TERMS OF REFERENCE

FOR

CONSULTANCY SERVICES FOR DETAILED ENGINEERING DESIGN, ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT, AND PREPARATION OF TENDER DOCUMENTS FOR UPGRADING OF MATAI – KASESYA ROAD (50km) TO BITUMEN STANDARD

1. INTRODUCTION

1.1. The Government of the United Republic of Tanzania through the Tanzania National Roads Agency (TANROADS) has allocated funds for development programme of its road network and intends to use part of the proceeds of the funds for carrying out Detailed Engineering Design, Environmental and Social Impact Assessment [ESIA] and preparation of tender documents for upgrading of the Matai - Kasesya Road which is approximately 50km to bitumen standard. The road improvement is part of the Government strategy to develop its road network to support the socio-economic development of the Country.

1.2. In order to carry out this project a qualified firm of consulting engineers (the Consultant) is required to undertake Detailed Engineering Design, Environmental and Social Impact Assessment [ESIA] and preparation of tender documents pursuant to these Terms of Reference [TOR]. The prospective firms shall submit their proposals within the period defined in the Letter of Invitation. The successful tenderer shall enter into an Agreement for the Assignment with Tanzania National Roads Agency [TANROADS].

1.3. The Matai - Kasesya Road is located in the southwestern part of Tanzania and traverses within Rukwa region in which it forms part of the trunk roads network. The road commences at Matai and runs towards south for about 50 kilometres to the end of the project at the Zambia/Tanzania boarder. The implementation of the project is intended to facilitate the economic growth as it will reduce transport costs, travel time as well as harness agricultural and livestock potentials in the project area. The improvement of the road is likely to stimulate the transportation of the products from these areas and neighbouring country (Zambia) to markets in areas of consumption.

1.4. The present Matai – Kasesya road is gravel surfaced road. The current condition of the road is generally fair and allows passability throughout the year. The maintenance operations carried out on this road at the moment are Routine and Recurrent, Spot and Periodic Maintenance involving spot gravelling, grading, vegetation control and desilting of drainage structures on the existing road alignment.

2. OBJECTIVES OF THE ASSIGNMENT

The main objective of the consultancy services is to undertake detailed engineering design, environmental impact assessment, social impact assessment and preparation of tender documents for upgrading of Matai - Kasesya Road to bitumen standard. The assignment includes detailed engineering design of all bridges along the road.

3. SCOPE OF THE CONSULTANCY SERVICES

3.1. The Consultant shall perform all technical, environmental and social impact assessment of the road and preparation of tender documents. The consultant shall review all available and relevant documents, maps, previous studies if any and perform all engineering work, economic studies, field investigations and the related works herein described as well as any other related work required to attain the objectives.

The scope of services is further detailed as follows:

Route selection

3.2. The existing road alignment shall basically be adopted for this design. Minor re-alignment can be proposed where it is justifiable. The Consultant will look the possibilities of improving to bitumen standard access roads to all townships bypassed.

Topographic Surveys

3.3. It is emphasized that in order to complete the assignment within the specified duration, the Consultant shall deploy adequate support staff for carrying out the topographical survey. In this connection, the Consultant's attention is drawn to Item 13.2 of these Terms of Reference.

3.4. All topographic surveys undertaken by the Consultant shall be according to the Land Surveying and Mapping Standards of Tanzania, and shall be recorded in standard survey field books/electronic data book, which shall be submitted and become the property of the Client at the completion of the assignment.

3.5. The topographic surveys shall be carried out for the whole project road and shall include:

- Establishing the primary network of permanent control points at a maximum interval of 3000m along the road thereafter to be distributed to a maximum of 300m as secondary points, which should be inter-visible.
- Survey of the existing road, junctions, kerbs, drains, culverts, road furniture, utilities, buildings etc within the road reserve for preparation of mapping to a scale of 1:2000 and completion of the detailed engineering design as necessary,
- Detailed surveys at all proposed locations for new drainage structures including at least a length of 50m downstream and upstream of the structures,
- Levelling along centreline at 25m intervals for the longitudinal profile, and
- Cross-section levelling for this design at 25m intervals and at any local irregularity.
- Cross sections are to cover at least 30m each side of the future centreline.

3.6. The Consultant shall liaise with the Ministry responsible for lands for identification of the existing National Grid/Datum reference beacons and benchmarks in order to establish the permanent control points. The co-ordinates of all intersection points shall be in Universal Transverse Mercator (UTM) system and shall be tied to the National Survey Grid, and levels related to the National Benchmarks. The following activities shall be carried out:

- Monumentations of all control points using 12mm steel pins embedded in concrete cast in-situ. The description cards for the primary control points shall be prepared and submitted to the Client and detailed in the report to be submitted to the Client for future reference.

- Computation and definition of the geometric characteristics of the centreline of the road.
- Preparation of the setting out data.
- Computation and definition of the Vertical and Horizontal alignment

3.7. The topographic data shall be available and presented on maps with a scale of 1:2000 for the following:

(a) Existing road, other roads, footpaths, rivers, creeks, watercourses, drains;
(b) Buildings:- houses of stone, mud, public buildings; including planned relocation
(c) Land use: sports fields, cemeteries, cultivation, forests, etc.;
(d) Trees with diameter exceeding 0.5m and height exceeding 1.50m.
(e) Main fences/bench marks and grid lines; and
(f) Existing national trigonometric points, and national bench marks, Consultant's primary and secondary trigonometric points and benchmarks with co-ordinates and elevations.

3.8. In addition, electronic copies of the topographic data saved in M/S Excel and topographic drawings in DXF or DWG format shall be submitted in CD ROMs for future reference and actions.

Soils and Materials Investigations

3.9. The Consultant shall perform all necessary tests as stipulated in the PMDM to verify the type and strength of the subgrade soils along the road line. In particular, trial pits for taking subgrade tests will be excavated at average of 250m throughout the study road. This will be supplemented by DCP sounding to establish the insitu strength profile down to a depth of 800 mm. Special attentions shall be given to identification of sections with problem soils.

3.10. Geotechnical investigations shall be undertaken at sites for new bridges and major culverts and where major embankments shall be constructed, including sampling, field and laboratory testing to achieve necessary data for foundation design, stability analysis, assessment of settlements of embankments etc.

3.11. The geotechnical investigations shall include, as necessary, pitting, hand auguring and/or drilling down to foundation level including logging, SPT and taking of disturbed and undisturbed samples at proposed foundation levels of structures. Seismic investigation shall also be carried out if considered necessary by the Consultants. Allowable bearing pressures of subsurface stratum shall also be determined.

3.12. The Consultant shall review all existing relevant data and perform investigations to verify suitability and sufficiency of materials for construction of wearing course, base course, sub-base, improved sub grade and fill within economic haulage distance.

3.13. To verify quantity and quality of materials from existing borrow pits and to identify potential supplementary suitable sources as necessary, the Consultant shall undertake proof drilling and pitting.

3.14. Potential gravel sources shall be tested for:

- Grading (particle size distribution),
- Atterberg Limits,
- Moisture/density relationship,
- California Bearing Ratio (CBR)
- Any other necessary tests as per PMDM.

3.15. Potential sources of hard stone shall be tested for:

- Los Angeles Abrasion,
- Aggregate Crushing Value (ACV)
- Ten Percent Fine Value (TFV),
- Sodium Sulphate Soundness,
- Bitumen Affinity,
- Specific Gravity and Water Absorption,
- Soluble salts Content,
- AIV (Aggregate Impact Value)
- Any other necessary tests as per PMDM.

3.16. The Consultant shall identify existing water sources for supplying water for construction works, and assess its quantities and quality. It should be noted that water to be used for the implementation of the project shall not be on the expense of local community. Where construction water is not available from existing sources, the Consultant shall explore alternative sources such as bore holes or shallow ponds and identify associated costs.

Drainage Structures

3.17. The Consultant shall check the structural condition of the existing drainage structures including the inlet and outlet of the structures, and carry out the designs as appropriate. The Consultant shall also carry out hydrological analysis for all new drainage structures and existing ones which are hydraulically and structurally unsound and in need of replacement.

3.18. The catchment areas, rainfall, run-off duration/intensity relationships, catchments run-off characteristics and channel slopes/discharge characteristics for each catchment shall be determined on the basis of available topographic maps and field investigations as necessary. The appropriate return flood period and corresponding water levels will be established and the adequacy of existing waterways should be checked. The 100 year return period shall be used for bridges 50 years for box culverts and 25 years for pipe culverts. An appropriate flood design model like the East African flood design model should be used depending on the areas of the catchment and limitations for each model.

DESIGN STANDARDS

3.19. The following approved standards by the Ministry of Works shall be adopted and adhered to:-

- Geometric design:- - Road Geometric Design Manual (MOW), 2011;
  - Code of Practice for Geometric Design (Draft) published by SATTC -TU, 1998

- Pavement and Materials: - Pavement and Materials Design Manual, [MoW],1999
- Specifications: - Standard Specifications for Road Works, [MoW], 2000.
- Testing Procedure: - Central Materials Laboratory Testing Manual, 2000
- Structures: - British Standards BS 5400
- Hydrology and hydraulics - TRRL East African Flood Model and other appropriate models depending on the catchment areas.
- Surveying - Land Surveying and Mapping Standards of Tanzania [Land Surveying Regulations CAP 390].

3.20. The Consultant shall be responsible for the design details within this framework. The methodologies used in the design of pavement, earthworks, drainage structures, shall conform to latest techniques while ensuring the use of locally available materials. At all times a balance must be maintained between capital and maintenance costs.

CLIMATE

3.21. The Consultant shall describe the climatic conditions of the study area by providing details of:

a) Rainfall (monthly distribution and intensity, including rain days per month);
b) Temperature (minimum, median and monthly ranges throughout the year); and
c) any other climatic features of importance

DETAILED ENGINEERING DESIGN REQUIREMENTS

Horizontal and vertical alignment

3.22. The horizontal and vertical alignments for project road shall be determined by points at minimum intervals of 25m along the centreline; tangent points and such other critical points as may be required.

3.23. All primary and secondary points shall be in UTM system and shall be coordinated to the National Grid System. Wherever possible, the primary and secondary points shall be tied to at least three permanent features using distances or a combination of distances and angles. The Consultant shall submit a summary of description cards for the primary and secondary control points, consisting of photographs, their respective co-ordinates, and sketches of the control points indicating their location in relation to the closest permanent features.

3.24. The vertical alignment shall be designed to take into account the hydraulic and soil conditions and the needs to raise the embankment to avoid flooding.

Earthworks and Pavement Design

3.25. The pavement shall be designed to carry traffic over a 20-year design period of the proposed project road and in accordance with the Pavement and Materials Design Manual, 1999.

3.26. Other parameters to be considered during pavement design shall include: results of the pavement evaluation, soils and materials tests and other engineering treatments dictated by available natural materials. Access roads joining the project road shall be paved up to the end of the road reserve, i.e. *30 m* from the centreline.

Design of Drainage Structures

3.27. All existing data and the results of the field investigations for soils, foundations, hydrology, etc shall be assessed and used as a basis for the design of drainage structures. Detailed hydraulic computation and structural designs shall be carried out and fully documented in the reports. All drainage structures shall be designed according to BS 5400 using HA Loading and 37.5 units of HB Loading.

3.28. All pipe culverts should preferably be of reinforced concrete. The minimum size of cross pipe culverts shall be 900 mm diameter, while those for access roads shall be a minimum of 600 mm diameter.

Geometric Design

3.29. Based on the topographic surveying and the designed pavements, the Consultant shall design the horizontal and vertical alignments as necessary to comply with the approved design standards appropriate to the traffic and engineering characteristics of the road. The Consultant shall use the designed alignments to perform volume computations for earthworks and pavement layers.

3.30. The Consultant shall identify all possible accident black spots and include in the design, measures to improve them. Improved layout and visibility at junctions, proper separation of pedestrians and cyclists from the vehicular traffic and the provision of pedestrian crossings, bus bays and parking areas shall be included in the design. Other measures to be considered include provision of wide shoulders in towns/villages and climbing lanes on steep grades.

3.31. The Consultant shall identify the appropriate places to install fixed weighbridge in order to control vehicle overloading. Also, the Consultant shall look for the possible places for Heavy Trucks/Buses parking along the route.

Design Traffic

3.32. The Consultant shall carry out traffic counts and origin-destination surveys, in order to determine the nature of traffic, the present and future volume of freight, passenger and vehicles movements and prepare O-D matrices of passengers and commodities flow, which will utilize the road under study. The classified traffic counts shall be carried out for a period of seven days whereby 4 days will be undertaken for 12 hours and 3 days for 24 hours in order to determine Average Daily Traffic (ADT) of the present traffic on the project.

3.33. The Consultant shall determine appropriate growth rates per category of vehicles (i.e. light, medium and heavy) using appropriate methods acceptable by the client and provide for each identified category future traffic forecast for the next 10 to 20 years after completion.

3.34. The Consultant shall carry out axle load survey to capture information on directional traffic loading in order to determine the Vehicle Equivalent Factors (VEF) for various categories of vehicles for the estimation of E80s for traffic loading on the project road. The axle load survey shall be carried out for a period of seven consecutive days for 24 hours.

3.35. A detailed traffic engineering design shall be carried out to specify the necessary traffic control features. This design shall include detailed traffic analysis including where appropriate, design traffic forecasts for major intersections. Based on the traffic analysis, the

Consultant shall conduct intersection capacity and related traffic studies to determine the location of signs, signals as necessary, pavement markings, and facilities for pedestrians and non-motorized traffic around populated areas and other control features.

3.36. A detailed scheme for the management of the traffic flow shall be developed to ensure that vehicle and pedestrian movement is properly handled during the construction period. This plan shall include details of the location and design of by-pass lanes; temporary structures, barriers, signs, signals and other physical features necessary to accommodate traffic flow during construction. In addition to the design plan, the Consultant shall prepare a traffic operations plan detailing the construction sequencing, public information announcements, use of traffic control devices and other activities designed to minimize traffic disruption.

Engineering Drawings

3.37. The Consultant shall prepare the following engineering drawings for the project using format and title sheets as required by TANROADS, with the originals becoming the property of the Client.

(i) Topographic Plans, scale 1:2000

(ii) Plans and Profile, scale 1:2000/1:200

The drawings shall show natural ground levels, horizontal and vertical curve details, running chainage, cross-section chainages, side drains location, description and references to all drainage works, location of bench marks, location of road furniture, any other relevant information in the format approved by TANROADS.

(iii) Typical Cross-Sections, scale 1:50

Showing all details of road cross section in cuts and fills, side drains, Pavement thickness, camber and super-elevation and pavement widening. Also showing natural ground level and super - imposed road prism and structural drawings details as required.

(iv) Typical Cross sections of Junction layouts, scale 1:50

Showing all details of junction layouts along the road. The drawings shall include detailed junction layouts where appropriate. Based on the nature of the road and traffic analysis, the Consultant shall determine the appropriate location of junctions including the signs, signals, pavement markings and other traffic control features.

(v) Cross Sections, scale 1:200

Showing natural ground level and superimposed road prism at 25m intervals.

(vi) Bridges, scale 1:100 and 1:50/20 for more detailed elements

Showing all the details for construction of a bridge superstructure and sub structure as well as any protection works

(vii) Culvert details, scale 1:25

Showing details of all types of culverts, their inlets and outlets and any necessary protection works.

(viii) Soil plans

Showing the location of borrow and quarry sites and characteristics of soil for various sections of the route using the appropriate scale.

(ix) Traffic Management Plans

Showing details of the location of by-pass lanes, temporary structures, barriers, signs, signals and other physical features necessary to accommodate traffic flow during construction.

(xi) Auxiliary Works

Showing all auxiliary works using the appropriate scales

Environmental and Social Impact Assessment

3.38. The consultant shall conduct detailed Environmental and Social Impact Assessments (ESIA) by taking into account the preliminary Environmental and Social Impact Assessment conducted at the feasibility study. The assessment shall be conducted in accordance with the requirement in the Environmental Impact Assessment and Audit regulations (2005). The Detailed Scope for conducting Environmental and Social Impact Assessment is attached herewith as Annex I of these Terms of Reference.

3.39. The Consultant shall undertake detailed survey of the properties to be affected by the project and indicate the names and addresses of the properties owners and undertake valuation of those properties for development of the Resettlement Action Plan (RAP) for effecting compensations.

3.40. The Consultant shall assess the likely impact of HIV/AIDS on the project road and propose measures to mitigate the same in accordance with National HIV/AIDS policy and strategies. The Consultant shall also prepare an awareness programs which aim at educating the communities on the control of HIV/AIDS.

3.41. The consultant shall identify the potential locations along the road reserve and propose facilitation of trade as a measure to prevent roads reserves encroachment by street venders.

CONSTRUCTION QUANTITIES

3.42. The calculated quantities for the items of construction shall be based on the final design drawings. The earthwork quantities shall be derived from calculations based on the field cross sections along the road centreline and in accordance with acceptable methods of measurements that shall be agreed with the Client. A detailed bill of quantities shall be prepared under the following sections: general; drainage; earthworks and pavement layers of gravel or crushed stone; bituminous layers and seals; ancillary roadworks; structures; dayworks etc.

COST ESTIMATES

3.43. The Consultant shall estimate likely ruling bill rates applicable to the proposed time of construction, showing how these are derived. In order to make a fair and reasonable estimate of the cost of project, the Consultant shall prepare a unit price analysis of each item using basic cost elements (labour, materials, equipment, tools, overheads, on - site costs, profit, etc.), and showing separately the cost of all taxes (direct or indirect, duties, levies and fees). The estimated financial cost resulting from this analysis shall be accurate to within ±10%. The cost estimates shall also include the costs for implementation of EMP, RAP, and HIV/AIDS alleviation programme.

CONSTRUCTION SCHEDULE

3.44. In order to assist in evaluating the required construction period and forward budget needs, the Consultant shall carry out a network analysis of the project using suitable deterministic or probabilistic theory or a combination of both showing, inter alia: -

(i) Major activities and their duration
(ii) A "network" showing the proposed ordering or sequencing of the major activities.
(iii) Duration of the entire project in the form of a bar chart
(iv) Monthly cost of each activity
(v) Anticipated monthly expenditure presented in form of an S-curve.

3.45. In carrying out the analysis of the construction schedule, due account shall be taken of the climatic conditions of the areas concerned.

PREPARATION OF TENDER DOCUMENTS

3.1 The Tender Documents shall be prepared in accordance with the latest version of the PPRA Standard Bidding Documents for the Procurement of Works. The Tender Documents shall be designed as follows:

a) Volume I

Section I - Invitation for Bids
Section II - Instructions to Bidders
Section III - Bid Data Sheet
Section IV - General Conditions of Contract
Section V - Special Conditions of Contract
Section VI - Technical Specifications (Standard and Special)
Section VII - Drawings (Bound Separately as Volume II)
Section VIII - Bill of Quantities
Section IX - Bid Form

- Form of Bid and Appendix to Bid
- Form of Qualification information
- Letter of acceptance
- Form of Contract Agreement

Section X - Form Security

- Bid Security form or Bid
- Securing Declaration form
- Performance Security Form
- Bank Guarantee for Advance Payment Form

Section XI - Integrity

- Undertaking by Bidder on Anti-Bribery Policy

N.B: This document shall be clearly marked on the cover as “TENDER DOCUMENT”

b) VOLUME II - Drawings (photo-reduced to "A3" size)

c) VOLUME III (A) - Materials Report

d) VOLUME III (B) - Hydrological/Hydraulic Report

e) VOLUME III (C) - Survey Report

3.2 The volumes III (A) & III (B) shall be factual reports clearly marked on the cover " FOR INFORMATION ONLY AND NOT PART OF TENDER DOCUMENTS" with preamble in the text stating that these reports are only representing the investigations and findings (without analysis or interpretation of results/findings) of the Employer’s Consultant and that it shall be the Tenderer's responsibility for any source and quality of materials, etc. without binding the Employer.

4. REPORTS

4.1. The Consultant shall prepare, and submit all reports in English and presented on A4 sized paper. All reports shall be submitted initially as draft versions in hard and soft copy, which shall be finalized to accommodate Clients’ comments. Survey data for both draft and final reports shall be submitted in a format compatible to current operating window system.

4.2. The Consultant shall arrange to present the Reports to the panel of TANROADS experts. The presentations shall be made at least 5 days after submission of the draft final report in hard and soft copy of the reports. The presentations shall preferably be in PowerPoint.

4.3. **THE CONSULTANT’S FAILURE TO SUBMIT REPORTS WHETHER AT INTERMEDIATE STAGES OR OVERALL ON SPECIFIED TIME PERIODS MAY RESULT TO IMPOSITION OF LIQUIDATED DAMAGES EQUAL TO 1/1000TH (ONE THOUSANDTH) OF THE VALUE OF THE INVOICE RELATING TO A PARTICULAR STAGE OR OVERALL AND PAYABLE FOR EACH CALENDAR DAY, WITH A MAXIMUM LIMIT OF 15% (FIFTEEN PERCENT) OF THE VALUE OF THE CONTRACT**.

Inception report: (5 copies)

4.4. This report shall briefly describe the mobilization and establishment status of the Consultant, the specific staffing plan, the updated work plan the Consultant proposes to follow in carrying out the assignment, based on the Consultants initial findings, details of any constraints or inputs required from the employer and such remarks as are deemed appropriate including the works done so far. This report shall be submitted not later than 30 calendar days from the date of commencement of the services.

Draft Final Design Report and Draft Tender Documents, Detailed ESIA & RAP, Valuation of Properties and Cost Estimate

4.5. The Draft Final Design Report shall summarize the findings, analysis, results and recommendations of the detailed engineering design, and shall consist of road plans and profile drawings, typical cross-sections drawings, drainage plans, design of drainage and other structures, traffic data, topographic data, setting out data, bills of quantities, bidding documents, estimate of construction costs (and its price analysis including all supporting material). The draft final design report shall comprise all the assumptions and criteria used in the analysis and design of the work together with all details and standards used. All design calculations for pavements and structures shall be enclosed in form of annexes. The draft final design report shall be submitted together with the following reports:

i) Materials Report (10 copies)

The report shall summarize all geotechnical findings and adoption of those findings to design quantities, and qualities of materials to be available with the corresponding excavation depth, test results and any other related information in respect of materials quarries.

ii) Hydrological - Hydraulic Report (10 copies)

The report shall summarize hydrological and hydraulic analysis/calculations together with the assumptions and criteria used for the design of drainage structures, waterway openings, major watercourses, etc.

iii) Engineering Drawings (10 copies)

One (1) bound set of engineering drawings in A1 size and three (3) sets photo reduced to A3 size. The drawings shall include cross sections drawn at 25m intervals, layout plans showing contours and other details, Typical Sections, Typical Drawings Details and Specific Details of all structures, together with a Culvert Schedule, Bridge Schedule and a Schedule of Drawings. All drawings should clearly show: - Designed by, approved by, with the name and signature of the responsible engineer and the date clearly displayed.

iv) Survey Report (10 copies)

The Survey report shall be submitted together with other reports.

v) Confidential cost estimate (10 copies)

The confidential cost estimate for works and services shall be in the form of completed Bills of quantities. The estimate shall be submitted together with other reports.

vi) Environmental and Social Impact Assessment Reports (20 copies)

Detailed Environmental and Social Impact Assessment including Environmental Management Plan and Resettlement Action Plan and Valuation report.

In addition, the consultant shall also submit a soft copy of the draft reports in editable and PDF format for review.

Note:

* ***The report shall cover all reports and the report shall still be regarded as a draft until the environmental authority has approved the report.***

Final Design Report, Tender Documents, Detailed ESIA & RAP, Valuation of Properties and Cost Estimate (25 copies)

4.6. The reports shall be submitted not later than 30 calendar days from the date of approval by Client of Draft Final Design Report and Draft Final Tender/Contract Documents. This report shall incorporate all revisions deemed necessary arising from comments received from the Client. The Consultant shall submit electronic copies of all the reports, including the Tender Documents in Microsoft Office format.

Record of Documents

4.7. After delivery of all final documentation, the originals of the documents are to be deposited with TANROADS head quarters in Compact Disc compatible with software used and agreed by the Client, such as Microsoft word for word processing, Microsoft Excel for spreadsheet, Microsoft project for project management, AutoCAD etc.

5. PROFESSIONAL STAFF

5.1. The professional staff to be provided by the Consultant is estimated at **25 staff-months** covered by the services of : Team Leader/ Senior Highway Engineer; Highway Engineer, Soils/Materials Engineer, Bridge/Structural Engineer, Topographical Surveyor, Hydrologist, Sociologist and Environmentalist. The services are estimated to be completed within **seven (7) months** from Effective date. Duties/responsibilities of the key staff are as indicated below:

i) Team Leader /Senior Highway Engineer

The Team Leader shall be responsible for the proper conduct of the entire study and shall be the principal contact person between the Design team and the Client.

The Team Leader/ Senior Highway Engineer must be a Registered Civil Engineer with a degree in Civil Engineering or an equivalent qualification. Postgraduate qualifications in Highway Engineering are an added advantage.

Preferably, He/She must demonstrate the following qualification: possess ten (10) years of cumulative experience related to road studies and designs of road; served in similar capacity in three (3) assignments of similar nature in the past 10 years and has working experience of 3 years in Sub-Saharan Africa. Additional years/assignments will be an added advantage. Fluency in written and spoken English is mandatory.

ii) Highway Engineer

The Highway Engineer shall be responsible for the design of the geometrical aspects of the road and shall assist the Senior Highway Engineer in the design of road pavement.

He/She must be a registered professional Civil Engineer with a degree in Civil Engineering or an equivalent qualification. Postgraduate qualifications in Highway Engineering are added advantage.

Preferably, He/She must demonstrate the following qualification: possess eight (8) years of cumulative experience related to studies, designs and/or construction of road and bridges; served in similar capacity in two (2) assignments of similar nature in the past 10 years and has working experience of 3 years in Sub-Saharan Africa. Additional years/assignments will be an added advantage. Fluency in written and spoken English is mandatory.

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iii) Soils/Material Engineer

The Soils/Materials Engineer shall be responsible for conducting and supervising the materials investigation with a view to achieving optimal design and construction strategy. The Soils/Materials Engineer shall carry out the pavement design and should be conversant with current practice in testing and pavement construction techniques.

He/She must be a registered civil engineer with a degree in Civil Engineering or equivalent qualification. A postgraduate qualification in geotechnical or pavement engineering is an added advantage.

Preferably, He/She must demonstrate the following qualification: possess eight (8) years of cumulative experience related to materials testing, soils investigation and pavement design and construction of roads and bridges; served in similar capacity in two (2) assignments of similar nature in the past 10 years and has working experience of 3 years in Sub-Saharan Africa. Additional years/assignments will be an added advantage. Fluency in written and spoken English is mandatory.

iv) Bridge/ Structural Engineer

The Bridge/Structural Engineer shall be responsible for the assessment of existing bridges and design of new bridges and other structures along the project road.

He/She must be a chartered or registered Civil Engineer with a degree in Civil Engineering or an equivalent qualification. Postgraduate qualification in Bridge/Structural Engineering is an added advantage.

Preferably, He/She must demonstrate the following qualification: possess eight (8) years of cumulative experience in studies and detailed design of bridges/structures; served in similar capacity in two (2) assignments of similar nature in the past 10 years and has working experience of 3 years in Sub-Saharan Africa. Additional years/assignments will be an added advantage. Fluency in written and spoken English is mandatory.

v) Topographical Surveyor

The Topographical Surveyor shall be responsible for conducting and supervising the survey team. He/she will be responsible for planning of the fieldwork, select known survey reference points, and determine the precise location of important features in the survey area. He/she shall be responsible for searching legal records, look for evidence of previous references survey points (geodetic reference points and national benchmarks) and analyze the data to determine the location of boundary lines and record the results of the survey, verify the accuracy of data, and prepare plans, maps, and reports.

The Topographical Surveyor shall be a holder of a diploma in land surveying or equivalent. Post graduate qualifications in surveying is an added advantage Preferably,

He/She must demonstrate the following qualification: possess six (6) years of cumulative experience related to Surveying for design and/or construction of roads and bridges; served in similar capacity in two (2) assignments of similar nature in the past 10 years and has working experience of 3 years in Sub-Saharan Africa. Additional years/assignments will be an added advantage. Fluency in written and spoken English is mandatory.

vi) Hydrologist

The Hydrologist shall be responsible for estimating and assessing the relationship between rainfall, run off and soils and rock features of the catchments along the project area with focus on surface water, including rivers, and dams. He /she shall study and update the available hydrological data by computer models or any other means in order to maintain and develop successful flood water management strategies. He /she shall provide advice and information to Bridge/ Structural Engineer on hydraulic characteristics of the catchments along the project area.

The Hydrologist shall be a holder of a degree in Applied Science or a degree in Civil Engineering or an equivalent qualification. Post-graduate qualification in Hydrology/Hydraulics Engineering is an added advantage. Preferably, He/She must demonstrate the following qualification: possess six (6) years of cumulative experience related to water/flood management schemes and/or design of roads and bridges; served in similar capacity in two (2) assignments of similar nature in the past 10 years and has working experience of 3 years in Sub-Saharan Africa. The ability to use appropriate flood design models is essential. Additional years/assignments will be an added advantage. Fluency in written and spoken English is mandatory.

vii) Environmentalist

The Environmentalist shall be responsible for carrying out an environmental impact assessment of the project and prepare Environmental Management Plan in order to minimize any negative impacts that the road upgrading will have on the environment.

The Environmentalist shall have a degree in environment management or related discipline. Preferably, He/She must demonstrate the following qualification: done an EIA of at least two (2) projects of a similar nature within the past ten (10) years and has working experience of 3 years in Sub-Saharan Africa. Additional years/assignments will be an added advantage. Fluency in written and spoken English and Swahili is mandatory.

viii) Sociologist

The Sociologist shall be responsible for conducting the social impact assessment in the corridor of impact and prepare mitigating plans and Resettlement Action Plan (RAP) in order to minimize any negative impacts that the road construction will have on the people along project area. Furthermore the sociologist will be responsible for proposing measures to prevent vendors from the common practice of encroaching the roads reserves

The Sociologist shall be a holder of a degree in social science or related disciplines. A postgraduate qualification in Social science is an added advantage. Preferably, He/She must demonstrate the following qualification: done a SIA on at least two (2) road development projects within the last 10 years and has working experience of 3 years in Sub-Saharan Africa. Additional years/assignments will be an added advantage. Fluency in written and spoken English and Swahili is mandatory.

Support Staff

5.2. In addition to the Key staff designated item 13.1 above, the Consultant shall determine the **Support staff** deemed necessary to assist for the successful completion of the assignment.

The support staff will not be considered in the evaluation of the proposals but the qualifications prescribed for their posts will be criteria for accepting them to be deployed for the assignment.

The Consultant must include the cost of the said support staff in the financial proposals.

6. TIMING

6.1. The following time frame/schedule in **seven (7) months** shall be adhered to or bettered in carrying out the detailed Engineering Design and Preparation of Documents. As such the various deliverables shall be submitted not later than the dates shown below: -

• Signing/Effective Date of Contract	**M**
• Commencement of services	**M + 1**
• Inception Report	**M + 2**
• Draft Final Engineering Design Report including Tender Documents, Detailed ESIA and Cost estimates	**M +5**
• Comments by Client	**M +6**
• Final Engineering Design Report and Tender/Contract Documents and Detailed ESIA and Cost estimates	**M +7**

7. SPECIFIC RESPONSIBILITIES OF THE CONSULTANT

7.1. All information, data and reports obtained from TANROADS in the execution of Consultancy services shall be properly reviewed and analysed by the Consultant. The Consultant shall be responsible for the correctness of using such data. All such information, data and reports shall be treated as confidential.

7.2. The Consultant shall be responsible for arranging for all necessary office and living accommodation, transport, equipment, supplies, secretarial services, and such other services, necessary for the proper implementation of the services.

7.3. The Consultant shall be responsible for making sure that all key staff proposed in the Technical proposal and approved by TANROADS are available at all time of the assignment as per the schedule provided in the contract. TANROADS will keep on investigating their presence and take contractual measures to the consultant including deduction of the relevant fees in case of absence.

7.4. The Consultant shall be responsible for making sure that the assignment is done according to the requirements of the Terms of Reference and the standards. Any cost that will be incurred by the employer for review of any resubmitted report due to substandard work will be borne by the Consultant and will be deducted directly from any monies payable to the Consultant.

Counterpart Staff Involvement

7.5. TANROADS may assign up to 2 counterpart staff relevant to the assignment during execution of the services to work with the Consultant in all aspects of the study as a way of knowledge transfer. The counterparts shall be involved in the field as well as the Consultant's home office. The Consultant shall allow under the reimbursable expenses provisional sums of **TShs 25,000,000.00**, necessary cost related to the assignment during field and office work, including providing the counterparts with any appropriate per diem, accommodation, transport and training.

Project supervision

7.6. TANROADS will assign its staff for supervision of the assignment during execution of the services. The consultant shall inform the supervisor on specific schedule of undertaking activities for close follow-up.

8. PAYMENTS TO THE CONSULTANT

8.1. The consultant shall build up the costs for carrying out the assignment using the forms provided in the Request for Proposal (RFP).

8.2. The Consultant shall allow under the reimbursable expenses the following provisional sums necessary to cover the cost related with the project supervision.

- Provision sum amounting Tshs 1,050,000.00 for the airtime for the project supervisor, calculated at a rate of Tshs 5,000 per day over the contract period.

Note: Payment of all Provision sums shall be supported with relevant confirmation attachments.

9. OBLIGATIONS OF THE CLIENT

9.1. The Client shall provide the Consultant with copies of the data and reports as available and considered relevant to the execution of the Consultant’s services.

9.2. The Client shall facilitate liaison with other institutions in order to introduce the Consultant to them. The Consultant shall be fully responsible for collection of data and information from the agencies, and shall be responsible for any costs thereof.

10. ASSISTANCE TO THE CONSULTANT

10.1. The Employer will assist the Consultant to:

(ii) Obtain formal consent from outside authorities or persons having rights or powers in connection with the works or the site thereof;
(iii) Obtain ministerial orders, sanctions, licenses and permits in connection with the works;
(iv) Register a non-Tanzanian firm and senior staff with the Engineers Registration Board. Any associated cost will be borne by the Consultant.

ANNEX 1: DETAILED TERMS OF REFERENCE FOR UNDERTAKING ENVIRONMENTAL AND SOCIAL IMPACT ASSEESSMENT (ESIA)

1.0 INTRODUCTION

The detailed scope for undertaking Environmental and Social Impact Assessment is intended to guide the Consultant to address relevant environmental and social issues during the assessment process. Among others, the ESIA shall be conducted in accordance with the requirements of the National Environmental Impact Assessment and Audit regulations (2005). The Consultant shall do everything necessary to meet the objectives of the services and not less than the following tasks that should be undertaken during the Environmental and Social Impact Assessment. In the process of consultation (Scoping process) with relevant stakeholders like environmental authorities, the Consultant may further be required to finalize the Terms of Reference for the undertaking of ESIA according the agreement with these stakeholders.

2.0 OBJECTIVE OF THE ASSIGNMENT

The main objective of the consultancy services is to undertake Environmental impact Assessment (EIA) for the upgrading of the road. The EIA will address environmental and social impacts which may arise from the upgrading the proposed road and provide mitigation plan to prevent or minimize adverse impacts.

3.0 SCOPE OF WORK

TASK 3.1: PROJECT REGISTRATION AND PREPARATION OF PROJECT BRIEF

Before undertaking the environmental and Social Impact assessment the consultant has to fill EIA Registration form and prepare project brief. The filled EIA registration form and project brief should be submitted Inception stage.

TASK 3.2: SCOPING

The Consultant shall carry out scoping exercise and prepare Scoping Report. The Scoping Report should include the following:

- Background of the project and objective of the assignment
- Project description
- An outline of how the scoping exercise was undertaken.
- Identification of issues and problems
- Synthesis of results of Scoping exercise (potential positive and negative impacts)
- Project boundaries in terms of spatial, temporal and institutional aspects
- Stakeholder's consultation. This will cover all levels of stakeholder identification, record their concerns and indicate how they were involved. This list of stakeholders consulted should be appended in the Scoping Report.
- Project alternatives,

In the undertaking of scoping exercise, the Consultant has to refine the framework TOR given by the Client to cover environmental issues, which may emerge from the consultation during the scoping exercise. The Refined TOR should be appended to the Scoping report. The Scoping Report should be submitted with the Inception Report for review and be submitted to the National Environment Management Council for further review and approval.

TASK 3.3. UNDERTAKING OF ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

Sub-Task (I): Introduction

The Consultant shall provide description or profile of the developer, background to the project proposal and its justification, need and purpose of undertaking the study, ESIA study methodologies and approaches applied and structure of the report.

Sub-Task (ii): Description of the Proposed Project

The Consultant shall describe project components and activities to be implemented in each phases of project life cycle i.e. pre construction, construction, post-construction (demobilization) and operation. This part is meant to give a general idea of what the project will entail. To avoid unnecessary details, focus on the project activities based on project phases i.e. mobilization or pre-construction phase, construction phase, operation phase and decommissioning and demobilization phase. The description shall include the following information**:**

Background information:
Background information shall include: Title of the proposed project and developer; Project justification and objectives; Funds and source of funding or financier(s); Project location including maps of appropriate scale; Project design, size, and capacity; Area of influence of the road works; Project life span and Project components; Land size required;

Project activities
Description of project activities shall be based on phases of project life cycle i.e. mobilization or pre-construction, construction, operation and maintenance, demobilization and decommissioning phases:

- Mobilization or Pre-construction activities;

Describe issued pertaining to land acquisition; construction camp and site workshop; project design; land dispossession and property evaluation; relocation and compensation arrangements

- Construction activities;

Describe all associated activities during construction work such as extraction of raw materials and water; blasting; cut and fill; land clearance; soil and gravel compaction and leveling, demolition of structures along the road reserve; liquid and solid waste generation and disposal; etc.

- Operation and maintenance activities;

Identify and describe all the associated activities to be conducted during road operation and maintenance such as road safety measures, operation and management of road facilities along the road such as public toilets, etc

- Demobilization and decommissioning activities

Identify and elaborate on the activities to be conducted during demobilization or decommissioning of the road project including movement and demolition of construction facilities, restoration of borrow pits, termination of the temporary workers' employment, waste management, etc.

Project Requirements:

Identify all types, sources and quantities of construction materials, equipments and chemicals required by the project. Source and quantities of water, energy, manpower (Staffing and support) and other facilities and services required in each phase of project life cycle;

[Note: specify any other type of information relevant to the description of the project category.]

Sub-Task (iii): Provide Baseline Condition or Description of the Environment

In order to forecast the impacts, it will be necessary to determine the initial reference or baseline state. It is therefore, required to describe the existing environment that would be directly and/or indirectly affected by the construction of the proposed rod project. The 'environment' to be affected must be based on the broad definition of the term that would include biophysical, socio-economic, cultural and historical factors. Only those environmental factors that are necessary to understand the impacts of the planned development should be considered. Assemble, evaluate, and present baseline data on the relevant environmental characteristics of the study area. Include information on any changes anticipated before the project commences.

(a) Physical environment: This shall cover geology; topography; soils; climate and meteorology; ambient air quality; surface and groundwater hydrology; existing sources of air emissions; existing water pollution discharges; and receiving water quality;

(b) Biological environment: flora; fauna; rare or endangered species; ecologically

Important or sensitive habitats, including Game and Forest reserves, significant natural sites; species of commercial importance; and species with potential to become nuisances, vectors, or dangerous (of project site and potential area of influence of the project); and

(c) Socio-cultural environment: population; land use; planned development activities;

Community structure; employment; distribution of income, goods and services; recreation; public health; Gender issues and HIV/AIDS, cultural / historic properties; tribal peoples; and customs, aspirations, and attitudes to the project.

The consultant shall indicate sources of data and methodologies used to acquire data. The relevant international and national standards of noise levels, water and air quality etc. must be applied when comparing between the existing and anticipated impact of project.

Sub-Task (iv): Describe Legal, Policies and Administration Framework

Describe the policy, legal, institutional framework as well as Regulations, strategies, standards, international conventions and treaties that are of relevance to the environmental management and the proposed undertaking in particular. They should be those, which relate to but not limited to environmental quality, heath and safety, protection of sensitive areas and protection of endangered species. The objective of this section is to show compliance of the developer with the existing policies, laws administrative/institutional conditions both at national and international levels.

The following, but not limited to, are the relevant policies and legislation to be cited in relation to the proposed project undertakings.

Policies, Regulations and Guidelines	Legislation
• Tanzania Wildlife Policy (1998); • National Environmental Policy (1997); • National Water Policy (2002); • National Forestry Policy (1998) • National Gender Policy (2002) • National Transport Policy (2003) • National Agriculture and Livestock Policy (1997) • National Land Policy (1995) • National Mineral Policy (1997) • National Energy Policy (1992) • National Human Settlement Development Policy (2000) • National Policy on HIV/AIDS (2001) • Construction Industry Policy (2003) • National Policy for National Parks (1994) **Regulations, Strategies and Guidelines:** • Environmental Impact Assessment and Audit Regulations (2005); • Mining (Environmental management and Protection) Regulation (1999) • Environmental Assessment and Management Guidelines in the Road Sector (2004); • Land Regulation (2001); and • National Strategy for Growth and Reduction of Poverty (NSGRP - MKUKUTA -2003) • Environmental Code of Practice for Road Works (2009); • Tanzania Development Vision 2025 (2000) • Road Sector Compensation and Resettlement Guidelines (2009)	• Road Act (2007); • Environmental Management Act (2004); • Railway Act No 4 (2002) • Energy and Water Utilities Authority (EWURA) Act (2001) • Water Resources Management Act No 11 of (2009), • Beekeeping Act No. 15 (2002) • Mining Act No. 14/10 (2010); • Occupational Health and Safety Act (2003) • HIV and AIDS (prevention and Control) Act No. 28/08 (2008) • Wildlife Conservation Act (2009); • Local Government Laws (Miscellaneous Amendments) Act (2006), No. 13/06; • TANAPA Act (1959); • Village and Urban Land Acts (1999); • Land Act No. 2/04 (2004), amendment of the Land Act (1999); • Forestry Act No. 14 (2002); • Antiquities Act (1964), Rules 1999 • Tourism Act (2008) • Employment and Labour Relations Act (2004) No. 6/04 • Explosives Act (2002) • Urban Planning Act (2007) • Land Use Planning Act (2007) • Worker's Compensation Act (2008) • Public Health Act No. 1/09 (2009) • Graves Removal Act (1969)

Furthermore, the consultant shall clearly describe the linkage between the functions of the relevant Institutional or administrative frameworks in Tanzania and the proposed project undertakings;

Sub-Task (V): Stakeholder Consultations and Public Involvement.

The Consultant shall identify and consult all the relevant stakeholders at national, regional and local levels. These include the Government Agencies, local NGOs, affected groups and other interested parties in order to obtain their views regarding the proposed road works. Indicate who are they, where are they, why they are important in this project, which

issues are critical to them and how they will be involved in the ESIA study. Particular attention shall be paid to the disadvantaged groups (e.g. children, the elderly and women) that may be affected by the proposed road project.

The consultant shall describe methodology applied during stakeholder consultations and public participation such as consultative meetings, household, focus groups interviews and other most appropriate methods to establish public views on the proposed project. At least one meeting with district/town/municipal council Environmental Committee shall be held to obtain their views on the project and its implication to the environment and social aspects.

Consultant shall propose public consultation programme during the EIA study and the most appropriate methods to establish public views should be used. The consultation process should be open and transparent to ensure that the views of interested and affected parties are incorporated in the project design. A summary of issues and response in table form indicting sections, which address them, should be prepared.

There should be evidence in the EIS to the effect that there were stakeholders' consultations at all levels. Photographs, minutes of the meetings, names and signatures of consulted people could be useful in this regard.
Among others the consultations should ensure the involvement of the following:

- Ministry of Works;
- Ministry of Water
- TANROADS
- Ministry of Lands and Human Settlement Development
- Local Governments in the project area;
- National Environment Management Council;
- Division of Environment -Vice President's Office; and
- Local Communities.
- TANESCO

Sub- Task (Vi): Analysis of Alternatives to the Proposed Project

The Consultant shall describe different project alternatives that were examined in the course of designing the proposed project and identify other alternatives, which would achieve the same objectives. Including the 'No action' alternative to demonstrate environmental and social conditions without the project, consideration of alternatives should extend to sitting, design, technology, construction techniques, phasing and schedule, and operating and maintenance procedures alternatives.

Compare alternatives in terms of potential environmental and social impacts; capital and operating costs; suitability under local conditions; and institutional, training, and monitoring requirements. When describing the impacts, indicate which are irreversible or unavoidable and which can be mitigated. To the extent possible, quantify the costs and benefits of each alternative, incorporating the estimated costs of any associated mitigating measures.

Various environmental and social criteria should be developed to select the best road alternatives.

Sub-Task (vii): Impact Identification and Assessment

The Consultant shall identify, analyze and assess environmental impacts of the proposed road works on natural resources, human beings and the ecosystems based on the phases of project life cycle i.e. mobilization or pre-construction phase, construction phase, operation phase and decommissioning and demobilization phase. Methods applied in impact identification and the criteria used in evaluating the levels of impacts significance of the proposed road works must be specified.

The impacts analysis should focus on both positive and negative impacts and be able to state whether the impacts are positive or negative; direct or indirect; short term or long term; reversible or irreversible. The Assessment should focus on the potential for negative environmental and social impacts caused by planned and unplanned (spontaneous) in-migration of people; clearing of forest lands for agriculture; increased pressure on fuel wood, fodder and water resources; social disruptions and conflicts; and threats to woodlands and wildlife species composition and habitats.

The assessment should also examine the potential for linear resettlement that usually involves projects producing linear patterns of land acquisition. An overview shall be provided of different groups of people and their cultural, ethnic, and socio-economic characteristics, and how they are likely to benefit and/or be negatively affected by the project. Negative impacts may include but not be limited to physical relocation, loss of land or other physical assets, or loss of access to livelihood. The consultant should identify the properties along the proposed road, which will be affected by the implementation of the road. The type and number of the properties to be affected should be indicated and be valuated for compensation. Furthermore, the names and address of the properties' owners should be indicated. The consultant shall utilize the information from the valuer to address resettlement issues and develop Resettlement Action Plan.

The ESIA study should clearly identify and analyse cumulative, residue and trans-boundary impacts. Wherever possible, describe impacts quantitatively, in terms of environmental components affected (area, number), environmental costs and benefits. Assign economic values when feasible. Characterize the extent and quality of available data, explaining significant information deficiencies and any uncertainties associated with the predicted impacts

The Consultant should take into consideration existing by-laws, national and international environmental standards, legislation, treaties, and conventions that may affect the significance of identified impacts. The Consultant shall use the most up to date data and methods of analyzing and assessing environmental and social impacts. Uncertainties concerning any impact shall be indicated.

The Consultant shall conduct a review of gender issues in the project area, the study shall include the road section influence to the lives of men, the elderly, women, children, and disabled so as to come up with a quantifiable analysis of the benefits which will accrue to them during and after the road construction**.**

Sub-Task (viii): Propose Impact Mitigation Measures

The Consultant shall suggest cost-effective measures for minimizing or eliminating adverse impacts of the proposed road works. Measures for enhancing positive or beneficial impacts should also be recommended. The costs of implementing these measures shall wherever possible be estimated and presented.

One of the mitigation measures for the resettlement impact is compensation. The consultant is therefore required to conduct properties valuation for those properties to be affected by the project implementation to effect compensation.

The Consultant shall review the ongoing measures on HIV/AIDS awareness creation within the project area and propose for the mitigation measures. The proposal shall include a plan of action, which will identify responsible key implementers, time frame and expected output.

The proposed mitigation measures and cost estimate shall be grouped in a separate Bills of Quantities (BOQ) for the project and should also include cost of supervision for the implementation of mitigation measures.

Sub-Task (ix): Resource Evaluation or Cost Benefit Analysis.

The Consultant shall undertake qualitative and quantitative analysis of costs and benefits to determine the viability of the proposed project on the environment, social and economic aspects. The Economic Internal Rate of Return (EIRR) and Net Present Value (NPV) of the project at recommended discount rate of 12% should be calculated and provide interpretation of the results.

Sub-Task (x): Environmental and Social Management Plan (EMP)

The Environmental Management Plan focuses on three generic areas: implementation of mitigation measures, institutional strengthening and training, and monitoring. The Consultant shall prepare Environmental and Social Management Plan, which will include proposed work programme, budget estimates, schedules, staffing and training requirements and other necessary support services to implement the mitigation measures. Institutional arrangements required for implementing this management plan shall be indicated. The cost of implementing the monitoring and evaluation including staffing, training and institutional arrangements must be specified. Where monitoring and evaluation will require inter-agency collaboration, this should be indicated.

Identify institutional needs to implement environmental assessment recommendations. Review the authority and capability of institutions at local, regional, and national levels and recommend how to strengthen the capacity to implement the environmental management and monitoring plans. The recommendations may cover such diverse topics as new laws and regulations, new agencies or agency functions, inter-sectoral arrangements, management procedures and training, staffing, operation and maintenance training, budgeting, and financial support.

EMP should specify impact mitigation plan and environmental monitoring plan requirement. Inject costs, responsibility and timeframe for mitigating each impact and monitoring of each environmental parameter. Impact Mitigation plan and monitoring plan should be based on the project phases i.e. mobilization or Pre-construction, Construction, Operation, Demobilization and Decommissioning phase. Prepare Resettlement Action Plan (RAP) to be implemented in accordance with the National Land Act No 4 and 5 of

1999 (revised in 2004). All properties likely to be affected by the road project should be evaluated for compensation arrangements.

TASK 3.4: REPORTING

Notwithstanding the above requirements, the contents and the structure of the Environmental and social Impact Assessment Report should be in accordance with the Environmental Impact Assessment and Audit Regulations of 2005:It is recommended that the Environmental Impact Assessment report closely contain the followings:

- The Report shall be presented as per format stipulated in Regulation 18 (2);
- The Executive Summary of the report should reflect the Regulation 18 (3) requirements;
- The Non-Technical Executive Summary should be a brief stand-alone document both in Kiswahili and English languages starting with the main findings, conclusions and recommendations as required by Regulation 19 (2).
- The cover page to indicate the names and address of the Client, EIA Consultant and the Reviewer (NEMC)

It is recommended that the Environmental and Social Impact assessment report closely contain the followings:
Chapters:

- Introduction
- Project Background and Description
- Policy, Legal and Administrative Framework
- Baseline or existing environmental Conditions
- Stakeholders Consultations and Public Participation
- Project alternatives
- Identification and analysis of Impacts
- Mitigation Measures
- Resources Evaluation or Cost Benefit analysis
- Environmental and Social Management Plan
- Action Plan for Management of impacts
- Environmental Monitoring Plan
- Action plan for Auditing
- Contingency Plan
- Decommissioning/demobilization Plan
- Summary and Conclusions
- References
- Appendices

1. STAFFING

The Consultant should employ an Environmental Impact Assessment Expert, Sociologist and a qualified Valuer for the carrying out of the services.

Section 7: Undertaking by Consultant on Anti – Bribery Policy / Code of Conduct and Compliance Programme

MEMORANDUM

GOVERNMENT OF THE UNITED REPUBLIC OF TANZANIA

I_____*(name of Consultant)* places importance on competitive tendering taking place on a basis that is free, fair, competitive and not open to abuse. I am pleased to confirm that I will not offer or facilitate, directly or indirectly, any improper inducement or reward to any public officer their relations or business associates, in connection with my proposal, or in the subsequent performance of the contract if I am successful.

I have an Anti-Bribery Policy/Code of Conduct and a Compliance Program which includes all reasonable steps necessary to assure that I comply to the No-bribery commitment given in this statement, as well as by all third parties working with me on the public sector projects, or contract including agents, consultants, consortium partners, sub- contractors and suppliers. Copies of the Anti-Bribery Policy/Code of Conduct and Compliance Program are attached

Authorized Signature:_____

Name and Title of Signatory: _____

Name of Consultant: _____

Address: _____

Annex 1 to the RFP: Detailed Evaluation criteria

In applying the above criteria and sub-criteria, the Evaluation Committee shall take into consideration the specific requirements, which are stated in the RFP as follows:

a) ***Understanding of the Terms of Reference. (5 points)***

Under this sub-criterion, a subjective assessment of the firm's understanding of the TOR will be made from the firm's comments or suggestions on the terms of reference and on the counterpart staff and facilities to be provided by the Client.

b) Overall Quality *of* the offer, quality of work plan and Methodology (25 points)

(i) Technical approach and methodology [15 pts]

Under this sub-criterion, a review of the presented methodology will be made to assess incorporation of the requirements of the TOR. The extent to which the technical methodology is found to address the various tasks stipulated in the TOR will be evaluated and scored accordingly.

(ii) Work Plan [05 pts]

Under this sub-criterion, the work plan presented by the Consultant shall be reviewed to confirm that it reflects the approach and the activities described in the methodology and whether it is in conformity with the time frame specified in the RFP.

(iii) Organization and Staffing [05 pts]

The proposed project organization chart and staffing schedule shall be analysed to establish whether the Consultant has provided adequate human resources to manage and execute the project and that the organization reflects an efficient setup of undertaking the assignment.

The time schedule for the key staff shall be evaluated against the key staff input estimated in the RFP. A major discrepancy between the estimated staff input contained in the RFP and that proposed by the firm shall be treated as a deviation from the TOR and shall be scored unfavourably. However, where the firm have provided a justification for the discrepancy in staff input, the justification shall be assessed and judged accordingly.

c) Qualifications of experts and experience in the field of assignment (60 points)

1. **Senior Highway Engineer (Team Leader)**

- *Must be a registered professional Civil Engineer.*
- A degree in Civil Engineering or equivalent qualification and postgraduate qualification in Highway Engineering - **30 points**. *(A degree in Civil Engineering or equivalent to score 80% and postgraduate qualification in Highway Engineering or above to score 100%);*

- Cumulative experience related to road studies and designs - **25 points** *(10 years to score 80% and 15 years or more to score 100%; else pro-rata).*
- Experience in similar capacity – **35 points** (*at least 3 projects of similar magnitude and complexity in the last 10 years to score 80% and 5 projects or more to score 100%; else pro-rata).*
- Experience in Sub-Saharan Africa - **5 points** *(experience of 3 years to score 80% or more to score 100%)*.
- Proficiency in written and spoken English - **5 points.**

2. **Highway Engineer**

- *Must be a registered professional Civil Engineer.*
- A degree in Civil Engineering or equivalent qualification and postgraduate qualification in Highway Engineering - **30 points**. *(A degree in Civil Engineering or equivalent to score 80% and postgraduate qualification in Highway Engineering or above to score 100%);*
- Cumulative experience related to road studies and designs - **25 points** *(8 years to score 80% and 12 years or more to score 100%; else pro-rata).*
- Experience in similar capacity – **35 points** (*at least 2 projects of similar magnitude and complexity in the last 10 years to score 80% and 5 projects or more to score 100%; else pro-rata).*
- Experience in Sub-Saharan Africa - **5 points** *(experience of 3 years to score 80% or more to score 100%)*.
- Proficiency in written and spoken English - **5 points.**

3. **Soils/Materials Engineer**

- *Must be a registered professional Civil Engineer.*
- A degree in Civil Engineering or equivalent qualification and postgraduate qualification in Geotechnical or Pavement Engineering - **30 points**. *(A degree in Civil Engineering or equivalent to score 80% and postgraduate qualification in Geotechnical or Pavement Engineering or above to score 100%);*
- Cumulative experience in pavement evaluation, materials testing, soils investigation and pavement design - **25 points** *(8 years to score 80% and 12 years or more to score 100%; else pro-rata).*
- Experience in similar capacity – **35 points** (*at least 2 road projects of similar magnitude and complexity in the last 10 years to score 80% and 5 projects or more to score 100%; else pro-rata).*
- Experience in Sub-Saharan Africa - **5 points** *(experience of 3 years or more to score 100%)*.
- Proficiency in written and spoken English - **5 points**.

4. **Bridge/Structural Engineer**

- *Must be a registered professional Civil Engineer.*
- A degree in Civil Engineering or equivalent qualification and postgraduate qualification in Bridge/Structural Engineering - **30 points**. *(A degree in Civil Engineering or equivalent to score 80% and postgraduate qualification in Bridge/Structural Engineering or above to score 100%);*
- Cumulative experience in Bridge Construction Supervision - **25 points** *(8 years to score 80% and 12 years or more to score 100%; else pro-rata).*
- Experience in similar capacity – **35 points** *(at least 2 bridge construction projects of similar nature and magnitude in the last 10 years to score 80% and 5 projects or more to score 100%; else pro-rata).*
- Experience in Sub-Saharan Africa - **5 points** *(experience of 3 years or more to score 100%)*.
- Proficiency in written and spoken English - **5 points**.

5. Topographic Surveyor

- *Must be a registered with professional body;*
- A diploma in Land Surveying or equivalent qualification and postgraduate qualification in Surveying - **30 points**. *(A diploma in Land Surveying or equivalent to score 80% and postgraduate qualification in Surveying or above to score 100%);*
- Cumulative experience related to land surveying activities - **25 points** *(6 years to score 80% and 10 years or more to score 100%; else pro-rata).*
- Experience in similar capacity as Topographical Surveyor – **35 points** (*at least 2 projects of similar magnitude and complexity in the last 10 years to score 80% and 4 projects or more to score 100%; else pro-rata).*
- Experience in Sub-Saharan Africa - **5 points** *(experience of 3 years or more to score 100%)*.
- Proficiency in written and spoken English - **5 points.**

6. **Hydrologist**

- A degree in Applied Science or Civil Engineering or an equivalent qualification and postgraduate qualification in Hydrology/Hydraulics Engineering - **30 points.** *(A degree in Applied Science or Civil Engineering or an equivalent to score 80% and postgraduate qualification in Hydrology/Hydraulics Engineering or above to score 100%);*
- Cumulative experience related to water/flood management schemes - **25 points** *(6 years to score 80% and 10 years or more to score 100%; else pro-rata).*

- Experience in similar capacity – **35 points** (*at least 2 road projects of similar magnitude and complexity in the last 10 years to score 80% and 5 projects or more to score 100%; else pro-rata).*
- Experience in Sub-Saharan Africa - **5 points** *(experience of 3 years or more to score 100%)*.
- Proficiency in written and spoken English - **5 points.**

7. **Environmentalist**

- *Must be a registered with professional body;*
- Degree in Environment Management or related discipline - **30 points;**
- Cumulative experience in doing EIA in projects of similar nature in the last 10 years – **60 points** *(2 projects to score 80% and 4 projects or more to score 100%, else pro-rata);*
- Experience in Sub Saharan African - **5 points** *(3 years or more to score 100%);*
- Proficiency in written and spoken English and Swahili - **5 points**.

8. **Sociologist**

- A degree in Social Science or related disciplines and postgraduate qualification in Social Science - **30 points**. *(A degree in Social Science or related disciplines to score 80% and postgraduate qualification in Social Science or above to score 100%);*
- Working experience in doing SIA in road development projects in the last 10 years – **60 points** *(2 projects to score 80% and 4 projects or more to score 100%, else pro-rata);*
- Experience in Sub Saharan Africa - **5 points** *(3 years or more to score 100%);*
- Proficiency in written and spoken English and Swahili - **5 points.**

According to Clause 36.2 (iii) of the Proposal Data Sheet, the proposed Professional staff shall have at least the qualification and experience indicated above or scores equal to 80% or more of the stipulated points.

d) Inclusion of National Experts (10 points)

Participation by the qualified nationals among proposed key staff shall be assessed as follows:

- 3 or more key personnel to score 10.0 points
- 2 key personnel to score 5.0 points
- 1 key personnel to score 2.0 points