FINAL REPORT BY THE ASSURANCE TEAM

ON

THE MATERIAL PROJECT INFORMATION PROVIDED

BY

THE ROAD DEVELOPMENT AGENCY

ON

REHABILITATION AND MAINTENANCE OF THE MONGU-SENANGA ROAD WESTERN PROVINCE

Dr. Michael Mulenga
James K. Njolomba
Robert Ngulube
Dr. Paul Makasa

September 2010
# TABLE OF CONTENTS

1 EXECUTIVE SUMMARY .................................................................................. 1

2 INTRODUCTION ............................................................................................. 3
   2.1 Construction Sector Transparency Initiative ............................................ 3
   2.2 Objectives of the study ............................................................................ 4
   2.3 Project description and location ............................................................... 4
   2.4 Approach to Pilot Study .......................................................................... 5

3 ACTIVITIES UNDERTAKEN ON THE PROJECT ........................................ 6
   3.1 Meetings with stakeholders .................................................................... 6
   3.2 Collection and Analysis of Data ............................................................... 6
   3.3 Site Visit .................................................................................................. 7

4 DATA VERIFICATION ...................................................................................... 8
   4.1 Project Identification and Budgeting ......................................................... 8
   4.2 Procurement Procedure ........................................................................ 8
   4.3 Procurement Process .............................................................................. 8
   4.4 Project Execution ................................................................................... 9

5 DATA ANALYSIS ........................................................................................... 11
   5.1 Project Design and Supervision ............................................................... 11
   5.2 Works Contract ....................................................................................... 11
   5.3 Issues of Concern ................................................................................... 11

APPENDIX I MATERIAL PROJECT INFORMATION (MPI) ....................... 12

APPENDIX II SCHEDULE OF CONTRACT DOCUMENTS DISCLOSED ...... 15

APPENDIX III SCHEDULE OF CONTRACT CHANGES-WORKS ............. 16

APPENDIX IV PHOTO GALLERY ................................................................... 17
## LIST OF ACRONYMNS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARE</td>
<td>Assistant Resident Engineer</td>
</tr>
<tr>
<td>AT</td>
<td>Assurance Team</td>
</tr>
<tr>
<td>AWP</td>
<td>Annual Work Programme</td>
</tr>
<tr>
<td>BoQ's</td>
<td>Bill of Quantities</td>
</tr>
<tr>
<td>CoST</td>
<td>Construction Sector Transparency Initiative</td>
</tr>
<tr>
<td>DANIDA</td>
<td>Danish Development Agency</td>
</tr>
<tr>
<td>DfID</td>
<td>Department of International Development, UK</td>
</tr>
<tr>
<td>DLP</td>
<td>Defects Liability Period</td>
</tr>
<tr>
<td>ICB</td>
<td>International Competitive Bidding</td>
</tr>
<tr>
<td>GRZ</td>
<td>Government of the Republic of Zambia</td>
</tr>
<tr>
<td>MoE</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>MoH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>MPI</td>
<td>Material Project Information</td>
</tr>
<tr>
<td>MSG</td>
<td>Multi Stakeholder Group</td>
</tr>
<tr>
<td>MWS</td>
<td>Ministry of Works and Supply</td>
</tr>
<tr>
<td>NCB</td>
<td>National Competitive Bidding</td>
</tr>
<tr>
<td>NCC</td>
<td>National Council for Construction</td>
</tr>
<tr>
<td>NRFA</td>
<td>National Road Fund Agency</td>
</tr>
<tr>
<td>PEs</td>
<td>Procuring Entities</td>
</tr>
<tr>
<td>QCBS</td>
<td>Quality and Cost Based Selection</td>
</tr>
<tr>
<td>RDA</td>
<td>Road Development Agency</td>
</tr>
<tr>
<td>SATCC</td>
<td>Southern Africa Transport and Communications Commission</td>
</tr>
<tr>
<td>SIS</td>
<td>School Infrastructure Section</td>
</tr>
<tr>
<td>ZMK</td>
<td>Zambian Kwacha</td>
</tr>
<tr>
<td>ZPPA</td>
<td>Zambia Public Procurement Authority</td>
</tr>
</tbody>
</table>
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 (MPI).

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 Road Development Agency (RDA) carried out rehabilitation and maintenance the Mongu - Senanga Road M10 (103.7 km) as one of the projects Government embarked upon to improve the Country’s road infrastructure.

1.5 The Mongu - Senanga Road is located in Western Province, starting from Mongu (km 0.0) and ending just after passing through Senanga town (km 103.7). The road is an all weather paved road and connects the Provincial Centre, Mongu, with Senanga. The road is therefore critical to trade, tourism and agriculture for Western Province.

1.6 The decision to rehabilitate the Mongu-Senanga Road followed the extreme deterioration of the road resulting from flooding in the project location which adversely affected the efficient movement of traffic and consequently business.

1.7 The RDA generally follows the Public Procurement Act of 2008, in the award of contracts for consultants and contractors except where funding is provided by a Cooperating Partner or Multilateral lending institution which requires adherence to its procurement procedures such as the World Bank, African Development Bank and the European Union. Further, RDA operates procedures for contract management to ensure cost, quality of work and time are in accordance with the contract. RDA has made full and accurate disclosure of documents showing the procedures it used for the award of the contracts for this project.
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 short listed and invited to submit technical and financial proposals. The Consultancy Contract was signed in October 2007.

1.9 The appointment of the consultants followed procurement procedures and the Quality and Cost Based Selection process was adopted. The contract was awarded to Ng’andu UWP Consulting Engineers on in 2007 at contract sum of ZMK 1,649,700,000.00.

1.10 The appointment of the contractor followed open bidding procedures using the National Competitive Bidding which ensured competition and transparency. The contract for works was awarded to China Henan International Cooperation Co. Ltd at a contract sum of ZMK 51,559,999,990.00, awarded 3rd September 2007 but initially revised to ZMK 43,963,995,120.00. The contract sum was finally revised to ZMK 46,000,000,000.00 due to scope changes.

1.11 During construction of works, progress meetings were held with the aim of monitoring progress, quality of work, costs and resolving potential threats to the successful completion of the project. These monthly meetings are critical to the efficient and effective management of the contract in accordance with the form of contract used and RDA procedures and the success of the project.

1.12 On the basis of the information disclosed, the procurement process for the consultant and contractor followed the Public Procurement Act of 2008.

1.13 The Project was completed one month before intended completion date, within budget and the quality of the works was satisfactory, according to the completion report.

1.14 The main source of concern is the procurement process which was not fully disclosed.
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 (DFID), United Kingdom.

2.1.4 In Zambia, the National Council for Construction (NCC), 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.

2.1.4 A total of 17 projects have been selected for the pilot and the reconstruction and rehabilitation of the Mongu-Senanga Road was one of the projects.

2.1.5 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 Mongu-Senanga Road.
2.2 Objectives of the study

2.2.1 The Zambia 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 On the project, the Assurance Team has been appointed to carry out the following tasks:

- collect the project information
- verify the accuracy and completeness of the information
- report on the extent and accuracy of the information which has been released
- analyse the 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 highlighting any outstanding issues of concern

2.3 Project description and location

2.3.1 The project starts from the junction of M9 (Lusaka-Mongu) and M10 (Mongu-Senanga) km 0+000, to Senanga Prison km 103+000. The Project involved the following: Pothole patching and edge repair, Resurfacing approximately 67.1 km with double surface dressing, Overlaying approximately 7 km with 40mm wearing course in the urban sections of Mongu and Senanga, Resurfacing approximately 35.9 km with single seal surface dressing, Reconstruction of approximately 13.9 km, Maintenance of side drains, Reconstruction of approximately 103 km of shoulders, Culvert works, Reinstatement of road signs and road line marking. The project is located in Western province and was
aimed at rehabilitating the road infrastructure to ensure all weather service for the province.

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 seven selected road projects.

3.1.2 A more detailed meeting was held with the Manager, Procurement at which meeting it was agreed that the RDA would make available whatever information it had in electronic form and hard copies where electronic copies 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.

3.1.3 After the initial set of information was released by RDA, the Team followed up with more visits to get more information especially on the procurement process as the project was funded by DANIDA.

3.2 Collection and Analysis of Data

3.2.1 The team 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.

3.2.2 The material project information disclosed is given at Appendix I. The documents which were disclosed to the Assurance Team are listed in Appendix II.

3.2.3 Obtaining the necessary documents proved to be more difficult than initially envisaged. This was largely due to the way in which the documentation is being managed.
3.3 Site Visit

3.3.1 The site visit was not undertaken as the RDA HQ and Regional office provided adequate information.

3.3.2 Additional information was also obtained from the Project Consultants, Ng’andu UWP Consulting-Zambia.
4 DATA VERIFICATION

4.1 Project Identification and Budgeting
The project was identified and budgeted for under the RDA Workplan for 2008. The total budget was financed by DANIDA.

4.2 Procurement Procedure
From the documents disclosed it is clear that the procedures for procurement of works were followed.

4.2.1 The procurement of the consultant was carried after the works contract had been signed. Normally, the Supervision contract is signed earlier than the works one, to enable the consultant review the design and the tender documentation for the works contract.

4.2.2 The procurement of the Contractor followed the NCB.

4.2.3 The RDA procurement thresholds are as follows:

- Procurement and Contract award are executed by RDA except those above K40billion which have to be authorised by the Central Tender Committee.
- Variations up to 25% of the original contract sum can be authorised by the RDA Procurement Committee.
- Variations above 25% have to be approved by the Zambia Public Procurement Authority (ZPPA).

4.3 Procurement Process

4.3.1 Design and Supervision

4.3.1.1 The procurement of the consultant was carried out before the works contract and this allowed design and tender document review.

4.3.1.2 The procurement of the Consultant followed the Quality and Cost Based Selection and the contract was awarded to Ng’andu UWP Consulting Engineers on in 2007 at contract sum of ZMK 1,649,700,000.00.

4.3.1.3 The contract documentation was handled by DANIDA
4.3.2 Works

4.3.2.1 The procurement for Works followed the National Competitive Bidding and five contractors submitted bids. China Henan International Cooperation Co. Ltd was the lowest evaluated bidder.

4.3.2.2 The Scope of Works included Rehabilitation and Maintenance of the Mongu-Senanga Road, M10 (103Km).

4.3.2.3 The contract for works was awarded to China Henan International Cooperation Co. Ltd on 3rd September 2007 at a contract sum of ZMK 51,559,999,990.00. The contract sum was initially revised to ZMK 43,963,995,120.00 and finally revised to ZMK 46,000,000,000.00 due to scope changes.

4.4 Project Execution

4.4.1 Design and Supervision

4.4.1.1 The scope of services under the contract included:
Design review and review of contract documents, redesign of a 15km section of the road, redesign of three culverts, and redesign of the intersection in Mongu between Lusaka-Mongu Road and Mongu-Senanga Road.

4.4.2 Works

4.4.2.1 The Scope of Works included reconstruction of a road section between km 53.1 and km 68.0 and carrying out repairs/erosion protection for three culverts in Mongu, one of which had collapsed due to downstream erosion.

4.4.2.2 The original contract sum of ZMK 43,963,995,120.00 was revised to ZMK 46,000,000,000.00 (4.6% increase) as per Variation Order No. 1 and No. 2, resulting from changes in the design of works and greater than expected haulage distances for gravel, as a suitable borrow pit was located at km 95, on the Southern end of the project road.

4.4.2.3 A saving of ZMK 7,270,965.06 was realized on the project.
4.4.2.4 Minor problems were encountered in carrying out the project. These included stripping of bituminous seal on isolated sections over a stretch of 15km, unacceptable surface finish on concrete works and non straight line markings. These were all corrected.

4.4.2.5 The works were substantially complete by 22\textsuperscript{nd} December 2008 (about 72\% of the contract duration) and this date was established as the start date for the Defects Liability Period (DLP) which ended on 22\textsuperscript{nd} December 2009.

4.4.2.6 A few minor defects were corrected during the DLP.

4.4.2.7 Additional defects were observed on the works and the Defects Liability Period was extended from 7\textsuperscript{th} March 2009 to 8\textsuperscript{th} May 2010.

4.4.2.8 All payment certificates have been paid.
5 DATA ANALYSIS

5.1 Project Design and Supervision

5.1.1 The general procurement guidelines were followed. NCB was adopted, however the amount allocated in the RDA 2009 Annual Work Programme (AWP) was less than half the contract price. Also the works contract was awarded before the Supervision contract. Normally the works contract is awarded after so that the Consultant participates in the procurement of the Contractor and reviews the design.

5.1.2 The Regional Engineer was not fully involved in the procurement process and execution of projects but attends site meetings. Control of project was by DANIDA.

5.2 Works Contract

5.2.1 The Contractor carried out works as per specifications and had few variations. These variations resulted from redesign of some of the works and overhaul of gravel.

5.2.2 Redesign of three culverts, a section of the road and an intersection were carried out.

5.2.3 The works were completed ahead of schedule and below budget and the Defects Liability Period ended in December 2009. However, the DLP was extended 7th March 2009 to 8th May 2010, to address some minor defects.

5.3 Issues of Concern

5.3.1 The RDA HQ and the Regional Engineer were not fully involved in the procurement process and the Regional Engineer had limited involvement in the supervision of works.

5.3.2 Inadequate project preparation lead to two variations
### APPENDIX I  MATERIAL PROJECT INFORMATION (MPI)

**Project Name:** REHABILITATION AND MAINTENANCE OF THE MONGU-SENGA ROAD

1. **Project Identification**
   - **Project Specification:** TB/CE/009/07): Rehabilitation and Maintenance of the Mongu-Senanga Road, M10 (103Km)
   - **Purpose:** To rehabilitate and maintain the Mongu - Senanga Road M10 (103Km)
   - **Location:** Western Province
   - **Intended beneficiaries:** Motorists and General Public
   - **Specification:**
   - **Feasibility Study:** Yes

2. **Funding**
   - **Financing Agreement:** DANIDA ROAD SECTOR PROGRAMME SUPPORT
   - **Budget**
   - **Engineer’s Estimate**

3. **Tender Process for the Contract for Project Design**
   - **Tender procedure:** QCBS
   - **Number expressing interest**
   - **Number shortlisted**
   - **Number submitting tender**

4. **Tender Process for the Contract for Project Supervision**
   - **Tender procedure:** QCBS
   - **Number expressing interest**
   - **Number shortlisted**
   - **Number submitting tender**

5. **Tender Process for the Main Contract of Works**
   - **Tender procedure**
   - **Number expressing interest**
   - **Number shortlisted**
   - **Number submitting tender:** 5
   - **List of tenderers**:
     1. Sable Transport Limited
     2. China Geo-Engineering Corporation
     3. Raubex Construction Zambia Limited
     4. JJ Lowe (Zambia) Limited / Roads and Paving
## Details of the Contract for Project Design

<table>
<thead>
<tr>
<th>Name of main consultant</th>
<th>RaMbol Zambia Ltd. in joint venture with BCHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract Price (ZMK)</td>
<td></td>
</tr>
<tr>
<td>Contract Scope of Works</td>
<td>Construction supervision and provision of qualified experienced personnel, management, co-ordination and efficient execution of these services.</td>
</tr>
</tbody>
</table>

## Details of the Contract for Project Supervision

<table>
<thead>
<tr>
<th>Name of main consultant</th>
<th>Ng’andu UWP Consulting Engineers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract Price</td>
<td>ZMK 1,649,700,000.00</td>
</tr>
<tr>
<td>Contract Scope of Works</td>
<td>Construction supervision and provision of qualified experienced personnel, management, co-ordination and efficient execution of these services.</td>
</tr>
</tbody>
</table>

## Details of the Main Contract for Works

<table>
<thead>
<tr>
<th>Contractor Name</th>
<th>China Henan International Cooperation Co. Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract Price (Original)</td>
<td>ZMK 51,559,999,990.00, awarded 3rd September 2007</td>
</tr>
<tr>
<td>Contract Price (revised 1)</td>
<td>ZMK 43,963,995,120.00</td>
</tr>
<tr>
<td>Contractor Price (Revised 2)</td>
<td>ZMK 46,000,000,000.00</td>
</tr>
<tr>
<td>Contract Scope of Works</td>
<td>Rehabilitation and Maintenance of Mongu – Senanga road (M10). The project starts from the junction of M9 (Lusaka Mongu) and M10 (Mongu Senanga) km 0+000, to Senanga Prison km 103+000. The Project involves the following: Pothole patching and edge repair, Resurfacing approximately 67.1 kilometers with double surface dressing, Overlaying approximately 7 km with 40mm wearing course in the urban sections of Mongu and Senanga, Resurfacing approximately 35.9 kilometers with single seal surface dressing, Reconstruction of approximately 13.9 kilometers, Maintenance of side drains, Approximately 103 kilometers of Shoulder reconstruction, Culvert works, Reinstatement of road signs and road line marking.</td>
</tr>
</tbody>
</table>

<p>| Contract Programme | 9th November 2007 to 9th May 2009 |</p>
<table>
<thead>
<tr>
<th>Execution of the Contract for Project Supervision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant Changes to Contract Price, Programme, Scope with Reasons</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Execution of the Main Contract for Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual changes to the Contract which affect the price and reason for those changes</td>
</tr>
<tr>
<td>Individual changes to the contract which affect the programme and reasons for those changes</td>
</tr>
<tr>
<td>Details of any re-award of main contract</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Post Contract Completion Details of the Main Contract of Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual Contract Price</td>
</tr>
<tr>
<td>Total Payments made</td>
</tr>
<tr>
<td>Actual contract scope of work</td>
</tr>
<tr>
<td>Actual contract programme</td>
</tr>
<tr>
<td>Project Evaluation and Audit Reports</td>
</tr>
</tbody>
</table>
## APPENDIX II  SCHEDULE OF CONTRACT DOCUMENTS DISCLOSED

<table>
<thead>
<tr>
<th>Item No.</th>
<th>DESCRIPTION</th>
<th>DATE DISCLOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Completion Report for the Mongu-Senanga Road prepared by Ng’andu UWP Consulting-Zambia, February 2010</td>
<td>24&lt;sup&gt;th&lt;/sup&gt; August 2010</td>
</tr>
<tr>
<td>2</td>
<td>Contract Document</td>
<td>July 2010</td>
</tr>
<tr>
<td>3</td>
<td>Tender Document</td>
<td>July 2010</td>
</tr>
</tbody>
</table>
## APPENDIX III  SCHEDULE OF CONTRACT CHANGES-WORKS

<table>
<thead>
<tr>
<th>Variation Order No.</th>
<th>CAUSE/DESCRIPTION</th>
<th>DATE DISCLOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Changes in the Design</td>
<td>July 2010</td>
</tr>
<tr>
<td>2</td>
<td>Overhaul of Gravel</td>
<td>July 2010</td>
</tr>
</tbody>
</table>
APPENDIX IV    PHOTO GALLERY

No Site Visit was conducted