

**FINAL REPORT BY THE ASSURANCE TEAM**

**ON**

**THE MATERIAL PROJECT INFORMATION PROVIDED**

**BY**

**THE ROAD DEVELOPMENT AGENCY**

**ON**

**THE REHABILITATION OF THE ZIMBA TO LIVINGSTONE  
ROAD**

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***September 2010***

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## **List of Acronyms**

AT	Assurance Team
ARE	Assistant Resident Engineer
BoQ's	Bill of Quantities
CoST	Construction Sector Transparency Initiative
ICB	International Competitive Bidding
GRZ	Government of the Republic of Zambia
MPI	Material Project Information
MSG	Multi Stakeholder Group
MWS	Ministry of Works and Supply
NCB	National Competitive Bidding
NCC	National Council for Construction
NRFA	National Road Fund Agency
PEs	Procuring Entities
QCBS	Quality and Cost Based Selection
RDA	Road Development Agency
SATCC	Southern Africa Transport and Communications Commission
ZMK	Zambian Kwacha
ZPPA	Zambia Public Procurement Authority

## **1. EXECUTIVE SUMMARY**

- 1.1. The Construction Sector Transparency Initiative (CoST) is a multi-stakeholder initiative aimed at increasing transparency and accountability in the construction sector through improved disclosure of material project information.
- 1.2. CoST is being piloted in seven countries; Ethiopia, Malawi, Philippines, Tanzania, United Kingdom, Vietnam and Zambia and is supported by the Department for International Development (DfID) of the United Kingdom.
- 1.3. In Zambia, four institutions involved in infrastructure development and maintenance; Ministry of Education, Ministry of Health, Buildings Department under the Ministry of Works and Supply and Road Development Agency, were selected for the pilot study.
- 1.4. The Rehabilitation of the Zimba –Livingstone Road was one of the projects selected under the road Development Agency.
- 1.5. The Road Development Agency (RDA) is rehabilitating the Zimba to Livingstone Road as one of the projects Government has embarked upon to improve the Country's infrastructure.
- 1.6. The Zimba to Livingstone Road is a 73 km stretch of road on the Main Trunk Road T1 linking Zambia to its neighbours in the south and in the North and is a critical link between the capital Lusaka and Zambia's premier tourist destination of Livingstone. The road is therefore critical to trade, tourism and agriculture.
- 1.7. The decision to rehabilitate the Zimba to Livingstone Road followed the extreme deterioration of the road which greatly affected the efficient movement of traffic and consequently business.
- 1.8. The appointment of the consultants followed an invitation for expressions of interest and only those firms deemed to have the necessary expertise were shortlisted and invited to submit technical and financial proposals. This approach ensured that only capable, qualified and consultants would undertake the assignment.

- 1.9. The appointment of the contractor followed open bidding procedures which ensure value for money.
- 1.10. The contracts with the consultants and contractors are based on the FIDIC standard contract documents which are widely used in the construction industry.
- 1.11. The site visit revealed that the work was of high quality and the project was on schedule.
- 1.12. The major issue of concern is delayed payments on the works contract.
- 1.13. On the basis of the information disclosed, we are satisfied that time and cost are being managed satisfactorily.

## **2. INTRODUCTION**

### **2.1. Construction Sector Transparency Initiative**

- 2.1.1. The Construction Sector Transparency Initiative (CoST) is a multi-stakeholder initiative aimed at increasing transparency and accountability in the construction sector. CoST intends to ensure that national governments, affected stakeholders, and the wider public get what they pay for in public construction projects, by increasing transparency in the construction sector. It is expected that greater transparency, through greater disclosure of project information, will yield benefits to government, industry, civil society, and ordinary citizens.
- 2.1.2. It is, however, recognised that the disclosure of this information may not be sufficient on its own to achieve greater accountability. This is because some of the information is likely to be complex and not easily intelligible to the general public. For example, there are many reasons for time and cost overruns on construction projects that may be quite legitimate and not necessarily an indication of poor governance of the procurement process.
- 2.1.3. CoST is being piloted in seven countries; Ethiopia, Malawi, Philippines, Tanzania, United Kingdom, Vietnam and Zambia and is supported by the Department for International Development.
- 2.1.4. In Zambia, the National Council for Construction, on behalf of the Construction Sector Transparency Initiative (CoST) Zambia Multi Stakeholder Group (MSG) contracted an Assurance Team in May 2010, to undertake assurance services on selected public construction projects ranging from roads to health and school infrastructure to ensure that the information released is both accurate and in a form that can easily be understood by stakeholders.
- 2.1.5. A total of 17 projects have been selected for the pilot and the Rehabilitation of the Zimba to Livingstone Road is one of them.
- 2.1.6. The Assurance Team comprises four specialists in construction working together to obtain, verify and assess material project information and provide reports. This report has been prepared by the Assurance Team in accordance with its Terms of Reference and gives the activities undertaken and its opinion on the material project information (MPI) released by the Road Development Agency on the rehabilitation of the Zimba – Livingstone Road.

## **2.2. Objectives of the study**

2.2.1. The Zambian pilot has four objectives:

- to learn lessons to help in the development of CoST
- to learn lessons on improving transparency through the disclosure of project information
- to gain an improved understanding of construction project costs amongst public sector clients
- to learn and share lessons on the management and control of publicly-funded construction projects.

2.2.2. The Assurance Team has been contracted to carry out the following tasks on the project:

- Collect the material project information;
- Verify the accuracy of the material project information;
- Report on the extent and accuracy of the information which has been released;
- Analyse the material project information and make informed judgements about the cost and quality of the project;
- Report on the findings regarding the cost and quality of the project and highlight any outstanding issues of concern.

## **2.3. Project Description and Location**

2.3.1. The Zimba to Livingstone Road is a 72.8 km stretch of road on the Main Trunk Road T1 on the North South corridor and is a strategic link between Zambia's capital Lusaka and its main tourist destination Livingstone. The road also serves the local agricultural industry and is a strategic trade and transportation link between Zambia and its neighbours in the north and south.

2.3.2. The rehabilitation of the Zimba to Livingstone portion of the T1 is aimed at bringing the road to acceptable standards. The works include but are not limited to the following:

- Rehabilitation works with concrete asphalt wearing course and drainage works.



- Clearing and Grubbing.
- Drainage works.
- Reconstruction with a crushed rock base, cement stabilized sub-base, asphaltic concrete surfacing and bituminous single seal of shoulders.
- Provision of road furniture such as road signs, road marking, guardrails and marker posts.

2.3.3. The project to rehabilitate the Zimba to Livingstone Road was initially supposed to be undertaken for the entire 72.8 kilometres with funding from the European Development Fund. However, when the tender for the works was invited and offers received, it was found that the bids were in excess of the available maximum budget of €15,000,000.00.

2.3.4. Government therefore decided that it would fund the first 30 kilometres from Zimba and the remaining 42.8 kilometres would be undertaken when sufficient funds were sourced.

2.3.5. This report is on the second phase of the rehabilitation of the Zimba to Livingstone Road, i.e., from Km30 to Km72.8.

## **2.4. Approach to Pilot Study**

2.4.1. The approach taken by the Team generally involved:

- (i) Hold an initial meeting with the procuring entity to introduce the objectives of the study and submit the list of information (MPI) the entity was expected to disclose;
- (ii) Agree and identify the contact person on behalf of the procuring entity to provide the MPI and the timeframe for providing the information;
- (iii) Receive and analyse the initial information disclosed;
- (iv) Seek clarifications and further information where this was deemed necessary; and
- (v) Undertake a site visit to get an appreciation of the project and obtain clarifications, confirmations etc from the contractor and/or supervisor on issues not clear to the Team.

2.4.2. The findings were then compiled into this report.

### **3. ACTIVITIES UNDERTAKEN ON THE PROJECT**

#### **3.1. Meetings with Stakeholders**

- 3.1.1. The Assurance Team and the MSG Zambia Coordinator had a meeting with the Management of the RDA. The Meeting was used to introduce the Assurance Team and to discuss the material project information that needed to be disclosed. The RDA appointed the Manager, Procurement to be the contact person for any information required for all the eight selected projects.
- 3.1.2. A more detailed meeting was held with the Manager, Procurement at which meeting it was agreed that the RDA would email whatever information it had in electronic form and hard copies where electronic means were not available. A template showing a schedule of the material project information which the RDA needed to disclose was given to the Manager, Procurement.

#### **3.2. Collection and Analysis of Data**

- 3.2.1. The material project information which the RDA was expected to disclose is given in Appendix I.
- 3.2.2. We analysed the information disclosed and held further meetings with other staff from RDA to obtain missing information and get clarifications on certain issues and processes, determine the accuracy and completeness of the information and appreciate how the project was being managed.
- 3.2.3. Obtaining the necessary documents proved to be more difficult than initially envisaged. This was largely due to the fact that the documents were lying in various places and offices.

#### **3.3. Site Visit**

- 3.3.1. After the initial set of information was released by RDA, the Team undertook a site visit to talk to the contractor and supervising consultant and get an appreciation of the project.
- 3.3.2. The Team also used the site visit to collect additional/missing information and carryout a qualitative visual inspection of the works.

## **4. DATA VERIFICATION**

### **4.1. Project Identification and Budgeting**

4.1.1. The RDA prepares Annual Procurement Plans based on approved Annual Work Plans. The decision to include a particular road on the annual work plan is determined by a number of factors which include;

- Strategic importance of the road
- State of the road
- Traffic volume
- Social impact of the road; and
- Political expedience

4.1.2. The project to rehabilitate theimba to Livingstone Road was in the 2006 Annual Work Plan.

4.1.3. The engineer's estimate and hence the budget was €23,038,383.

### **4.2. Procurement Procedures**

#### **4.2.1. General Procurement Guidelines**

4.2.1.1. Procurement undertaken by the RDA is governed by the Public Procurement Act, 2008 or its predecessor, the Zambia National Tender Board Act.

4.2.1.2. In accordance with guidelines issued by the Zambia Public Procurement Authority, RDA has a procurement threshold of K40billion for works and K10billion for consulting services. Procurements above this threshold are referred to the Central Tender Committee for authorisation.

#### **4.2.2. Procurement of Consulting Services**

4.2.2.1. The procurement of consulting services for project design and supervision for the rehabilitation of the 43 kilometres was governed by the European Union Procurement Guidelines as it was funded by the European Development Fund.

4.2.2.2. The procurement guidelines required the invitation of expressions of interest which were then evaluated to develop a short list. The shortlisted firms are then invited to submit detailed technical and financial proposals. The Quality and Cost Based Selection method was used to evaluate the proposals received.

4.2.2.3. The European Union through the National Authorising Office at the Ministry of Finance and National Planning had fiduciary functions

over the procurement process and issued no objections at various stages.

#### **4.2.3. Procurement of Works Contractor**

- 4.2.3.1. The procurement of contractors was governed by the Zambia National Tender Board Act. In accordance with the guidelines issued by the Zambia Public procurement Authority, all procurements with an estimated cost above K500million were to be undertaken using the open bidding method.
- 4.2.3.2. RDA has a procurement threshold of K40billion up to which its Procurement committee can authorise award of contract. Procurements with an estimated cost above K40billion had to be submitted to the Central Tender Committee for authority.

#### **4.3. Procurement Process**

##### **4.3.1. Appointment of Consultant for Project Design and Supervision**

- 4.3.1.1. The original project design was undertaken by WSP International Management Consulting, but no further information is available on this contract.
- 4.3.1.2. In 2006, Expressions of Interested to supervise the rehabilitation of the Zimba to Livingstone Road were invited. The terms of reference included the review of the Final Design Report prepared by WSP International Management Consulting. Participation was open to all natural and legal persons of the States signatory to the Cotonou Agreement (EU Member States and ACP States).
- 4.3.1.3. 10 expressions of interest were received and six firms were shortlisted and invited to submit proposals.
- 4.3.1.4. All the six consulting firms submitted proposals as follows:
  - (i) Carl Bro A/S sub-contracting to BICON Zambia limited;
  - (ii) SNC Lavalin with ASCO Zambia Limited;
  - (iii) DIWI Consult International and Kiran & Musonda Zambia Limited;
  - (iv) BCEOM Societe Francaise d'Engeniére with Rankin Engineering (Zambia);
  - (v) Nicholas O'Dwyer & Company in Association with Zulu Burrow (Zambia); and
  - (vi) Roughton International with JD Mwila and V & V Consulting Engineers (Zambia).

- 4.3.1.5. The proposals were evaluated using the Quality and Cost Based Selection (QCBS) method in accordance with the Request for Proposals and Nicholas O'Dwyer & Company and Zulu Burrow were awarded the contract to undertake the review of the Final Design Report and supervise the works for the entire 72.8 kilometres.
- 4.3.1.6. However, due to funding problems, the terms of reference were revised and the scope of work reduced to the 42.8 kilometres.
- 4.3.1.7. Except for the documentation for appointment of WSP International Management Consulting, we are satisfied that the documents disclosed fully and accurately describe the appointment of Nicholas O'Dwyer & Company in association with Zulu Burrow as consultant for the design review and supervision of the rehabilitation of the 42.8 kilometres of the Zimba to Livingstone Road.

#### **4.3.2. Appointment of China Geo-Engineering Corporation**

- 4.3.2.1. The tender for the rehabilitation of the remaining 42.8 km from Km30 to Km72.8 was launched on 28 November, 2008 and closed on 30 January, 2009. The tender was open to firms that were registered in Zambia with the National Council for Construction (NCC) in Category R, Grade 2 up to 1, and had a Tax Clearance Certificate with the Zambia Revenue Authority. The invitation for bids was done in accordance with the Zambia National Tender Board Act.
- 4.3.2.2. At the time of tender closing, two bids were received from the following construction companies:
  - China Henan International Corporation Group Company Limited.
  - China Geo-Engineering Corporation.
- 4.3.2.3. The two bids were evaluated in accordance with the solicitation document and China Geo-Engineering Corporation was determined to be the lowest evaluated bidder.
- 4.3.2.4. We are satisfied that the documents disclosed describe fully and accurately the appointment of China Geo-Engineering Corporation

as contractor for the rehabilitation of 42.8 kilometre of the Zimba to Livingstone Road.

#### **4.4. Project Execution**

##### **4.4.1. Project Supervision**

- 4.4.1.1. The contract for design review and supervision of the rehabilitation of the Zimba to Livingstone Road, Km30+00 to Km72.8 was signed in 2009 and was to run up to December 2010 at a contract price of €857,796.

##### **4.4.2. Works**

- 4.4.2.1. The works contract was awarded on 10 March, 2009 and the commencement order was issued on the 11 May, 2009. Project completion is scheduled for 10 November 2010.

## **5. DATA ANALYSIS**

### **5.1. Project Supervision**

- 5.1.1. The award of contract for the supervision of the works followed the invitation of expressions of interest from which the consultants deemed to have the necessary capacity were shortlisted and invited to submit technical and financial proposals. Thus the appointment was done on a competitive basis which ensures value for money.
- 5.1.2. The EU had a fiduciary role in the procurement process to ensure that its Procurement Guidelines were complied with. This was in addition to the oversight role of the Zambia Public Procurement Authority.
- 5.1.3. We have not been able to establish the budget and therefore are unable to state whether or not the contract amount of €857,796 was within budget.
- 5.1.4. In order to ensure that the contract cost remains within the contract amount, the RDA supervises the consultant. Data made available shows that the Chief Executive Officer and Director of the RDA is the supervisor for the project.
- 5.1.5. There have been no significant changes to the contract price, programme and scope of work.

### **5.2. Works Contract**

- 5.2.1. The award of contract followed a competitive procurement process. However, there was not much competition as only two bids were received. This could have been due to contractors being discouraged following the cancellation of the earlier tender in 2007.
- 5.2.2. Due to the funding arrangements, two contracts were signed for the works:
  - Contract A for € 11,570,229.49 (funded by the European Development Bank); and
  - Contract B for € 23,950,019.09 (funded by the Government of Zambia)
- 5.2.3. The contract the RDA and China Geo-Engineering Corporation signed is based on the FIDIC standard form and is widely used in many parts of the World.
- 5.2.4. The cost estimate for the works was done by the consultant Nicholas O'Dwyer & Company based on the bids received in the aborted tender of 2007. Nicholas O'Dwyer & Company conservatively put the estimate



for the works at €23,038,383. The contract amount of €35,520,248.58 was 54% above the estimate.

- 5.2.5. The cost estimate and contract price are uneconomic compared to the bid prices received in 2007. The three bids received then were in the amounts of €20,605,818, €25,246,361 and €26,214,755 for the reconstruction of the entire 72.8 kilometres of the Zimba to Livingstone Road.
- 5.2.6. To ensure the contract terms and conditions are met and the project cost and timeframe are managed, site meetings are held monthly and minutes of the meeting recorded. The minutes are only circulated to specified persons. While RDA has a Regional Engineer for Southern Province, where the road is, the Regional Engineer is not on the circulation list for minutes of site meetings.
- 5.2.7. A number of incidences occurred which resulted in variation orders leading to extension of time and cost variations.
  - (i) Variation Order No. 1: Extension of time of 25 days due to the heavy rains experienced;
  - (ii) Variation Order No. 2: To change from single seal to asphalt and widen the carriage way from 6.1m to 6.5m. This variation resulted in a cost reduction of about €300,000;
- 5.2.8. As at August 2010, €20,381,275.94 had been certified out of which €18,293,509.91 had been paid. Funding has been the major area of concern on this project and could affect the completion of the project. RDA is certain that the contractor could complete the project on schedule if the funding issue was resolved. This was corroborated by both the contractor and consultant.
- 5.2.9. During the site visit undertaken by the Team, it was evident from qualitative visual inspection that the quality of work was very high.
- 5.2.10. On the basis of the information disclosed and the discussions held with the supervisor, we are satisfied that time and cost on the Project are being managed satisfactorily.

### **5.3. Issues of Concern**

- 5.3.1. The major issue of concern on this project is delayed payments. During the site visit undertaken by the Team, the Contractor stated that they could complete the works on time if payments were made on time.
- 5.3.2. The other issue is that the Regional Engineer is not fully involved in the procurement process and execution of projects but attends site meetings.

- 5.3.3. Another issue of concern is that the Team was not able to establish the budget for project design and supervision.

## APPENDIX I: MATERIAL PROJECT INFORMATION

**A8 Project Name: REHABILITATION OF ZIMBA TO LIVINGSTONE ROAD**

<b>1</b>	<b><i>Project Identification</i></b>	
	Project Specification	Rehabilitation of Trunk Road T1 from Zimba to Livingstone from km30 to km73.
	Purpose	To rehabilitate the Trunk Road T1 from Zimba to Livingstone
	Location	T1 Road Between Zimba and Livingstone in Southern Province
	Intended Beneficiaries	The general public, tourists, farmers, international trade
	Specification	The SATCC Standard Specifications for Road and Bridge Works, September 1998, (Reprinted July 2001).
	Feasibility Study	Design Review (Design undertaken by WSP International Management Consulting)
<b>2</b>	<b><i>Funding</i></b>	
	Financing Agreement	NRFA-Road Fund and European Union (9 ACP ZA 021)
	Budget	Engineer's Estimate
	Engineer's Estimate	€23,038,383
<b>3</b>	<b><i>Tender Process for the Contract for Project Design</i></b>	
	Tender procedure	Information not available
	Number expressing interest	Information not available
	Number shortlisted	Information not available
	Number submitting tender	Information not available
<b>4</b>	<b><i>Tender Process for the Contract for Project Supervision</i></b>	
	Tender procedure	Quality and Cost Based Selection
	Number expressing interest	Information not available
	Number shortlisted	Information not available

	Number submitting tender	6
<b>5</b>	<b><i>Tender Process for the Main Contract of Works</i></b>	
	Tender procedure	ICB
	Number expressing interest	N/A
	Number shortlisted	N/A
	Number submitting tender	2
	List of tenderers	(i) China Geo-Engineering Corporation. (ii) China Henan International Corporation Group Company Limited.
	Tender evaluation report	Yes
<b>6</b>	<b><i>Details of the Contract Award: Project Design</i></b>	
	Name of main consultant	WSP International Management Consulting
	Contract price	Information not available
	Contract scope of work	Information not available
	Contract programme	Information not available
<b>7</b>	<b><i>Details of the Contract Award: Project Supervision</i></b>	
	Name of main consultant	Nicholas O'Dwyer and Company Limited in association with Zulu Burrow Consulting Engineers
	Contract price	Euro 857,796.00
	Contract scope of work	Review of Final Design Report prepared by WSP International Management Consulting. Supervision of works of 42km of the Zimba-Livingstone Road.
	Contract programme	
<b>8</b>	<b><i>Details of Contract Award: Main Contract for Works</i></b>	
	Name of main contractor	China Geo-Engineering Corporation
	Contract price	Euro 35,520,248.58

	Contract scope of work	Rehabilitation works with concrete asphalt wearing course and drainage works. <ul style="list-style-type: none"> <li>• Clearing and Grubbing</li> <li>• Drainage works</li> <li>• Reconstruction with a crushed rock base, cement stabilized sub-base, asphaltic</li> <li>• Concrete surfacing and bituminous single seal of shoulders</li> <li>• Provision of road furniture such as road signs, road marking , guardrails and marker posts</li> </ul>
	Contract programme	18 calendar months from 14 May 2009 to 14 November 2010
<b>9</b>	<b><i>Execution of the Contract: Project Supervision</i></b>	
	Significant Changes to Contract Price, Programme, Scope with Reasons	None
<b>10</b>	<b><i>Execution of Contract: Main Contract for Works</i></b>	
	Individual changes to Contract which affect the price and reason for those changes	<ul style="list-style-type: none"> <li>• Widen asphalt from 6.1 to 6.5m</li> </ul>
	Individual changes to the contract which affect the programme and reasons for those changes	<ul style="list-style-type: none"> <li>• Single seal varied on carriageway by extension of asphalt</li> </ul>
	Details of any re-award of main contract	<ul style="list-style-type: none"> <li>• One</li> </ul>
<b>11</b>	<b><i>Post Contract Completion Details: Main Contract for Works</i></b>	
	Actual Contract Price	On-going works.
	Total Payments made to date	€18,293,509.91
	Actual contract scope of work	On-going works.
	Actual contract programme	On-going works.
	Project Evaluation Reports (on-going and on completion)	On-going works.

## APPENDIX II: DOCUMENTS DISCLOSED

S/N	Description	Date Released	Comment(s)
1.	Status Report – August 2010	August 2010	
2.	Design Review Report	July 2010	
3.	Bid Evaluation Report (Works)	July 2010	
4.	Tender Document (Works)	July 2010	
5.	Contract Document (Works)	July 2010	
6.	Financing Proposal, June 2008	July 2010	
7.	Zambia Daily mail Advertisement for Expressions of Interest for the Supervision of the Rehabilitation of Zimba – Livingstone Road	July 2010	

## **APPENDIX II: SCHEDULE OF CONTRACT CHANGES**

1. Variation Order: extension of time by 25 days due rains
2. Variation Order: Change in asphalt width from 6.1m to 6.5m

## APPENDIX IV: PHOTO GALLERY



Plate 1 Detour sign



Plate 2 View from the North with detour



Plate 3 Electric and IT cabling works in progress



Plate 4 Recently opened stretch



