



**ADDIS ABABA UNIVERSITY  
ADDIS ABABA INSTITUTE OF TECHNOLOGY  
SCHOOL OF CIVIL AND ENVIRONMENTAL  
ENGINEERING**

**ASSESSMENT OF CONTRACTORS' QUALIFICATION CRITERIA  
IN ETHIOPIA FEDERAL ROAD PROJECT TENDER PRACTICES**

Individual Project submitted to the School of Graduate Studies of the Addis  
Ababa University in partial fulfillment of the requirements for the degree of  
Master of Engineering in Civil Engineering  
(Construction Technology and Management)

By  
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Advisor: Dr. Wubishet Jekale (PhD.)

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Masters of Engineering Project

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## Declaration

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

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## **Abstract**

In construction, tendering process is one of the vital stages. To award construction project for contractors must fulfill set of qualification criteria set by the employer. Thus, qualification criteria are an important aspect in the tender evaluation process the aim of this project to make an assessment of contractors' qualification criteria in federal road project tender practices. The project examines four different types of federal road project awarded by ERA in the last five years, and different in delivery type which are design bid build, design build and maintenance projects.

The findings of this project revealed that qualification criteria used in federal road projects are not following any standard and didn't consider the size of projects in subject and found that the qualification criteria wide open to be manipulated by the employer.

The project also shows the way how the qualification criteria must be handled to create fair and competitive for bidders.

keywords: Tender, bid, tender evaluation, federal road, contractors' qualification

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## **List of Abbreviations**

|        |  |
|--------|--|
| BC     | Building Contractor                            |
| DB     | Design and Build                               |
| DBB    | Design Bid and Build                           |
| EC     | Ethiopian Calendar                             |
| ERA    | Ethiopia Roads Authority                       |
| FDRE   | Federal Democratic Republic of Ethiopian       |
| GC     | General Contractors                            |
| GC     | Gorgonian Calendar                             |
| ICB    | International Competitive Bidding              |
| MUDC   | Ministry of Urban Development and Construction |
| NCB    | National Competitive Bidding                   |
| PPA    | Public Procurement Agency                      |
| PPAA   | Public Procurement and Administration Agency   |
| RC     | Road Contractor                                |
| RR:    | Rural Roads                                    |
| RSDP   | Road Sector Development Program                |
| SBD    | Standard Bidding Document                      |
| SC     | Special Contractor                             |
| URRAP: | Universal Rural Road Access Project            |

## **Chapter One: Introduction**

### **1.1 Back Ground**

Tendering is very vital stage in the construction delivery system; specially in Ethiopian where construction industry booming and according to African Economic Outlook 2014 report construction covers 5.0 GDP Per Sector (percentage of GDP) of the country.

The Client advertises the tender or invite for selected contractors and the invitation to tender may request the contractor to present technical documents or may to respond pre-qualification questionnaires. Interested contractors will respond to those pre-qualification questionnaires presenting relevant information. If the tender process has two stages, the client/Engineer will come up with short listed contractors, which concludes to the processes of pre-qualification so called Technical Evaluation and proceed to the next step which is Financial Evaluation.

In Ethiopian; proclamation no. 649/2009 establishment of Public Procurement and Administration Agency Ethiopian Government to address public body construction procurement and tender procedure problems giving all power to newly established Public Procurement and Administration Agency and the agency fully start working 2003 EC to close all weep-hole.

PPA (Public Procurement and Administration Agency) prepared standard bidding documents (SBD) to public procurement system; which are categorized into five divisions (Pharmacy, Consultancy, Non-Consultancy, Goods and Works) each has two separate SBD for International Competitive Bidding (ICB) and for National Competitive Bidding (NCB) in both Amharic and English languages. PPA documents didn't specify details on how Evaluation and Qualification Criteria will be performed. According to Proclamation no. 649/2009 the Standard tender documents prepared by PPA shall used by all public body including Ethiopian Roads Authority (ERA).

Ethiopian Roads Authority (ERA) was established as Imperial Highway Authority (IHA) under proclamation No. 115/1951 with specific duties to plan, design, construct, and maintain roads. The Ethiopian Roads Authority has been reestablished under proclamation 133/1978 incorporating, among others, the Rural Roads Department in addition to the Highway Department. ERA was again reestablished by proclamation No.63/1993 with a view to providing a strong administration under the leadership of a Board. Finally the current organization ERA reestablished under proclamation 80/1997 to by the board and chairman to be appointed by the

Government and given power to design through a consultant, construct through contractors, maintain and administrate all road networks in Ethiopia.

The ERA report indicates that from year 1992 to 2010 construct and maintain more than 49,000Km roads under plan stated at Road Sector Development Program (RSDP)

| Year       | Asphalt | Gravel | R.R   | URRAP | Total |
|------------|---------|--------|-------|-------|-------|
| *1984 1992 | 3542    | 8966   | 5573  | -     | 18081 |
| 1989 1997  | 3708    | 12162  | 10680 | -     | 26550 |
| 1992 2000  | 3824    | 12250  | 15480 | -     | 31554 |
| 1994 2002  | 4053    | 12564  | 16680 | -     | 33297 |
| 1999 2007  | 5452    | 14628  | 22349 | -     | 42429 |
| 2000 2008  | 6066    | 14363  | 23930 | -     | 44359 |
| 2001 2009  | 6938    | 14234  | 25640 | -     | 46812 |
| 2002 2010  | 7290    | 14957  | 26753 | -     | 49000 |
| 2003/2011  | 8295    | 14136  | 29611 | 854   | 52896 |

*\*Eritrea's Road Network is reduced*

Table 1 Road Network (1992 - 2010)

According to ERA Report indicates that RSDP IV which is from 2010 to 2015 consists of: Rehabilitation of 728 kilometers of trunk roads, Upgrading of 5,023 kilometers of trunk and link roads, Construction of 4,331 kilometers of new link roads, Heavy maintenance of 4,700 kilometers of paved and gravel roads, Routine maintenance of 84,649 kilometers of road network. The program also consists of the following regional and Wereda road components: Construction of 11,212 kilometers of new rural roads through the RRAs; and Construction of 71,523 kilometers of Wereda roads through the Wereda road offices.

The report estimates the total cost of implementing RSDP IV is estimated to be ETB 125.3 billion of which ETB 84.5 billion is allocated to federal road projects, ETB 14.4 billion for regional projects and ETB 26.4 billion for Wereda road projects.

Legally ERA floats federal road project works via tendering processes which indicates that more than 20 billion ETB will disburse by floating tender in each year and the paper will assess effectiveness of tender process in federal road projects.

## **1.2 Problem Statement**

FDRE House of Peoples' Representatives approves budget for year 2014/15 (2007 EC) and Ethiopian Roads Authority (ERA) secures Birr 20 billion from government of Ethiopia, 8 billion Birr from foreign loan and 0.9 billion from foreign aid yields a total amount of 28.9 billion Birr approved budget for a year. Which account 18.37% of 2007 EC Ethiopian yearly total budget. According Proclamation 649/2009 this amount shall disburse through a tendering process. And due to sector economic impact and 53% (<http://www.era.gov.et/PerformanceRating>) of the contractors pass's the tendering process fail to complete the project in expected time, cost and quality. Thus, it is important to review and evaluate the effectiveness of the current tendering process of Federal road projects to ensure that fair competition and better project delivery. Therefore, assessing effectiveness of the tendering process is very vital and the project will evaluate and measure federal road projects' tender qualification criteria effectiveness using standard criteria like PPA as a guideline.

## **1.3 Objectives**

### **1.3.1 General Objectives**

The general objective of this project work is to make assessment on of contractors' qualification criteria in Ethiopia federal road project tender practices.

### **1.3.2 Specific Objectives**

The specific Objectives of the project are;

- To investigate the relationship between projects size and complexity with respect to the contractors' qualification criteria.
- To make an assessment on how the qualification criteria applied to select among contractors in federal road project tender.
- To make an assessment on tender the qualification criteria of Ethiopian Roads Authority with respect to world bank and PPA standards.
- To recommend appropriate tender evaluation criteria for federal road projects and qualification criteria approach to evaluation contractors' technical ability.

## **1.4 The Project Questions**

The Project will answer the following questions

- How the current tender evaluation practice is performed in federal road projects?
- How much qualification criteria are effective to ensure the required performance of the contractors?
- How the project size and complexity related to tender evaluation criteria?

## **1.5 Limitations of the Project**

Due to constraint of time and budget allocated the project on tender evaluation mainly focus on only technical Evaluation and Qualification Criteria (Pre-qualification Questioner) and only on road projects and their tender floated and administered by the Ethiopian Roads Authority (ERA).

## **1.6 Structure of the Project**

The project has five chapters the first chapter introduced and it discuss about the background of the study area, problem statement, objective and Limitations of the project. The second chapter discusses about literature review its deals with the tendering process in general and each qualification criteria in particular considering national and international criteria. The third part chapter three deals with project design and methods the size of population, sampling method adopted, data collection methods and its validating and evaluating. Forth part chapter four deals with result and discussion elaborated project data collection results. Fifth part Chapter five deals with conclusion and recommendation.

## **Chapter Two: Literature Reviews**

### **2.1 Definition of Tender**

Merriam-Webster dictionary defines the word tender as "an offer or proposal made for acceptance" and the origin Middle English tendur grant of a license, from Anglo-French tendre offer; and historically Merriam Webster dictionary states that first know use was circa 1543.

Oxford dictionaries the same way describe the word tender as an Offer or present (something) formally; and the origin as the mid 16<sup>th</sup> century from Old French tendre.

In most contract documents the word "Tender" used integer changeably with the word "Bid" and FIDIC MDB 2010 article 1.2 states that the word "tender" is synonymous with "bid". According to ISO 6707-2:2014 tender is US word for bid and it further describes the word tender as written offer to execute at a stated price or rate an order for the supply of goods or services, or the execution of works under given conditions.

### **2.2 Classification of Tendering Methods**

Classification of tendering methods is very different from scholar to another some related the tendering method to project delivery system and categorize tendering for instance, according to Ogunsanmi, (2013) tendering methods categorized as; Competitive tendering, Open tendering, Selective tendering, Open selective tendering, Design and build tendering method, Turnkey tendering method, Serial tendering, Negotiated tendering, Two stage tendering method.

On other hand Article 33 of Procurement and Property Administration Proclamation, Proclamation No. 649/2009 (Federal Negarit Gazeta, 2009) stated as " The following methods shall be used in public procurement: " and those are six types of methods discussed on the proclamation are; Open Bidding, Request for Proposals, Two stage Tendering, Restricted Tendering, Request for Quotation and Direct Procurement.

ISO 1048-1 Standard procurement Tendering Procedures categorized into four main categories and each have subdivisions;

- Negotiation procedure
- Competitive selection procedure
  - ✓ Nominated Procedure
  - ✓ Open procedure

- ✓ Qualified procedure
- ✓ Quotation procedure
- ✓ Proposal procedure using the two envelope system
- ✓ Proposal procedure using the two-stage system
- ✓ Shopping procedure
- Competitive negotiation procedure
  - ✓ Restricted competitive negotiations
  - ✓ Open competitive negotiations
- Electronic auction procedure

ISO 10485-1 also provides guidance on the selection of standard procurement procedures and note that the use of this method of procurement and suggests that its use might not be appropriate in high value contracts. The standard also elaborates their equivalence with the procedures advocated by international bodies, such as the World Bank, the World Trade Organization, the United Nations Commission on International Trade Law and the European Commission.

According to Australian Constructors Association, (2006) Classification of tendering procedures categorized into five considering projects type and complexity are Open Tenders, Selected or Approved Tenders, Pre-Qualified Tenders, Invited Tenders and Direct Negotiation.

To select among tender procedures type of project, size of project, location (local or international), budget, time of the procedure to take must be considered (ISO 10485-1)

### **2.2.1 Open or Public Tenders**

The Client invites tenders by way of public advertisement without restriction on the number of tenders received and any contractor be able to present the proposal. Mostly recommended for simple and low risk construction projects. According to Kovacs (2008:254), open tendering procedures and restricted tendering are the two normal tendering methods further states that open tendering procedures happen when theoretically all potential bidders from the four corners of the world are allowed to submit a bid. EPDRF Proclamation 649/209 recommends all public body to execute tender processes according to these types.

ISO 10485-1 describes this type of tender as the tenders are invited from a number of domestic suppliers and suppliers of other countries to ensure international competition in a fair and non-discriminatory manner.

### **2.2.2 Selected or Approved Tenders**

The Client invites a select number of Tenderers for a particular project. In some cases, the Client will have an established register of approved contractors for particular types of work. In these cases, Tenderers will have attained a minimum capability/standard to undertake such works. Tenderers are generally invited on a rotational basis. Registration needs to be reviewed and updated on a regular basis. Mostly recommended for Repetitive type works regularly carried out by a Client; “Roll-out” Type Works.

FDRE Procurement 649/2009 describes selected tendering as restricted tendering and only allowed under the following ground rules;

- ✓ Where there are only limited no to suppliers for the specified quality and economy.
- ✓ Where repeated advertisement didn't attract required bidders according to open tendering.

ISO 10485-1 this type of tended processes called Nominated procedure and described as the same procedure with open tendering except direct invitations are made without open advertisement.

### **2.2.3 Pre-Qualified Tenders**

The Client invites expressions of interest by way of public advertisement for Pre-Qualification for a specific project or specific types of projects. Evaluation is carried out against the defined Selection Criteria. A selected number of Pre-Qualified Tenderers is then invited to tender. Mostly recommended Complex Projects with High Risk & High Cost.

ISO 10485-1 describes these tendering procedure as potential tenderers are invited to pre-qualify for the submission of tenders on the basis of the capability and resources of prospective tenderers to perform the particular contract satisfactorily, taking into account their experience and past performance on similar contracts, capabilities with respect to personnel, equipment, and construction or manufacturing facilities, and financial position. Only those tenderers who qualify are invited to make tender submissions.

### **2.2.4 Direct Negotiation**

The Client negotiates with a single Tenderer. Mostly recommended for consulting need for highly specialized projects in which only one entity has the required skill and current capacity to undertake the work.



According to ISO 10485-1 direct tendering processes are equivalent to negotiated procedure or nominated procedure and described as a proposal or price quotation from a single tenderer is solicited.

FDRE Proclamation 649/2009 Article 51 direct tendering also known as Single source and allowed for consultancy under the following conditions;

- Where and only one can provide required quality of work or service.
- To change or request more on existing material where the new supply shall not deliver the same service.
- To Create consistence with ongoing conditions due to technical or economical reasons
- Where repetition of the same work required
- Continuity of consulting service required
- Where delay create serious problem and emergency of the required
- Where special advantage may arise to public body

and the FDRE Procurement Directive Article 25.7 further states in any case the contract price shall not exceed birr 30,000.00 (thirty thousand Birr) fiscal year purchase.

### **2.2.5 Two Stage Tendering**

In these process as the name implies shall have two stages as the first stage evaluation technical capability of the bidder and the second stage deals with the final offer of the bidder. ISO 10485-1 defines two stage tendering as the submission of un-priced technical proposals on the basis of a conceptual design or performance specifications are required, subject to technical as well as commercial clarifications and adjustments, followed by amended procurement documents and the submission of final technical proposals and priced tenders in the second stage mostly for turnkey contracts. World Bank recommended these type of tender for turnkey contracts or contracts for large complex plants or works of a special nature also the processes are longer than any other types.

FDRE Procurement 649/2009 recommend public body to use these type of procedure only under the following circumstances;

- ✓ When the public body unable to formulate detailed specifications
- ✓ When the public body inters in to contract for research, experiment, study or development
- ✓ When the public body like to negotiate with suppliers .

The procurement further describes the first stage shall be only technical qualification of the bidder without mention the bidders financial offer and the public body may negotiate with the first ranking bidder only about technical qualifications.

### **2.3 Current Tender Practice in Ethiopia Public Projects**

The process of contractor selection for the public projects is regulated by Ethiopian Federal Government Procurement and Property Administration Proclamation by the power vested in proclamation no. 649/2001 and all government body shall obey the directive and procedure set out by PPA. The Ministry of Finance and Economic Development release directive in June 2010 to clarify the enforcement and tender procedure in Ethiopia public body.

Proclamation no. 649/2010 Article 12, states Public Procurement and Property Administration Agency have that as an autonomous Federal Government organ having its own juridical personality and accountable to the Minister. And accordance with Article 14 the Agency have the power to implement the fairness, competitive, transparent, non-discriminatory and prevalence of uniform and consistent public procurement administration thought the nation.

Proclamations are one of sources of law in FDRE legislation system. Hence; for public body Proclamation no 649/2010 and its directive acts as primary guide line. Public Procurement and Administration Agency acts as guardian of the system.

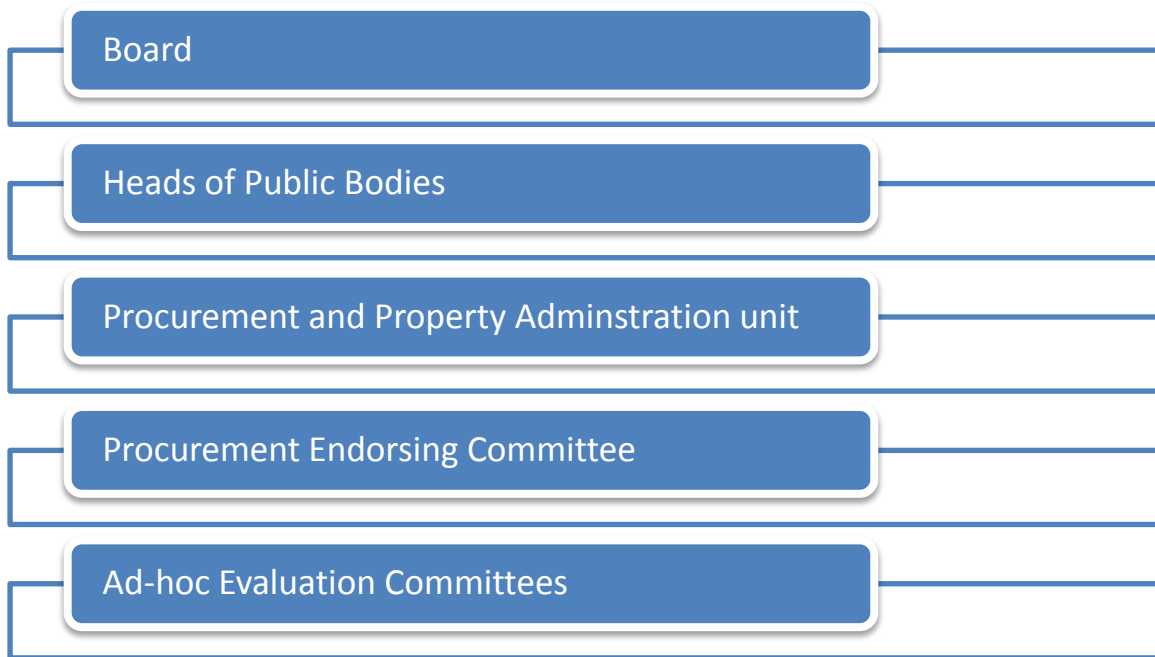
### **2.4 Stakeholders in FDRE Public Tender Process**

Role player in tender preparation and evaluation process different depending on type of tender implemented, client of the tender, and financial source.

Generally, in tender there are participants one way or another; client, contractor, Engineer, financier, bank and insurance are mostly common.

When the tender prepared and submitted mainly the role player will be the client and most research aggress the evaluation process shall handled by different department.

According to FDRE proclamation 649/2009 considered as stockholders in public tender processes; Board, Heads of Public Bodies, Procurement and Property Administration Unit, Procurement Endorsing Committee, Ad-hoc Evaluation Committees.



**Figure 1 Stakeholders in FDRE Public Tender Process**

The Board reviewing complaints and public procurement and property Administration enter in action when there is complaints in any party and consists of appoint five persons appointed by the minister and shall drawn from; the ministry of finance and economic development as chairperson, from the chamber of commences, public bodies, public enterprises and Public Procurement and Property Administration Agency as member. Each board member have three years of term of service. The board shall have technical assistance from the Public procurement and Administration Authority.

FDRE Procurement 649/2009 states that public bodies shall have overall responsibility for all procurements they perform. The procurement further states that the head of public bodies have the following particular responsibilities;

- a) established an adequately staffed unit for procurement and property administration;
- b) set up fully staffed unit for endorsing committee for approval of higher values; it may also setup ad hoc evaluation committee for complex procurement;
- c) ensure that staff and officials assigned in the procurement and property administration and those assigned as members of the procurement endorsing committee receive training to enable them acquire knowledge of the content and application of the Proclamation, the directives, the manuals, the SBDs and other relevant forms;

- d) follow that the procurement of the public body is preplanned and complies with procurement principles enshrined in the Proclamation;
- e) ensure that the procurement department, the procurement endorsing committee and other sections of the public body involved in procurement discharge their duties properly;
- f) where necessary, enter into a contract with third parties which support the public body in the process of procurement;
- g) ensure that property at the disposal of the public body is used in such a manner as to achieve economy and efficiency;
- h) ensure that property at the disposal of the public body is duly registered and traceable, properly handled and looked after and disposed off when it is no longer useful.

Procurement endorsing committee have responsibilities to ensure that public procurement is executed in compliance with this Proclamation, the procurement directives, the procurement manual, the standard bid document and the forms and review and endorse procurements within the financial limits set by the directive.

As stated above one of responsibilities of Heads of Public Bodies to set up ad hoc committee for higher and complex works. Ad hoc committee are expertise and have experience in procurement and in particular project.

## **2.5 Tender Documents**

In ISO 10485-3 (2008) tender documents defined as the documents issued by the employer for the purpose of a tender offer are listed in the tender data. Tendering is one of the stages in construction procurement that requires extensive information and documents exchange. Poor quality tender documents can lead to inaccurate estimates, higher margins in bids, claims and disputes. (Laryea, S. 2011).

Considering the project size, complexity and delivery methods the tender document must be prepared and available for tenderers. Tender document must be complete and must include all information, data, figures, drawings, specifications and more as much as possible. The completeness the tender document show the fairness and completeness of the tender. In most forms of conditions of contract like FIDIC red book and others, the tender documents are one of

contract forming documents. Thus care have to be taken to reduce risk in execution of the project.

FDRE Proclamation no 649/2009 Article 37 states that the content of the bid documents shall contain sufficient information and point out eleven point to consider while preparation of bid documents;

- Instruction for bids
- Information about final date of submission including Date, Time and place
- Bid Submission forms and bid security forms
- No of copies required to be submitted
- General and Specific conditions of the contract
- Specifications
- Legal documents and qualification demonstration requirements
- Bid Validity Period
- Evaluation Criteria and points assign for each
- Reservation to show the power of the client to rejects all bids
- Price Adjustments that may apply during implementation

The proclamation in article 38 further states about bid document and its content;

- Bid documents shall be made available to candidates at a price not exceeding the cost of reproduction and delivery of such documents to candidates.
- The bidding document shall be delivered to candidates on working days between the date of publication of the invitation to bid and the closing date of the bid and in the manner specified in the invitation to bid.
- Where it deems it to be appropriate the public body may make the bidding document available to candidates free of charge.

According to PPA standard bidding document (SBD) tender document have three parts Bidding Procedures, Schedule of Requirements and Conditions of Contract each part have different components and to further specify by the user.

In first part Bidding Procedures of PPA Standard bidding document (SBD) prepared for works discussed procedure and instruction how the tender shall perform and it includes sub pars; Instructions to Bidders, Bid Data Sheet, Evaluation and Qualification Criteria, Bidding Forms, Eligible Countries.

Second part of PPA standard bidding document for works includes only blank forms and tables to be filled by the user. Part two schedule of requirements includes forms and table; Scope of Works, Technical Specifications, Drawings, Bills of Quantities (or Activity Schedule).

Third part incorporates contracts to be implemented in execution period and special conditions of contract left blank to be filled by the user. It includes; General Conditions of Contract, Special Conditions of Contract, Contract Forms.

World Bank SBD (2006) Master Bidding Documents for Procurement of Works and User's Guide, prepared by the Multilateral Development Banks and International Financing Institutions also one of well organized tender document prepared manual to follow, which contains three sections; Bidding procedure, works requirement and conditions of contract and contract forms; which is more or less similar to PPA's SBD. Only Assessment of adequacy of technical proposal with requirements, other forms to be filled by user and condition of contract adapted are different. World Bank (2007) SBD recommends in special conditions of contract and bid data sheet forms where as PPA's SBD left blank to be filled by the user. World Bank SBD uses FIDIC as standard conditions of contract on other hand PPA SBD present's its own standard conditions of contract to be adopted.

According to Pauw et al (2002), ISO 10845 standards assure purchasers of receiving acceptable product and service quality. ISO 10845-3 was prepared by Technical Committee ISO/TC 59, Buildings and civil engineering works and the standard consists of eight parts guide line for Oing

Part 1: Processes, methods and procedures

Part 2: Formatting and compilation of procurement documentation

Part 3: Standard conditions of tender

Part 4: Standard conditions for the calling for expressions of interest

Part 5: Participation of targeted enterprises in contracts

Part 6: Participation of targeted partners in joint ventures in contracts

Part 7: Participation of local enterprises and labour in contracts

Part 8: Participation of targeted labour in contracts

In ISO 10845 (2008) part two states that to the tender document shall include the information to be complete as tender document.

- Tender notice and invitation to tender
- Tender data
- List of returnable documents

- Returnable schedules and
- Contract documents

The Standard further note that the tender data shall furthermore establish the precise means by which a preferred tenderer will be identified in a competitive selection process and preferred tenders will be identified for each successive round of negotiations in the competitive negotiation procedure. The award criteria, weightings assigned to such criteria, the relevant ratios between and the formula for scoring financial offer, quality and preference, and any threshold scores for quality shall be stated in the tender data.

According to Australia Constructors Association 2006 report on construction tender nevertheless, the tender document shall include following key documents as a minimum.

- Conditions of tendering
- Notice to Tenderers
- Tender forms & Schedules
- Conditions of Contract
- Specifications
- Drawings

According to Australia Constructors Association 2006 report further requirements to keep completeness of the tender document are listed below;

- the scope and/or functions of the work or service required
- the output required and the quality expected
- estimated maintenance requirements when appropriate
- any standards required to be achieved, or applied
- timescales including start date, finish date if “time is of the essence” and a schedule of deliveries
- any inspection required and at what stages
- details of free issue materials
- accommodation details for installation
- insurance cover required for contractors
- costs in use of components or complete product where appropriate
- response times
- details of measurement of the work

### **2.5.1 Invitations to Tender**

This document contains a Project Summary, a listing of Tender Documents, key dates, validity period, contact details, number of copies required and details of tender submission location and timing.

### **2.5.2 Closing and Opening of Tender**

In tender document the client state specific tender closing and opening date ; where the closing date implies deadline to submit the tender and opening data and time implies the tender delivered by bidder will be opened mostly in presence of the participants.

Opening of tender is the process where the participant of the tender officially known and the documents presented by the bidder preliminarily checked.

## **2.6 Contractors' Tender Evaluation Process /The Tender Process/**

"One of the most difficult decisions taken by the client in the construction industry is selecting the contractor. Every construction project faces adversity and uncertainty and an inappropriate contractor increases the chances of delays, cost overruns, sub-standard work, disputes, or even bankruptcy" Hatush et al (1997). Complexity of construction opens to create different qualification criteria to select and award one best contractor.

Qualification criteria required when the client document prepared according to prequalification tender type also known as two stage Tendering on other types the client may not require any qualification other than their legal presence and financial offer.

Qualification criteria categorized in to two parts one pre qualification criteria and post qualification criteria. According to Hatush et al (1997) prequalification is a pre-tender process used to investigate and assess the capabilities of contractors to satisfactorily carry out a contract if it is awarded to them. This involves a screening procedure based on a set of prequalification criteria to select the best contractor among tenderers. On other hand Herbsman and Ellis, (1992) they also states that past performance of contractors as a means of assessing likely quality to be achieved, and past accidents records as a means of assessing safety performance levels, the values of both these criteria values again being converted into cost terms to simplify comparison between bidders.



In Two Stage tender process the tenderers with incomplete, non eligible, not comply with stated requirements and considered as nonresponsive and the financial document of the bidder will left unopened.

PPA have standard bidding document (SBD) for procurement of different items every public body shall adopt. SBDs can be adopted for any procurement system and it give a room to the user to specify according to project nature.

### **2.6.1 Legal Status and Grade of Contractors**

legal requirements are main eligible criteria that able the bidder to participate different countries have different set of legal status requirements.

FDRE Proclamation 649/2009 article 28 in Qualification of Candidates states that the bidder have to Present renewed trade license and fulfilled their obligations to pay taxes according to Ethiopian tax laws.

FDRE directive 649/2009 more clarify legal requirements in article 16.4 Instruction to bidders sub article 16.4.2

*"Public Body has to ascertain that the instruction to bidders it prepares contains the following:-*

*b) The criteria that bidders are expected to fulfill including a statement of requirement that domestic bidders submitting bids for a contract value of Birr 100,000.00 and above must present value added tax registration certificate and foreign bidders must as appropriate submit business organization registration certificate or trade license issued by the country of establishment."*

For contractors to present trade license first must have commercial registration and certificate of competence than Ministry of Trade and industry will issue trade license. By the power vested in Ministry of Urban Development and Construction in FDRE Proclamation No. 691/2010 Article 25 (1-) to determine grade and certify contractors and award competence. Ministry of Urban Development and Construction amended directive no 19/2013 contractors divided in four categories i.e. General Contractors (GC), Building Contractors (BC), Road Contractors (RC) and Special Contractors (SC); The ministry Directive defines scope of each contractor categories.

General Contractor (GC): in range of form grade one to grade ten and are contractors who are qualified to undertake a variety of construction work such as building, roads railways bridges,

airports, dams, water works etc. Building contractors (BC) in range of form grade one to grade ten and are contractors who are qualified to undertake building construction and supplementary works to buildings. Road Contractors (RC) in range of form grade one to grade ten and are contractors who are qualified to undertake construction of roads and other related Civil Engineering works. Specialized Contractors (SC) in range of form grade one to grade six and are these are contractors who are qualified to undertake construction activities in specialized fields as and classify further more as; Painting and Decorations (SC-PD), Sanitary Installation (SC-SI), Wood and Metal Works (SC-WM), Landscaping (SC-LS).

The ministry put fixed threshold project size for the different categories and grades of contractors in the Directive 19/2013 of MUDC as table below.

| GC/BC/RC<br>in Grade | Construction Cost (ETB) |                   |                   |
|----------------------|-------------------------|-------------------|-------------------|
|                      | BC                      | RC                | GC                |
| 1                    | Above 210,000,000       | Above 300,000,000 | Above 350,000,000 |
| 2                    | Up to 210,000,000       | Up to 300,000,000 | Up to 350,000,000 |
| 3                    | Up to 160,000,000       | Up to 225,000,000 | Up to 270,000,000 |
| 4                    | Up to 110,000,000       | Up to 154,000,000 | Up to 185,000,000 |
| 5                    | Up to 54,000,000        | Up to 76,000,000  | Up to 100,000,000 |
| 6                    | Up to 27,000,000        | Up to 38,000,000  | Up to 45,000,000  |
| 7                    | Up to 11,000,000        | Up to 15,000,000  | Up to 18,000,000  |
| 8                    | Up to 5,400,000         | Up to 7,500,000   | Up to 9,000,000   |
| 9                    | Up to 3,000,000         | Up to 4,200,000   | Up to 5,000,000   |
| 10                   | Up to 1,000,000         | Up to 1,500,000   | Up to 1,800,000   |

Source: MUDC Amended Directive 19/2013 P:13

Table 2 Contractors grade and Project size

Contractors grade and project size indicative of awarded amount of construction sized pre determined with its grade and in invitation to bidder grade of contractors to call shall carefully examined.

Contractors needed to present required manpower and equipment to award requested category and grade. Grade one General Contractor must present stated manpower and equipment in MUDC Amended Directive 19/2013 and for any particular project again the contractor must present his available manpower and equipment.

On the other hand the contractor may request to present Historical Contract Non-Performing and Pending Litigation to evaluate further legal capability to be awarded.

### **2.6.2 Annual Construction Turnover**

Annual construction Turnover of the company is total amount of money the company collect in the budget year without considering advance payment.

### **2.6.3 Liquid Asset**

Ward (2000) defines Asset as "mount recorded on a contractor's balance sheet representing the value of property owned by or debts owed to the contractor. May be cash, near-cash (accounts receivable, temporary investments, notes receivable), or nonmonetary property."

On the other hand Historical Financial Performance of the contractor request to assurance the financial capability to the contractor in future. Historical financial performance presented last five years financial situation of the bidder indicating the parameters from balance sheet; Current Asset, Total Asset, Current liability, Short-term debts and working capital.

### **2.6.4 Construction Experience**

The performance of an organization and its long-term effectiveness are impacted by organizational culture. Culture is a key factor in the success of organizations in many different industries, including the public sector (Cameron and Quinn, 2002). There are different ways to measure organizations long term effectiveness one and best way is general construction experience of the contractor with unit of years and type of works executed in those years.

Specific Construction Experience Contractors performance can be evaluated in other damnation by considering on company's specific construction experience. Specific construction experiences

are experiences indicates contractors capability only for proposed area of work similar to work experience.

In addition to general and specific construction experience the contracture evaluated in current contract commitments Current contract commitments are project on hand and not completed in six months or completion less than seventy present in financial progress. Current contract commitments indicate the current organization and performance of the bidder.

#### **2.6.5 Proposed Equipment**

In the tender document "Evaluation and Qualification Criteria" there are number of equipment the bidder expected to proposed as owned, hire or lease (in some case to be purchased also acceptable) for particular project in subject.

Where tender documents prepared fairly and precisely there will be points for provisions of each equipments; some times its good to provide more than required to assure the employer/evaluator the company have enough of equipment and not to worry in missing of required attached data.

#### **2.6.6 Proposed Personnel**

Where the tender document request to present personnel requirements the contractor should demonstrate the qualification and competence of the personal proposed for the subject project; the bidder should show for every required position education level, General experience, experience in similar works and Position.

#### **2.6.7 Proposed Work Program and Methodology**

The bidder shall demonstrate technique capability, full knowledge how each activity shall be execute, time required for each activities, how crew formed and managed, site condition and safety measure to be taken in contract execution period. These ideas can be demonstrate in two forms; First work program which indicated time line to project execution, start and finish date of project, relation between each activity, project closer, items delivery time and critical activates.

Secondly; Construction Methodology, includes crew formation, camp and site organization, activates detail description, required manpower and equipment for every activates.

Both demonstrates bidder technical knowledge towards the project, assures understanding of the site and scope work.

## Chapter Three: Project Method

### 3.1 Introduction

Since this is quantitative project method to address based on case study approaches and total population outlined and cases selected accordingly.

Since the project objective involved in federal road tender process; these efforts has made to make a selection and sampling method are targeting to find more cases on federal road tender processes for works.

### 3.2 Project Design and Methodology

Project Design quantitative of nature and start with determining study population; and sample size shall be determined with consideration of construction type i.e Design Bid Build, Design Build and Maintenance; then data collection will be made according to stated methodology.

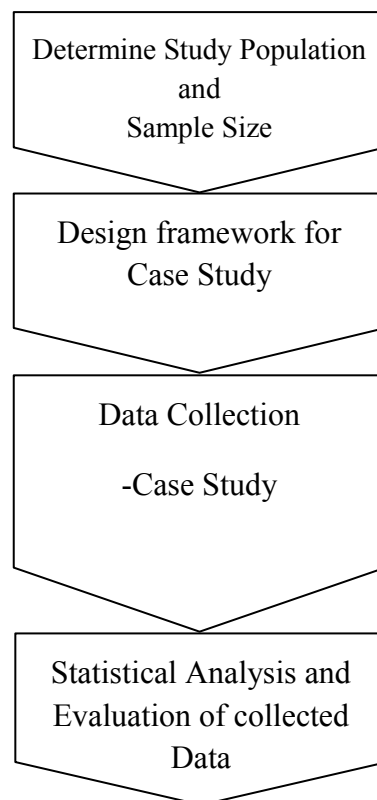


Figure 2 Project Design

### 3.3 The Study Coverage

The aim of the project mainly focus on contractors qualification criteria and total study population which concerns on projects under Ethiopian Roads Authority (ERA);

- Design Bid Build,
- Design Build and
- Maintenance projects

According to report on a Contract Construction Survey study by the FDRE Central statistical Agency and Ministry of Urban Development and Construction in 2012 there are 1,500 contractors from grade 1 up to grade 9 and according to September 2014 report contractors' evaluation by ERA (www.era.gov.et) currently have 54 federal road projects under construction by 31 local contractors and 43 federal road projects under construction by 22 foreign contractors. Total study population will be 97 projects constructed under ERA.

Total Study Population will be

| Study Population Area | No of Study Population | Remark |
|-----------------------|------------------------|--------|
| Design Bid Build      | 76                     |        |
| Design Build          | 8                      |        |
| Maintenance projects  | 13                     |        |
| Total                 | 97                     |        |

Table 3 Summary of Total Study Population

### 3.4 Sample Size Determination

The sample size used must represent the study population and this involves identifying and selecting individuals or groups of individuals that are especially knowledgeable about or experienced with a phenomenon of interest (Cresswell and Plano Clark 2011).

There are formula developed to estimate populations that are large, Cochran (1963:75) to yield a representative sample for proportions. considering abscissa of the normal curve. But for the project required to determine number of case study.

For this project total of four case study to evaluate; two Design Bid Build (DBB) projects, one Design Build (DB) project and one maintenance project.

### **3.5 Data analysis**

Yin (2003) defines a case study as an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly defined.

Methodology of the project is a case study for projects selected. All projects under case study are owned by ERA and the case study and desk study were analyzed in relation to the theoretical propositions lined so far.

Each project will be detailed studied and presented using employer evaluation methods and studied accordance with an international approach.

## **Chapter Four: Results and Discussions**

### **4.1 Evaluation System of Federal road Tender Practices**

The Ethiopian Roads Authority has Comparison of qualification criteria to evaluate contractors tender documents. For qualification criteria described in measurable ways, some formula others expressed as range to determine specific requirements to be fulfilled in accordance to World Bank, ERA or PPA, as discussed in Table 4.

Annual construction turnover (ACT) demonstrated in formula;

$ACT = \text{Engineers Estimate} * F / (\text{Contract period in years})$  ; Where F refers to factor according to World Bank SBD and the project funded by world bank given to  $F=2.0$  where;  $F=0.7$  where bidder are local contractors;  $F= 1.5-2.0$  for foreign contractors.

Liquid asset/ Cash flow (CF) requirement also calculating using formula below;

$CF = \text{Engineers Estimate} * F / (\text{Contract period in months})$ ; Where F refers to factor; according to World Bank SBD and World bank funded projects  $F=4$  for; for ERA projects  $F= 3.0$  for local contractors and  $F= 4.0$  for foreign contractors.

General Construction experience; According to World Bank SBD and World Bank Funded Projects 3 years of general experience required, 3 years for local contractors and 5 years for foreign contractors for ERA projects.

According to ERA qualification criteria Specific construction projects experience requirement are subdivided in to three; Number of Projects, Value of the Project and Nature, Complexity and Similarity of the Projects. According to World Bank two similar projects required in contractors past experience. For local contractors One project required according to ERA SBD and Two projects required for foreign contractors.

Specific construction experience in key activities According to World Bank SBD 80% of the estimated monthly or annual production rate of key activities. In ERA SBD 60% of the estimated monthly or annual production rate of key activities for local contractors and 60% for foreign contractors. Other qualification criteria summarized as table below.



| Qualification Criteria                  | Tender Type | Qualification Requirements   |   |   |   |   |
|---|-------------|--|---|---|---|---|
|   |             | World Bank's SBD   | PPA's SBD (Recommended)   | ERA's Bidding Documents   |   |   |
|   |             |  |   | Normal projects   |   | Capacity building projects (dedicated to local bidders only)                                |
| Annual construction turnover (ACT)      | ICB         | $ACT = \frac{EE \times F}{Yrs}$<br>Where<br>EE => Engineer's Estimate<br>Yrs => Contract period in Years<br>The multiplier F=2 may be reduced for very large projects (>200US\$) but shouldn't be less than 1.5. | The minimum value of the annual turnover of construction work should be set at not less than 2.5 times the estimated annual cash flow for the Contract. For low risk works, this minimum could be reduced to 2 times or less. | For locals<br>$AT(Peak) = \frac{EE \times F}{yrs}$<br>F=0.7                                 | For foreign<br>$AT(Average) = \frac{EE \times F}{yrs}$<br>F= 2.5 to 1.5.                    | N/A   |
| Annual Construction turnover (ACT)      | NCB         |  |   | As above, but the multiplying factor (F) shall be 0.5 for local contractors.                | As above but F=1.5  | $AT(Peak) = \frac{EE \times F}{yrs}$<br>F = 0.2 however, it shouldn't exceed 15 million ETB |
| Liquid asset/cash flow requirement (CF) | ICB/ NCB    | $CF = \frac{EE \times F}{months}$<br>Factor F should not be more than 4 months.  | The minimum liquid assets and credit should normally be set as the estimated payment flow over approximately 3 months at the average ("straight lined") construction rate   | $CF = \frac{EE \times F}{months}$<br>Months=> Construction period in months<br>Factor F = 3 | $CF = \frac{EE \times F}{months}$<br>Months=> Construction period in months<br>Factor F = 4 | $CF = \frac{EE \times F}{months}$<br>Factor F = 3   |
| General Construction experience         | ICB         | 5 or more years may be reduced to 3 years in agreement with the Bank.  | Not indicated   | Three years experience  | 5 to 10 years of general experience in construction.  | N/A   |

|   |     |   |  |  |   |  |
|---|-----|---|--|--|---|--|
| General construction experience   | NCB |   |  | The firms experience could be reduced to two years to support the participation of the newly established/ infant local construction industry.  | 5 years of general experience in  | 2 years general experience in construction |
| Specific construction projects experience<br>i) Number of projects<br><br>ii) Value of the project<br><br>iii) Nature , Complexity & Similarity of Projects | ICB | i) 1 to 3 contracts normally 2 depending on the size and complexity of the subject contract, the exposure of the Employer to risk of contractor default, and country conditions.<br><br>ii) 80% of the estimated value of the subject contract.<br><br>iii) Similar to the proposed works. The similarity shall be based on the physical size, complexity, methods/ technology. | i) number of similar contracts, which should be in the range of one to three, depending on the size of contract, risk of contractor default and market conditions<br><br>ii) Not Indicated<br><br>iii) works of a nature and complexity equivalent to the proposed Works | i) 1 Project<br><br>ii) 50%of the estimated Value of the intended contract or 75% of the length of the intended project.<br><br>iii) Similarity of the project could be one standard work below. | i) 1-3 projects<br><br>ii) 80%of the estimated Value of the intended contract or equal length to the subject project.<br><br>iii) works of a nature and complexity equivalent to the proposed Works | N/A  |

|   |            |  |                      |  |  |   |
|---|------------|--|----------------------|--|--|---|
| <p>Specific construction experience</p> <p>i) number of projects</p> <p>ii) value of the projects</p> <p>iii) nature, Complexity &amp; Similarity of projects</p> | <p>NCB</p> |  |                      | <p>i) 1 project</p> <p>ii) 25% of the value of the intended project or half of the length of the intended project.</p> <p>As exceptional, for less complex and less risk projects this requirement could be relaxed to 15%</p> <p>iii) One level below the standard of the intended project or higher level.</p> | <p>i) 2 projects</p> <p>ii) Value of the project 80%of the intended contracts or length to the subject project.</p> <p>iii) Similarity of the project could be of similar size and complexity.</p> | <p>Experience in <b>completion</b> of at least one construction project of any nature with at least a project cost of ETB 15 million.</p> |
| <p>Specific construction experience in key activities</p>   | <p>ICB</p> | <p>80% of the estimated monthly or annual production rate of key activities.</p> | <p>Not indicated</p> | <p>60% of the estimated monthly or annual production rate of key activities</p>  | <p>80% of the estimated monthly or annual production rate of key activities</p>  | <p>N/A</p>  |
| <p>Specific construction experience in key activities</p>   | <p>NCB</p> | <p>80% of the estimated monthly or annual production rate of key activities.</p> |                      | <p>40% of the estimated monthly or annual production rate of key Activities</p>  | <p>80% of the estimated monthly or annual production rate of key activities</p>  | <p>Not required</p>   |

|   |                      |   |   |   |  |  |
|---|----------------------|---|---|---|--|--|
| <p>Historical contract non – performing records</p> | <p>ICB &amp; NCB</p> | <p>i.) Non performance of a contract did not occur within the last <i>two (2) years</i> prior to the deadline for Qualification submission based on all information on fully settled disputes or litigation. A fully settled dispute or litigation is one that has been resolved in accordance with the Dispute Resolution Mechanism under the respective contract, and where all appeal instances available to the Bidder have been exhausted.<br/>                 ii.) If the Employer, based on full documentary evidence, establishes continued poor performance by any Bidder engaged in similar works in Africa and other developing countries, on any contracts carried out over the last 2 years, the Employer may use this information in the assessment of the Bidder. The documentary evidence to support the assessment and final decision by the Employer will be fully disclosed to the applicant.</p> | <p>A consistent history of litigation or arbitration awards against the Applicant or any partner of a Joint Venture may result in disqualification.</p> | <p>In addition to the World Bank’s guideline special attention shall be paid for this criterion as contract non-performing is CRITICAL in the current Ethiopian situation.<br/>                 Therefore:<br/>                 i) Record of progress shall be kept accurate;<br/>                 ii) Evaluation of contractors performance shall be conducted monthly;<br/>                 iii) Any contractor’s performance shall be evaluated based on the ERA’s contractor’s performance assessment framework and rated accordingly.<br/>                 The minimum acceptable performance on ongoing contract shall be revised to reflect the actual situations. The minimum acceptable performance on ongoing contracts is set time to time by ERA BOARD.</p> | <p>In addition to the World Bank’s guideline special attention shall be paid for this criterion as contract non-performing is CRITICAL in the current Ethiopian situation.<br/>                 Therefore:<br/>                 i) Record of progress shall be kept accurate;<br/>                 ii) Evaluation of contractors performance shall be conducted monthly;<br/>                 iii) Any contractor’s performance shall be evaluated based on the ERA’s contractor’s performance assessment framework and rated accordingly.</p> | <p>In addition to the World Bank’s guideline special attention shall be paid for this criterion as contract non-performing is CRITICAL in the current Ethiopian situation.<br/>                 Therefore:<br/>                 i) Record of progress shall be kept accurate;<br/>                 ii) Evaluation of contractors performance shall be conducted monthly;<br/>                 iii) Any contractor’s performance shall be evaluated based on the ERA’s contractor’s performance assessment framework and rated accordingly.</p> |
|---|----------------------|---|---|---|--|--|

| <b>Other criteria:</b>                                    |           |             |             |             |   |   |
|---|-----------|-------------|-------------|-------------|---|---|
| ○ Legal Status  | ICB & NCB | Is required | Is required | Is required | Is required according to the respective financiers' guide | Is required   |
| ○ Major Equipment   | ICB & NCB | Is required | Is required | Is required | Is required according to the respective financiers' guide | Is required according to the specific nature of the project |
| ○ Key Personnel   | ICB & NCB | Is required | Is required | Is required | Is required according to the respective                   | Is required according to the specific                       |
| ○ Proposal for Sub-Contracting                            | ICB & NCB | Is required | Is required | Is required | Is required according to the respective                   | Is required   |
| ○ Proposal of work methods and programs                   | ICB & NCB | Is required | Is required | Is required | Is required   | Is required   |
| ○ Pending Litigation                                      | ICB & NCB | Is required | Is required | Is required | Is required according to the                              | Is required   |
| ○ Historical Financial Performance                        | ICB & NCB | Is required | Is required | Is required | Is required according to the respective financiers' guide | Is required   |
| ○ Current Contract Commitments                            | ICB & NCB | Is required | Is required | Is required | Is required according to the respective financiers' guide | Is required   |
| ○ Declaration of Site Visit and Understanding of the Work | ICB & NCB | Is required | Is required | Is required | Is required according to the respective financiers' guide | Is required (Optional)                                      |

Table 4 Qualification Criteria among World Bank, PPA and ERA

## 4.2 Case Study of Federal Road Projects

Four selected Road projects are relatively different one another in project delivery system but in tender evaluation system are more or less similar

Case One: Design Bid Build (DBB); Lot 2: Omo River – Tercha (83.4km)

Case Two: Design Bid Build (DBB); Sanja – Keraker Road Project

Case Three: Design Build (DB); Efeson (Ataye)-Mehal Meda Road Project

Case Four: Maintenance Project: Hargele-Imi-Fik road project

Project description and detail analysis discussed below;

### 4.2.1 Case One: Design Bid Build (DBB)

Lot 2: Omo River – Tercha (83.4km) is part of Sodo- Tercha Road Upgrading Project the design was completed and tender floated construction.

The works under this contract consist of the upgrading of the existing gravel surface road which begins at the town of Tercha and ends at about Omo River at Km 139+000. The road shall be upgraded to DS4 road class (ERA's Geometric design Manual -2002). The upgrading road shall have a cross section width of 7.0m outside town (with 1.5m shoulder on each side) and 19 m width (including 3.5 parking lane and 2.50m pedestrian walkway) within town section. The formation of the road is 20cm base course/wearing gravel, 27.5cm sub base and 30cm capping layer for widening.

The road will be constructed to an Asphalt Concrete Standard. The works under this contract consists of the construction of 83.4 Km road to DS-4 standard with 7.0 m carriageway width. The works also includes construction of several minor and major drainage structures.

The road traverses abundantly through mountainous terrain and has necessitated the installment/rehabilitation of 138 minor/major drainages – RC pipes, box/slab culverts and bridges, requiring new construction and provision of additional cells/rehabilitation as detailed and presented in the engineering report of this contract. The provision of new construction includes two bridges with span: 1\*20 RCDG and 1\*10 RCSS, Three slab/box culverts at km 58+284,108+780 &113+052 and Thirty nine pipe culverts.

Complete project description stated in table below;

| S.No | Information                        | Lot 2: Omo River – Tercha (83.4km)   |
|------|------------------------------------|--|
| 1.   | Project Location                   | Southern Nation Nationalities and Peoples of Ethiopia  |
| 2.   | Length (km)                        | 83.4   |
| 3.   | Road standard                      | DS-4   |
| 4.   | Width of Road                      | 7.0m outside town (with 1.5m shoulder on each side) and 19 m width (including 3.5 parking lane and 2.50m pedestrian walkway) within town section |
| 5.   | Type of Surface                    | Asphalt Concrete surface   |
| 6.   | Existing Road                      | New road construction.   |
| 7.   | Source of Finance for Construction | Government of Ethiopia   |
| 8.   | The Designer (Design Consultant)   | by DANA and Associates in JV with Spice Consulting Engineers Plc   |

Table 5 Information on Lot 2: Omo River – Tercha (83.4km)

Tendering was conducted following an open tender procedure. The Specific Procurement Notice for Invitation to bids for the subject Project was published on the Ethiopian Herald on July 27 & 29, 2014. Pursuant to the notice of invitation, sixteen bidders have purchase the tender documents before the deadline for submission of bids as shown in the table below.

The table below shows eight bidders have submitted their qualification applications and financial bids in two separate sealed envelopes parcels for the qualification documents and bid security, and their respective financial offer on or before deadline for submission other eight didn't submitted the tender document.

Later some queries has been received from bidders in written forms and Addenda & clarification to Queries were issued to all the bidders who has purchased the bidding document.

| <b>S.No.</b> | <b>Name of Applicants</b>  | <b>Country of Registration</b> | <b>Submitted</b> |
|--------------|--|--------------------------------|------------------|
| 1.           | Alemayehu Ketema General Contractor  | Ethiopia                       | No               |
| 2.           | China First Highway Engineering Co.,Ltd (CFHEC)                                | China                          | No               |
| 3.           | China Jiangxi Corporation for International Economic and Technical Cooperation | China                          | No               |
| 4.           | China Railway No.3 Engineering Group Co., Ltd                                  | China                          | No               |
| 5.           | China Seventh Group Co.  | China                          | Yes              |
| 6.           | Defence Construction Enterprise  | Ethiopia                       | Yes              |
| 7.           | DMC Construction Plc   | Ethiopia                       | Yes              |
| 8.           | Enyi General Business Plc, Enyi Construction                                   | Ethiopia                       | Yes              |
| 9.           | Ethio General Contractor   | Ethiopia                       | No               |
| 10.          | Gemshu Beyene General Contractor   | Ethiopia                       | Yes              |
| 11.          | SATCON Construction Plc  | Ethiopia                       | No               |
| 12.          | SBI International Holdings AG  | Switzerland                    | Yes              |
| 13.          | Sinohydro Corporation  | Ethiopia                       | No               |
| 14.          | SUR Construction Plc   | Ethiopia                       | Yes              |
| 15.          | Yencomad Construction Plc  | Ethiopia                       | Yes              |
| 16.          | Zhongmei Engineering   | China                          | No               |
|              | Total  | 16                             | 8                |

Table 6 Participants for tender for Lot 2: Omo River – Tercha (83.4km)

For the this tender two stage tender method used and qualification criteria set by the employer; construction experience, construction turnover, Financial Performance, manpower requirements, proposed construction methodology and work program.

Qualification criteria set for the tender are stated below



| S.No | Specified Criteria                                 | Required Qualification   | Assessment of Applicants |
|------|--|--|--------------------------|
| 1    | Legal Requirement                                  | Must be GC-1   | All Pass                 |
| 2    | History of Non-Performing Contracts                | Non performance of a contract did not occur within the last Two (2) years                      | All Pass                 |
| 2    | Pending litigation                                 | All pending litigation shall in total not represent more than 30% of the Applicant's net worth | All Pass                 |
| 3    | Historical Financial Performance                   | Audited balance sheets for the last five years   | All Pass                 |
| 4    | Cash Flow  | 115 Million Birr for local bidder and 150 Million Birr for foreign                             | All Pass                 |
| 5    | Annual Construction Turnover                       | 320 Million Birr for local bidder and 910 Million Birr for foreign                             | All Pass                 |
| 6    | General Construction Experience                    | Five Years Required  | All Pass                 |
| 7    | Specific Construction Experience                   | One project with min. Project amount of 610 million Birr or equivalent AC projects             | 1 fail /7 pass           |
| 8    | Specific Construction Experience in Key Activities | Quantitative requirement for earth work previous execution.                                    | 1 fail /7 pass           |
| 9    | Personnel Capabilities                             | As required in execution of the project  | All Pass                 |
| 10   | Proposal of work methods and program               | To present Proposal of work methods and program  | All Pass                 |

Table 7 Qualification Criteria and evaluation of the case one

One Bidder fail to fulfill the must meet requirements on Specific Construction Experience and Specific Construction Experience in Key Activities and found be non responsive and rejection form further evaluation.

#### 4.2.2 Case Two: Design Bid Build (DBB)

Sanja – Keraker Road project located in North Gondar Zone of the Amhara Regional State. The road to be constructed with DBST standard for the first 30km and to DS 5 having sub-base gravel wearing course for the rest 17.9 km. The 30 km has already been constructed to sub-base gravel wearing whereas the 17.9 km is a new construction. The sub-base may be natural gravel screened or crushed aggregate to meet the requirements of the specifications.

Notice for Invitation to bids for the subject Project was published on the Ethiopian Herald on August 08, 2013. Pursuant to the notice of invitation, seven applicants have collected the tender documents before the deadline for submission of applications as shown in table below.

| S. No. | Applicant                                   | Country of Registration | Submitted |
|--------|---|-------------------------|-----------|
| 1      | China Railway No.3 Engineering Group Co.Ltd | China                   | Yes       |
| 2      | Diriba Defersha General Contractor          | Ethiopia                | Yes       |
| 3      | DMC Construction PLC                        | Ethiopia                | No        |
| 4      | FAL Trading General Contractor              | Ethiopia                | Yes       |
| 5      | MELCON Construction Co.                     | Ethiopia                | No        |
| 6      | SUR CONSTRUCTION PLC                        | Ethiopia                | Yes       |
| 7      | YOTEK Construction PLC                      | Ethiopia                | No        |
| Total  |   | 7                       | 4         |

Table 8 Tender Participants list of case two

As summarized in the table there are only four contractors prepare and submitted the tender document prior to specified tender closing date.

To evaluate technique qualification of the bidder the ERA set the following qualification requirements as criteria; Legal requirements, historical non-performing contracts, Historical financial performance, general and specific construction experiences, proposed work program and methodology etc.

Qualification criteria for Sanja – Keraker Road project are summarized in table below;

| S.No | Specified Criteria                                 | Required Qualification  | Assessment of Applicants |
|------|--|---|--------------------------|
| 1    | Legal Requirement                                  | Must be GC-1  | All Pass                 |
| 2    | History of Non-Performing Contracts                | Non performance of a contract did not occur within the last Two (2) years   | All Pass                 |
| 2    | Pending litigation                                 | All pending litigation shall in total not represent more than 30% of the Applicant's net worth                                  | All Pass                 |
| 3    | Historical Financial Performance                   | Audited balance sheets for the last five years  | All Pass                 |
| 4    | Cash Flow  | 69 Million Birr for local bidder and 92 Million Birr for foreign  | All Pass                 |
| 5    | Annual Construction Turnover                       | 137 Million Birr for local bidder and 412 Million Birr for foreign  | All Pass                 |
| 6    | General Construction Experience                    | Five Years Required   | All Pass                 |
| 7    | Specific Construction Experience                   | For local bidders ETB 172 Million or project of length 66km for foreign bidders ETB 549 Million or project of length 88 km each | 2 fail /2 pass           |
| 8    | Specific Construction Experience in Key Activities | Quantitative requirement for earth work previous execution.   | 2 fail /2 pass           |
| 9    | Personnel Capabilities                             | As required in execution of the project   | All Pass                 |
| 10   | Proposal of work methods and program               | To present Proposal of work methods and program   | All Pass                 |

Table 9 Qualification criteria set by ERA for Case Two

Four submitted tender documents for participation to construction of the project but only two contractors pass qualification criteria, thus, only two contractors pass for financial participation in next stage of tender process.

### 4.2.3 Case Three: Design Build (DB)

The Efeson (Ataye) – Mehal Meda road project is found in the Amhara National Regional state, northern part of Shewa and Southern Wollo provinces which traverses Efratana Gidim and Lala Midirna Woreda. The project road starts on the junction on Tarmaber- kombolcha trunk road at Efeson town which is about 262 km far from the capital of the county, Addis Ababa, and traverses to west and the project end up at Mehal Meda town. The Efeson- Mehal Meda road project is approximately 60km.

| S.No | Information                                      | Efeson (Ataye) – Mehal Meda Road Project             |
|------|--|--|
| 1.   | Project Location                                 | Amhara National Regional State                       |
| 2.   | Project Concept Design prepared by               | Ethio-Infra Engineering Plc (Local Consultant)       |
| 3.   | Length (km)                                      | 60 km  |
| 4.   | Road standard                                    | DS-5   |
| 5.   | Width of Road                                    | 10 m (7m DBST and 1.5m gravel shoulder on each side) |
| 6.   | Type of Surface                                  | Double Surface Treatment (DBST)                      |
| 7.   | Existing Road                                    | N/A  |
| 8.   | Source of Finance for Construction               | Government of Ethiopia                               |
| 9.   | Type of Contracting (Contract Delivery Strategy) | Design-Build Contract                                |
| 10.  | Type of Contract (Based on Payment Modality)     | Lump Sum Contract                                    |

Table 10 Project information summery for Efeson (Ataye) – Mehal Meda road project

The project involves identifying the best route alignment based on technical, economic, social environmental and administrative reasons, designing and constructing of the road to DS5 with Double Surface Treatment. The work includes demolishing and removal of substandard structure such as fords, pipes, bridges and vented causeways if any and construction of new culverts and bridges as required and supported by the detail design analysis and submittals.

The road connects the two towns, Mehal Meda and Efeson (Ataye), as well as villages and large rural settlement areas in between these towns. It provides unique accesses to markets, hospitals, schools and other infrastructures including important administrative centres.

Tendering was conducted following an open tender procedure. Specific Procurement notice for Invitation to bids for the subject project was published on the Ethiopian Herald on March 01 and 02, 2014 and the same was posted on ERA web site. Pursuant to the notice of invitation, Twenty One have collected the tender documents before the deadline for submission of applications as shown in table below.

| <b>S.No</b> | <b>Name of Applicants</b>                             | <b>Country of Registration</b> | <b>Submitted</b> |
|-------------|---|--------------------------------|------------------|
| 1.          | AL ASAB General Transport & Contracting Establishment | UAE                            | Yes              |
| 2.          | China Gezhouba Group Compnay Limited Ethiopian Branch | China                          | No               |
| 3.          | China First Highway Engineering Co.Ltd                | China                          | No               |
| 4.          | GIBB Africa Consulting Design Management              | Kenya                          | No               |
| 5.          | FAL Trading General Contractor                        | Ethiopia                       | No               |
| 6.          | China State Construction Engineering Corp. Ltd        | China                          | No               |
| 7.          | China Railway No. 3 Engineering Group Co. Ltd.        | China                          | No               |
| 8.          | Hawk International Finance & Construction Co. Ltd.    | Yemen                          | No               |

| S.No | Name of Applicants                             | Country of Registration | Submitted |
|------|--|-------------------------|-----------|
| 9.   | Fermanoglu Construction Tourism Trade industry | Turkey                  | No        |
| 10.  | Hunan Huanda Road & Bridge Corporation         | China                   | Yes       |
| 11.  | MACRO General Contractor & Trading Plc         | Ethiopia                | Yes       |
| 12.  | Emnete Endeshaw General Contractor             | Ethiopia                | No        |
| 13.  | Sunshine Construction plc                      | Ethiopia                | Yes       |
| 14.  | Sur Construction Plc                           | Ethiopia                | No        |
| 15.  | YENCOMAD Construction Plc                      | Ethiopia                | Yes       |
| 16.  | Yemane Girmay General Contractor               | Ethiopia                | No        |
| 17   | Raubex Construction (pty) ltd                  | Ethiopia                | No        |
| 18   | Rotation International Trading Plc             | Ethiopia                | No        |
| 19   | DMC Construction Plc                           | Ethiopia                | No        |
| 20   | PAKSOY INS. TUR.SAN.VE TIC.AS.                 | Turkey                  | No        |
| 21   | Tekleberhan Ambaye Construction Plc            | Ethiopia                | Yes       |
|      | <b>Total</b>                                   | <b>21</b>               | <b>6</b>  |

Table 11 Participants in Efeson (Ataye) – Mehal Meda road project tender process

As indicted in above table a total of twenty one bidder responds to invitation but only six bidders submit.

ERA specifies qualification criteria for Efeson (Ataye) – Mehal Meda road project tender process participants must fulfil including; legal requirements, historical non-performing contracts, historical financial performance, general and specific experience etc. Qualification requirement for to participate in Efeson (Ataye) – Mehal Meda road project tender process summarized in table below.

| S.No | Specified Criteria                                 | Required Qualification  | Assessment of Applicants |
|------|--|---|--------------------------|
| 1    | Legal Requirement                                  | Must be GC-1  | All Pass                 |
| 2    | History of Non-Performing Contracts                | Non performance of a contract did not occur within the last Two (2) years   | All Pass                 |
| 2    | Pending litigation                                 | All pending litigation shall in total not represent more than 30% of the Applicant's net worth                                    | All Pass                 |
| 3    | Historical Financial Performance                   | Audited balance sheets for the last five years  | All Pass                 |
| 4    | Cash Flow  | 105 Million Birr for local bidder and 140 Million Birr for foreign  | All Pass                 |
| 5    | Annual Construction Turnover                       | 209 Million Birr for local bidder and 426 Million Birr for foreign (peak)   | 1 Fail/5 Pass            |
| 6    | General Construction Experience                    | Two years for local bidder and Five Years Required for foreign bidders  | All Pass                 |
| 7    | Specific Construction Experience                   | For local bidders ETB 314 Million or project of length 66km for foreign bidders ETB 1.004 Billion or project of length 88 km each | 2 fail /4 pass           |
| 8    | Specific Construction Experience in Key Activities | Quantitative requirement for earth work previous execution.   | 2 fail /4 pass           |
| 9    | Personnel Capabilities                             | As required in execution of the project   | All Pass                 |
| 10   | Proposal of work methods and program               | To present Proposal of work methods and program   | All Pass                 |

Table 12 Qualification criteria for Efeson (Ataye) – Mehal Meda road project

From total of six bidders only four found to be responsive for qualification criteria set by ERA and pass this stage and proceed to next stage, the other two considered non responsive and rejected from further evaluation.

#### 4.2.4 Case Four: Maintenance Project

The Government of the Federal Democratic Republic of Ethiopia, represented by the Ethiopian Roads Authority has tendered out the Routine Term Maintenance of Road Projects under Dire Dawa RNMD (Hargele-Imi-Fik road project).

The Maintenance Projects are located under ERA's Dire Dawa Road Network Management Directorate (NMD). The works under these contracts requires routine term maintenance with quality and specification as depicted in these bidding documents. The contract period for the whole of the works under each contract is 24 months from the commencement date. The Routine Term Maintenance of Road Segments under Dire Dawa RNMD i.e Hargele – Imi (237 km), Imi – Hamero (100 km) and Hamero – Fik (105 km).

Notice for Invitation to bids for the subject maintenance projects were published on the Ethiopian Herald on December 26 & 27, 2013. Pursuant to the notice of invitation, seventeen applicants have collected the tender documents before the deadline for submission of applications as shown in Table below.

| S. No | Applicant                             | Country of Establishment | Submitted |
|-------|---------------------------------------|--------------------------|-----------|
| 1.    | Shed General Contractor Plc           | Ethiopia                 | No        |
| 2.    | Almahadi Transport & Construction Plc | Ethiopia                 | No        |
| 3.    | Yalkoneh Business Group PLC           | Ethiopia                 | No        |
| 4.    | Zeluel Yohannes General Contractor    | Ethiopia                 | No        |
| 5.    | Abebe Alemu Building Contractor       | Ethiopia                 | No        |
| 6.    | Tayam Engineering And Commerce Plc    | Ethiopia                 | No        |
| 7.    | Rabah & Sons Plc                      | Ethiopia                 | Yes       |
| 8.    | Yared T/Medhin General Contractor     | Ethiopia                 | No        |
| 9.    | Kidane Berihu Road Contractor         | Ethiopia                 | No        |
| 10.   | G/Hiwot E/Mariam General Contractor   | Ethiopia                 | No        |



|     |   |          |     |
|-----|---|----------|-----|
| 11. | Man General Contractor                      | Ethiopia | Yes |
| 12. | GIGA Construction Plc                       | Ethiopia | No  |
| 13. | Hope Construction Company                   | Ethiopia | Yes |
| 14. | Sara Dejen General Contractor               | Ethiopia | No  |
| 15. | Ansif Construction                          | Ethiopia | Yes |
| 16. | Medcon Engineering & Construction Plc       | Ethiopia | Yes |
| 17. | Yoftay Construction & Freight Transport Plc | Ethiopia | Yes |
| 18. | Samson Chernet General Contractor           | Ethiopia | Yes |
| 19. | Cold Stone Construction                     | Ethiopia | No  |
| 20. | Merid Tadesse BC                            | Ethiopia | No  |
| 21. | Aldhafra GC                                 | Ethiopia | No  |
| 22. | Mela Engineering and Construction Plc       | Ethiopia | No  |
| 23. | Samson G/Yohannes BC                        | Ethiopia | Yes |
|     | Total                                       | 23       | 8   |

Table 13 Applicant for Hargele-Imi-Fik road maintenance project

In line to invitation to bid twenty three local bidder able to collect tender document but only Eight of them submit the tender document and consider for further qualification evaluation set by ERA which includes but not limited to; legal requirements,

| S.No | Specified Criteria                  | Required Qualification   | Assessment of Applicants |
|------|-------------------------------------|--|--------------------------|
| 1    | Legal Requirement                   | GC-4 or RC-4 or BC-3 and Above   | All Pass                 |
| 2    | History of Non-Performing Contracts | Non performance of a contract did not occur within the last Two (2) years                      | 1 Fail/ 7 Pass           |
| 2    | Pending litigation                  | All pending litigation shall in total not represent more than 30% of the Applicant's net worth | All Pass                 |
| 3    | Historical Financial Performance    | Audited balance sheets for the last five years   | All Pass                 |
| 4    | Cash Flow                           | 8 Million Birr   | All Pass                 |

| S.No | Specified Criteria                                 | Required Qualification                          | Assessment of Applicants |
|------|--|---|--------------------------|
| 5    | Annual Construction Turnover                       | 17 Million Birr (Peak)                          | All Pass                 |
| 6    | General Construction Experience                    | Two years                                       | All Pass                 |
| 7    | Specific Construction Experience                   | None  | 1 not evaluated/7 pass   |
| 8    | Specific Construction Experience in Key Activities | None  | 1 not evaluated/7 pass   |
| 9    | Personnel and Equipment capabilities               | As required in execution of the project         | All Pass                 |
| 10   | Proposal of work methods and program               | To present Proposal of work methods and program | All Pass                 |

Table 14 Qualification criteria and evaluation for case four

Only one bidder considered as non responsive and rejected form further evaluation due to the bidder didn't fulfil the requirement of historical non-performing contracts; the other seven contractor fulfil qualification requirement and pass for next stage.

### 4.3 Summary of Findings in Case Studies

Invitation to bidder are posted in Ethiopian Herald Newspaper for all tender evaluation process and all given date to prepare tender document was satisfactory.

History of non-Performing contracts, pending litigation, historical financial performance, personnel requirement and equipment requirement are addressed for all case as stated in Table 4.

Personnel requirement, equipment requirement Proposal of work methods and work program are not considered as must meet qualification requirements.

There are qualification criteria set by ERA stated in Table 4 some are difficult to quantify but construction turnover, cash flow requirement and general experience can be quantified and studied against for each above case studied.

The Annual construction turnover can be calculated for each cases using the formal given in Table 4.

$$ACT = \frac{EE \times F}{Yrs}$$

Where

EE => Engineer's Estimate

Yrs => Contract period in Years

The multiplier F=2 may be reduced for very large projects (>200US\$) but shouldn't be less than 1.5. For local contractors as low as F= 0.7 using formula above Annual construction turnover will be calculated and compared.

the Cash flow requirements also calculated using the formula given in Table 4.

$$CF = \frac{EE * F}{months}$$

Factor F should not be more than 4 months.

Case One: Design Bid Build (DBB); Lot 2: Omo River – Tercha (83.4km)

Calculating for annual construction turnover using Engineering estimate (EE) and the formula given in Table 4 calculation made for both local and foreign bidder and actually used didn't match with calculated amount. Amount for local bidders are lower than estimated for foreign bidder.

The calculating for cash flow requirements using qualification criteria of ERA in Table 4 show the calculated amount lower than that of actually used for both local and foreign bidders

In qualification criteria requirement stated in Table 4 indicates the general experience required for local contractors three years and for foreign bidders are five to ten years required but for the project acutely used indicates that five years for both bidders.

Case Two: Design Bid Build (DBB); Sanja – Keraker Road Project

The actually used annual construction turnover for this project are much higher lower than form calculated for both local and international bidders.

The calculated Cash flow requirements according to Table 4 also two times higher than the one actually used for the project qualification for both local and foreign bidders.

Foreign bidders general construction experience are the same as required qualification stated in Table 4 but for local bidder requirements are higher than the one stated in ERA qualification requirements.

#### Case Three: Design Build (DB): Efeson (Ataye)-Mehal Meda Road Project

The Annual construction turnover calculated using the formula stated in Table 4 are much lower than the one used in actually as qualification criteria for the tender.

The Actual cash flow requirement also lower than calculated according to the formula given in qualification criteria requirements in Table 4.

The General construction experience requirement is the same to that of the general construction requirement stated in the Table 4.

#### Case Four: Maintenance Project: Hargele-Imi-Fik road project

This project treated as capacity building and the tender floated for only local contractors. But the calculated annual construction turnover is much less than the one actually requested by the employer.

On the other hand, according to MUDC Amended Directive 19/2013 (as show in Table 2) BC -4 have a project size limit to 110 million Birr, RC-5 have a project size limit to 76 million Birr and GC -5 also have a project size limit to 100 million Birr. Since the engineering estimate is 74.2 million, contractors with grade BC-4, RC-5, and GC-5 and above are eligible to participate tender invitation, but the employer invites only GC-4 or RC-4 or BC-3 and above. Which is contractors with grade GC-5, RC-5 and BC-4 are unable to fulfill this must meet qualification criteria indicates that more than 258 contractors lose a chance to participate this tender process.

Calculated cash flow requirement and general construction experience requirement are similar to acutely used in tender qualification requirement.

Summarized with actually used in table below.

| S.No | Qualification Criteria                     | Case One  | Case Two  | Case Three  | Case Four                         |
|------|--|---|---|---|-----------------------------------|
| 1    | Annual Construction Turnover (in Millions) | <u>Calculated:</u><br>821 Foreign<br>383 Local    | <u>Calculated:</u><br>821 Foreign<br>383 Local    | <u>Calculated:</u><br>426 Foreign<br>209 Local    | <u>Calculated:</u><br>5 Local     |
|      |  | <u>Actually Used:</u><br>910 Foreign<br>320 Local | <u>Actually Used:</u><br>412 Foreign<br>137 Local | <u>Actually Used:</u><br>725 Foreign<br>338 Local | <u>Actually Used:</u><br>17 Local |
| 2    | Cash Flow Required (In Millions)           | <u>Calculated:</u><br>182 Foreign<br>137 Local    | <u>Calculated:</u><br>182 Foreign<br>137 Local    | <u>Calculated:</u><br>161 Foreign<br>121 Local    | <u>Calculated:</u><br>6 Local     |
|      |  | <u>Actually Used:</u><br>150 Foreign<br>115 Local | <u>Actually Used:</u><br>92 Foreign<br>69 Local   | <u>Actually Used:</u><br>140 Foreign<br>105 Local | <u>Actually Used:</u><br>8 Local  |
| 3    | General Construction Experience (In Years) | <u>Calculated:</u><br>5 Foreign<br>3 local        | <u>Calculated:</u><br>5 Foreign<br>3 local        | <u>Calculated:</u><br>5 Foreign<br>2 local        | <u>Calculated:</u><br>2 local     |
|      |  | <u>Actually Used</u><br>5 Foreign<br>5 local      | <u>Actually Used</u><br>5 Foreign<br>5 local      | <u>Actually Used</u><br>5 Foreign<br>2 local      | <u>Actually Used</u><br>2 local   |

Table 15 Finding on standard qualification criteria verses qualification criteria used

## **Chapter Five: Conclusions and Recommendations**

The main purpose of this project to do assess on contractors' qualification criteria in federal road projects. To go through qualification requirements and study on how qualification criteria formulate and evaluated.

The following conclusions and recommendations are, therefore, presented in line with the specific objectives designed to meet the main objective.

### **5.1 Discussion and Conclusions**

The first specific objectives of the project were to investigate the relationship between projects size and complexity with respect to the contractors' qualification criteria. This project indicates that project size represented by engineers estimate (EE) has a direct effect on qualification requirements, particularly on annual construction turnover and cash flow requirements. Bigger project size has a larger amount of cash flow and annual turnover requirements.

The second specific objective of the project was make assessment on how the qualification criteria applied to select among contractors in federal road project tender. This project indicates that a qualification requirement applied used to evaluate the contractors' technical capacity are not consistence to one project to another for the same project type.

The third specific objective of the project was to make an assessment on tender the qualification criteria of Ethiopian Roads Authority with respect to the world bank and PPA standards. Qualification requirements according to either PPA standard nor world banks. Qualification requirements like annual turnover and cash flow requirements are not calculated in line with PPA or World Bank standards for the same project. On the other hand required construction experience and special experience requirements are in line with stated standards. Other qualification criteria manpower and personnel equipments are not taken as main evaluation criteria in the bid evaluation process. Proposed work program and methodology also presented as information and the bidders didn't affected by the content of the work programs and methodology.

This project assessment finds out that contractors' qualification requirements set to evaluate bidders are not derived from any standard.

The forth specific objective of the project was to make recommendations for better qualification criteria to evaluation contractors' technical ability. This section discussed in the next topic.

## 5.2 Practical Recommendations

Recommended qualification criteria for road projects to limit the personal decision of the evaluators requirements are very useful. For road projects using ERA standard qualification requirements for construction experience and specific construction experience are acceptable. But the main qualification requirement holdback for tender participation was requirement of construction turnover. Thus, the construction turnover requirements are recommended to resolve this problem in the following manner. The first task will be categorize the roads in different types, i.e Asphalt Road Construction, Gravel Road Construction, Maintenance Projects and others (bridge etc.) . This helps calculating annual construction turnover and cash flow requirements for each project and give in range to select depending on project type. Also, it helps to bidder to prepare themselves for future project even before they float. Creating standard qualification criteria for all types and left no room for and further adjustment and blend with Ministry of Urban Development and Construction contractors requirement. Constrictors grad requirement to participate in bid with respect to project size for each project type can be summarized in table as below;

| S.No | Project Size      | Grade Requirement         |                          |                       |                            |
|------|-------------------|---------------------------|--------------------------|-----------------------|----------------------------|
|      |                   | Asphalt Road Construction | Gravel Road Construction | Maintenances Projects | others                     |
| 1    | Above 300,000,000 | GC 1 and RC 1             | GC 1 and RC 1            | GC-1 and RC-1         | GC-1, RC-1& BC-1           |
| 2    | Up to 300,000,000 | GC 2, RC 2 and above      | GC 2, RC 2 and above     | GC-2, RC-2 and above  | GC-2, RC-2, BC-1 and above |
| 3    | Up to 225,000,000 | GC-3, RC-3 and above      | GC-3, RC-3 and above     | GC-3, RC-3 and above  | GC-3, RC-3, BC-1 and above |
| 4    | Up to 154,000,000 | GC-4, RC-4 and above      | GC-4, RC-4 and above     | GC-4, RC-4 and above  | GC-4, RC-4, BC-2 and above |
| 5    | Up to 76,000,000  | GC-5, RC-5 and above      | GC-4, RC-5 and above     | GC-5, RC-5 and above  | GC-5, RC-5, BC-5 and above |

Table 16 Project size and grade requirements

All qualification requirements shall derive from above table and each bidder will know its capacity prior bid participation.

Study area of contractors' qualification criteria for federal road projects tender practice is very narrow study area; and additional study must be done for the financial evaluation of contractors' tender evaluation, for consultant qualification evaluation and consultant financial evaluation.

The other main recommendation is on providing training. Creating tender evaluation and tender practice awareness for all stakeholders. Contractors must take training on how tender must be prepared and how it will be evaluation. The employer must take training on how qualification requirements must be set for different type of projects and how tender must be evaluated. Creating general awareness of about tender process must be done.



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