopian Construction Industry

The majority of disputed claims raised in Ethiopian construction industry by local contractors are settled amicably by negotiation between contracting parties, even though, neither BaTCoDA nor international conditions like FIDIC, ICE etc. supposes that claims will be settled by negotiation. All provide machinery for the submission and determination of claims, as well as laying down procedures for extension of time.

The dispute settlement systems practised by local contractors were assessed using questionnaire survey. Thus, 85.71% of respondents settle their claim case by negotiation (Table 5.6). Negotiated settlements are a desirable objective for both parties to the contract. More over, the implication of clause 67 of BaTCoDA forces parties to negotiate because it says: *"if dispute arise between parties because of execution of the contract it shall be in the first place referred to and settled by engineer within specified time. If parties disagree with engineer's decision the case will be referred to MoWUD. The decision of MoWUD is the final"*. But if the parties still do not agree with the decision of MoWUD the case may be referred to arbitration or litigation.

Therefore, failure to negotiate a settlement may result in abandonment of valid claim if the contractor does not wish to embark upon the uncertainties and hazards of arbitration or litigation. Both of which involve expenditure of time and money for which even an award of costs to a successful claimant will not provide full recompense.

5.5.1 Negotiation

During negotiations the contractor should be prepared to provide all written evidence that the engineer may reasonably require to establish the validity of the claim. If the claim has ultimately to be referred to arbitration the respondent will have the right to demand such evidence. This applies in particular to the contractor's pricing notes, which are often considered by the contractor to be confidential but which would nevertheless have to be produced at discovery stage of all arbitration. Similarly the contractor should be prepared to discuss his claims and if requested to do so by the engineer to arrange for the relevant personnel to attend a meeting with the engineer in support of the claim.

Moreover, the contractor should consider carefully and determine an acceptable settlement figure for the claim. He should recognize that his objective is to obtain payment of the sum to which he considers himself entitled and which he can substantiate.

If the engineer rejects a claim, his reason for the rejection should be considered. In negotiation, the contractor should have made a realistic assessment of the value of the claim as a reference in considering any offer of settlement.

The aforementioned paragraphs laid down some procedures which have to be followed to settle disputed claims by negotiation, which is dominant way of dispute settlement in Ethiopian construction industry.

However the negotiation usually practised in the Ethiopian construction industry is in formal, which do not follow the aforesaid procedures. The result obtained from the respondents to the questionnaire is tabulated below (Table 5.6).

Table 5.6 Dispute settlement methods

No.	Types of Dispute settlement System	Number of respondents	Percentage of respondents
1	Negotiation	18	85.71
2	Arbitration	6	28.57
3	Litigation	0	0

5.6 Claims Management in Ethiopian Construction Industry

The opinions of different peoples working at managerial level in governmental and non-governmental organizations were collected with the aim of knowing about administration of claims in the industry.

It is known that good claims management enables the construction parties to successfully implement their obligation in the constraint of budget, contract document, time and environment. Active familiarity with and awareness of potential claims situation are also prerequisite to successful claim management. A proper claim management begins with identification and goes hand in hand with notification. If the contractor does not recognize a situation, or wait too long to take action, he can loss any and all right to claim.

Most local contractors have the problem of early identification and notification of claims situation. Early identification and notification enables the owner to verify, confirm, and possibly remedy the situation at the earliest opportunity. It help the designer to suggest new design, new material, and different construction method, and it also enable the contractor himself to have adequate time to study the problem, analyze different proposal and notification technique, and best prepare himself for claims that might prove troublesome.

The study result shows that the following are some among the problems in claims management widely seen currently in the Ethiopian construction industry.

- Lack of experience in processing claims

- Lack of awareness of claims situation. Most local contractors do not give notice of their intent for future claim when the problem arises. They claim when they encounter shortage of money or time.
- When the owner of the project is government and the contractor is private most decisions made by consultants are in favor of employers. Contractors have less opportunity to be entitled to their intent.
- Lack of knowledge of legal and contractual right
- Poor record keeping for justification of claim
- Most local contractors do not want to issue financial claim to their client. Many of them claim only time extension claim, not its associated cost. The reason is because of fear of their reputation for future relationship with their client.
- The financial constraint of contractors

6.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are forwarded from the research work

1. Most construction projects undertaken in Ethiopia are procured by traditional project procurement system. The form of contract used in traditional procurement system usually contain a number of clauses entitling the contractor to claim for extra time or money or both, and entitling the employer to claim in certain circumstances. Therefore, because of the nature of project procurement system claim is inevitable in Ethiopian construction industry.
2. Eventhough, BOT procurement shifts both short-term and long-term risks to the contractor, it is recommended in reducing the rate of claims. Moreover, the writer would like to strongly recommend that, the partnering procurement system, which

share all risks between contracting parties and reduce the rate of construction claim should be practiced in Ethiopian construction industry.

3. Contract, an agreement between two or more persons or organizations, has both express and implied terms. The implied terms mainly depend upon the law of the country at which the construction is made. Therefore, both employers and contractors have to understand both express and implied terms of the contract before signing an agreement. However, it was found that most contracting parties in Ethiopian construction industry have less understanding of legal aspect of claim. Hence it is logical to recommend that some short-term on the job training have to be given on legal aspect of claims for every contacting party.
4. Contractual Claims usually evolve due to: variation, delay/disruption, breach of contract and third party. The statistical analysis of this thesis work witnessed that claims due to delay/disruption is the highly ranking cause of construction claim in Ethiopian construction industry.
5. The standard condition of contract used for local contracting firms is old and more or less a copy of FIDIC Red book. Also it contains adversarial clauses. Hence, new and revised edition of standard condition of contract, which considers the actual situation in the industry and current technological advancement, has to be prepared.
6. Because of the limited capacity of local contractors, multi-million Birr worth projects are offered to foreign contractors. But most of foreign contractors start to manufacture claim before the start of the project and they are claiming up to/more than the total cost of the project. Therefore, it is logical to recommend that, the

government have to take strong measure to build the capacity of local contractors so that they are competent with international contractors.

7. Professional associations like EACE, ECA and others have to work hard to improve the status of claim management in the industry.
8. Other problems associated with claim management vividly seen during the study on the local contractors were:
    a) Lack of experience in processing claims
    b) Lack of knowledge of legal aspect of claims
    c) Lack of awareness of claims and
    d) Deficiency of detail pre contract planning
9. In addition the study shows that most disputes raised between contracting parties are settled amicably by negotiation between parties. The amicable settlement of claims is in fact recommended than arbitration and litigation. But the problem here is that the negotiations made are not procedural and scientific and most decisions are in favor of clients. Eventhough, local contractors face loss they are not interested to raise claim issue to their clients to reserve their right. This is because of fear of the future relationship with their client.

In general the study shows that claims management in Ethiopian construction industry is at very low and infancy stage and need great input for improvement.

At last the writer would like to recommend that since the subject of claim is very wide and could not be totally adressed by one M.Sc thesis, further detail study is required to address every possible causes of claim and to sugest solutions for the same.

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Appendix A1

Case study on 500 special housing projects

The 500 special housing project was executed from 1987-1992 in Addis Ababa (Ethiopia) around Kotebe area. The contracting parties for this project were Ministry of Work and Urban Development of Ethiopia as an employer from one part and Cooperativa Muratori and Cementisti-C.M.C-di-Ravenna as contractor from the other part. The consulting engineers were Foster Wheeler Italiaana (FWI) with collaboration with

Building Design Enterprise (BDE) up to 84% of the work and the remaining 16% was completed with consulting service of BDE alone.

The special housing project was intended to satisfy the demand for housing for expatriates personnel having 'Diplomatic' status or the cooperates from the various international technical assistance bodies present in the country. Accordingly, the housing standard was intended to be high in quality of service and finishing. Also the house topologies and architectural aspects were designed in such a way that it satisfies the expectance of an international community.

The general program of special housing project was for the construction of 2500 apartments to be completed in four phases. The 500 apartments, under consideration, were the first phase of this program over 27 hectares of land with 56 blocks. The contract completion time of the project, prepared by FWI, was 731 days. However, the contractor was unable to finish the project in its contract time because of different reasons. Some of the activities encountered delays were: shipping, construction of contractor's camp, survey and construction of work shop area, production of precast components, construction of cast in situ components, construction of auxiliary building etc. The causes of the delay were procurement of local materials, variation orders, delayed issue of final drawing, the special risk happened during government change in the country etc.

Appendix A2

The main focus of this case study is the way the contractor issued his claim, his record keeping (evidence), and the magnitude of time he was entitled and compare this with that of Lalibela to Sekota rural road project case (undertaken by local contractor).

The contractor clearly justified the delay on each activity and overall delay by programme comparison between the start and completion of the activities.

The following points are contractor's delay justification for some of the activities of the project.

1. For Shipping

-**Shipment 1**.

Programmed: start 22/10/88;finish 20/2/89.

Actual : start 22/10/88:finish 15/4/89

Delay: 1 3/4months,to the completion of the activities.

-**Shipment 2.**

Programmed: start 1/2/89;finish 31/3/89.

Actual : start 1/2/89;finish8/8/89

Delay : 4 1/4 months, to the completion of the activities

-**Shipment 3**.

Programmed: start 1/3/89; finish 30/4/89.

Actual : start advanced to 1/2/89;finish 10/8/89

Delay : 3 1/4 months, at least ,to the completion of the activities, despite the initial advancement of one month.

-**Shipment 4.**

Programmed: start 15/3/89; finish 23/5/89.

Actual : start 21/4/89; finish10/8/89

Delay : 1 1/4 months, to the start of the activities

2 ½ months, at least ,to the completion of the activity.

Appendix A3

-**Shipment 5.**

Programmed (Assab to site): start 15/5/89; finish 7/7/89.

Actual : start 22/6/89; finish 10/8/89

Delay : 1 1/4 months, to the start of the activities

1 months, at least ,to the completion of the activity.

-Shipment 6.

Programmed (Assab to site): start 15/6/89; finish 7/8/89.

Actual : start delayed post to 10/8/89,therefore requires a separate review.

2. For Construction of Contractor's Camp.

Programmed: phase 1, start 21/11/88; finish 15/3/89.

Actual : start 21/11/88; finish 8/4/89

Delay : ¾ month in the completion of the activity

Programmed: phase 2, start 1/3/89; finish 30/4/89.

Actual : start 1/3/89; finish 1/7/89

Delay : 2 month in the completion of the activity

Note: the procurement of local material was slow, which undoubtedly slowed the progress of this construction.

3. For Workshop Area

a. Reduced Levels (changed quantity from 10,000m^3 to 56,000 m^3) Programmed: start 1/11/88; finish 9/1/89

ii) Actual : start 1/77/88; finish 10/8/89

iii) *No Delay* *(the five-fold increase in quantities of excavation has to be explained)*

Appendix A4

b. Drainage and Fencing

i) Programmed: start 15/12/88; finish 28/2/89

ii) Actual: :start 15/12/88; finish 31/1/89

iii) No Delay

c. Building Foundation; Subsurface Ducts; Fuel Tanks Etc.

i) Programmed: start 1/12/89; finish 31/1/89

ii) Actual : start 7/1/89; finish 15/2/89

iii) Delay : the activity was started ¾ month early and completed ½ month early i.e. the duration of the activity was increased by ¼ month

No delay was observed on erecting buildings; laboratory and factory offices, road works, and customs bonded area under this activity

The contractor CMC-di-Ravenna justified their all claims in the same fashion

Appendix B1

Case Studies on Lalibela to Sekota Rural Road Project

The project was newly proposed RR50 road project. The construction parties for the project were: SUR construction Share Company as

contractor, Ethiopian Road Authority (ERA) as employer and ROUGHTON INTERNATIONAL CONSULTING ENGINEERS, ARCHITECTS AND PLANNERS as consultants.

The contract agreement was turnkey based on SUR Construction's technical proposal dated 30th, July 1993. The proposed length of the road was 128 Km with contract sum of 93,049,979 Birr and contract time of 1080 days. During the execution period, the contractor encountered project delays because of:

1. a) Difficult nature of terrain, large volume of earthwork and rock excavation
   b) Time for design
2. Right of way problem
3. Delay in effecting payment
4. Heavy rain fall a) Delaying construction
   b) Effect of fatal accident
5. Security problem a) Damage to culverts
   b) Malaria epidemic

The main aim of this case study is to analyze the contractor's claim and to suggest time of extension based on his request.

Claim 1

Difficult Nature of Terrain, Large Volume of Earthwork and Rock Excavation and Time for Design

a. Difficult nature of terrain, large volume of earth work and rock excavation

Contractor's justification

The actual volume of work as measured mainly during execution of the works and partly as taken from the design was found out to be 4,199,248 m^3 in normal soil and soft (weathered) rock rip able using bulldozers, 494,664 m^3 in hard rock excavated by blasting. The average volume of earthwork per kilometer in normal soil and rock excavation was 32,806 m^3 and 3,864 m^3 respectively.

Appendix B2

The large volume of earthwork in this project can be easily understood by comparing the volume of earthwork per kilometre with that of other projects.

Although the volume of earthwork assumed in fixing the completion period was not clearly known, the list of equipments proposed in the instruction to bidders section 3.3(c), and the contract document for Lalibela to Sekota road were given.

The following key items of equipments in full working conditions were required.

Equipment type and capacity	**Min. No. required**
Bulldozers 300 HP	4
Grader 130 HP	3
Dump trucks 7 m^3	7
Roller 8 T	3
Wheel loaders 2.4 m^3	2
Water truck 10,000 Lt.	2

As to contractor's justification, they had used the above list of equipments in arriving at the volume of work estimated at the tender stage in fixing the completion period. The decisive equipment in estimation of the volume of earthwork at the project was bulldozer. Assuming four of them can be assigned fully to operate in earthwork 10 hours a day, 26 days a month 10 months a year the maximum output that can be achieved was:

4 dozers* 115m^3/dozer-hr*10 hr/day*26 days/month*10 months/year=1,196,000 m^3/year

In three years=1,196,000*3=3,588,000 m^3

However, the actual volume of earthwork was 4,199,248 m^3 in normal soil and 494,664 m^3 in rock. If it is assumed that a separate crew for rock excavation was deployed and the four dozers are assumed to be fully engaged in normal soil excavation the period required for earthwork should have been at least [4,199,248/3,588,000]*1080=1,264 calander days.

Appendix B3

Therefore, 184 calendar days additional to the estimated completion period would be required in consideration of the actual volume of earthwork, given other considerations normal.

Analysis

Claim 1(a)

i) SUR Construction's '' technical proposal for design and construction of Lalibela to Sekota road'' dated 30th July, 1993:- paragraph 2.1 states: - ''the road traverse through an area of rugged terrain and it is subjected to a high cross slope involving major earthworks''.

Paragraph 2.2 states: -''the project site comprises rough topography of steep slopes, river valleys and deep gorges''. Generally, the route topographic configuration was mountainous and hilly.

An appropriate estimation of earthworks in mountainous terrain was in the order of 20-30,000 m^3/Km, which was in line with figure referred to SUR, and which was foreseeable at the time of tender. In addition, in their contract agreement, instruction to bidders Article 5.1 states: - '' the bidder is advised to visit and examine the site of works and its surroundings and obtain for himself on his own responsibility all information that may be necessary for preparing the bid and entering in to a contract for construction of the works''.

ii) The contractor's justification for 184 days extension was based upon the out put of 4 no. dozers, as referred to in the equipment list provided in instruction to bidders, Clause 3.3(c) and specified as ''minimum number required''

In practice, SUR Construction's technical proposals for design and construction of Lalibela to Sekota road incorporate an equipment list specifying the need for 14 no. D_8 dozers and 2 no. D_6 dozers to complete the work.

The following table summarizes the availability of dozers at expected peak periods of earthwork operations during the project, which started on 14th, Dec.1994.

Appendix B4

Table 1* Availability of dozers at expected peak periods

Period	No. Of dozers programmed	Dozers on site/operation	Remark
Dec., 1994	4	4/3	Progresses report No.12-"equipment falls short of requirements to complete with in contract period."
Nov., 1995	7	6/4	Dozer availability below programmed requirements
Dec., 1996	14	11/11	Dozer availability below programmed requirements
Dec., 1997	13	12/10	Dozer availability below programmed requirements

It can be seen that dozer availability was significantly below the identified requirements to complete the project with the specified contract period.

On the basis of the information provided, no extension of time should be recommended under claim 1(a).

b. Time for design

Contractor's Justification

Because of the type of contract, the contractor had to design and construct. It would be easily understood that both couldn't be started at the same time. Certain time would be required between the commencement of design and earthwork. A minimum of three months ('90' calendar days) would be normally required before any experienced contractor can prepare design readily available to commence the earthwork activities.

Analysis

The contractor had argued that, because he had had to design the works, he was unable to start construction until design work was available. He requested an additional 90 days for this purpose.

However, the instruction to bidders, Clause 1.1, states: - ''the ERA (Employer) wishes to receive bids for the design, construction and completion of Lalibela to Sekota road of class RR50 as defined in the bidding documents''.

Clause 1.2 states: - '' the successful bidder will be expected to complete the works with in 36 months from the date of receipt of notice by the contractor for commencement of the works ''. Bidders were clearly made aware that design was included in the contract.

Therefore, the contractor's justification could not be convincing and no time should be recommended under this sub-claim. **That is, the contractor requested 184+90=274days under claim 1 but his justification was not convincing. Thus no time should be recommended under claim 1 ('a' and 'b'). This analysis result agrees with the engineer's decision.**

Claim 2

Right Of Way Problem

Contractor's Justification

At some locations the route passes through towns, villages and farmlands where the right of way was not secured while the contractor was to carry out construction activities in those stations. Therefore the contractor was forced in some cases to jump those stations where alternative access was available and in some cases to wait until the time the case was resolved or alternative access to pass by was built. The contractor communicated the resident engineer, ERA and other concerned bodies with regard to such problems with formal letters in different times. Stations, which were jumped for the said reasons, were executed and some of them were being executed by pulling back the machinery. Some of them like the case of Lalibela town, houses around Km 3, stations around Km 47, Asketemma town were not resolved for long period of time.

Hence certain time would obviously be required for executing the works in the said portions. Calculation of the delay caused by right of way problem was shown in the following Table. The total delay caused was estimated to be **270** calendar days.

Appendix B6

Table 2* calculation of delays due to right of way problem

Item no.	Station	Right of way problem was communicated on	Right of way problem was resolved on	Days interrupted due to lack of access to work on other stations	Time taken to mobilize &demobilize machinery (days)	Time taken to execute the work/estimated req. time if not exceeded so far	Total delay caused (days)	Total extension of time requested (days)	Reference letters
1	0+00 up to 3+500	25/10/94, 2/10/95 & 16/2/97	Jan, 1998		5	35	40	40	0010/L-S/R/88&615/L-S/R/89
2	9+00 up to 19+00	21/10/94	Jan., 1995	10	5		15	15	34/L-S/R/87
3	32+120 upto32+140	03/05/95	Jan.,1996		5		5	5	484L-SR87
4	32+900	03/05/95	Jan., 1996		5		5	5	484L-S/R/87
5	32+930 up to 32+960	03/05/95	Jan., 1996	5	5		10	10	484L-S/R/87
6	35+520 up to 35+900	03/05/95	Jan., 19965	5	5		10	10	484L-S/R/87
7	47+020 up to 47+140	04/07/96	Aug., 1997	5	5	15	25	25	938/L-S/R/88

Item no.	Station	Right of way problem was communicated on	Right of way problem was resolved on	Days interrupted spent due to lack of access to work on other stations	Time taken to mobilize &demobilize machinery (days)	Time taken to execute the work/estimated req. time if not exceeded so far	Total delay caused (days)	Total extension of time requested (days)	Reference letters
8	47+250 up to 47+328	04/07/96	Aug., 1997	5	5	10	20	20	938/L-S/R/88
9	47+371 up to 47+448	04/07/96	Aug., 1997	5	5	10	20	20	938/L-S/R/88
10	50+00 up to 59+941	12/07/96		15	15		15	15	1013/ L-S/R/88
11	98+500 up to 105+800	24/03/97	Jan.,1998		5	25	30	30	786/ L-S/R/88
12	120+500 up to 120+920	28/01/97	Sept., 1997		5	25	30	30	0060/SL/89
13	132+800 up to 13+00	13/02/97	Sept., 1997		5	20	25	25	0106/SL/89
14	162+700	18/12/96	Sept., 1997		5	15	20	20	0001/89
								Total **270**	

For those stations where right of way problem was resolved after expiration of contract period, the time extension was requested to execute those stations in addition to the time wasted to mobilize and demobilize machinery and days of interruption.

Analysis

The contractor has claimed extension of time totalling 270 days in respect of lack of access to sections of the site (as recorded in Table 2* above). The employer should have to give the portion of the site when the contractor was ready to undertake the work and had to solve any problem related to right of way. But the contractor claimed that this was not done. The claim was supported in principle. However the period of time claimed by the contractor in respect of mobilization/demobilizations and time for execution was excessive.

i) Mobilization/ demobilization was considered excessive in respect of claim 3-6 sections were in close proximity and completed consequently. Therefore, mobilization would be required once. In respect of claims 12-14 sections were completed consequently. Hence one day mobilization and one day movement between sites was sufficient.

ii) Time for execution: - as compared to site engineer's site record, claims in respect of 7, 8, 9,11,12,13, &14 were considered excessive. Table 3* below summarizes the engineer's recommended extensions.

Table 3* Total extension recommended due to right of way problem

Item no.	Interrupt. (Days)	Mobilize (Days)	Execut. (Days)	Total extension recommended	Comments
1	-	5	35	40	After contract
2	10	5	-	15	-
3	-	5	-	5	-
4	-	As-3	-	-	Mobilization under 3
5	5	As-3	-	5	Mobilization under 3
6	5	As-3	-	5	Mobilization under 3
7	5	5	8	18	After contract
8	As-7	As-7	5	5	Mobilization under 7
9	As-7	As-7	5	5	Mobilization under 7
10	15	-	-	15	-
11	-	5	15	20	After contract
12	-	1	7	8	After contract
13	-	1	7	8	After contract
14	-	1	6	7	After contract

Total	**40**	**28**	**88**	**156**	

Appendix B9

Here, the engineer recommended 156 days from 270 days requested. The engineer's recommendation depends on the assumption that the contractor can minimize the required time by modifying his method of execution.

But contractually the engineer had no base to assume such modification. Therefore, the contractor should have been recommended 270 days of extension.

Claim 3

Delay in Effecting Payment for Operational Items

Contractor's Justification

The contractor in the effort to successfully complete the work had deployed brand new dozers, graders, loaders, dump trucks and rollers, which the contractor hoped that these were known to the consultant and the client. However there was considerable break down of these machineries. Although tolerable rate of break down could happen, the problem was aggravated by the difficult terrain and rock excavation they were working on. The effort made by the contractor to resolve the problem was hampered by the shortage of fund to timely purchase required spare parts. The shortage of fund was caused mainly because payments which were payable to the contractor as per the contract agreement were not being effected for a long time. The concerned body was being communicated by letters of reference No. 690/88, 1584/88, 1101/89 and 1767/89 so that attention and early solution would be given to the problem. However the first payment for operation items was effected in Dec. 1997. On the other hand the contractor had spent a lot of money to construct the houses, buy the vehicles, equipment and facilities and provide services. Therefore the contractor had no choice to ask for extension of time for the delays caused by the mentioned reasons.

Some of the machineries were down time and others were idle. Part of idling was caused because of breakdown of key machine from a crew was down like a loader fore example the rest of the machinery in the crew, dump truck as an example, will be forced to be idle. From the record the percentage of down time and idle time combined was shown to be 40%.

From experience the percentage of down time and idle time combined should not exceed 25% of the total working hours, unless other problems occur.

The extra amount beyond the normal, which was caused by the shortage of fund to timely purchase and deliver spare parts, was beyond the responsibility of the contractor for the reasons mentioned above. Hence, time lost because of the above reason, which was estimated to be 15% of 1080 days= 162 calendar days were requested.

Analysis

Payment on the operational items, related to the provision and maintenance of supporting services to the supervising consultant, was added to the original contract as addendum No.2 on 3rd June,1994, and forms part of the contract agreement.

Reimbursement of operational item was suspended by ERA from PPC No.3 in March 1995 and reinstated from Dec., 1997, paid through PPC No.10 dated 2/1/98. The amount of operational item unpaid varied from Birr 2,526,428.16 in March, 1995 to Birr3,118,173.26 in January, 1998 as shown in Table 4* below.

Referring Clause 60(2) of standard condition of contract, which is read as "*the contractor will be paid monthly, with in 30 days of the presentation of the engineer's interim payment certificate to the employer 100% of the estimated value of the work executed up to the end of the previous month, together with the value of materials on site intended to form part of the permanent work as and from such time as they are reasonably, properly and not prematurely brought up on the site but only if adequately stored and/or protected against weather or damage".*

This clause implies that the contractor have to be paid on time for work already performed.

Appendix B11

Table 4* summary of cumulative deductions of operational items from PPC's

Date	PPC No.	Operat. item claimed (Birr)	Operational item paid (Birr)	Cumulative amount deducted (Birr)	Less 10% retention(Birr)	Net cumulative deduction (Birr)
02-05-95	2	535,384.50	535,384.50	-	-	-
04-02-95	3	3,061,812.66	-	2,526,428.16	252,642.82	2,273,785.34
05-06-96	4	3,198,342.66	-	2,662,958.16	266,295.82	2,396,662.34
16-12-96	5	3,777,641.65	-	3,242,257.15	324,225.72	2,918,031.43
24-02-97	6	4,000,021.46	-	3,464,636.96	346,463.70	3,118,173.26
02-01-98	10	**4,000,021.46**	4,000,021.46	-	-	-

The contractor claimed that the loss of the operational items, over a period of 22 months, had affected his cash flow, his capacity to effect needed repairs on his plants and consequently his possible rate of progress. The contractor's justification covers the period of first January, 1995 to 31st December, 1997 and relates the amount of down time plus idle time experienced over the period, totalling 40% of total machine hours, to a reasonable norm of 25%, the difference of 15% over three years representing 162 days loss of production.

The contractor's method of delay computation was considered to be an over all simplification, relating specific cash losses directly to an estimated excess loss of plant hours over the same period. The computation could reasonably be done by taking proportions, the estimated delay against the cumulative loss of earnings, compared with the contact value over the original contract period.

Thus, the computed delay (days) =10,706,652.37/93,049,357*1080=125days should be recommended. The engineer's assessment in respect of this claim was that the delays were computed by taking proportions of the estimated delay against the average loss of earnings compared with contract value over the original contract value. i.e. 2,695,979/93,049,357*1080 = 32 days.

Here the analysis result disagreed with the engineer's assessment. The engineer had no contractual justification to take average of loss of earning of contractor's claim. Hence, once he agreed with the amount of the contractor's claim, he should have considered total of the money claimed for delay calculation.

Claim 4

Heavy Rain Fall

Contractor's Justification

Heavy rainfall occurred during the month of May and June in 1996 and in June, October and partly in November of 1997. The later was believed to have happened by the weather change caused by Elinino. The above months were normally considered as working months, hence rainfall, which occurs during those months, was found to cause delay on the expected progress of the project. The rainfall does not only interrupt the execution of the works during rainfall but it also blocks the way to the site by flood at major crossings caused by the flood at Simeno river on 09/05/1996 where 5 of their employees had died and 3 had been wounded, while coming back to camp from the work site.

Rainfall data collected from National meteorology service was shown in Table 5*.

The numbers of interrupted days were:

In May, 1996	15 days
June, 1996	15 days
June, 1997	15 days
September, 1997	10 days
October, 1997	10 days
	=========
	65 days

Effect of the accident (where among key staff 1 surveyor died 2 were wounded) and took 20 days to replace and proceed with workers. Hence, a total 85 days were requested.

Appendix B13

Analysis

The contractor had claimed a total of 85 days comprising

a) Number of days interrupted due to rain = 65 days

b) Effect of accident resulting from heavy rain fall = 20 days

a) Number of days interrupted due to rain [65 days].

Table 5* below shows the days claimed by the contractor compared with the monthly progress report prepared by the resident engineer staff for the relevant months.

Table 5* weather records [days reported {lost/interrupted}]

Month	No. of days lost (Claimed)	No. of days lost (progress report)	10 year average rain fall Lalibela (mm)	Monthly rainfall report Lalibela(mm)
May ,1996	15	8	48.8	56.2
June, 1996	15	7	52.1	161.6
June,1997	15	3	52.1	104.5
Sept.,1997	10	Nil-site closed	47.9	24.9
Oct.,1997	10	8	12.3	100.3
Total	65	26	n/a	n/a

It can be seen that the RE's record support a total of 26 days interruption, compared with 65 days claimed by the contractor.

Generally, claims for delays to construction should relate to the number of days lost to inclement weather in excess of the number of days lost normally to be expected for the time of year.

The limited records provided indicate that actual rainfall exceeded average rainfall significantly in the months of June, 1996 and June, October, 1997, providing some justification for a claim against unexpected inclement weather. The claim for September 1997 was invalid, the site being officially closed for that month.

b). Effect of fatal accident [20 days]

Records supporting the 20 days claimed by the contractor, in respect of the fatal accident of 9th May, 1996 had not been submitted. The resident engineer received no report of delays following the accident and notification was supplied by the contractor of his intention to claim under the standard specification of ERA 1968, Article 9.5.

No extension should be recommended under this sub-claim. **Consequently total extension of 26 days should be recommended in respect of rainfall under claim 4(a) & (b). This is the same as engineer's assessment.**

Claim 5

Security Problem and Malaria Epidemic

Contractor's Justification

a) Security problem

Security problem like removal of reference points around Lalibela town and damaging deliberately the already constructed pipe culvert in Km 12+00 to Km 25+00 had happened by unknown people.

This problem caused the contractor to do the works again. The problem had been communicated to the resident engineer and other concerned (on 20/04/87 E.C Ref.no. 148/L-S/R/87E.C and 19/09/1987 E.C, Ref.no.S/R/01/02278/35) so that early solution could be given to the problem. The interruption in the surveying works and the time taken to execute the pipe culverts again had caused "21" calendar days on the progress of the works.

In addition to contractor's justification the site engineers record show that the contractor suffered damage of works at stations: kms 18+096, 18+242, 19+730, 19+904, 23+000, 23+148, 23+500, 24+205, 25+314, and 26+022.

b. Malaria epidemic

The malaria epidemic, which erupted in October 1996 especially in Lalibela area, had caused some of their operators, surveyors and other key personnel to interrupt work because of illness.

Appendix B15

Though the problem stayed for a period more than a month the effect on the progress was estimated to have caused a "15" calendar days of delay on the over all progress

Analysis

The contractor claimed 36 days extension in respect of:

a) Security problem -21 days resulting from replacement of damaged culverts and survey reference points.
b) Malaria epidemic- 15 days due to illness of operators, surveyors and other key personnel from malaria epidemic of October, 1996.

a. Security problem

Contractually this case could be treated by using clause 20(1) of standard condition of contract. The clause under care of work stated "… *provided further that the contractor shall take full responsibility for the care of any outstanding work which he shall ha*ve *to finish during the period of maintenance until such outstanding work is completed. In case any damage, loss or injury shall happen to the works, to any part there of, from any cause what so ever, save and except the excepted risks*…" the excepted risks as listed in clause 20(2) are war, hostilities, invasion, act of foreign enemies, rebellion, revolution, insurrection, military or usurped power, civil war and other problems which an experienced contractor could not foresee or reasonably make provisions for or insure against it. There fore, the problem of damaging the already constructed pipes and removing survey reference points can be categorized under excepted risks. Hence it is contractually logical to recommend some extension of time under this sub-claim.

After evaluating the scope and extent of damage the engineer recommended:

i) Reinstatement of reference points: 2 days

ii) Minor repairs to damaged culverts: 2 days

iii) Replacement of damaged culverts: 6 days

Therefore, 10 days extension of time was recommended under 5(a).

b. Malaria epidemic

The contractor submitted notice of intention to claim at the time of the problem. Moreover, BERTA construction working on contract 3 reported on the same case with supported document of local health authority.

Appendix B16

Therefore, 15 days extension proposed by contractor should be recommended under claim 5(b).

This implies that a total of 25 days should be recommended under claim 5.

The engineer's assessment in respect of claim 5 was agreeable and logical

Table 6* summary of total time extension

Item no.	Cause of delay	Time extension claimed (days)	Time extension recommended (days)
1	a) Difficult nature of terrain and large volume of earth works and rock excavations, beyond expectation b) Time for design	184 90	Nil Nil
2	Right of way problem	270	270
3	Delay in effecting operational payment	162	125
4	Heavy rain fall i) Delaying construction ii) Effect of fatal accident	65 20	26 Nil
5	Security problem i) Damage to culverts	21	10

	ii) Malaria epidemic	15	15
Total extension		**827**	**445**

Appendix C1

Case Study on Sodo-Chida Access Road Project

The Sodo-Chida feeder road was undertaken based on contract agreement made between the Ethiopian Road Authority, Ministry of Work And Urban Development of transitional government of Ethiopia as an employer from one part and Salini construttori S.P.A with registered office in Rome, via della Dataria 22, Italy as contractor of the other part and with consulting service of H.P Gaff Ingineure-consulting engineer (Germany).

The project was executed in two sections. For each section, contract 1 and contract 2 were signed between the contractor and the employer. The project was a new gravel surfaced feeder road linking the town of Chida and Sodo in south of the country. The work was divided in to two separate sections: section 1, 73 Km links Chida and Wacca, an intermediate population centre. Section 2, 87 Km links Wacca and Sodo to which was added by a supplementary agreement, an approximately 6.5 Km link road to the Sodo city centre.

The tender was called for by the employer on June 1994, and the contractor's offers were the most competitive for both lots.

a. The tender for contract one was in the amount of Ethiopian Birr 105,357,234.01;and
b. The tender for contract two was in the amount of Ethiopian Birr 114,587,908.84

The contract was negotiated, and the employer accepted both tender on 16 November 1994. The employer's acceptance includes a discount of 11.42% for the joint award of both contracts. The form of agreement was executed by the parties on the same day 16 November

1994. The contract was signed for an initial total value of Ethiopian Birr 194,827,407.54, divided between the two contracts as follows.

c. The tender for contract one was in the amount of Ethiopian Birr 93,325,437.89
d. The tender for contract two was in the amount of Ethiopian Birr 101,501,969.65

Appendix C2

At the time of award the contract had an equivalent value of US$30,974,150.00

The engineer, Mess Gaff Ingenieure of Frankfurt, issued the notices to commence for both contracts fourteen days later on 30 November 1994 there by establishing the time of the works, which were to be completed in, 1,092 days, or 27 November 1997. The project was financed by African development bank (ADB), 82.4% and government of Ethiopia for the remaining 17.6%.

The contractor raised time extension and extra payment claims for successful completion of the project. The claims issues were the following.

i. Disruption of work due to design related problems
ii. Time for completion and constructive acceleration
iii. Employer's breach of obligation (failure to provide a timely design of works)
iv. The exceptionally adverse weather condition
v. The failure to determine proper extension of time
vi. The failure to certify and for work completed under the contract ;and
vii. Other miscellaneous breaches

This case study will try to analyze some of the contractor's claims and suggest time of extension and compensation for the claims.

Claim1.

Disruption of Work Due to Design Related Problems

Contractor's justification

As to the contractor's justification, the problem arose virtually from the inception of contract works. There were difficulties concerning the employer's obtaining and delivering possession of the site, illegal labour disputes and interference from the local population, which was

affected directly by the new road construction. By far, however the most important problems, which arose on the contract, were connected with the design. The tender design was produced by the engineer at the request of the employer on the bases of paper study. It was not possible to obtain topographical data and geotechnical information concerning the ground condition through which the road was built prior to the employers call for tenders.

Appendix C3

It was not possible for instance to identify the sources of construction materials at the tender design stage, and particular reference is made here to the material sources for the gravel wearing surfaces. The construction design was produced as the construction progressed, and it varied the contractor's work under the contract to a substantial degree.

The delay progress in the design activity affected the employer's capability of delivering the possession of the site to the contractor in advance of the progress of the works. It was necessary to locate the road alignment on the ground before exploration activity could commence. This could not start before the engineer established the alignment.

Once the construction work provided the necessary access, it was often necessary to carry out geological investigations in order to finalise the construction design. Both vertical and horizontal alignments were changed from the tender design, and it was not uncommon to have such changes instructed only once the construction work had already began in some sections. The geological investigations, which were finally carried out, were not sufficient to do meaning full stability analysis for the road cuts in advance. The construction design was based on steep cut slopes in order to minimize the excavation quantities. The final slopes were left to nature to decide, and the engineer issued design variations for those areas, which exhibited instability, usually during the rainy seasons.

The construction work was further disrupted by the exceptionally adverse weather conditions which were connected with Elinino and which had world wide effects during 1997 and 1998 construction seasons. Because of this the contractor requested 60 days for contract 1 with 21,070,673.00Birr financial compensation and 113 days for contract 2 with 12,958,554.00Birr financial compensation.

Appendix C4

Analysis

The general conditions of contract are those of the fourth edition of the condition of contract for works of civil engineering construction as published by the fẽdẽration Internationale des Ingẽnieurs-conseils,1987,repreneted in 1988. This form was modified by the part two condition of particular application. The contract conditions, including conditions of particular application and the technical specification for both contracts are identical. Therefore, the analysis of all issues will be made based on provisions of general and particular conditions of contract and Ethiopian civil code relied on by the contractor.

It can be seen from their contract agreement that, ERA was responsible through the engineer, for providing the design for the road. The exception to this was that Salini was responsible for the design of the bride over the Omo River (Bid notice No.4 dated May 18, 1994). In addition, the engineer stated "the responsibility for provision of design for bridge has never been evaded by us" by letter dated September 28 and 29, 1998(ck/c/03/478 and ck/c/03/484).

Regarding the ground survey and geotechnical investigation, contrary to Salini's claim, ERA undertook survey and geotechnical investigation. The results of the survey and geotechnical investigation were made available to Salini during February 1994 in the book of drawings and in material report. The engineer prepared an addendum to the book of drawings in March 1994, which set out the design for further section of the road. The addendum was also made available to the Salini. Gauff's surveyor undertook extensive survey operations on ERA's behalf during the period November 1993 to March 1994. Gauff undertook surveys at critical points using the original TCDE design rather than as original design engineer. TCDE had performed the original design, survey and geotechnical investigation. Gauff also undertook realignment surveys in certain areas. In areas that Gauff surveyed, it found sufficient original

TCDE survey marks and reference marks to incorporate in to the new survey. Gauff survey works involved the traversing and strip mapping of the corridor along the road alignment in four distinct areas deemed to be the most critical in terms of earthworks quantities.

Appendix C5

For each sections Gauff used a local datum incorporated TCDE survey marks and carried out major traversing to generate detailed digital mapping and digital terrain modelling.

Salini's claimed that the engineer did not carry out a preliminary ground survey or geotechnical investigation and that "no survey had been carried out by any body" are therefore not justified. Similarly Salini's complain about ERA electing to have the ground survey and investigation carried out after the commencement of the works to save pretender cost are also not justified. Salini knew at the time it signed the contracts that further ground survey and geotechnical investigation would be necessary, in addition to that already undertaken.

In its method statement for contract 1 Salini stated:
During mobilization in addition to the usual logistic problem, some important technical aspects of the project will be addressed in coordination with the engineer. Such activities as original ground surveying and additional geotechnical investigations will characterize the mobilization stage at the project site. Surveying activities will start during the mobilization stage, as soon as sufficient logistical support has been provided. The laboratory for testing material will be organized in the earliest stage of the project. Soil survey will then be started in earliest, together with studying of borrow and quarry areas, structures, foundations and slope stability.

Pursuant to clause 11.1 and 12.1 of the condition of particular application of the contract, Salini's rate of prices were deemed to have taken account of the fact that additional ground survey and geotechnical investigation would be necessary, Salini can not now base its claim on the alleged lack of ground survey and geotechnical investigation.
Salini was not contractually entitled to receive the design for the road by the tender stage or by the mobilization stage. Salini relied on clause 14.1 of the condition of particular

application in support of its claims that it was entitled to receive the design by tender stage or mobilization stage. However, Salini ignores part of clause 14.1 in doing so.

Appendix C6

Clause14.1 states in full

The contractor should note that the detail programme shall be in the form of a critical path schedule for the works with sufficient details to enable his proposed schedule to be analyzed. The critical path schedule shall also identify the earliest and latest date for provision of details from the engineer in order to ensure that the contractor's construction was not delayed.

The contractor shall submit supplementary critical path schedules with in 14 days of receiving a request for such supplementary schedule from the engineer. The supplementary critical path schedules shall be consistent in all respects with the time and order of works completed to the dates of submission there of. The critical path schedules shall be supplemented in three months interval.

The contractor should have noted that the nature of this contract was such that the contractor may not receive at the time of bid and at the time of commencement of the works all the necessary details required for the construction of the whole works. Construction details would be provided in such a sequence as to enable the contractor to proceed with the works with out hindrance. Salini may have the hope that it would "receive the whole final design by the early mobilization time, so as to allow for accurate and cost effective planning" but there was no such term in their agreement. It is clear from clause 14.1 that Salini was not entitled to receive the design of the road by the tender stage or by the mobilization stage. Salini new or should have known this when it signed the contract containing clause 14.1. In addition, clause 11.3 of the instruction to bidders, made it clear that the design would be amended during the bid period.

Salini admitted in its October 30, 1995 letter to Gauff that:

At the time of tender it was understood that we would not have all the design information available at the commencement of the works. ERA gave no undertakings to provide the design by either mobilization or tender stage.

Appendix C7

Salini wrote to Gauff on February 19, 1996 and stated that:

"We would agree that, by clause 14.1 of the particular conditions, it was not intended that all necessary design details would be issued, either at the time of bid or at the commencement of the works. However the method statement which was submitted with our bid, accepted and bound in to the contract documents made it clear that we expected to have the whole final design early and until we received this information any programme could be tentative."

Whatever Salini's hope or expectations in relation to receiving the design have been, this letter shows Salini new that it was not contractually entitled to receive all of the design before commencement of the works.

In light of the difficulty in obtaining access to certain part of the road alignment, Salini knew (or should have reasonably inferred) that the engineer would not be able to complete the design of certain part of the road in inaccessible areas until Salini itself opened up access to those areas. Salini therefore, knew that the design would not be provided all at once, and that there was no alternative to this.

The engineer's ability to complete the design of the inaccessible portion of the road alignment depended (for practical purpose) on Salini providing access to that area. Salini knew that access was an issue.

Bid notice no.1 dated March 22, 1994 stated:

During the past months the client, ERA, has opened the link between Chida and Wacca. However, this shall not be construed to indicate that a fully serviced road is available. The link was made to facilitate survey works and the passing during the pre-bid site visit. Serviceability of the access was apart from other factors subject to weather conditions.

A related matter was the issue of mud chains for the wheel of the engineer's vehicles. There were necessary for the engineer to survey in accessible areas. Survey was impossible in such

areas with out them. It was Salini's obligation to provide these. The engineer reminded Salini about this in its letter dated August 17, 1996.

"I reminded you also, that we are still awaiting 5 of the 6 sets of tyre chains ordered through you by air fright on 18/4/1996(ck/c/03/182)".

Appendix C8

In relation to Salini's request for an interim extension of time for contract 2 in relation to provision of design, or delay as a result of lacking design information. The contractor had not demonstrated that lack of the total design information during the initial contract period and up to complete receipt of such information had ever prevented him from progressing. Whatever he was able to work, he had the necessary detail information on hand. For overall planning purposes, the contract information was available to him.

The position in relation to ERA's provision of design to Salini for contract 1 was that all the tenderes and, in particular, Salini during the pre-contract award negotiations were made aware of the design status of this project and that further drawing would be issued from time to time. In line with this the contractor was issued with detail design for the first 36.2 Km of road in the contract drawings, and this design remained substantially unchanged. Additional and final design information was always made available before works on particular sub section is commenced.

The contactor had always work in hand and was never idling consequently; no notice in accordance with clause 6.3 (disruption of progress) was given by the contractor.

Similarly for contract 2, the position in relation to ERA's provision of design to Salini was that all the tenderers and, in particular the Salini, during pre contact award negotiations were made aware of the design status of this project and that further drawings would be issued from time to time. The design information, showing the character and magnitude of works along the alignment were available to the contractor from time to time. Additional and final design information was always made available before works on a particular sub-section commenced.

Here the analysis agrees with the engineer's assessment.

As a summary the contractor failed to demonstrate that lack of design information caused delay and disruption to the execution of the design works. Hence the contractor should not be entitled to his intent of time extension and extra payment under both contracts.

Appendix C9

Claim 2

Weather

Contractor's justification

Salini claimed for additional time and compensation in respect of delays and extra cost caused by:

1. Inclement weather during the dry seasons of 1996/1997 and, because of delay due to ERA, during the dry seasons of 1997/1998 (for both contract 1 and contract 2)
2. Having to work during the additional wet seasons of 1997/1998 (for contract 2 only up to June 1998); and
3. The design drainage system was unable to cope up with rain water run-off and flood water caused damage works (e.g. culverts)

Under contract 1 in respect of inclement weather, Salini claimed an extension of time of 52 days and compensation in the amount of 896,201 Birr (output losses under ''disruption''). In respect of working in the additional wet seasons, Salini claimed an additional 165 days and compensation in the sum of 629,341 Birr (time related cost)

Under contract two, for inclement weather Salini claimed an additional 48 days and compensation in the amount of 896,201 Birr (out put losses under ''disruption''). With regard to working during additional wet seasons, Salini claimed an additional 123 days and compensation in the sum of 372,907 Birr (time-related costs)

For both limbs of its weather related claims, Salini invokes Clause 44.1 of General Condition of contract as the basis for its entitlement to additional time. It relied on Clause 12.2 of the General Condition of contract and Clause 20.4(d) of the condition of particular application in its claim for compensation as a result of inclement weather.

Analysis

Inclement weather is a neutral event, which although potentially giving rise to an extension of time, does not entitle a party to compensation [Clause 44.1 of general condition of contract]. With regard to working during wet seasons, Salini agreed to perform some activities during these periods, especially during 1997 rainy seasons. Further more, in Salini's method statement of December 1994 for contract 1 the following was provided.

MOBILIZATION

"*As by today mobilization has already started due to late order of commencement we are endeavouring to compress as much as possible all mobilization in order to make all the preliminary works required to carry out all the planned activities during the first rainy seasons as per our programme of works. This compression allowed the contractor to carry out all those preliminary works, which permits the development of planned activities during rainy season."*

Similarly, Salini provided the following in its December 1994 method statement for contract 2.

WORK PROGRAMME

''*This compression will allow the contractor to carry out all those preliminary works which will permit the development of planned activities during rainy seasons and the contractor will endeavour to compress by such extent his mobilizations period''*

These rainy seasons therefore form part of the contract period. Furthermore, Salini's late mobilization as well as neutral events, including the inclement weather, would have resulted in Salini's having to work during the 1997 and 1998 rainy seasons.

The contactor does not invoke any specific contractual provision in support of its claim for compensation due to its working during the additional wet seasons but seeks recovery of its cost as part of its claim for prolongation (time related costs).

In addition sub clause 11.1 and 12.1 of the general condition of contract cover the process that the contractor was deemed to have gone through in deciding all the rates and prices, and set out the effectiveness of these rates.

Appendix C11

The contractor was deemed to have inspected the site and the information available, and as far as practicable to have satisfied himself as form and nature of the site, hydrological and climatic conditions, the extent and the nature of the work and the required materials, the means of access availability of accommodation. In general the contractor shall be deemed to have obtained the entire necessary information subject as above mentioned, as to risks, contingencies and all other circumstances which may influence or affect his tender. After obtaining all the reasonable information, the contractor was expected to take into account when pricing. Under sub clause 12.1 it is stipulated that the contractor will be deemed to have actually taken these factors in to consideration, and thus the rates and prices will be considered to be adequate remuneration for these foreseeable costs and risks.

The prevailing climate was of primary concern for all activities and especially so for earthworks. The earthwork will therefore, be carefully planned to allow for reasonable adjustment of production rates. The contractor should have taken in to consideration that once saturated; the soil takes considerable time to dry out. Being the site was, highly rain fall area, it takes considerable amount of rain each day after that the work should be stopped because the soil remains saturated and is not able to dry out. Any cost consequences arising from this had to be assumed entirely by the contractor.

Clause 12.2 of the general conditions of contract and Clause 20.4(d) of the condition of particular application are both clearly in applicable. Clause 12.2 specifically excludes climatic condition. Clause 20.4(d) doesn't apply to weather (even excessive rainfall). ''Force of nature'' provided for by this clause was supposed to be cataclysmic events such as earthquakes, not excessive rain. Furthermore, Salini could have reasonably foreseen or taken appropriate measures to prevent loss or damage to physical property. Being relied on Clause 20.4(d), the contractor did not justified why flooding amounted to an employer's risk. There was no indication that the flooding actually affects the works. Salini's weather claim should not be brought under Clause 20.4(d) and Salini was not entitled to any costs for the disruption,

only an extension of time. On this basis Clause 20.4(d) was not applicable in these circumstances.

Appendix C12

Referring to the engineer's letter of December 12, 1997 for both contracts, the engineer stated: "I do not consider that the exceptional (out-of-season) rain fall in October and November constitutes an employers risk. Furthermore, Salini had not complied with the notice requirements pursuant to Clause 53. Nor had it complied with these notice requirements in respect of its claim for extension of time. In so far as clause 20.4 is concerned, Salini's non-compliance with Clause 53 was evident from the correspondence produced from Salini it self. In respect of contract 1 Salini first notified the engineer of its intention to claim extension of time to under clause 44 in May 1997. It was not until its first submission to the engineer, on November 1, 1997, however, that Salini actually made a request for an extension of time. As for compensation, all that Salini did was, in its letter to the engineer of December 6, 1997 to refer to clause 20.4 and to claim that it was applicable with out actually making a request for costs pursuant to this clause. With regard to contract 2 there was no notice of intention to claim an extension of time.

An actual request for an extension of time was made by Salini its submission of November1, 1997. As for its compensation claim, similar to contract 1, Salini merely invokes Clause 20 in its letter to the engineer on December 4, 1997.

Regarding to the contractor's claim about drainage systems, the contractor had to redesign the drainage as the works proceeded; go back to completed section of the works and improve drainage and reinstate the works. Therefore, the contractor should be paid for reinstatement and additional works.

As summary for inclement weather claim, the contractor should be awarded, based on contractual provision of Clause 2.1(c) of the condition of particular application, the full amount of time sought by it under both contracts. Under clause 44.1 inclement weather is to be considered as a neutral event, and therefore a risk for both parties. Whilst it may entitle a party to an extension of time, it does not give an entitlement to costs. Therefore, the contractor

should be awarded 52 days for contract 1 and 48 days for contract 2. Comparing with the engineer's assessment, the engineer granted 52 days for contract 1 and 49 days for contract 2. **Under this sub claim the engineer's assessment and analysis result do not agree on contract 2. This is because with out any contractual base under general condition, particular condition or Ethiopian civil code, the engineer granted the contractor more time which is greater than his request.**

Appendix C13

For additional wet season claim, it was awarded 83 days for contract 1 with financial compensation of 314,671Birr. Similarly 62 days with financial compensation of 448,101Birr should be awarded for contract 2. The engineer's assessment in this respect was 68 for contract 1 with financial compensation of 270,410 Birr and 23 days with financial compensation of 372,907 Birr. The disagreement of the analysis result and the engineer's assessment is that, in their agreement the parties agreed to execute the work, as shown in the analysis, in wet season to share the risk equally, the engineer should have considered this in his assessment.

Claim 3

Possession of the Site was not granted on time

Contractor's justification

The contractor claimed that ERA failed to give possession of the site as was required to enable it to commence and proceed with the works in accordance with the programme. The contractor argued that this breached clause 42.1 of the general condition of contract.

Clause 14.8 of the condition of particular application required Salini to carry out the works by starting at one end of the road and proceeding continuously towards the other without leaving any isolated stretch of uncompleted road provided the site had been acquired in its entirety and encumbrances removed. The contractor goes on to claim that ERA was obliged to give the contractor possession of site in that sequence.

The programme of works were based on ERA's ability to deliver possession in good time and at the latest immediately on release of construction details. However, the contractor claimed that the late, fragmented, and partial delivery of site possession caused delay and disruption. Salini claimed that ERA did not give any portion of the site concurrently with the engineer's order to commence, and did not give possession of portions of the site necessary to allow permanent works to commence. And also did not give possession of such portion of the site at the times required to allow the works to proceed with out hindrance. This breached Clause 42.1 of the general condition of contract.

Appendix C14

As to contractor's claim lack of possession meant disruption to the works because the contractor had to deviate from the programmed sequence and timing of works, which intern meant reallocation of resources to other works without proper advance planning. It also meant that there was delay to the engineer's investigation of site conditions, finalization of design, assessment of work volume, identification of source for gravel wearing coarse and concrete aggregates, rock blasting activities and drainage works.

The contractor claimed that local residents or landowners obstructed access or possession due to grievances regarding the payment of compensation by ERA. The contractor settled many land compensation claims directly for latter reimbursement by ERA. Salini also complained that it was often instructed by the engineer to pay a daily allowance to ERA's right-of-way officers and to provide fuel and transport for compensation activities, for later reimbursement by ERA.

Contractual provisions relied on by Salini in support of this claim were clause 42.1 of general condition of contract, Clause 14 of condition of particular application, and Article3183 (2) and 3259(2) of Ethiopian civil code. By stating this, Salini requested time extension of 142 days.

Analysis

Clause 42.1 of general condition of contract states:

The employer will with the engineer's notice to commence the works, give to the contractor possession of so much of the site, and such access as, in accordance with the contractor is to be provided by the employer as may be required to enable the contractor to commence and proceed with the execution of the works in accordance with the programme referred to in clause 14 if any of particular condition of contract. The employer will from time to time as the works proceed, give the contractor possession of such further portions of the site as may be required to enable the contractor to proceed with the execution of the works with due contract upset the balance of the contract, the party contracting with an administrative authority to assist it in overcoming the supervening difficulties by sharing the loss arising from the circumstances.

Appendix C15

Therefore, the contractor's claim in relation to this clause was that the employer had not complied with its duty of cooperation with contractor that arises under this provision.

In relation to contractor's claim that the employer did not give possession of any portion of the site concurrently with the engineer's order to commence. Basically, it was not required to do so. This is because the contractor planned, following clause 14 of condition of particular application, five month mobilization period following orders to commence. That is the contractor did not plan to commence execution of works on the road until five months after orders to commence. There was therefore no need for the contractor to have possession of any portion of the site with orders to commence.

Regarding the contractor's claim that ERA did not give possession of portion of the site necessary to allow permanent works, the contractor had not established that it would have been in a position to commence the works had it received possession of the relevant portion of the site earlier than it did.

The delays due to site possession that were agreed between the parties and convincing were the delay at km 35 of contract 1 and a few minor delays caused by farmers blocking access to the road due to late compensation payment. Salini wrote to the engineer on July10, 1995 stating that '' possession of the site from km 159+600 to 161+500 was not effective because land owners, presumably for a delay in receiving compensation, prevented the contractor's workers and equipment from performing works on July 23,26,27,28 and 29. The surveyor team was forced to suspend works on June 24 and July 5-7. Then the contractor claimed that in order to continue with the execution of the works, the contractor had to pay compensation for farmers and other landowners. Then the contractor settled the problem by doing so with expectation of later reimbursement ERA.

Appendix C16

Regarding payment made for ERA's right of way officers, any contractor would be content with a rate of return of 30% if payment he made is genuine and provable. The same applies to Salini's statement that it was often instructed to pay a daily allowance to ERA's right-of-way officers and to provide fuel and transport in addition to settlement for farmers and landowner's case. This implies that the instances were farmers blocked the roads on contract 1 merited a minor extension of time.

In relation to contractor's claim, of fragment site possession the engineer denied his claim by stating:

"The contractor proceeded linearly with the construction of both section 1and 2 of the road (except few stretch of road skipped). Salini's claim that he had to reallocate resources to other works with out proper advance planning was therefore, unfounded. Except stating the case, the contractor had not established that he suffered any loss due to the reallocation of resources. This could not be considered as breach of clause 14.8 of the particular condition of contract."

However, the condition of particular application Clause 14.8 did not allow even small stretch of road to be skipped. Hence the contractor's claim should have been accepted.

The contractor's claimed that lack of site possession means that there was delay due to the engineer's investigation of site conditions, finalization of design, assessment of work volume, identification of sources for gravel wearing coarse and concrete aggregates, rock blasting activities and drainage works.

These activities are all carried out in advance of land expropriation and therefore in advance of site possession. Based on their agreement**,** ERA gave the engineer and the contractor access to the site for the purpose of advance operations, such as survey works.

Salini only required possession of a portion of a site once it was ready to start bulk earthworks at that location save for the delay at km 35 and the minor delays caused by the farmers. ERA gave Salini possession of the site in time for Salini to carry out bulk earthworks without hindrance. Hence the contractor should not be entitled to his intent under this sub-claim.

Appendix C17

The contractual provision of Article 3183(2) and 3259(2) of Ethiopian civil code are irrelevant to late site possession. In relation to Article 3183(2) ERA's case was that balance of contracts not upset by unforeseen circumstances or at all. There was nothing about the provision of the site possession that upset the balance of contract. In relation to Article 3259(2) the contractor had not proven that ERA made "abusive "requirement or postponed the contract in violation of the contract.

Therefore, the only justified claims of the contractor were the delay around km35 and the farmers closed the road. Therefore, 54 days of extension should be allowed with no financial compensation. In this sub claim the analysis result and the engineer's assessment agree.

Appendix D1

Comments on the case studies

As discussed in the case studies , the Lalibela to Sekota road project was undertaken by local contractor called SUR construction share company, with consulting service of ROUGTHON INTERNATIONAL, the 500 special housing project was undertaken by international(foreign) contractor called CMC-di-ravenna, with consulting service of FWI and BDE and the Sodo to Chida road project was also undertaken by international(foreign) contractor called Salini construttori S.P.A with consulting service of Mess Gaff Ingenieure. The case studies tried to bring in to view the contractor's approach to issue their financial and time extension claims.
This comment is aimed to compare the contractor's experience toward claim management and the way they justified their claim.

- When we see the over all of the study, unlike SUR construction CMC and Salini reserve their right to adjust their position as new evidence come to light.

- CMC justified their delay claim by programme comparison between the programmed and actual start and completion time. This helps to know when the delay happened, the reason of the delay and the magnitude of the delay on each activity.
- CMC and Salini did not ignore any thing, which seems silly, but which they think it affects their performance. As an evidence, even though, they had the capacity and right to remove it from their site, CMC claimed for extension of time and its consequential effect by their latter dated 29, Oct. 1991 for the presence of two military tanks on their site.

- Claim justification by CMC and Salini was very clear and discrete.
- Through out their execution period CMC and Salini were able to foresee for the occurrence of future delay based on their current activities, for the start and the completion of each activity.
- For every delay CMC and Salini claimed for its consequential financial effect.

Appendix D2

Comparing the Lalibela to Sekota road project with that of 500 special housing project and the Sodo to Chida road project, the following points can be easily observed.

- Data recording technique is relatively poor.
- The contractor, SUR construction, was entitled 239 days of time extension from 827 days of their request i.e.29.89%. But CMC-di-Ravenna succeeded 151days from 181days of their request i.e.83.34%.
- Because of lack of detail claim management, the SUR construction claimed for extension of time when the site was officially closed. Sept.1997 (claim 4)
- Under claim no.3 the SUR construction claimed for extension of time for delay of payment for operational item, but not for its consequential effect and interest of the amount.
- Through out their claims SUR construction raised no financial issue.

- Under claim no.1 SUR construction claimed for difficult nature of terrain and large volume of earthwork. However this was foreseeable during time of tendering. This shows that lack of detail analysis before tendering.
- The instruction to bidders, for Lalibela to Sekota road project illustrate that the design and construction of the project had to be completed in 36 months. It was known that design had to be completed before the start of construction. Even though, time extension for design should not be the claim issue, the contractor claimed for time extension for design.
- Under claim no.4 the contractor, SUR construction, request 65 days of time extension due to interruption of heavy rainfall and 20 days due to the consequence of heavy rain fall. Due to this problem, 5 employees were died, among which one was key surveyor. However, the contractor was entitled no extension of time for the case. This was due to contractor's fault to give notice on time.

In general the claim management of SUR construction was at very low stage comparing with that of CMC-di-Ravenna and Salini.

Appendix-E$_{1-1}$

Questionnaire to collect information from contractors on claims in Ethiopian construction industry

Introduction

- You are kindly requested to complete the questionnaires as soon as possible.
- You are not obliged to answer questions, which you do not want to.
- Tick yes or no which ever is appropriate and write the required information in the open space provided.

1. Name of your organization----------
2. Are you:
   - foreign (international) contractor yes% ف no%ف
   - local contractor yes%ف no%ف

(If any other please specify)----------

---

3. In which category co contractor you lie?

a) General contractor (GC) yes% ف no%ف
b) Building contractor (BC) yes%ف no%ف
c) Road contractor (RC) yes%ف no%ف
d) Specialized contractor (SC) yes%ف no%ف
(If any other please specify)----------

---

4. Do you have any insurance? Yesف, No ف
If your answer is yes, please list them corresponding premiums you are paying ----------
---

If your answer is no, please list your reason for not being insured ----------
---

---

5. What is your grade? ----------

Appendix-E$_{1-2}$

6. What is your present capital? (Tick)
100,000-500,000 Birr ف
500,000- 1million Birr ف
1 million-5 million Birr ف
5 million-10 million Birr ف
10 million- 40 million Birr ف
Above 40 million Birr ف

7. How old is your firm? (If possible write the time of establishment)----------
---
---

8. How many departments you have in your organization?
(*Please list them and write their responsibility*)

---

9. Do you have specialized staff member who is responsible for claim cases in your organization?
(*Please write his/her duty and responsibility*)----------

---

10. How many projects have you under taken in the last 15 years? ----------

---

---

11. Among the projects you have under taken are there any projects completed with out any claim for time or money?

Please specify

Name of the project	**Estimated cost**	**Estimated time**

(Please specify the strong side of these projects that avoided the occurrence of claims)----------
---

Appendix-E$_{1-3}$

12. Among the projects you have under taken, cite the maximum amount claimed?
a). Name of the project----------
i) Total estimated cost----------
ii) Claimed cost ----------

iii) Total cost expend for completion of the project. ----------
iv). Total estimated time----------
v). Claimed time ----------
vi). Total time at which the project was completed. ----------

b). Who was concerned for the claim case?
(*Please specify the name, profession, and qualification*)----------
---

---

c). What was the cause of the claim?
i). Employers breach of contract ف
ii). Contractors breach of contract ف
iii). Third party ف
iv) Delay/disruptionف
v) variation

(Please specify if any other cause of the claim) ----------

---

c). How was the claim settled?
i). Negotiation ف
ii). Litigation ف
iii) Arbitrationف
(*If any other or combination of the above specify*)----------
---
---

13. What is your opinion on claims management in Ethiopian construction industry.------
---

Thank you

Appenndix-E_{2-1}

Questionnaire to collect information from consultants on claims in Ethiopian construction industry

Note

- You are kindly requested to complete the questionnaires as soon as possible.
- You are not obliged to answer questions, which you do not want to.
- Tick yes or no which ever is appropriate and write the required information in the open space provided.

1. Name of your organization----------

2. Are you?
   - Foreign (international) consultant? Yes no
   - Local consultant? Yes no

(If any other please specify)----------

3. How many employees do you have? ----------

4. List types of consulting service you give?

   ---

5. Do you have professional indemnity insurance coverage? yes no
If your answer is yes, please list them. ----------

If your answer is no, please list your reason for not being insured ----------
---
---

6. Do you require insurance policy as criterion for selection of contractors for a project?
Yes no
   If your answer is no, what will you do should an accident occur due the failure of the contactor?

   If your answer is yes please list ----------
   ---

7. How old is your firm? (If possible write the time of establishment)----------
---
---

8. How many departments you have in your organization?

(*Please list them and write their responsibility*)

---

9. Have you specialized staff member who is responsible for claim cases in your organization?

(*Please write his/her duty and responsibility*)----------

---

10. How many projects have you under taken in the last 15 years? ----------
---
---

11. Among the projects you have under taken are there any projects completed with out any claim for time or money?

Please specify

Name of the project	*Estimated time*	*Estimated cost*

(Please specify the strong side of these projects that avoided the occurrence of claims)-----
---

---

12. What type of claim a approach you admit?
- Global approach
- Discrete approach

13. Among the projects you have under taken, cite the maximum amount claimed?

a). Name of the project----------
i) Total estimated cost----------

ii) Claimed cost ----------
iii) Total cost expend for completion of the project.----------
iv). Total estimated time----------
v). Claimed time ----------
vi). Total time at which the project was completed.----------
b). Who was responsible for the claim case?
(*Please specify the profession and qualification*)----------
c). What was the cause of the claim?
i). Employers breach of contract
ii). Contractors breach of contract
iii). Third party
iv). Delay/disruption
v). Variation

(Please specify if any other cause of the claim) ----------

---

c). How was the claim settled?

i). Negotiation
ii). Litigation
iii) Arbitration
(*If any other or combination of the above specify*)----------
---

14. What is your role in settling claims? ----------

---

15. Do you have standard procedure for settling claims? Yes no
(*If your answer is yes please cite them*)----------
---

16. Which standard condition of contract do you use to tackle claim cases? Why?----------
---
---

17. What is your opinion about the administration of claim in Ethiopian construction industry? ----------
---

Thank you

Appendix-E$_{3-1}$

Questionnaire to collect information on claims from clients in Ethiopian construction industry

Note

- You are kindly requested to complete the questionnaires as soon as possible.
- You are not obliged to answer questions, which you do not want to.
- Tick yes or no which ever is appropriate and write the required information in the open space provided.

1. Name of your organization----------

2. How many employees do you have? ----------

3. Do you require insurance policy as criterion for selection of contractors? Yes , no
(*If your answer is no, what will you do should an accident occur due the failure of the contactor?)*

(*If your answer is yes please list the types of insurance policy you require*)----------
---

---

4. How old is your firm? (*If possible write the time of establishment*)----------

5. How many departments do you have in your organization?
(*Please list them and write their responsibility*)

---

6. Do you have specialized staff member who is responsible for claim cases in your organization?
(*Please write his/her duty and responsibility*)----------

---

7. How many projects have you under taken in the last 15 years? ----------
---

8. Among the projects you have under taken are there any projects completed with out any claim for time or money?

Appendix-E$_{3-2}$

Please specify*:*

Name of the project	*Estimated time*	*Estimated cost*

(Please specify the strong side of these projects that avoided the occurrence of claims)-----
---

9. What type of claim approach you admit?
   - Global approach
   - Discrete approach

10. Among the projects you have under taken, cite the maximum amount claimed?
a). Name of the project----------
i) Total estimated cost----------
ii) Claimed cost ----------
iii) Total cost expend for completion of the project.----------
iv). Total estimated time----------
v). Claimed time ----------

vi). Total time at which the project was completed.----------

b). Who was concerned for the claim case?

(*Please specify the profession and qualification*)----------

---

---

c). What was the cause of the claim?

i). Employers breach of contract

ii). Contractors breach of contract

iii). Third party

iv). Delay/disruption

v). Variation

(Please specify if any other cause of the claim) ----------

---

d). How was the claim settled?

i). Negotiation

ii). Litigation

iii) Arbitration

(*If any other or combination of the above specify*)----------

---

11. What is your role in avoiding/minimizing claims? ----------

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12. Which standard conditions of contract you use to tackle claim cases? Why?

---

13. What is your opinion about the administration of claim in Ethiopian construction industry? ----------

---

Thank you,

DECLARATION

"The thesis is my original work, has not been presented for a degree in any other university and that all sources of material used for the thesis have been dually acknowledged".

Candidate

Name _____

Signature _____