DRAFT TECHNICAL PROPOSAL

FOR

DEVELOPMENT&CONSTRUCTION

OF

MARONDERA UNIVERSITY

OF

AGRICULTURAL SCIENCES

and

TECHNOLOGY (MUAST)

Prepared by *Vengai Alfred Zizhou*

email: alfred.zizhou@gmail.com cell: +263779 213 560 / +27 84 379 8064

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

Since 2004 Zimbabwe has developed five (5) state universities, operating from rented premises with limited and insufficient resources, puts pressure on the fiscus to avail budget for infrastructure development. So when the necessity to implement great infrastructure developments e.g. the development of MUAST campus - such development meets the insufficiency of capital and technology, it becomes unavoidable to use different financing and investments methods. In this framework the built-operate-transfer (BOT) model becomes the alternative to infrastructure development. The objective of the built-operate-transfer (BOT) financing model for development and construction of MUAST campus is aimed at considering the planning, construction, and monitoring and control stages of the proposed infrastructure development using private funding under a Special Purpose Vehicle company. The SPV will assemble various Built Environment professionals including, engineers, environmentalists, architects, quantity surveyors, land surveyors and various contractors to execute the development and construction of the Marondera University of Agricultural Sciences and Technology campus.

The work plan involves;

- Planning includes EMP adoption and approvals, topographical surveys etc
- Engineering designs – design of all infrastructure
- Building and construction of a fully-fledged MUAST campus within five (5) years
- Operation phase: SPV operates Commercial centre, student accommodation and amenities, while the MUAST takes Occupancy of the completed Dozmery campus, paying nominal occupational rentals to SPV
- Transfer of facilities previously operated by SPV to MUAST administration

In line with the long term vision for infrastructure development of the Dozmery Campus, which is to create a self-contained institution, a mini town in its own right, which may become the epicentre of a future “university town or city”, we (Zimbabwe South Africa Diaspora Consortium) are coming up with a funding model where the institution itself can sustain the infrastructure development that it requires through a Public-Private Partnership (PPP) based BOT (Built, Operate and Transfer) project – the **Design, Build, Operate** and **Transfer (DBOT)** Private Public Partnership **(PPP)** financing model.

1.1 INTRODUCTION

1.1 The Background

The Marondera University of Agricultural Sciences and Technology has remained undeveloped due to inadequate funding from central government though it is operational from rented buildings in Marondera and from Dozmerry campus. A permanent, operational state-of-the art premise is very essential for efficiency in any organisation - and this is the reason why we believe that the development of a permanent fully-fledged campus site for the Marondera University would be a noble venture for the Mashonaland East Province, as well as the country at large. The new Dozmery Campus will need to be developed alongside the following supporting infrastructure requirements:

- A reliable water supply system enough to supply a population of 20 000, with provisions for increased future demand
- A good link road from Marondera town to Dozmery Campus. The existing 40km link road is in bad state hence it needs upgrading to meet the increased traffic volumes expected after construction of the Dozmery Campus.
- A reliable power supply with back-up generation systems
- A new sewer reticulation to include new sewer treatment plant
- Subsequent development of solar and biogas plant on campus

1.2 Existing Infrastructure/Facilities

The existing Dozmery campus has the following essential facilities:

- a small dam within periphery of existing campus
- A new dam under construction close to the campus
- Lecture hall, clinic and science laboratory
- Staff houses and workers compound
- Sports facilities - football and netball pitches

These existing facilities will be either be incorporated or upgraded in line with the the university's development plan.

1.3 Purpose of this report

This report presents technical proposals for the implementation programme by The Consortium (Zimbabwe – South Africa Diaspora Consortium) for the proposed **design and construction** of the fully-fledged Marondera University of Agricultural Sciences and Technology campus.

This document serves to:

a) Give a general descriptive layout of our methodology in conformance with the guidelines and requirements outlined within Government of Zimbabwe statutory instruments and Joint Venture Agreements.

b) Confirm our understanding of the briefing by His Excellency the President of Zimbabwe, Cde E.D Mnangagwa (on 21 December 2017) at Zimbabwe Embassy in Pretoria during the President's interactive meeting with Zimbabweans in Diaspora.

c) address and confirm our interest in participating in investment opportunities available in Zimbabwe as detailed in the document "Investment Guidelines and Opportunities in Zimbabwe" released by the Ministry of Finance and Economic Development.

The Zimbabwe South Africa Consortium would want to tap into these investment opportunities by investing in infrastructure development in the education sector.

1.3.0Project description

1.3.1 Creation of Special Purpose Vehicle (SPV) Company

i) This financing model is based on the Public and the Private sector (ZW-SA Diaspora Consortium – which will transform into SPV company) working interdependently, using private funding, the funds of which will be guaranteed by the Government.

ii) The Special Purpose Vehicle (company) will undertake evaluation and adoption of existing designs (if any), design for off-site facilities, tender documentation, contract administration and construction supervision and operation of infrastructure as per BOT and Joint Venture dictates of Government of Zimbabwe

1.3.2 Project scope / Work Plan

The proposed development of MUAST Campus is proposed to be in three (3) parts:

Part 1

1. Construction of the MUAST Administration Campus (includes all amenities and respective faculties), but not limited to:

- - Modern libraries
- - Upgrade of existing Dozmery campus infrastructure
- Construction of Technology Development Centre
- Modern lecture rooms and laboratories
- Offices for Vice Chancellor and other administration blocks
- Health facilities – to build a well-equipped Clinic and a Medical Centre to service both MUAST and surrounding rural communities. This will be run on commercial lines
- State of the art Sports and Recreational facilities ie create a high performance centre and sports pavilion
- Access roads and car parks
- Develop waterfront recreational facilities along river and dam

Part 2

2. (a) Construction of student and staff accommodation

i) state of the art Student Halls of Residence and Student Amenities

ii) Staff accommodation consisting of:

a) Low density suburb for academic, senior management and senior technical staff

b) Medium density suburb for middle management and technical staff

c) High density suburb for junior and non-academic staff

(b) Construction of University Business Centre consisting of:

i) Service station with tyre fitment centre

ii) Banking facilities and facilities for other businesses

iii) A Four or five Star Hotel with at least four (4) Conferencing facilities

iv) Supermarkets and Pharmacy

v) Hair salons and boutiques
vi) Food outlets and butchery
vii) Stationery shop and printing facilities
viii) Internet access in form of Wi-Fi hotspots and internet laboratories or cafes

(c) Construction of modern primary and secondary school

These facilities will cater for children of university's academic, technical and non-academic staffers.

Part 3

3. Construction of Supporting Services:

i) Construction of Water Reticulation System
ii) Construction of Sewer Reticulation System
iii) Construction of power generation and electricity with a backup power supply.

Construction activities for the three (3) items mentioned above will run **concurrently** so that within a five (5) year period the fully-fledged MUAST campus will become fully operational.

1.3.3 Project Location

Access to the existing Dozmery Campus is along Ruzawi Road, past Wenimbe Dam then past Masomera Business Centre. After driving for approximately five (5) kilometres there is a sign post to the campus. The existing road is a tarred single carriageway, damaged road, in dire need of repair. The existing road will need to be upgraded to a meet high traffic volumes anticipated when the New Dozmery Campus becomes fully operational. The existing campus sits on 1022 ha of land with a generally flat topography.

1.3.4 Project Objective

In line with MUAST's vision to be a leading centre of excellence in sustainable food production systems and nutrition through innovative teaching and research, the objectives of the campus development framework are to:

a) Adopt innovative ideas in the delivery of infrastructure and architecture for New Dozmery Campus

b) Facilitate the scam less exchange of knowledge and best practice with the surrounding communities

c) Be sensitive to needs of the surrounding district and ensure proper integration

d) Establish appropriate links to the city and surrounds

e) Ensure proper access for students and visitors via public transport

f) Create a pedestrian friendly campus environment

g) Improve existing public amenities and strengthen partnerships with introduction of new facilities

h) Assist with the spatial regeneration of the surrounding district

i) Be thoughtful in the campus' architectural expression

j) Create an architectural language that is of its place.

2.0 PROPOSED PUBLIC – PRIVATE- (PPP) BASED BUILD – OPERATE-TRANSFER (B.O.T) FINANCING FOR THE DEVELOPMENT OF NEW MUAST CAMPUS

2.1The Design, Built, Operate and Transfer Principle as applied to MUAST

a) We propose to set up a **"Special Purpose Vehicle" (Company),** constituted of ZW-SA Diaspora Consortium & stakeholders. The SPV will oversee the **Design** and **Build**ing construction of the campus and then **Operate** the student accommodation and Amenities, and Business Centre, and use revenue generated from student occupancy and rentals from the Business Centre occupancy to service the loan. At the expiry of the Operate period, the SPV will Transfer the ownership of the Student Accommodation facility and Amenities, as well as the Business Centre to the Marondera University of Agricultural Sciences and Technology (MUAST).

b) We propose to **Design** and **Build** a fully-fledged Marondera University of Agricultural Sciences Campus (MUAST) within five (5) years. The upgrading and construction of new Dozmery campus is intended to improve existing public amenities and strengthen partnerships with the introduction of new facilities.

c) Once the full campus has been completed, the University will assume **occupancy of the new facility (the Campus Administration Centre)**, except for the student residences and amenities, and the business centre. The revenue generated from student residences and amenities, and from the Business Centre, will be used to repay the loan financing to the financier

d) The University is expected to pay a **nominal "Occupational Rent"** to the SPV Company, for occupying the Campus Administration Centre. The revenue generated from the occupational rent will also be used to service the loan.

2.2Function of the Special Purpose Vehicle (SPV) will be as follows:

- SPV will be the CAPEX Managers running the project. SPV will appoint various Built-Environment specialists, including but not limited to, Architects, Civil, Electrical and mechanical Engineers, Land Scarping specialists, Quantity Surveyors, Land Surveyors and Planners to assist with the designs for the university. The SPV will also appoint Civil and Building Contractors to carry out construction of the university.
- Access project funds from Investors to finance development (**DESIGN**) and construction (**BUILD**) of the Marondera University of Agricultural Sciences (MUAST) Campus through a Private Public Partnership (PPP) BOT financing arrangement.
- Formulate, with the stakeholders, the execution strategies through the project team, which will ensure that the whole project is successfully implemented within a **five (5) year** period.
- **Operate** the student accommodation, student amenities, the Business Centre and other related facilities over an agreed **OPERATE** period of time. The University will pay a **nominal occupational rent** for occupancy of the Campus Administration Centre.
- **Repay the financier/Funder** using income generated from the occupancy of student accommodation and student Amenities, Business Centre and the off-site newly constructed schools- which is the main driver behind this model which we have agreed with the funders that we are in partnership with.
- **TRANSFER** the ownership of the student accommodation and student Amenities, Business Centre and the off-site newly constructed schools back to the University at the expiry of the **OPERATE** period.

2.3The Governmentof Zimbabwe:

a) will be required to assure the funders that, through the Central Bank External Loans Coordinating Committee (ELCC), Government of Zimbabwe will facilitate the repatriation of the loan repayments over an agreed period of time. Such assurance refer to item 6.5 and 6.6 of “Investment Guidelines and Opportunities in Zimbabwe” document by the Ministry of Finance.

b) will, through Marondera University of Agricultural Sciences and Technology (MUAST), take ownership of all other campus buildings once construction is concluded (within five (5) years), except for the Student Accommodation and student Amenities, Business Centre and the off-site newly constructed schools. These facilities will be operated by SPV so as to generate revenue for servicing the loan.

In short this is a Technical proposal (brief summary) under DBOT model, to **DESIGN and BUILD** the MUAST campus, by adopting available preliminary designs (if any), detailed design, contract administration, construction supervision, project management, **OPERATE** for the facility for the contractual period, and **TRANSFER** to the Zimbabwe Government, of the proposed MUASTcampus.

3.0 THE Design-Build-Operate-Transfer (D.B.O.T) FINANCING MODEL UNDER Public Private Partnership (PPP) ARRANGEMENT

3.1 Funding features

a) The Zimbabwe South Africa Diaspora Consortium will do a preliminary engagement with MUAST
b) MUAST engages parent ministry and legal department
c) The Zimbabwe South Africa Diaspora Consortium will sign an M.O.U/N.D.A with Marondera University of Agricultural Sciences upon approval of proposal.
d) A SPV will be established. The SPV will enter into an MOU/NDA with MUAST. Once state guarantees have been secured, the financier/funder will release funds (a loan financing to Government of Zimbabwe through SPV) to **DESIGN** and **BUILD** a fully-fledged **MUAST Administration Campus** with Student Accommodation and Amenities facilities, Business Centre and all other facilities.
e) The SPV would then **Operate** the Student Accommodation and Amenities facilities, the Business Centre, primary and secondary School, over an agreed period so as to service the loan. The **Operate** period depends on the levels of revenue generated from the facilities being operated
f) The SPV will then **Transfer** ownership of Student Accommodation, the Business Centre and the Primary and secondary schools, to the Marondera University of Agricultural Sciences and Technology (MUAST) at the expiry of the agreed **"Operate"** period.
g) The **'Operate"** period ranges between 15 to 30 years, depending on the level of revenue inflows generated from the newly built facilities being **Operated** by the SPV. However most projects have a 30 year loan repayment period.
h) The financial model on student accommodation is based on 15 000 student enrolment when MUAST campus becomes fully operational. No allowance is made for annual increase in students requiring student accommodation.

3.2 Securitisation criteria

- Set up a Special Purpose Vehicle (SPV) involving Stakeholders and the financier to develop the project concept
- SPV borrows from the financier after state issues sovereign guarantee
- Ring fencing of revenue collections from student accommodation, student amenities and Business Centre facilities into a separate sinking fund under the SPV.
- ELCC undertaking to facilitate repayments for any borrowings of the SPV.
- SPV executes/undertakes the project and collects the ring fenced revenue.
- Funding to be Aligned with the exchange control regulation on dividend repatriation and procedures on disinvestment as per Central Bank guidelines

3.3 Semester payment amounts

a) The revenue generated from student accommodation occupancy and proceeds realised from the Business Centre will be used to service/repay the loan.

b) The assumption is that the hostel fee will be $250 per semester per student, giving us $500 per academic year per student.

c) Student accommodation occupancy is expected to be 15 000 students.

3.4 Amortisation

a) The amortisation period is expected to be 30 years, ie loan repayment period

b) The resultant depreciation of the structures is countered by constant operation and maintenance interventions as will be set out in Operation and Maintenance manuals.

c) At the expiry of operation period the facilities will be transferred to MUAST in good order, as per the BOT dictates and guidelines

3.4.1 Financial Model - Cash flow projections

The following assumptions are made:

1) Student accommodation fees rise of 2%, 2 semesters per academic year
2) For this model hostel occupancy remains static (though the trend would be an increase0f about 2 to 3% per academic year).
3) Revenue generated from Business Centre/year – only 5 star hotel considered at 50% occupancy. Income = 200beds*$50/bed/day*0.5*7days*52weeks
   = $ 1, 820, 000.00

3.4.1.0 Financial model notes

- The student accommodation and Hotel occupancy are the main drivers of this financial model. Average of 50% hotel occupancy rate per year is assumed.
- Revenue generated from primary and secondary school, shop and office space rentals - not considered in this financial model.

3.4.2 Cash flow projections

Year	Number of Students	Rate/ seimester	Cashflow/ semmester	Cashflow/ Academic Year	Revenue from Business Centre	Total Annual Revenue	Cummulative Revenue
1	15000	250	$3,750,000.00	$7,500,000.00	$2,180,000.00	$9,680,000.00	$9,680,000.00
2	15000	255	$3,825,000.00	$7,650,000.00	$2,180,000.00	$9,830,000.00	$19,510,000.00
3	15000	260	$3,901,500.00	$7,803,000.00	$2,180,000.00	$9,983,000.00	$29,493,000.00
4	15000	265	$3,979,530.00	$7,959,060.00	$2,180,000.00	$10,139,060.00	$39,632,060.00
5	15000	271	$4,059,120.60	$8,118,241.20	$2,180,000.00	$10,298,241.20	$49,930,301.20
6	15000	276	$4,140,303.01	$8,280,606.02	$2,180,000.00	$10,460,606.02	$60,390,907.22
7	15000	282	$4,223,109.07	$8,446,218.14	$2,180,000.00	$10,626,218.14	$71,017,125.37
8	15000	287	$4,307,571.25	$8,615,142.51	$2,180,000.00	$10,795,142.51	$81,812,267.88
9	15000	293	$4,393,722.68	$8,787,445.36	$2,180,000.00	$10,967,445.36	$92,779,713.23
10	15000	299	$4,481,597.13	$8,963,194.26	$2,180,000.00	$11,143,194.26	$103,922,907.50
11	15000	305	$4,571,229.07	$9,142,458.15	$2,180,000.00	$11,322,458.15	$115,245,365.65
12	15000	311	$4,662,653.66	$9,325,307.31	$2,180,000.00	$11,505,307.31	$126,750,672.96
13	15000	317	$4,755,906.73	$9,511,813.46	$2,180,000.00	$11,691,813.46	$138,442,486.42
14	15000	323	$4,851,024.86	$9,702,049.73	$2,180,000.00	$11,882,049.73	$150,324,536.15
15	15000	330	$4,948,045.36	$9,896,090.72	$2,180,000.00	$12,076,090.72	$162,400,626.87
16	15000	336	$5,047,006.27	$10,094,012.54	$2,180,000.00	$12,274,012.54	$174,674,639.41
17	15000	343	$5,147,946.39	$10,295,892.79	$2,180,000.00	$12,475,892.79	$187,150,532.20
18	15000	350	$5,250,905.32	$10,501,810.64	$2,180,000.00	$12,681,810.64	$199,832,342.84
19	15000	357	$5,355,923.43	$10,711,846.86	$2,180,000.00	$12,891,846.86	$212,724,189.70
20	15000	364	$5,463,041.90	$10,926,083.79	$2,180,000.00	$13,106,083.79	$225,830,273.49
21	15000	371	$5,572,302.73	$11,144,605.47	$2,180,000.00	$13,324,605.47	$239,154,878.96
22	15000	379	$5,683,748.79	$11,367,497.58	$2,180,000.00	$13,547,497.58	$252,702,376.54
23	15000	386	$5,797,423.77	$11,594,847.53	$2,180,000.00	$13,774,847.53	$266,477,224.07
24	15000	394	$5,913,372.24	$11,826,744.48	$2,180,000.00	$14,006,744.48	$280,483,968.55
25	15000	402	$6,031,639.69	$12,063,279.37	$2,180,000.00	$14,243,279.37	$294,727,247.92
26	15000	410	$6,152,272.48	$12,304,544.96	$2,180,000.00	$14,484,544.96	$309,211,792.88
27	15000	418	$6,275,317.93	$12,550,635.86	$2,180,000.00	$14,730,635.86	$323,942,428.74
28	15000	427	$6,400,824.29	$12,801,648.57	$2,180,000.00	$14,981,648.57	$338,924,077.32
29	15000	435	$6,528,840.77	$13,057,681.55	$2,180,000.00	$15,237,681.55	$354,161,758.86
30	15000	444	$6,659,417.59	$13,318,835.18	$2,180,000.00	$15,498,835.18	$369,660,594.04

3.5 The objectives of the Special Purpose Vehicle (SPV):

- To carry out a geotechnical investigations at the campus site to standards acceptable to the Government of Zimbabwe and to international standards.
- To improve the level of service of the MUAST by providing adequate infrastructure acceptable norms and standards of the Government of Zimbabawe's Department of Public Works, whilst meeting the needs of the affected communities.
- To produce an EMP acceptable to Environmental Management (EMA) standards
- To execute the parts of the works labour intensively in terms of the Public Works Principles and create approximately 5 000 jobs both directly and indirectly - through the multiplier effect.
- To involve community participation in the decision-making and information dissemination process, in order to achieve full project acceptance by the affected communities.
- To execute construction of the campus and have the facility ready for occupation within five (5) years.

4.0ORGANISATIONAL STRUCTURE

The Zimbabwe South Africa Diaspora Consortium, which is in agreement with the funders is constituted by all black Zimbabweans:

1) **Mr Last Chigombe**
2) **Mr Vengai Alfred Zizhou**
3) **Mr Peter Boora**

The consortium members will become the main drivers of the SPV (company) to be formed for the execution of the project.

4.1PROJECT EXECUTION METHODOLOGY

4.1.0 Understanding of the project.

4.1.1 Scope and Objectives of the project.

(a) General Description of Special Purpose Vehicle (SPV) Services

The services for the assignment have been divided into four phases in terms of construction project implementation methodology:

Phase 1 - Tender Design and Documentation

Phase 2 - Detail Design and Construction Monitoring

Phase 3 - Commissioning

Phase 4 –Operating

Phase 5 – Transfer

To achieve the Department of Public Works' Targets and Project Management objectives an overarching activities have been introduced as Activity 5 & 6.

(b) Phase 1 - Tender Design and Documentation
Activity 1- Tender Design

To provide the Services for this phase of the Contract, the SPV shall assemble team(s) of engineers and other specialists, experienced in the design of structures, tender design and documentation of the works - access roads, car parks, building structures, sports facilities, accommodation facilities (for students and staff), drainage systems and structures, sewer and water reticulation system. The SPV shall construct a Business Centre with facilities for banks and other businesses. The SPV shall provide the Services, carry out such duties

and assume such powers and responsibilities as are defined by the MUAST and as are necessary for the due performance of the Services. The SPV shall ensure that the Project components are designed to current international best practice, on schedule and within budget, in accordance with the Scope of Services.

Sub-Activity 1.1- Engineering

This section covers engineering tasks required to complete the tender designs and compile a Tender Design Package, define the engineering Scope of Work for construction, and the engineering specification for the construction contract. The objectives for this task can be broadly described as follows:

- to carry out field investigations –namely a) carry out a site geotechnical investigation b) re-check of site boundary survey marks in accordance with the Land Survey Act.
- to carry out a) tender design b) prepare tender documents c) adopt construction drawings for the Project from siting Consultants of MUAST in accordance,
- to ensure that all engineering design shall take account of and incorporate the EIA recommendations and mitigation measures.

Sub-Activity 1.2 –Environment

This section covers tasks required for the scope and specifications of the natural, social and land acquisition requirements of the project as per EMA regulations. The objectives are as follows:

- to draft the final Environmental Management Plan (EMP) for construction using the existing draft EMP as the basis.The final EMP needs to incorporate conditions specified in the record of decision.
- to define the scope and detailed specification for an environmental baseline
- to establish an environmental baseline for the project.
- to develop the scope and detailed specifications for environmental monitoring, environmental data, environmental mitigation, and environmental reporting for the construction contract.

Sub- Activity 1.3- Health and Safety

This section covers tasks required to compile the Health and Safety Specifications incompliance with the OHS Act and reporting on statistics. The objectives for this subtaskare as follows:

- to develop health and safety specification to ensure compliance with the OHSAct of 1993 in particular the Construction Regulations of 2003. .
- to comply with the OHS Act of 1993 in carrying out his services.

Sub-Activity 1.4 - Project Management

This section covers tasks required to meet Project Management requirements, suchas project scope, time, cost, quality, risk, resources, procurement, communicationand integration. The objectives are as follows:

- to set up a project management unit to coordinate and ensure effective management of the Construction Contract.
- to manage the Construction Contract and to ensure that all the deliverables required for the tender design stage are achieved.
- to develop an Engineer's Programme and Cost Estimate of the Project components.
- to pre-qualify suitable contractors, procure and evaluate construction tenders, assist in negotiation and award of construction contracts and prepare conformed contract documentations.

(c) Phase 2 - Detail Design and Construction

Activity 2- Detailed Design

Sub-Activity 2.1- Engineering

This section covers all tasks required to fulfil the engineering and Engineering Management requirements during the Detailed Design Phase of the project. These tasks include the production of the Design Report. The objectives are as follows:

- Adopt all architectural and all other designs as previously approved by the MUAST and timely issue construction drawings
- to carry out detail design for the Business Centre and schools, and timeously issue construction drawings,
- to evaluate contractors proposals and method statements to ensure compliance with the design intent.
- to respond promptly to any technical queries raised during construction of the works.

Sub-Activity 2.2 –Environment

This section covers all tasks required to fulfil the Environmental Management requirements during the Detailed Design and Construction Phase of the project.These activities include the preparation of the Environmental Method Statement, implementation,

operation and maintenance of Environmental Protection Measures and Rehabilitation, monitoring construction processes on impacted land and the social environment.
The objectives for this sub-activity are as follows:

- to monitor the implementation of the Environmental Specification and the Environmental Management Plan (EMP) by the Contractor during construction.
- To issue instructions for corrective actions where there is non-compliance by the Contractor.
- Provide ongoing support to the Client (MUAST).

Sub-Activity 2.3 - Health and Safety

This section covers all tasks required to fulfil the Occupational Health and Safetyrequirements during the Detailed Design. These tasks include making sure thatHealth and Safety requirements are incorporated in the Design of Temporary andPermanent Works. The objectives are described as follows:

- to ensure compliance with the Occupational Health and Safety Act and the Construction Regulations 2003 by the employer, contractor, consultant's own staff and visitors to the site.
- to review the Principal Contractor's health and safety plan before it isimplemented and to carry out ad hoc reviews during its development andamendment to ensure that all OSHA, 1993 and Construction Regulationsprovisions are taken into consideration to ensure safe construction of theWorks.
- to provide safe facilities for personnel in providing services during all phases.

Sub-Activity 2.4- Project Management

This section covers all tasks required to fulfil Project Management requirements during the Detailed Design and Construction Phase. These tasks include updating the Work Breakdown Structure, maintaining the Baseline Programme, controlling Project Costs, undertaking Quality Audits, monitoring and evaluating Risks, managing Project Resources, awarding and administrating the Contract, distributing Information and ensuring Integrated Change Control. The Consultant shall assemble teams(s) of engineers and

other specialists,experienced in the design, administration and construction supervision of the works.This task includes the production of all the reports necessary for project documentation.The objectives include the following:

- to integrate and coordinate all activities related to the Consultancy Contract,
- to build capacity in the Local Municipality staff seconded to the Consultant
- to deliver presentations to expert panels and dispute adjudication boards and stakeholders.
- Offer industrial training for MUAST students in the relevant faculties

(d)Activity 3-Construction Monitoring

The Consultant shall act as the Engineer for the Construction Contracts (FIDIC1999 ,GCC 2010 or the NEC suite of conditions), carrying out such duties and assuming such powers andresponsibilities as are defined in these Contracts and in this Agreement, and as Are necessary for the performance of the Services. The objectives for this activity canbe broadly described as follows:

- to monitor the quality of the construction, manufacturing and/or installationcontract to ensure compliance with the specifications.
- to administer the construction, manufacturing and/or installation contract.

Sub-Activity 3.1 –Engineering

This section covers all tasks required to fulfil the Engineering and Engineering Management requirements during the Construction period. The tasks include the adaptation of the designs to accommodate conditions encountered on site and production of as built drawings.

Sub-Activity 3.2 - Environment

The requirements for this section are similar to Sub-Activity 2.2 above.

Sub-Activity 3.3 - Health and Safety

This section covers all tasks required to fulfil the Occupational Health and Safety requirements during the Construction Phase. These tasks include making H & S Legal Appointments, compiling Safety Statistics, observing Unsafe Practices andConditions, ensuring Contractor Competency and Resources, obtaining Certificatesof Compliance, and performing OH & S Audits. To act as the Clients agent in termsof the OHS Act and Regulations.

Sub-Task 3.4 - Project Management

This section covers all tasks required to fulfil Project Management requirements during the Detailed Design and Construction Phase for the Construction Contract.These tasks include updating the Work Breakdown Structure, maintaining the Baseline Programme, controlling, Project Costs, undertaking Quality Audits, monitoring and evaluating Risks, managing Project Resources, awarding and administrating the Contract, distributing Information and ensuring Integrated Change Control.

Sub-Task 3.5- Construction Administration

This task deals directly with the project management required by construction supervision team. The SPV shall ensure that the project is supervised to achieve a high standard of workmanship and appropriate material, on schedule and within budget, in accordance with the Specification and Drawings of the constructioncontract(s), to acceptable environmental standards and in accordance with country's requirements of international best practices. This task includes the production of all the reports neccessary for this activity.

(a) Phase 4 – Commissioning And Close Out

Activity 4a- Commissioning

The objectives for this activity include the following:

- to administer the commissioning of the Works,
- to formulate administration, operation and maintainance strategies

Sub-Activity 4.1 –Engineering

This section covers all tasks required to fulfil the engineering and Engineering Management requirements during the Commissioning Phase. The tasks include monitoring of the commissioning activities and production of calibration certificates, commissioning reports and As Built Drawings. These activities include regular site visit to ensue that contruction of MUAST campus is proceeding as planned, recommending remedial action in case of non-compliance and final acceptance of finished sections of the Works.

Sub-Activity 4.2 –Environment

This section covers all tasks required to fulfil the Environmental Managementrequirements during the Detail Design and Construction Phase of the project. These activities include the preparation of the Environmental Method Statement, implementation, operation and maintenance of Environmental Protection Measures and Rehabilitation, monitoring construction processes on impacted land and the social environment.

Sub-Activity 4.3 Health and Safety

This section covers all tasks required to fulfil the Occupational Health and Safety requirements during the Construction Phase. These tasks include ensuring compliance with the relevant sections of the OHS Act during commissioning of theWorks.

Sub-Activity 4.4 Project Management

This section covers all tasks required to fulfil Project Management requirements during the commissioning Phase for the Contract. These tasks include ensuring that all legal requirements and licenses for commission to commence are in place and the necessary reports are submitted to the Client.

Sub-Activity 4.5 Construction Administration

This task deals directly with the project management required by constructionsupervision team. The SPV shall ensure that the project is on schedule andwithin budget, in accordance with the approved commissioning plans.

Activity 4b Assessment and Close-out

The objective of the activity is to conclude all contractual obligation and recordlesson learned for the benefit of future projects.

Sub-Activity 4.6 Engineering

This section covers all tasks required to fulfil the engineering requirements duringthe Assessment and Close-out Phase. The tasks include assessment of projectperformance in relation to the, design criteria, specifications and recording oflessons learned.

Sub-Activity4.7 Environment

This section covers all tasks required to fulfil the environmental requirements during the Assessment and Close-out Phase of the project.

Sub-Activity 4.8 Project Management

This section covers all tasks required to fulfil Project Management requirements during the commissioning Phase for the Contract. These tasks include concluding all contracts and production of the project completion report.

(g) Activity 5- Inclusion of loca subcontractors and sme's

This section covers the requirement to train and mentor local contractors and SMMEs within the work areas. We undertake to mentor students from the local universities and technical colleges seconded with the aim of gaining required vacational training and experience by the end of the Contract. The training will take place through phases 1 to 3. Furthermore, it deals with the promotion of enterprise development by involving local SMMEs through subcontractwork. The objectives for this sub-task are as follows:

- ❖ to build capacity in the (LRDC) Local Rural District Councils staff seconded to the Consortium
- ❖ Provide attachment to MUAST students in relevant faculties
- ❖ Skills development of LRDC's seconded staff.
- ❖ Establish contract packages to facilitate enterprise development during construction.

4.2 Project Deliverables

The MUAST can expect to receive the following items related to the project from the Special Purpose Vehicle (SPV) Company:

- Scoping Report (Evaluation)
- Geotechnical Report (if not done, if already done Consortium will adopt it)
- Preliminary report on the results of the initial phase of the scheme including preliminary details and capital cost estimate.
- Design report containing details of the proposed project and an updated cost estimate.
- Detail Construction Drawings.
- Tender documents (Special conditions of Contract, Specific Conditions of Contract, General Conditions of Contact and Contract Specifications- compiled in accordance to the Department of Public Works' National Public Works Programme requirements
- Safety specification based on the scope of works for the construction to be performed.
- Environmental Management Plan.
- Sub-Contract Tender evaluation report, detailing the tenders received from sub-contractors, analysing the different elements of the tenders, and recommending award of the contract to the most favourable Bidder(s). These will be managed and co-ordinated in accordance with the bid evaluation criteria by theSpecial Purpose Vehicle (SPV) Company's Contracts Management Bid Evaluation Committee.
- Advertisements for tenders in three Local newspapers and completed forms relating to the advertising of tenders.
- Construction progress reports and payment certificates, prepared during the course of the construction.
- Training Audit (if any) and progress reports
- SMMEs and preferential procurement progress reports
- Project documentation, as-built drawings and, installation and operation manuals.
- Construction completion certificate.
- Completion reportof final accounts to Government of Zimbabwe/MUAST/Ministry of Higher Education.

5.0 PROPOSED IMPLEMENTATION STRUCTURE

The project management organisational structure will include two support groups, that is, the Engineering and Design Specification team and the construction management team. The Project Manager will handle contractual aspects of the agreements and give direction to the project.

(a) Engineering Design and Specification Team

The Engineering and Design Specification Team is responsible for establishing the design and construction specifications for the various portions of the project.

(b) Construction Management Team.

The construction management team will oversee all aspects of construction on site and ensure that work is performed in accordance with the engineering plans and specifications, environmental requirements, good industry practice and health and safety needs. The Project Site Manager will have a support group consisting of quality control specialists, environmental inspectors and health and safety officers. The site team will also rely on the engineering team for the in-the-field support on technical issues as they arise during construction.

c) Risk Assessment and Management

The **Special Purpose Vehicle** (SPV) Company shall follow a continuous risk assessment management model consisting of the following phases:

- Identification,
- Assessing,
- Monitoring and Controlling of risks.

5.1Work Plan and Task Description

For the purpose of this proposal the works are be divided into Section 1, 2 and 3.

Section 1: Shall be Construction of fully-fledged Marondera University of Agricultural Sciences and Technology Campus

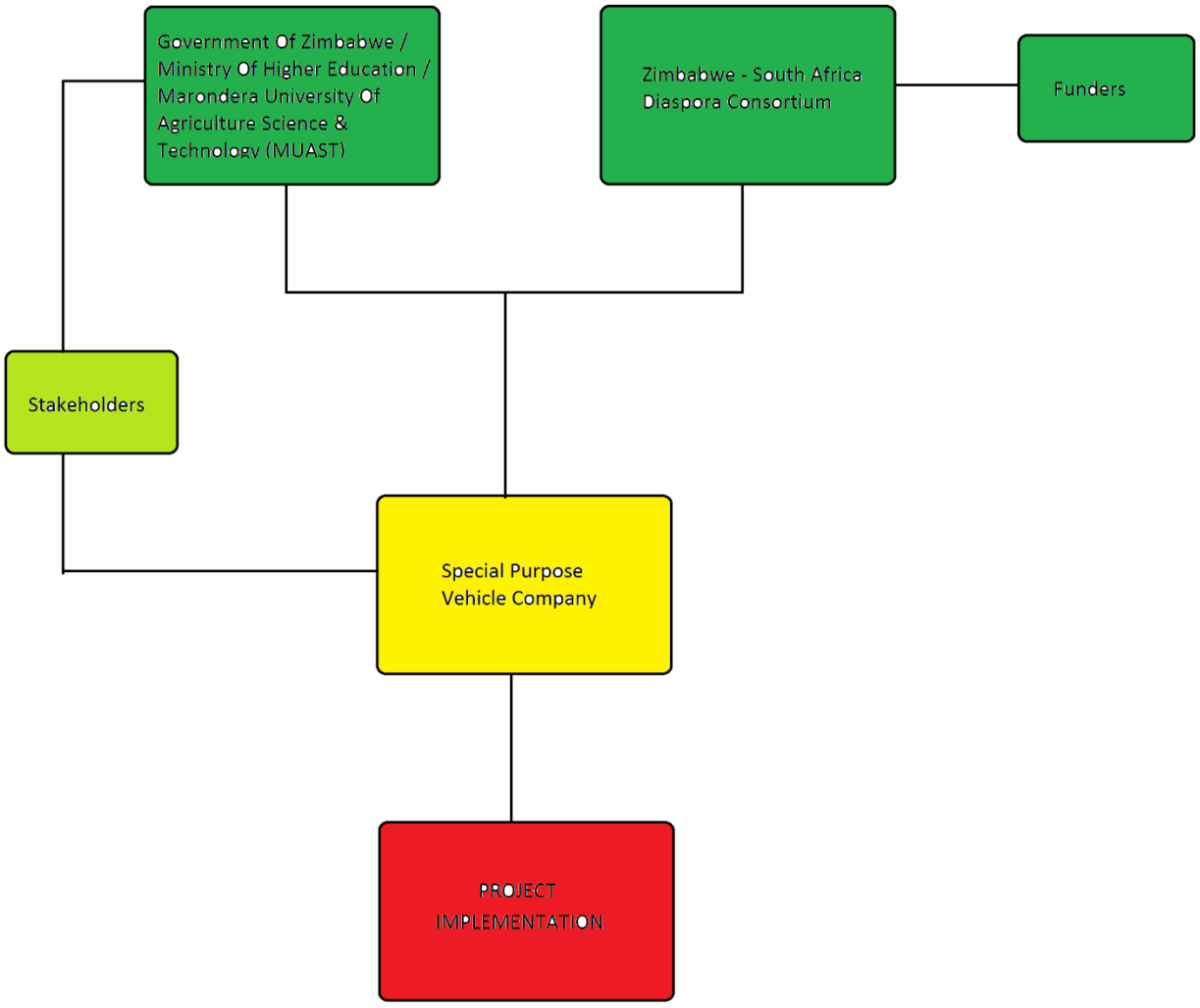
Section 2: Shall be Construction of Student Residences and staff Accommodation

Section 3: Shall be Construction of Business Centre, primary and secondary school, power Generation, Sewer and water reticulation system

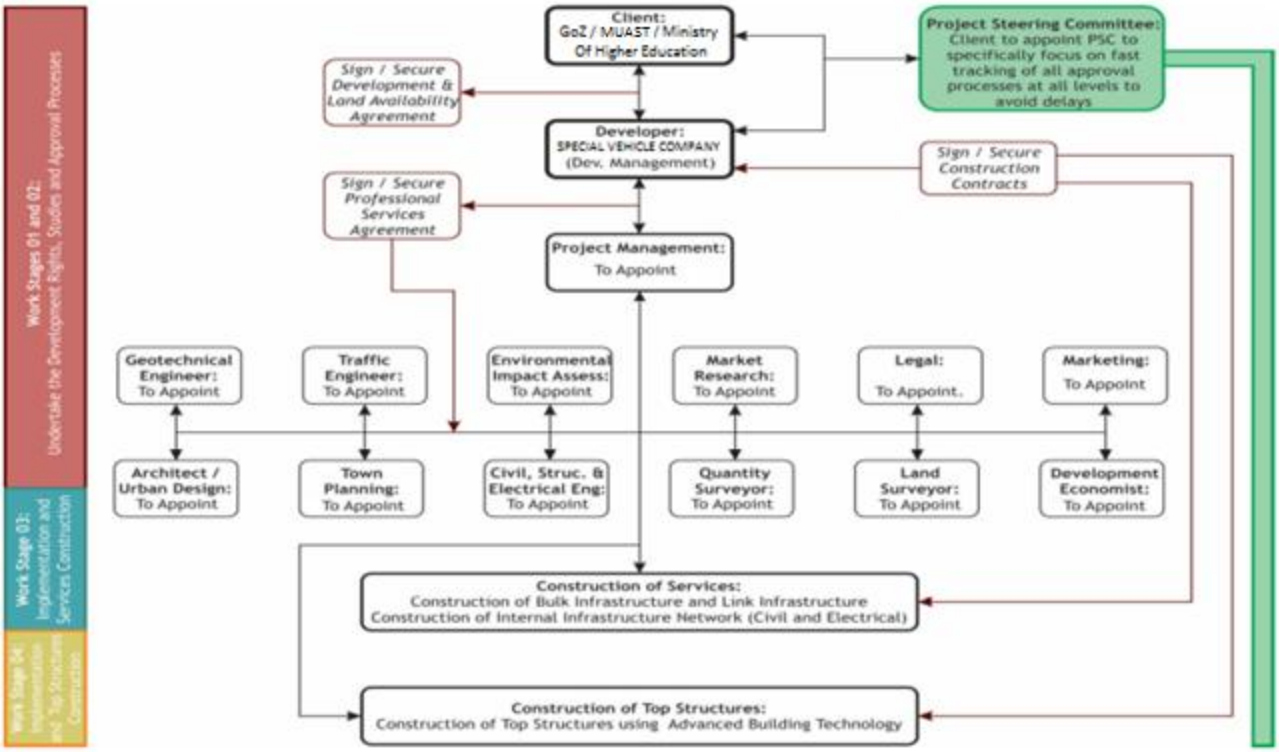
Ref. No.	Task/ Sub-Task	Description	Deliverables	Duration (wks)			
				Section			
Tender Design & Documentation Phase 1				01	02	03	Total for scheme
	1.	Tender Design	Geological Report, Topographic Surveys Scoping report, Preliminary Report and Cost Estimate Health and Safety Specifications, Environmental Management Plan, Site Management System Forms, EPWP specifications, Advertisements for Bids.	15	12	15	15
1	1.1	Engineering					
2	1.2	Health & Safety					
3	1.3	Environment					
4	1.4	Project Management					
5	6	BEE Score Card					
Detail Design and construction Monitoring Phase 2							
	2.	Detail Design	Design Report, Tender Documents (Specific Conditions of Contract, Special Conditions of Contract, General Conditions of Contract and Contract Specifications, Detail Construction drawings). Tender Adjudication Report. Baseline Programme of works.	15	12	15	15
6	2.1	Engineering					
7	2.2	Health & Safety					
8	2.3	Environment					
9	2.4	Project Management					
10	6	BEE Score Card					
Construction Monitoring			Update Programme of works, Training Audit and Progress Reports, Construction Progressing, Progress reports (construction), Interim Payment Certificates, Health and Safety Audit Reports, BEE progress Reports. DPW Audit Reports. Minutes of Monthly Progress Meetings.	260	260	225	260
	3.	Construction Monitoring					
11	3.1	Engineering					
12	3.2	Health & Safety					
12	3.3	Environment					
13	3.4	Project Management					
15	6	BEE Score Card					
Commissioning Phase 3							
	4.	Commissioning	Operation Licences (if Applicable), As-Built Drawings, Practical Completion Certificate, Contract Documents, Hand Over Report,	5	4	6	6
16	4.1	Engineering					
17	4.2	Health & Safety					
18	4.3	Environment					
19	4.4	Project Management					
20	6	BEE Score Card					
Assessment and Close-out Phase 4							
21	5.	Assessment & Close-out	Completion Report and Final Accounts, construction Completion Certificate, Final Payment Certificate.	4	3	5	5
	5.1	Project Management					
	6.	SMME Score Card					

5.1Work plan and Task Flow chart

ORGANISATION FORMULATION STRUCTURE



PROJECT CONTRACTING STRUTURE:



6.0 CONCLUSION

The proposed Marondera University of Agricultural Sciences and Technology project will certainly result in a positive impact on the socioeconomic dimension - creation of employment opportunities right from its inception. Coupled with the development of on-site Business Centre with facilities for hotel, banks, petrol station and other businesses, the local economy will improve through the multiplier effect - the leasing out of amenities and commercial properties constructed as supporting structures, and resultant upsurge in local commerce.