



Uganda
MARTYRS
University



ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN (ESMMP)

FOR



THE AFRICAN CENTRE OF EXCELLENCE IN AGRO-ECOLOGY AND LIVELIHOOD SYSTEMS (ACALISE)



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ACRONYMS

ACALISE	African Centre of Excellence in Agro-Ecology and Livelihood Systems
DSGBV	Domestic Sexual and Gender based Violence
DWRM	Directorate of Water Resource Management
EA	Environmental Audit
ESMMP	Environmental and Social Management and Monitoring Plan
ESIA	Environmental and Social Impact Assessment
GoU	Government of Uganda
HIV/AIDS	Human Immune-Deficiency Virus/Acquired Immune Deficiency Syndrome
EHS	Environment Health and Safety
HSO	Health Safety Officer
HR	Human Resource Manager
LC	Local Council
SGBV	School Gender Based Violence
MoGLSD	Ministry of Gender Labor and Social Development
MoWT	Ministry of Works and Transport
NEA	National Environment Act
NEMA	National Environment Management Authority
NGO	Non-governmental Organization
OSH	Occupational Safety and Health
OP/BP	Operation Procedure/Bank Policy
PPE	Personal Protective Equipment
PRO	Public Relations Officer
UMU	Uganda Martyrs University
CBD	Convention on Biological Diversity
UNFCCC	United Nations Framework Convention on Climate Change
ACE	African Center of Excellence

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1. INTRODUCTION

1.1 Background

The African Centre of Excellence in Agro-ecology and Livelihood Systems (ACALISE), is one of the twenty-four World Bank Centers of Excellence in the ACE II Project. The main objective of ACALISE is to streamline the production of high level, well-motivated and ethically conscious critical mass of Agro-ecology and Livelihood systems experts. It is funded by the World Bank through the Government of Uganda as a regional centre of excellence to collaborate quality postgraduate education as well as applied research to address key development challenges facing the East and Southern Africa and beyond. Uganda Martyrs University, the World Bank Group and the Inter-University Council for East Africa are jointly responsible for overseeing the activities of ACALISE.

ACALISE is hosted by Uganda Martyrs University in the Faculty of Agriculture. Uganda Martyrs University is a leader in Agro-ecological solutions related to climate change and livelihood systems and has trained top-notch Agro-ecologists on the African continent and beyond through its top-rated programmes in Organic Agriculture and Agroecology. ACALISE integrates Ecology into a holistic Agricultural approach with direct benefits to livelihoods in East and Central Africa. It is premised upon a system thinking approach. ACALISE applies a system thinking approach in training Agro-ecology and food systems experts who will work with other stakeholders along the value chains to bring about better livelihoods. Project Components for the ESMP include: Hostel, University Farm, Organic Demo Site, Black soldier larvae site.

This task also involved visualization and documentation using motion and still photography, which reports are hereby appended in the annexes.

1.2 Objectives of ACALISE:

- Training of a new breed of M.Sc. and PhDs envisioned to carry out relevant research in Agro-ecology and livelihood systems for innovation in the region and beyond
- Integration of ecological approaches in Agriculture and related disciplines in the region to stimulate sustainable development and better livelihoods
- Initiation of critical regional collaborations for strengthening multidisciplinary and multi-sectoral research for development.

- Promotion of Public Private Partnerships (PPP) for innovation dissemination and impact enhancement in Agro-ecology for better livelihood strategies. ACALISE will promote action research, student-centered learning techniques including problem solving, experiential research but also experimental methods to foster innovations in the field.
- Creation of demonstration farms to facilitate the provision of hands-on skills and sustainable agricultural methods and technologies to the neighbouring communities involved in agriculture to enhance sustainable livelihoods and improve their standards of living and quality of life.

1.3 The Purpose of the ESMMP

The Environmental and Social Management and Monitoring Plan describes the various environmental and social impacts (both positive and negative) associated with the project activities and outlines planned mitigation and management measures that will be employed to mitigate potential adverse environmental and social impacts.

The ESMP will provide a guide on how the project works will observe and comply with the National and International laws and regulations which seek to ensure that the maintenance and rehabilitation works do not adversely affect the environmental and social community resources.

1.4 The Objective of the ESMMP

The main objective of the Environment and Social Management and Monitoring Plan is to identify and assess the potential environmental and social impacts of the project and put viable remedial measures for addressing the non-conformances while enhancing positive attributes.

The specific objectives of the Environmental and Social Management and Monitoring Plan are to provide direction and assistance in;

- Further elaboration and operationalization of the guidelines in the approved Environmental and Social Impact Statement, work planning and following set procedures to protect the environment.
- Implementation of Environmental and Social mitigation and management measures in line with the National and International laws and Regulations.

- Guidance to all environmental and social monitoring activities for the Contractor, Sub-Contractor and other Lead Agencies including preparation of the requisite progress reports.
- Environmental and Social emergency response procedures.
- Ensure sound environmental and social management during implementation of the project.

1.5 Responsibility for Environmental Management

Numerous offices and institutions have the responsibility for environmental management. They include the contractor, NEMA, district local governments and the university among others.

The Management and Staff of the proposed project components will be responsible for the implementation of the ESMMP throughout the life cycle of the project. In order to implement the environmental and social mitigation and management measures in the field, an Environmental and Social Officer will be responsible for reviewing work methods with regards to their potential for adverse impacts on the environment. The above team will carry out the following activities;

- Review work schedule with respect to environmental management and monitoring;
- Ensure that emergency spill equipment/kits are adequately supplied;
- Supervise the implementation of the Environmental and social management and Monitoring Plan and all the other Plans regarding environmental and social;
- Ensure stake holder engagement
- Sensitize and handle emerging social issues

Monitoring of environmental and social impacts shall be regular and performed over a long period of duration to provide the information required to ensure that project implementation has the least possible negative environmental impacts on the people and environment.

1.6 Scope of the ESMMP

The scope of the ESMMP covers the project activities and components under ACALISE management. It also covers a description of procedures and methods for complying with general environmental management conditions, and specific conditions specified in the ESMMP such as:

- A description of specific mitigation measures that will be implemented in order to minimize adverse impacts;
- A description of all planned monitoring activities (e.g. wastes and sanitary effluent) and the reporting thereof; and
- Internal organizational, management and reporting mechanisms put in place for such.

CHAPTER 2: LEGAL, REGULATORY AND INSTITUTIONAL FRAMEWORK

2.1 POLICY FRAMEWORK

2.1.1 The National Environment Management Policy, 1994

This policy aims to promote sustainable economic and social development mindful of the needs of future generations and EIA is one of the vital tools it considers necessary to ensure environmental quality and resource productivity on long-term basis. It calls for integration of environmental concerns into development policies, plans and projects at national, district and local levels. Hence, the policy requires projects or policies likely to have significant adverse ecological or social impacts to undertake an ESIA before implementation. This is also reaffirmed in the National Environment Act, Cap 153 which makes ESIA a requirement for eligible projects.

2.1.2 National Water Policy, 1999

A key objective of this policy is to guide development and management of water resources in Uganda following integrated and sustainability concept so as to secure and provide water of adequate quantity and quality for all social and economic needs, with full participation of all stakeholders and mindful of the needs of future generations. The policy was set to:

- Promote rational use of water.
- Promote provision of safe water supply for domestic use.
- Promote orderly development and use of water resources for purposes other than domestic including transport or navigation.
- Control pollution and promote the safe storage, treatment and disposal of waste, which could pollute water and impact public health.

The policy is relevant where project development could impact quantity or quality of surface water resources.

2.1.3 Uganda's Vision 2040

The Uganda Vision 2040 articulates clear strategies and policy directions to transform the country into a competitive upper middle income country with per capita income of USD 9,500 building from previous development strategies such as Vision 2025. The development prospects include the discovery of oil and gas reserves, green economy, demographic profile, E-revolution, globalization and regional economic integration among others, as well as associated challenges.

From the environmental perspective, the Vision 2040 intends to conserve and wisely use the country's environmental, natural resources and cultural diversity for collective benefit of the present and future generations and adopts patterns of production, consumption and reproduction that safeguards the environment will be undertaken as a matter of urgency.

In recognition of these aspirations, this project should conduct ESIA's to mitigate any potential impacts to the natural resources and enhance conservation and sustainability. Such ESIA's will be ready as soon as the technical design of the project is available.

2.1.4 The National Gender Policy, 1997

The aim of this Policy is to guide and direct at all levels, the planning, resource allocation and implementation of development programmes with a gender perspective. Its overall goal is to mainstream gender concerns in the national development process in order to improve the social, legal/civic, political, economic and cultural conditions of the people in Uganda in particular, the women. This policy obliges the developer to ensure gender dimensions are mainstreamed into projects at all its stages.

2.1.5 The Plan for Modernization of Agriculture

The Plan for Modernization of Agriculture (PMA) is a multi-sectoral policy framework for agriculture and rural development, is responsible for shaping the policy environment for agriculture in Uganda over the past eight years or so. The PMA pillars include: - research and technology development; national agriculture advisory services; rural finance; agro processing and marketing; agricultural education, physical infrastructure and sustainable natural resource utilization and management. The PMA outlines the national agricultural goals and priorities (Uganda Government, 2010). Linkages with PMA interventions have been used in designing recommendations for this project.

2.2 Regulatory Framework

2.2.1 Constitution of the Republic of Uganda, 1995

The Constitution places obligations on both the state and the citizens of Uganda to among other things: a) protect the environment; b) protect important natural resources including land, water, wetlands and fauna and flora; c) promote sustainable development and public awareness of the need to protect and conserve natural resources in a balanced manner for the benefit of the present and future generations and to prevent damage to natural resources resulting from pollution and other causes.

Article 39 and 41 of the Constitution of 1995 provide that everyone has a duty to maintain a sound environment. It also stipulates that every person in Uganda has a right to a healthy and clean environment and as such can bring legal action for any pollution or disposal of wastes. Chapter III, Section 245 stipulates that the Parliament shall by law provide measures intended to protect and preserve the environment from abuse, pollution and degradation. The articles detailed above place project development within the constitutional framework. The Constitution puts upon all Ugandans the duty to create and protect a clean and healthy environment. An EIA will be conducted with the aim of identifying, assessing and putting in place measures to ensure that environmental and social settings are not compromised during project implementation.

2.2.2 The National Environment Act (Cap 153)

The specific legislation that deals with environmental impact assessments (EIA) in Uganda is the National Environment Act (NEA), Cap 153. NEMA was created under NEA and mandated with the responsibility to oversee, coordinate and supervise environmental management activities in Uganda. The Act provides for various strategies and tools for environment management, which also include EIA (Section 19) for projects likely to have significant impacts on the environment. NEMA sets multimedia environmental standards (Sections 24-32) to prevent contamination of air, water and soil resources. Section 36 entrusts NEMA, lead agencies and the district environment committee with powers to protect quality of watercourses, permanent or seasonal from human activities that could adversely affect them. Section 56 prohibits discharge of hazardous substances like chemicals, oil, etc into the environment except in accordance with guidelines prescribed by NEMA.

NEMA will also be responsible for approval of the project EIA and prescribing compliance conditions during project implementation.

This Act is relevant to the Proposed Project as it will have environmental impacts and requires an EIA to be conducted. All the foregoing sections of the Act are relevant for preservation of the natural environment around the project site both during construction and operation of the project. Environmental standards of NEMA will be adhered to during the construction process.

2.2.3 The Occupational Safety and Health Act 2006

The Act requires employers to provide and maintain safe working conditions, and to take measures to protect workers and the public from risks and dangers of their works, at his or her own cost (Section 13). Employers with more than 20 workers should prepare and often revise a written policy with respect to safety and health of workers (Section 14). Every workplace must be kept in a clean state, free from effluent arising from any drains and sanitary facilities (Section 46). The developer therefore is obliged to provide employers with washing facilities, First Aid, facilities for meals and safe access to workplaces. Clearly, this law will apply to occupational health and fire safety risks associated with operation of equipment.

The developer will ensure safety of all workers that will be employed during the operation of the proposed project.

2.2.4 Public Health Act, Cap 281

The Public Health Act consolidates the law with respect to Public health. The act puts a duty on urban and local authorities for matters pertaining to public health. The act specifies about nuisances or conditions liable to be injurious to health caused by persons or to persons on premises/ land they occupy or are in charge of.

The act in section 79 (1) emphasises about draining into public sewers and prohibits draining of harmful substances into public drains. In general, the Public Health Act seeks to protect the health of all citizens including the health of the environment through stipulations about drainage and safety of buildings and activities.

Section 105 of the Public Health Act imposes a duty on the local authority to take measures to prevent any pollution dangerous to the health of any water supply, which the public has a right to use for drinking or for domestic purposes. It establishes rules for drainage and sanitation, which specifically mention technical aspects of water disposal.

This Act is applicable to onsite management of construction waste, sewage and domestic waste during construction to prevent contamination of the environment. In this case the surrounding communities are susceptible to contamination in case of poor handling of construction materials and waste disposal during the construction phase. Adequate sanitary facilities, waste management bins and toilets will be implemented and well maintained to prevent any outbreaks that may affect the public.

2.2.5 Water Act, Cap 152

The Act provides for the management of water in Uganda and is under the mandate of Directorate of Water Development (DWD) in the Ministry of Water, Lands and Environment. Section 31, subsection (1) of the Water Act deals with prohibition of pollution to water and stipulates that a person commits an offence that, unless authorized under this Act, causes or allows:

- Waste to come into contact with any water;
- Waste to be discharged directly or indirectly into water;
- Water to be polluted

Under section 107, the Water (Waste Discharge) Regulations (1998); the Water Supply Regulations (1999) and the Sewerage Regulations (1999) have been put in place to operationalize the Act and are aimed at minimizing pollution of public waters by developers and other users.

According to Regulation 4 (1) of the Water (Waste Discharge) Regulations (1998): No person shall discharge effluent or waste on land or into aquatic environment contrary to the standards established under section 27 of the National Environment Act (1995), that is, The National Environment (Standards for Discharge of Effluent into water or on Land) Regulations (1999); unless he or she has a permit in the format specified in the First Schedule issued. Water requirement in the process will be met by collection from the streams in the project area using water tanks. Management of the proposed project will ensure the community water source will not be strained.

2.2.6 The Land Act 1998, Cap 227

The Act addresses four issues namely, *holding, control, management and dispute resolution* related to land ownership. As regards tenure, the Act repeats in Section 3 provisions of Article 237 of the Constitution which vests all land in the citizens of Uganda, to be held under *customary, freehold, mailo and leasehold* tenure systems. It then defines the incidence of each tenure regime (section 4); provides mechanisms of acquisition of certificates of customary ownership (sections 5-9); the conversion of customary tenure to freehold (sections 10-15), or collective management of land held under customary law (sections 16-27); the protection of the rights of women, children and persons with disability (sections 28); the conversion of leasehold into freehold (section 29) and the security of tenure for ‘tenants by occupancy’ (sections 30-39).

The Land Act provides for a decentralized system to resolve land disputes in Uganda (sections 75-90) through establishment of Land Tribunals at all levels of local government and that they should first arbitrate land disputes before resorting to legal courts of law. No other organ, except informal traditional authority mediators (section 89) will henceforth have jurisdiction over land disputes (section 98). Therefore, the Act favours local landowners by advancing a process that is both localized and free from costs and formalities associated with formal judicial courts.

2.2.7 The Local Governments Act, 243

The Local Government Act, 1997 provides for the decentralization and devolution of Government functions, powers and services from the central to local governments. The local governments are responsible for the protection of the environment in the areas of their jurisdiction and on matters that affect their environment.

2.2.8 The Workers Compensation Act, 2000

Section 28 of The Workers’ Compensation Act (2000) states that:

Where a medical practitioner grants a certificate that a worker is suffering from a scheduled disease causing disablement or that the death of a workman was caused by any scheduled disease; and,

The disease was due to the nature of the worker’s employment and was contracted within 24 months immediately previous to the date of such disablement or death, the worker or, if

he or she is deceased, his or her dependants shall be entitled to claim and to receive compensation under this Act as if such disablement or death had been caused by an accident arising out of and in the course of his or her employment.

2.2.9 The Physical Planning Act 2011

This Act replaced the Town and Country Planning Act, Cap 246 which was enacted in 1951 and revised in 1964 but is now inconsistent with contemporary government system in Uganda. The 1951 Act was enacted to regulate and operate in a centralised system of governance where physical planning was carried out at national level through the Town and Country Planning Board. Implementation of the Act was supervised by local governments, especially the urban local governments.

Uganda has since gone through many social, political and economic changes. For example, promulgation of the 1995 Constitution established a decentralised system of governance which divulged powers and functions including physical planning, finance and execution of projects from the central government to local governments. This therefore created a need to enact a physical planning legislation which is consistent with this Constitutional requirement. The Physical Planning Act, 2011 establishes district and urban physical planning committees, provides for making and approval of physical development plans and applications for development.

Section 37 of The Physical Planning Act, 2011 requires an EIA permit for developments before they are implemented, stating:

“Where a development application related to matters that require an environmental impact assessment, the approving authority may grant preliminary approval subject to the applicant obtaining an EIA certificate in accordance with the National Environment Act”.

Mpigi District has jurisdiction over the area covered by the project and therefore has regulatory control to ensure that this project conforms to local physical planning requirements.

2.2.10 Uganda Citizenship and Immigration Control Act Cap 66

This act makes provision for acquisition of citizenship of Uganda pursuant to the constitution, It provides for the compulsory registration of all Ugandans and the issue of national identification numbers and the issue of national identity cards to citizens of Uganda; It regulates the issue of passports to citizens of Uganda, it provides for the regulation and control of aliens in Uganda; to repeal the Uganda Citizenship Act, the Immigration Act, the Passport Act and Aliens (Registration and Control) Act; and to provide for other matters incidental or connected with the foregoing. The workers at the proposed project will include both citizens and non-Citizens. Citizens will be required to have national IDs or Introductory letter from the respective LC1 while none citizens will be required to have work permits.

2.2.11 Children Act 2016

The objectives of this act are: to enhance the protection of children: to strengthen the provision for guardianship of children; to strengthen conditions for inter country adoption; to prohibit corporal punishment; to provide for the National Children Authority, repeal the National Council for Children Act Cap.60 and to provide for other related issues. In line with this act, the developer will not employ anyone who is below the age of 18years.

2.2.13 The Environmental Impact Assessment Regulations, 1998

The regulations require a detailed study to determine possible environmental impacts and mitigation measures. The guidelines require that the EIA process should be participatory engaging the general public and stakeholders in consultations or to inform them and obtain their views about the proposed development during the EIA.

These regulations are relevant to the Project as they detail the requirements for the EIA to be undertaken for the project.

2.2.14 National Environment (Noise Standards and Control) Regulations, 2003

Part III Section 8 (1) requires machinery operators, to use the best practicable means to ensure that the emission of noise does not exceed the permissible noise levels. The regulations require that persons to be exposed to occupational noise exceeding 75 dBA for 8 hours should be provided with requisite ear protection (Table 1). This regulation would be specifically important in construction and operation phase scheduled to take place at the site.

Table 1: Regulatory noise limits (Uganda)

Facility	Noise limits dB (A) (Leq)	
	Day*	Night*
Construction sites	75	65
*Time frame: Day 6.00am -10.00 pm; Night 10.00 pm. - 6.00 am.		

Source: *The National Environment (Noise Standards and Control) Regulations, 2003.*

2.3 International Agreements and Conventions

2.3.1 UNESCO Convention of 1972 on Protection of the World Cultural and Natural Heritage

Article 4 states that each State Party to this Convention recognizes that the duty of ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage referred to in Articles 1 and 2 and situated on its territory, belongs primarily to that State. It will do all it can to this end, to the utmost of its own resources and, where appropriate, with any international assistance and co-operation, in particular, financial, artistic, scientific and technical, which it may be able to obtain.

Article 5 ensures that effective and active measures are taken for the protection, conservation and presentation of the cultural and natural heritage situated on its territory, each State Party to this Convention shall endeavor, in so far as possible, and as appropriate for each country:

to adopt a general policy which aims to give the cultural and natural heritage a function in the life of the community and to integrate the protection of that heritage into comprehensive planning programmes;

to set up within its territories, where such services do not exist, one or more services for the protection, conservation and presentation of the cultural and natural heritage with an appropriate staff and possessing the means to discharge their functions.

2.3.2 Convention on Biological Diversity (CBD)

This obliges member states to establish a system of protected areas, develop guidelines for the selection, establishment and management of protected areas, and promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings and integration of sustainable utilization of natural resources in national strategies.

2.3.3 The United Nations Framework Convention on Climate Change (UNFCCC)

The ultimate objective of the Convention is to stabilize greenhouse gas concentrations in the atmosphere at a level that would not jeopardize the global climate. The convention also requires all Parties to develop, periodically update, publish and make available to the Conference Of parties (COP) their national inventories of anthropogenic emissions of all greenhouse gases not controlled by the Montreal Protocol. The developer has put in place measures to reduce greenhouse emissions like Monitoring of dust emissions, notably Particulate Matter (PM₁₀), shall be carried out on a regular basis among others.

2.3.4 International Labor Organization's Fundamental Conventions

The ILO's Governing Body has identified eight conventions as "fundamental", covering subjects that are considered as fundamental principles and rights at work: freedom of association and the effective recognition of the right to collective bargaining; the elimination of all forms of forced or compulsory labour; the effective abolition of child labour; and the elimination of discrimination in respect of employment and occupation. These principles are also covered in the ILO's Declaration on Fundamental Principles and Rights at Work (1998). There are currently over 1,367 ratifications of these conventions, representing 91,4% of the possible number of ratifications. A further 129 ratifications are still required to meet the objective of universal ratification of all the fundamental.

The Eight Fundamental Conventions are:

1. Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87)
2. Right to Organise and Collective Bargaining Convention, 1949 (No. 98)
3. Forced Labour Convention, 1930 (No. 29)
4. Abolition of Forced Labour Convention, 1957 (No. 105)
5. Minimum Age Convention, 1973 (No. 138)
6. Worst Forms of Child Labour Convention, 1999 (No. 182)
7. Equal Remuneration Convention, 1951 (No. 100)
8. Discrimination (Employment and Occupation) Convention, 1958 (No. 111)

3.0 DESCRIPTION OF THE PROPOSED PROJECT

3.1 Location of the Project

The African Centre of Excellence in Agro-ecology and Livelihood Systems (ACALISE) under the Eastern and Southern Africa Higher Education Centres of Excellence Project (ACE II) will have different project components which include: Hostel, University Farm, Organic Demo Site, Black soldier larvae site. These are located on Uganda Martyrs University land in Nkozi Sub County, Mpigi District. The sites can be accessed via University Road.

The various project components are located at the following grid references:

No.	Project Component	Easting (E)	Northing (S)	Elevation
1	Hostel	0.003206	32.017376	1189
2	University farm	-0.006727	32.018938	1149
3	Organic Demo Site	-0.006077	32.026957	1146
4	Black soldier larvae site	-0.002798	32.022827	1146

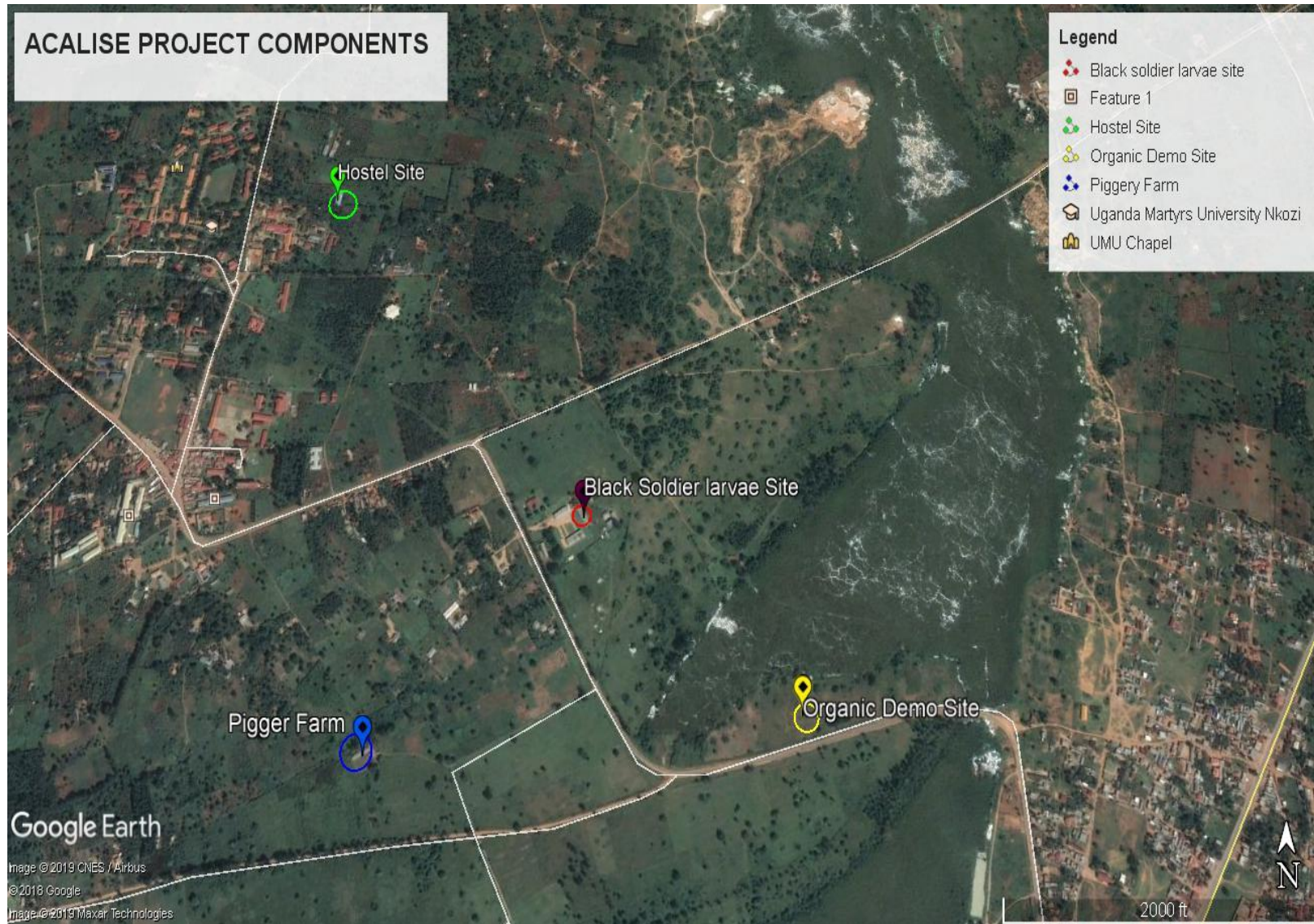


Figure 1: Google map showing all project components

3.2 Overview of the Sites for the Project Components

a. Hostel

The hostel structure is incomplete, and it is immediately neighboured by banana and coffee plantations to the south, a residential house under construction to the west, a green field and crop gardens to the east and north as seen in the pictures below.



Figure 2: Google map showing the Hostel site



Figure 3: Current state of the incomplete hostel structure



Figure 4: Crop garden and green fields neighboring the site to the east



Figure 5: The banana plantation and residential house under construction neighboring the hostel site to the west and south

b. University Farm

The University Farm comprises of a piggery farm with a penstock of 12 units. The farm is neighboured by planted eucalyptus trees, green fields and crop gardens in all directions as seen in the pictures below.

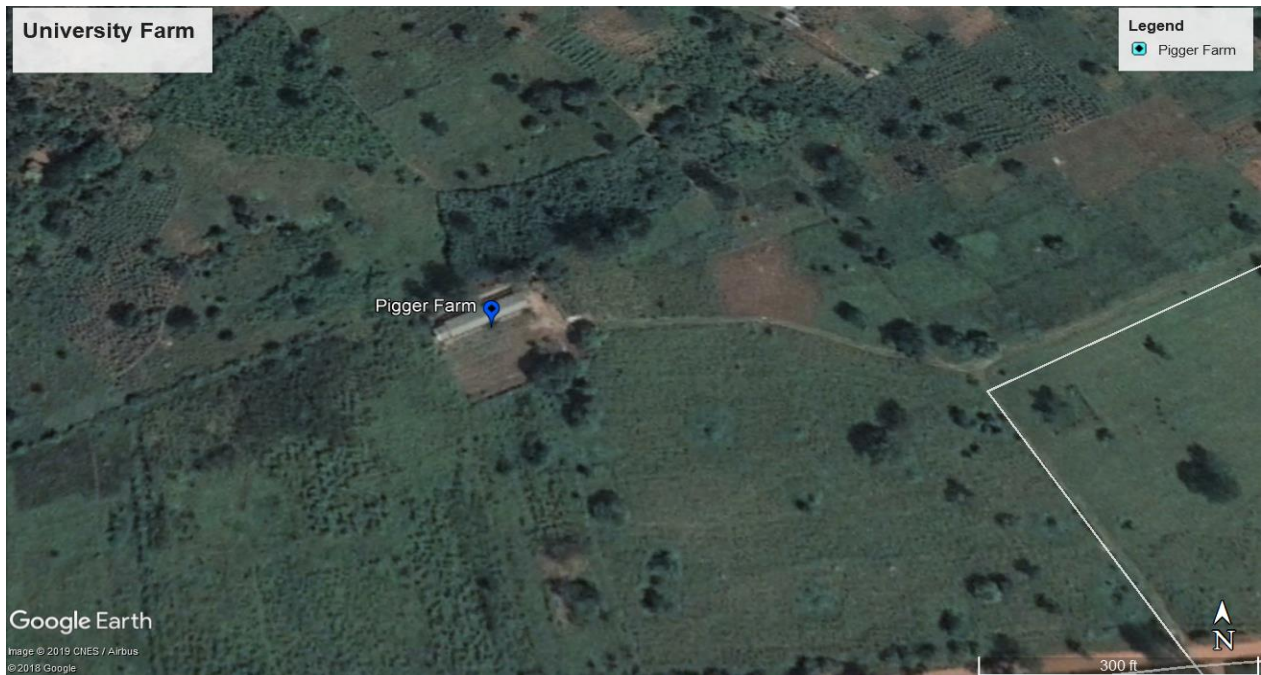


Figure 6: Google map showing the farm site



Figure 7: Overview of the piggery farm



Figure 8: The pen stock units



Figure 9: Some of the pigs reared at the farm



Figure 10: The eucalyptus trees neighboring the piggery farm to the north.

c. Organic Demonstration Farm Site

This facility is still under construction, however demo crops have already been planted and among these include: Ethiopian mustard, Spinach, Red amaranth and African eggplants. The site also has some structures which are still under construction such as a pig sty, milking shed and an office building. The organic demonstration farm site is bordered by a wetland to the east, Nkozi town to the far north, farm land and crop gardens across the road to the west and south as seen in the photos below.



Figure 11: Google map showing the organic demonstration site



Figure 12: Some of the crops grown at the organic demonstration farm site



Figure 13: Some of the structures at the organic demonstration farm site under construction



Figure 14: Wetland bordering the organic demonstration farm site to the east

d. Black Soldier Larvae Site

The black soldier larvae site is located within the Faculty of Agriculture at Uganda Martyrs University. Construction of the block to house the black soldier larvae structures has been completed. Being within the faculty premises the site is neighboured by lecture rooms, the administration block to the east and north, poultry farm to the south and west as seen in the pictures below.

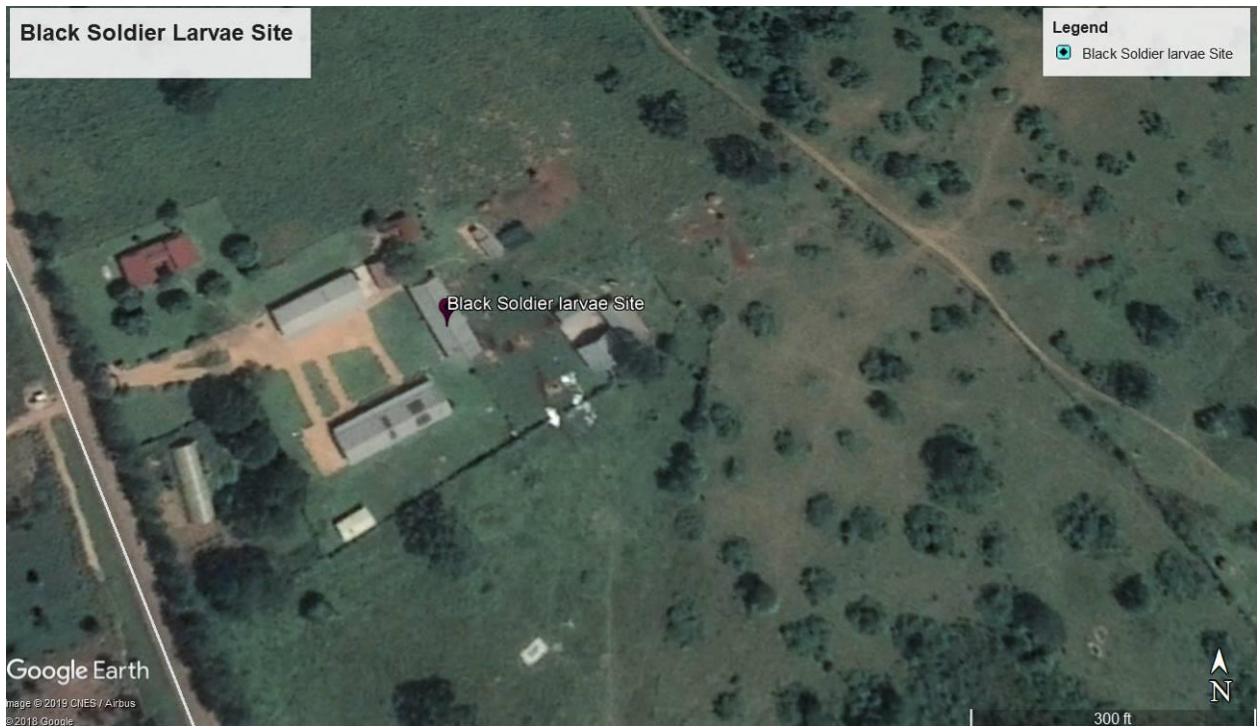


Figure 15: Google map showing the black soldier larvae site



Figure 16: Black soldier larvae cabinets



Figure 17: The building block to house the black soldier larvae project



Figure 18: Poultry farm neighbouring the black soldier larvae site to the south

4.0 EXISTING ENVIRONMENTAL AND SOCIO-ECONOMIC CONDITIONS OF THE PROJECT AREA

4.1 Climate (Rainfall and Temperature)

A considerable area of Mpigi District is influenced by the presence of Lake Victoria. This zone displays comparatively small seasonal variations of temperature, humidity and wind throughout the year. There are two relatively short dry seasons (December-March, and June-July) frequently broken by thunder-storms. Rainfall is well distributed throughout the year with peaks around March-April-May (the main rainy season), and October-November; thus exhibiting bimodal pattern of rainfall distribution. Mean annual rainfall is much higher at the Lake zone than in inland areas, and amounts range between 1250 - 1500mm.

Rainfall

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Temperature

Mean annual maximum temperatures are 27.5°C; while average annual minimum temperature 16°C and 15°C in the north-western to western parts of the District. Mean annual pressure (vapour pressure) is 18 - 20 millibars (mb). Mean monthly evaporation ranges between 125 and 150mm; depending on the temperature levels and the nature of the prevailing winds (dry or moist).

4.2 Soils and Geology

The geology of Mpigi District is generally dominated by undifferentiated gneiss which are in the category of wholly granitized or high to medium grade metamorphosed formations. They account for more than 75% of the geological features of the District. The other geological feature, although limited in occurrence, are Cainozoic rock (Pleistocene to Recent) comprising sediments, alluvium and moraines. Along River Katonga, there exists a shear zone referred to as the Katonga Break. In addition, a greater area is characterised by main fold trends which on the eastern part of the District, plunge south-wards away from the Katonga Break (shear zone); while the direction of plunge of the rest of the fold trends are not quite well known.

There are two dominant categories of soils in Mpigi District, namely, ferralitic (those with dominant colour yellow and red, respectively), and hydromorphic soils. Soil erosion is generally rated low and low level of siltation of water bodies. Towards the western part of the District, however, soil erosion is medium but also high in some specific areas.

4.3 Hydrology and Drainage

Mpigi District is generally endowed with adequate surface and sub-surface water reserves. It is rich in water resources and there are a few cases where people have to travel long distances in search of water. The numerous streams, rivers and wetlands both permanent and seasonal indicate how rich in surface water reserves of the district are. Minor valleys have distinct seasonal swamps and rivers, which contain water especially during the wet season. The water table along these swamps is quite high. They are suitable sinking shallow wells.

4.4 Vegetation Cover

Over the years considerable changes have occurred on the extent of vegetation cover in Mpigi District. The description of the vegetation types in the district bears the main vegetation types that have existed over time. The vegetation types in the District fall under the following categories: Medium Altitude Moist Evergreen Forest; Medium Altitude Moist Semi-Deciduous Forest; Forest/Savanna Mosaic; Moist *Acacia* Savanna; Dry *Combretum* Savanna; Dry *Acacia* Savanna; Grass Savanna; Dry Thicket; Communities on Sites with Impeded Drainage; The site greatly exhibits indigenous species of the woodland ecosystem like *Rubiaceae*, *Myrtaceae* etc (RCC, 2009). It is interesting to note that although this part of the area is exciting and with a reasonable number of species for grassland woodland ecosystem, there were no species of conservation concern recorded.

4.5 Socio-economic Environment

4.5.1 Land use and Tenure

Mpigi District has mailo, customary, freehold and leasehold land tenure systems. Although most of the land in the area is under private ownership, protection of the environment and adherence to environmental laws in land management is poor. This has led to massive land degradations mainly through land fragmentation and wetland reclamation.

4.5.2 Economic Activity

The state of the economy of a given area is a function of what the human setting is and the status of the resource base. Agriculture is the back-bone of the District economy, providing the most important source of livelihood for about 72% of the total households. A wide variety of crops are grown and marketing activities contribute to the well-being of the households.

A number of light industries mainly agro-based (crop processing - including grain-milling production of animal-feeds, cooking oil, and hulling of coffee) exist in the District. Other small-scale industries include furniture making which are widely distributed in the District. Metal-fabrication workshops, motor vehicle servicing garages, and handcraft making are mainly concentrated in urban areas. There is considerable petty trading in all ranks of the population.

4.5.3 Social Services and Infrastructure

Like most districts of Uganda, Mpigi District has got three types of road network classified in accordance with the type of surface and institution/authority responsible for their maintenance. These include trunk roads maintained by the Ministry of Works Transport and Telecommunications, feeder roads are a responsibility of Local Administration, and earth roads under care of local councils (LCS) and residents in communities where these roads pass. Communication in the area is readily available with use of mobile telecommunication networks (UTL, Airtel, MTN, Warid and Orange).

5.0 POTENTIAL IMPACTS AND MITIGATION MEASURES

This section provides an assessment of impacts, both positive and negative, on the physical, biological and socio-economic components of the environment that may arise from the construction and operation phases of the project. It also details alternative approaches or mitigation measures that need to be implemented in order to avoid, minimize, remedy or compensate for the potential negative impacts and enhance the potential benefits of the project. The section further provides a prediction of the residual impacts that may remain, assuming that all mitigation measures are implemented.

5.1 Impacts arising from Site Preparation and Construction Phases of the Project

5.1.1 Air and Dust Emissions

Transportation of construction earth materials and offloading of granular construction materials are likely to create dust. This may lead to the deterioration of the air quality, posing a health risk to workers and people in the vicinity. The levels of dust generated would change over time depending on the level of activity, weather and condition of the ground itself. Similarly, construction equipment such as trucks, excavators, concrete mixers and generators are likely to cause mobile emissions, leading to an increase in ambient levels of pollutants such as carbon dioxide, sulphur dioxide, nitrogen oxides and particle emissions. These emissions may cause respiratory infections to workers and neighboring people, the impact is expected to be **MEDIUM NEGATIVE** because the short duration of the impact. However, the implementation of the suggested mitigation measures may reduce it to **LOW NEGATIVE**.

IMPACT	MITIGATION	IMPACT					SIGNIFICANCE	
		NATURE	EXTENT	DURATION	MAGNITUDE	PROBABILITY		
Air and dust emissions	No	Negative	2	2	6	4	40	Medium
	Yes	Negative	1	2	2	2	10	Low
Mitigation Measures	<ul style="list-style-type: none"> Fit trucks used for ferrying construction materials with tailgates that close properly and cover them with tarpaulins; Use well-conditioned and serviced equipment to ensure high operation efficiency, thereby minimizing the emissions; Introduce and enforce a speed limit for all project traffic to reduce dust generated by over speeding; and 							
Cumulative Impact	Yes							
Reversibility	No							

5.1.2 Occupational Health and Safety Hazards

Construction of the facility will definitely involve activities, operations and machinery that could injure workers when appropriate safety measures are not in place. Major injuries may result from the falling of materials or tools, slips or falls on the same elevation, and falls from elevations. Other hazards may be related to equipment and vehicle repair, contact with moving machinery and lifting heavy weights. The injuries can range from minor ones to possible loss of life. However, if caution and personal protection gear is provided to workers, these injuries and accidents would be avoided. With the implementation of the suggested mitigation measures, the significance of the impact can be reduced from **HIGH NEGATIVE** to **LOW NEGATIVE**.

IMPACT	MITIGATION	IMPACT					SIGNIFICANCE	
		NATURE	EXTENT	DURATION	MAGNITUDE	PROBABILITY		
Occupational hazards	No	Negative	5	5	10	4	80	High
	Yes	Negative	5	1	2	2	16	Low
Mitigation Measures	<ul style="list-style-type: none"> • Planning work site layout to minimize the need for manual transfer of heavy loads; • Providing workers with protective gear such as safety glasses with side shields, face shields, hard hats, and safety shoes; • Ensure that at all time there are quick means of ambulating victims to the nearest health facilities; and • Ensuring that a first aider and first aid boxes are on site to handle minor accidents and to administer first aid in case of serious accidents before the victims are transferred to the nearby health facilities for extensive medical attention. 							
Cumulative Impact	No							
Reversibility	No							

5.1.3 Generation of Solid Waste

Activities involved in the construction may generate significant amounts of non-hazardous and hazardous solid waste. Non-hazardous wastes likely to be generated include debris from demolition of the existing structure, excess fill materials from grading and excavation activities

and mortar spills. Others include office, kitchen, and dormitory wastes like paper and polythene materials. Hazardous solid wastes that may be generated at the site include small amounts of machinery maintenance materials, such as oily rags, used oil filters, and used oil, as well as spill cleanup materials from oil and fuel spills. If the non-hazardous wastes are improperly managed, they may degrade site aesthetics or cause injuries thus being a nuisance in the area. Hazardous waste may contaminate the soil and run off in the area. With the implementation of the suggested mitigation measures, the significance of the impact can be reduced from **MEDIUM NEGATIVE** to **LOW NEGATIVE**.

IMPACT	MITIGATION	IMPACT					SIGNIFICANCE	
		NATURE	EXTENT	DURATION	MAGNITUDE	PROBABILITY		
Generation of solid waste	No	Negative	2	4	6	4	48	Medium
	Yes	Negative	2	1	2	1	5	Low
Mitigation Measures	<ul style="list-style-type: none"> Put on site special containers, well labeled, for collection of all categories of food waste, hazardous waste and non-hazardous non-biodegradable waste; Erect on site a bunded shed, with well labeled compartments, for storage of all categories of non-hazardous non-biodegradable waste and hazardous waste; Contract a licensed and experienced company to transport hazardous and non-hazardous biodegradable waste to approved waste treatment or disposal or recycling sites. 							
Cumulative Impact	No							
Reversibility	Yes							

5.1.5 Generation of Noise

Construction of the facility will involve activities and equipment that are likely to generate noise. Equipment or machinery likely to generate noise at the site includes moving trucks, excavation equipment, concrete mixers and cranes while activities likely to generate high levels of noise are hauling and offloading of the construction materials. If these sources are not carefully controlled, they may significantly increase the background noise level of the area thereby affecting the health of the workers and people in the neighborhood. With the implementation of the suggested mitigation measures, the significance of the impact can be reduced from **MEDIUM NEGATIVE** to **LOW NEGATIVE**.

IMPACT	MITIGATION	IMPACT					SIGNIFICANCE	
		NATURE	EXTENT	DURATION	MAGNITUDE	PROBABILITY		
Generation of noise	No	Negative	2	2	6	4	40	Medium
	Yes	Negative	1	2	2	2	10	Low
Mitigation Measures	<ul style="list-style-type: none"> Restricting activities with potential to generate noise to specific working time; Fitting noise control devices, such as muffles, to exhausts of noise generating equipment; Provide noise protection devices, such as ear plugs, to operators of noisy equipment or workers near noisy activities; and Servicing all equipment regularly to ensure high operation efficiency thus less noise. 							
Cumulative Impact	No							
Reversibility	Yes							

5.1.6 Sanitation

Construction of the facility will involve many workers. These people will have to spend most of their time, especially day time, on the site. They will automatically require better facilities where they can go and ease themselves. If these facilities are not provided, they may overload the only pit latrine at the site which may cause disease outbreaks in the area. With the implementation of the suggested mitigation measures, the significance of the impact can be reduced from **MEDIUM NEGATIVE** to **LOW NEGATIVE**.

IMPACT	MITIGATION	IMPACT					SIGNIFICANCE	
		NATURE	EXTENT	DURATION	MAGNITUDE	PROBABILITY		
Sanitation	No	Negative	3	1	8	4	48	Medium
	Yes	Negative	1	1	2	2	8	Low
Mitigation Measures	<ul style="list-style-type: none"> Provide proper sanitary facilities on the project sites. 							
Cumulative Impact	No							
Reversibility	No							

5.1.7 Job Creation

Construction works on the project will avail short-term jobs to skilled, semi-skilled and casual workers. These may include teachers, Engineers, Environmentalists, Masons and casual laborers. These will benefit from the wages or fees earned from working on the project. Considering the fact that construction will take a very short time (less than a year), the significance of this impact is anticipated to be **MEDIUM POSITIVE**.

IMPACT	MITIGATION	IMPACT					SIGNIFICANCE	
		NATURE	EXTENT	DURATION	MAGNITUDE	PROBABILITY		
Job Creation	No	Positive	5	1	2	4	32	Medium
	Yes	Positive	5	1	6	4	48	Medium
Enhancement Measures	<ul style="list-style-type: none"> • Ensure prompt payment of wages and fees. 							
Cumulative Impact	No							
Reversibility	No							

5.1.8 Income to Material Suppliers

Aggregates, sand, cement, timber, hard core and precast concrete materials are a few of the myriad construction materials likely to be used on the project. These materials may be purchased from the suppliers in the neighboring hardware shops in Villa town. Suppliers of these materials will realize incomes throughout the construction phase.

IMPACT	MITIGATION	IMPACT					SIGNIFICANCE	
		NATURE	EXTENT	DURATION	MAGNITUDE	PROBABILITY		
Income to construction material suppliers	No	Positive	5	1	2	4	32	Medium
	Yes	Positive	5	1	6	4	48	Medium
Enhancement Measures	<ul style="list-style-type: none"> • Local suppliers should be given first priority when procuring the construction materials, provided they are of the required quality and quantity. • Suppliers should promptly be paid. 							
Cumulative Impact	No							
Reversibility	No							

5.2 Impacts arising from the Operation Phase of the Project

5.2.1 Generation of Solid Waste

Operation of the facility is likely to generate significant quantities of both hazardous and non-hazardous solid waste. The non-hazardous solid wastes that may be generated include waste papers, waste foods, mineral water bottles and wrapping materials like polythene papers from the and accommodation units. The hazardous wastes that may be generated include waste associated with standby generator (if any) maintenance operations. If these wastes are improperly managed, they may degrade the environmental quality of the site and the neighborhoods. However, the implementation of the suggested mitigation measures can reduce the significance of the impact from **HIGH NEGATIVE** to **LOW NEGATIVE**.

IMPACT	MITIGATION	IMPACT					SIGNIFICANCE	
		NATURE	EXTENT	DURATION	MAGNITUDE	PROBABILITY		
Generatio n of solid waste	No	Negative	4	5	6	4	60	High
	Yes	Negative	2	4	2	2	16	Low
Mitigation Measures	<ul style="list-style-type: none"> Put on site special facilities, well labeled, for collection and storage of all categories of waste; Dispose non-hazardous solid wastes in an environmentally acceptable manner, where recycling or reclamation is not practical; Hazardous solid wastes should be properly stored in clearly marked containers; and Companies with experience in handling hazardous waste should be contracted to dispose of hazardous solid waste material. 							
Cumulative Impact	No							
Reversibility	Yes							

5.2.2 Fire Risk

Operation of the facility may pose fire risks if appropriate measures are not put in place. Fires can start from combustible materials at the site like paper, poor electrical connections or cigarette smoking in non-designated places. The damage could be loss of property or even human life. Whereas damage to property is a reversible adverse impact, loss of human life is irreversible. It might not always be possible to avoid all potential sources of fire accidents hence the need to take precautions. With the implementation of the suggested mitigation

measures, the significance of the impact can be reduced from **HIGH NEGATIVE** to **LOW NEGATIVE**.

IMPACT	MITIGATION	IMPACT					SIGNIFICANCE	
		NATURE	EXTENT	DURATION	MAGNITUDE	PROBABILITY		
Fire Risk	No	Negative	2	5	10	4	68	High
	Yes	Negative	1	2	4	2	14	Low
Mitigation Measures	<ul style="list-style-type: none"> • Install fire alarms in the buildings and fire suppression system like fire extinguishers at risky spots at the yard (like fuel storage area). • Install a hydrant system of adequate capacity to handle emergencies involving large fires. • Provide fire escape routes in all structures and clearly marked with lit signals. • Designate areas for smoking and as a muster point. • Workers should have basic training in fire prevention and control. • Undertake fire drills, at a minimum once a month. • Electrical installation shall conform to acceptable national safety standards. 							
Cumulative Impact	No							
Reversibility	No							

5.2.3 Generation of Sanitary Wastewater

Operation of the project is likely to be associated with generation of reasonable quantities of sanitary wastewater. This is because of the number of people that will be working and visiting the facility. Improper collection, storage and disposal of sanitary wastewater generated at the facility would lead to unsanitary conditions onsite, polluting ground and storm water. This may cause diseases such as cholera and dysentery. With the implementation of the suggested mitigation measures, the significance of the impact can be reduced from **MEDIUM NEGATIVE** to **LOW NEGATIVE**.

IMPACT	MITIGATION	IMPACT					SIGNIFICANCE	
		NATURE	EXTENT	DURATION	MAGNITUDE	PROBABILITY		
Generation of sanitary waste	No	Negative	3	2	8	4	52	Medium
	Yes	Negative	1	2	2	2	10	Low
Mitigation Measures	<ul style="list-style-type: none"> • Route sanitary wastewater generated from toilets, washing and urinary facilities to a septic tank-soak pit system for storage and purification; and • Contract a licensed waste handler to periodically empty the septic tank. 							

Cumulative Impact	Yes
Reversibility	No

5.2.4 Resource Consumption

Without adequate investment in conservation practices, the proposed project may consume significant quantities of resources, especially electricity and water. This is not only environmentally undesirable but also financially burdensome.

IMPACT	MITIGATION	IMPACT					SIGNIFICANCE	
		NATURE	EXTENT	DURATION	MAGNITUDE	PROBABILITY		
Resource consumption	No	Negative	5	2	6	4	52	Medium
	Yes	Negative	1	2	2	2	10	Low
Mitigation Measures	<ul style="list-style-type: none"> Employ energy conservation technologies during the operation of the project. Employ water conservation technologies. 							
Cumulative Impact	Yes							
Reversibility	No							

5.2.5 Job Creation

Operation of the facility will avail long-term employment to skilled and unskilled labor. People likely to be employed include managers, teachers, accountants, attendants, security guards, cleaners and other casual laborers. The significance of this impact is anticipated to be **HIGH POSITIVE**, once the recommended enhancement measures are implemented.

IMPACT	MITIGATION	IMPACT					SIGNIFICANCE	
		NATURE	EXTENT	DURATION	MAGNITUDE	PROBABILITY		
Job Creation	No	Positive	6	2	4	5	60	High
	Yes	Positive	6	2	6	5	70	High
Enhancement Measures	<ul style="list-style-type: none"> Ensure prompt payment of wages and salaries. 							
Cumulative Impact	Yes							
Reversibility	No							

5.2.6 Improved and Changed livelihoods

Operation of the facility will offer services like Skills development, social development, character development. The project will focus on all factors that hinder people to achieve their. This will improve and change people's live hoods for the better.

IMPACT	MITIGATION	IMPACT					SIGNIFICANCE	
		NATURE	EXTENT	DURATION	MAGNITUDE	PROBABILITY		
Provisio n of space	No	Positive	3	2	8	5	65	High
	Yes	Positive	3	2	10	5	75	High
Enhancement Measures	<ul style="list-style-type: none"> Follow up on the people and also track progress. 							
Cumulative Impact	No							
Reversibility	No							

6.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN

6.1 Introduction

This section presents an overview of the Environmental and Social Management and Monitoring Plan (ESMMP) that was developed to guide the management of all environmental and social impacts anticipated during the implementation of the project. The ESMMP has been informed by the EIA and includes an outline of potential impacts identified, mitigation/enhancement measures proposed, monitoring indicators, timing of monitoring, parties responsible and any capacity building requirement.

This ESMMP is a “living document” and should regularly be reviewed during the mandatory annual environmental audits and, where necessary, updated.

6.2 Objectives of the ESMMP

The main objectives of the ESMMP are to:

- Provide a process for achieving targeted environmental and social performance levels;
- Assign clear accountability and responsibility for environmental protection and social responsibility to management and employees; and
- Monitor compliance with applicable laws, regulations, standards and guidelines.

6.3 ESMMP Implementation

6.3.1 Roles and Responsibilities

The overall responsibility for the implementation of this plan rests with Uganda Martyrs University. The developer shall ensure implementation of the measures in the plan into project operations. Others with the responsibility for the implementation of this plan include:

- Contractors who shall be responsible for the integration of the measures in the plan into their operating procedures;
- Government environmental inspectors who shall regularly visit the site to monitor the compliance the project to environmental requirements;
- An independent social and environmental auditor who shall periodically come on site to conduct the mandatory annual environmental audits on the project.

6.3.2 Training

All employees and contractors shall receive training on the contents and requirements of the ESMMP. Thereafter, regular specific environmental trainings shall be carried out depending on the emerging environmental concerns.

Table 2: Environmental and Social Management and Monitoring Plan (ESMMP)

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
Construction Phase (All project Components)				
Dust polluting air quality.	<ul style="list-style-type: none"> Records of complaints of dust from neighbours. Hoarding off site during construction. 	<ul style="list-style-type: none"> Damp site during construction. Cover all materials in storage. Hoard off site during construction. Wet the roads with a water browser. 	Daily during construction phase Twice daily	Uganda Martyrs University Contractor
Poor disposal of human sanitary waste.	<ul style="list-style-type: none"> Presence of toilet odour from poor disposal of human waste. 	<ul style="list-style-type: none"> Construct waterborne toilets at site. Ensure toilets are properly used and kept clean at all times. Empty the septic tanks with a cesspool emptier when full. Restrict intruders' access to site during construction. 	During construction phase	Mpigi district Health Inspector. Uganda Martyrs University
Solid waste	<ul style="list-style-type: none"> Develop a waste management plan Litter at the site and immediate neighbourhood. 	<ul style="list-style-type: none"> Put in place coded waste collection bins. Separate bio-degradable and non-biodegradable waste. 	Weekly checks during the construction	Mpigi district Environment Officer. Uganda Martyrs University

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
	<ul style="list-style-type: none"> • Coded Waste bins on site. • Piles of debris. • Debris choking roadside drains. 	<ul style="list-style-type: none"> • Hire licensed waste collection firm to regularly collect and dispose of the construction waste. • Deposition of solid in the wetlands and streams is strictly prohibited. 		
Traffic interruptions	<ul style="list-style-type: none"> • Presence of warning placards. 	<ul style="list-style-type: none"> • Put in place clear signage indicating turn off, entry and exit points. • Put in place go slow/ construction ahead signage. • Hire traffic guides to help direct traffic where need. Arises. 	Daily during construction phases	Uganda Martyrs University Local Traffic Control staff.
Occupational Health and Safety issues.	<ul style="list-style-type: none"> • Presence of first aid kits. • Evidence of PPE use. • Records of tool box meetings. • Presence of firefighting plan 	<ul style="list-style-type: none"> • Have a functional First Aid Box on site. • Ensure all employees are trained to undertake their tasks. • Provide appropriate PPE for the workers. • Place fire extinguishers at strategic points on site. 	Daily during construction phases	Uganda Martyrs University

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
	and training schedule.			
Loss of vegetation cover leading to soil erosion.	<ul style="list-style-type: none"> Siltation of drainage channels along the camp and access roads. 	<ul style="list-style-type: none"> Limit vegetation clearing to the area required for construction of the campsites as per site layout plan. Pave the driveways. Re-vegetate unpaved and exposed sections of the site during landscaping with preferably indigenous grass and trees. 	Construction phase	Uganda Martyrs University Mpigi district Environment Officer.
Noise generation beyond permissible levels.	<ul style="list-style-type: none"> Records of complaints from neighbours 	<ul style="list-style-type: none"> Restrict all works today time. Provide masks to workers during working hours. Fit the generator with a muffler/silencer to minimise on the noise pollution. 	Daily checks during construction phase	Uganda Martyrs University
Possibility of Land use conflict.	<ul style="list-style-type: none"> Objection from neighbours. 	<ul style="list-style-type: none"> Fully compensate all the Project Affected Persons. Restrict development to leased area. 	Once before construction phase Regular	Uganda Martyrs University

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
	<ul style="list-style-type: none"> Copies of the lease agreement. 	<ul style="list-style-type: none"> Obtain all the necessary approvals from Mpigi district and Directorate of water resources department before construction. Stick to the approved plans by Mpigi district. 	checks by all stakeholders	Local area councillors.
Impacts on drainage.	<ul style="list-style-type: none"> Clogging of drains at the campsites or along access roads. 	<ul style="list-style-type: none"> Construct and maintain drainage channels along the site of development to ensure continuous flow of storm runoff from the site to the adjacent stream. Stabilise the drainage channels by stone pitching and stone pitch any raised flanks to avoid soil erosion. Design public drains in liaison with local planning authorities. 		Uganda Martyrs University Local area councillors.

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
Operations Phase (All Project Components)				
Occupational Health and safety.	<ul style="list-style-type: none"> • Presence of PPE. • Labels on hazardous substances. • Records of protection tests and staff meetings. • Presence of first aid kit. • Records of employee training. • Presence of health and safety policy. 	<ul style="list-style-type: none"> • Label all hazardous substances and appoint authorized persons to handle them. • Undertake various protection tests prior to commissioning. • Ensure appropriate PPE is provided to workers and is used. • Ensure restricted access to the storage areas. • Have a functional First Aid Box on site. • Provide Health and Safety policy to guide operations. • Train workers on basic firefighting techniques. • Implement weekly staff briefings on Environmental Health and safety. • Maintain good housekeeping. 	<ul style="list-style-type: none"> • Weekly meetings • Label containers prior to use • Provide PPE throughout operations phase 	Uganda Martyrs University Mpigi district Environment Officer.

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
Traffic interruptions	<ul style="list-style-type: none"> Records of motor accidents due to vehicles turning into or out of the site. Congestion at the campsites. 	<ul style="list-style-type: none"> Ensure there is no prolonged parking at the site to avoid vehicular congestion. Put in place signage indicating turn off, entry and exit points. Employ traffic guides. 	Daily	Uganda Martyrs University Local traffic control officers
Spillage of oil wastes on the site	<ul style="list-style-type: none"> Contamination of site soils with hydro-carbons Spillage on the ground along the drive way 	<ul style="list-style-type: none"> Monitor soil and air quality. Develop a spillage contingency plan. 	Daily Once During annual audit.	Uganda Martyrs University Mpigi district Environment Officer.
Security	<ul style="list-style-type: none"> Reported incidents of thefts or breaches in security. Records of vehicles turning 	<ul style="list-style-type: none"> Provide security lights at the site and immediate neighbourhood. Hire security guards from a reputable security firm to ensure security at the campsites. 	<i>Regular checks by Uganda Martyrs University</i>	Uganda Martyrs University Local traffic control officers.

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
	into or out of the site.	<ul style="list-style-type: none"> • All employees working at this site should have identity cards and recommendations from their respective LCI leaders. • Install vault and do not keep large amounts of cash at campsites overnight. • Ensure there is no prolonged parking at the site to avoid vehicular congestion. • Put in place signage indicating turn off, entry and exit points. • Employ traffic guides. 		
Noise from the generator and vehicle movements.	<ul style="list-style-type: none"> • Complaints from neighbours. 	<ul style="list-style-type: none"> • Install silencer on the generator, and ensure it is well serviced at all times. 	Throughout the Operations phase	Uganda Martyrs University Mpigi district Environment Officer.

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
Risk of fire	<ul style="list-style-type: none"> Records of fire outbreaks at the sites 	<ul style="list-style-type: none"> Paint boundary wall with flame resistant paint. Provide firefighting equipment at site. Train staff in basic firefighting. Prohibit smoking at the site and display hazard warning placards. Develop a fire emergency response plan and display it at the station. Obtain emergency telephone contacts (police, ambulance and Fire Bridge) and strategically display them on site. 	Regular checks by Uganda Martyrs University	Uganda Martyrs University Mpigi district Environment Officer and health Inspector.
Impacts on drainage	<ul style="list-style-type: none"> Clogging of drains at the project sites or along access roads. 	<ul style="list-style-type: none"> De-silt and maintain drainages to avoid stagnation of water and associated effects. 	Weekly checks	Uganda Martyrs University
Farm				
Manure and Litter	<ul style="list-style-type: none"> Isolation of manure/litter from water resources. 	<ul style="list-style-type: none"> Nutrients from manure/litter shall not be allowed to leach into the environment, either directly from 	Weekly	Uganda Martyrs University

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
	<ul style="list-style-type: none"> minimize the amount of manure produced, facilitate handling of animal wastes, and minimize migration of contaminants to surface water, groundwater, and air. 	<ul style="list-style-type: none"> sheds or during any storage prior to removal; It is preferable for manure/used litter to be cleaned from the sheds and removed from the site on the same day; Should the litter to be disposed of on site, buffer distances must be preserved between land disposal areas and sensitive features; Litter storage on site shall be on an impervious base with all clean rainfall runoff excluded from the site; Manure may be used as a fertilizer on agricultural land after careful assessment of potential impacts due to the presence of hazardous chemical and biological constituents; Ensuring production and manure storage facilities are constructed to 		

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
		<p>prevent manure contamination of surface water and ground water (e.g. use of concrete floors, use of roof gutters on buildings to collect and divert clean storm water, and covering manure storage areas with a fixed roof or plastic sheeting);</p> <ul style="list-style-type: none"> • Keeping waste as dry as possible by scraping wastes instead of using water as a solvent, minimize amount of water used during cleaning (for example, by using high-pressure, low-flow nozzles); 		
Animal Carcasses	<ul style="list-style-type: none"> • Diseases and odours, and vectors 	<ul style="list-style-type: none"> • Reducing mortalities through proper animal care and disease prevention/control; • Collecting carcasses on a regular basis to prevent putrefaction; 	Weekly and Every time the animals give birth	Uganda Martyrs University Mpigi District Agricultural Officer

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
		<ul style="list-style-type: none"> • Use reliable commercially available options approved by local authorities that dispose of carcasses by rendering or incineration, depending on the cause of fatality; • Incineration shall only be conducted in permitted facilities operating under international recognized standards for pollution prevention and control; • In absence of authorized carcasses collection, on-site burial may be one of the only viable alternatives, if allowed by the authorities; • On-site and/or off-site burial area should be accessible to earthmoving machinery and be designed and located so as to avoid contamination 		Mpigi District Health Inspector

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
		by vapours or leachate from buried, decaying carcasses; and <ul style="list-style-type: none"> • Open burning shall be avoided 		
Waste Water Management	<ul style="list-style-type: none"> • Reduce the impacts of water runoff from farm operations 	<ul style="list-style-type: none"> • Reducing water use and spills from animal watering by preventing overflow of watering devices and using calibrated, well-maintained self-watering devices; • Installing vegetative filters to trap sediment 	Weekly	Uganda Martyrs University Mpigi District Environmental Officer
Odour Management	<ul style="list-style-type: none"> • Reduced production of unpleasant odour from fresh excreta produced daily in shed's confinement 	<ul style="list-style-type: none"> • Controlling temperature, humidity, and other environmental factors of manure storage to reduce emissions; • Making an allowance for composting of manure to reduce odour emissions; • Reducing emissions and odours during land application activities by applying a few centimetres below the soil surface and by selecting favourable 	Weekly	Uganda Martyrs University

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
		<p>weather conditions (e.g. wind blowing away from inhabited areas);</p> <ul style="list-style-type: none"> • If need be, applying chemicals (e.g. urine inhibitors) weekly to reduce conversion of nitrogen to ammonia; • Optimizing the frequency of shed clean-out; • Keeping dust levels low, as odours are absorbed and carried by dust particles; • Ventilation that will achieve the maximum possible dilution of odour strength during shed cleanout; • Using dense vegetation buffer screens to filter dust and redirect odour away from sensitive areas; and • Containing litter and manure under weather proof covering, prior to removal from the vicinity. 		

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
Management of Spread of Animal Pathogens	<ul style="list-style-type: none"> Adequate disease-prevention procedures 	<ul style="list-style-type: none"> Establishing sound biosecurity protocols for the entire animal operation that control animals, feed, equipment, and personnel, entering the facility (for example, quarantine periods for new animals, washing and disinfecting equipment, showering and protective clothing and footwear for personnel, and keeping out stray animals and rodents; Controlling farm animals, equipment and personnel entering the facility (e.g. quarantine periods for new animals, washing and disinfecting crates, disinfection and coverage of shoes before entry into animal housing zones, and providing protective clothing to personnel); 	Weekly	Uganda Martyrs University

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
		<ul style="list-style-type: none"> • Vehicles that go from farm to farm (e.g. transport of veterinarians, farm suppliers, buyers, etc.) shall be subjected to special precautions such as limiting their operation to special areas with biosecurity measures, spraying of tires and treating parking areas with disinfectants: • Sanitizing animal housing on a regular basis; • Establishing a detailed animal health program supported by the necessary veterinary and laboratory capability; • Identify and segregate sick animals and develop management procedures for adequate removal and disposal of dead animals; and • Training workers in the application of animal health products. 		

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
Organic Demo Site				
Surface and Groundwater Pollution	<ul style="list-style-type: none"> • Pollution of surface and ground water sources 	<ul style="list-style-type: none"> • Prevention of accidental oil or chemical spillage, solid matters, contaminants, debris and other pollutants and wastes from entering into surface and ground water; • Awareness on environmental protection; • The contractor shall take reasonable measures to control storm-water and its erosive effects; Potential pollutants of any kind and in any form shall be kept, stored and used in such a manner that any escape can be contained and water table not endangered; 	Weekly and Monthly	Uganda Martyrs University
Hostel				
Management of water resources	<ul style="list-style-type: none"> • Presence of water conservation measures 	<ul style="list-style-type: none"> • Harvesting of Storm/Rainwater Regularly 	Monthly	Uganda Martyrs University

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
		<ul style="list-style-type: none"> • Maintaining plumbing, and identifying and repairing leaks • Shutting off water to unused areas of the Hostel building 		
Wastewater Management	<ul style="list-style-type: none"> • Sewage drainage in place 	<ul style="list-style-type: none"> • Use of the existing sewerage network or appropriate septic tank/soak pit system to disposal of sanitary waste 	Monthly	Uganda Martyrs University
Potential risks of fire	<ul style="list-style-type: none"> • Firefighting equipment in place • Hostel building designs with provisions for fire escape routes. 	<ul style="list-style-type: none"> • Firefighting equipment in place e.g. fire extinguishers; • Hostel building to have adequate and standard escape routes. • Training on fire management skills. 	Monthly	Uganda Martyrs University
Integrity of the building structures	<ul style="list-style-type: none"> • Presence of ramps, natural lightning and ventilation provided and emergency escape routes 	<ul style="list-style-type: none"> • Hostel structure to be designed to provide easy access for People with Disabilities (PWD) 	Monthly	Uganda Martyrs University

Impact issue	Indicators	Mitigation measures	Frequency of monitoring	Responsibility
		<ul style="list-style-type: none"> • Appropriate mechanical ventilation should be provided to ensure flow of clean air throughout the building • Natural lighting should be provided and incorporated • Passages to emergencies should be unobstructed at all times 		
Energy Conservation	<ul style="list-style-type: none"> • Presence of renewable energy systems • Reasonable electricity bills 	<ul style="list-style-type: none"> • Installation of renewable energy systems • Installation of high energy efficiency bulbs 	Monthly	Uganda Martyrs University
Security	<ul style="list-style-type: none"> • Presence of a fence 	<ul style="list-style-type: none"> • Fence of the hostel building to ensure among others safety of the occupants 	Monthly	Uganda Martyrs University

6. EMERGENCY PROCEDURES

6.1 Emergency Planning

6.1.1 Emergency Policy

While Uganda Martyrs University will take all reasonably practicable steps to minimize the risks of accident (and particularly fire and other situations where there may be significant risks to personnel and property), it is acknowledged that, despite these measures, it cannot be assumed that a major incident will never occur. In consideration of this circumstance, our primary objective is to provide a practiced, swift and effective response to any emergency situation.

6.1.2 Developer's commitment

Uganda Martyrs University is committed to providing a safe place of work and safe systems of work, as well as protecting the health and safety of people during reasonably foreseeable emergency situations. The University will maintain a fully documented emergency response plan that:-

- 1) Identifies the possible emergency scenarios for our site
- 2) Prescribes the Emergency Organization (people and duties)
- 3) Specifies the arrangements to be implemented (systems and procedures).

6.2 Fire Fighting Equipment

1. Fire-fighting equipment will be located in strategic places. The equipment shall also be mounted on company vehicles especially heavy machinery.
2. Nominated Uganda Martyrs University employees shall be trained in the use of the equipment. This training shall be by both verbal instruction and practical demonstration. The training is compulsory and shall be conducted for all nominated employees on an annual refresher basis.
3. All fire-fighting equipment shall be regularly checked and serviced. This will involve both internal inspections as well as external tests conducted by approved experts.
4. Fire-fighting equipment will not be used for any purpose other than its intended use for fighting fires.
5. Abuse of the equipment will lead to disciplinary procedures.

6.3 First Aid Policy

6.3.1 Company Commitment

Uganda Martyrs University is committed to the provision of an effective first aid service to protect the health and safety of all Employees who may be affected by accidents, incidents or injuries arising from the work carried out at the project site.

Uganda Martyrs University will train at least one of its employees in the different teams to work as first aid personnel to deal with minor accidents and emergencies.

6.3.2 First Aid Management Priorities

Uganda Martyrs University will ensure that:-

- 1) Legislative requirements for the first aid service are complied with;
- 2) The particular hazards of the workplace are taken into account when equipping and staffing the first aid service;
- 3) Adequate equipment, facilities and supplies are provided as required for the first aid service;
- 4) First aid kits are available at the project site;
- 5) Appropriate recording systems are established to record treatment provided
- 6) These records will be used to guide the development of strategies to prevent work-related injury and illness;
- 7) Appropriate arrangements will be made for the transportation of injured people, and
- 8) Training will be provided in skills to maintain basic life support in the case of critical injury.

6.3.3 Manager and Project Supervisors' Commitment

Managers and supervisors project site are responsible, within the scope of their authority, for ensuring that:

- The objectives of this policy are integrated into work practices, and
- Effective action is taken to ensure the first aid service is appropriate for workplace needs.

6.3.4 Employee Commitment

Employees are responsible for cooperating with the giving and receiving of first aid, as needed.

6.4 Emergency Measures

- a) Uganda Martyrs University shall develop and implement comprehensive emergency response procedures specific to site work areas and activities occurring. All related equipment and supplies for implementation of the written plan shall be provided by the company.
- b) A site specific Emergency Response Plan shall be developed
- c) All employees shall be regularly (not less than annually) trained on emergency response procedures, and their role in response activities.
- d) All personnel shall be informed of and be expected to know who their emergency responders are and have the contact information for all pertinent responders.

APPENDICES

Appendix 1: Hazard Identification, Social Risk Assessment and Management

Hazard Identification and Risk Assessment

Hazard identification and risk assessment are critical to Health and Safety planning in construction projects. Prior to the commencement of any works, introduction of any plant, substances, processes or work practices in this project, hazard identification will be carried out to identify whether there is any potential for injury, illness or disease associated with such introduction. This plan identifies hazards and risks associated with sections of the project.

The following generic hazards have been identified:

1. Manual handling,
2. Use, installation, inspection and/or repair of plant and equipment,
3. Working at heights,
4. Falling objects,
5. Working in confined spaces,
6. Vehicle movements on site,
7. Handling and storage of hazardous substances and dangerous goods,
8. Electrical installations and repairs,
9. Fire,
10. Noise and Vibrating Equipment,
11. Dust, fumes
12. Stress,
13. Traffic flow,
14. Poor sanitation and illicit sexual relationships
15. Congestion
16. Falls and slippery surfaces
17. Damage to underground water mains
18. Bites from poisonous insects

RISK ASSESSMENT

This section assesses risks associated with the project following a thematic approach. Assessment of risks has taken due cognizance of the complexity of the project and the repetitive nature of project activities. Risks arising from crossing cutting activities and management/prevention measures are presented.

Manual Handling and Associated Risks

Manual handling is a cross cutting hazard spread throughout the entire project profile. Activities ranging from handling of simple tasks like civil works to complex ones including chemical and material preparations are fraught with risks. The profile of risks can be very diverse and complex but the most significant risks include injuries to body extremities, fatalities under extreme conditions, burns including chemical burns, exposure to dangerous fumes, contamination of materials and food, ergonomic complaints, stress, dietary ailments, transmission of infectious diseases, injury to the eyes and uncontrolled spillages resulting into financial costs

Use, Installation, Inspection and/or Repair of Equipment

Construction projects deploy all categories of equipment. There will be heavy duty dozers, excavators, wheel loaders, back hoes and graders including heavy duty trucks and these relate to the following risks:

Risks

Injuries to the body, trapping between moving parts, exposure to fumes, injury to the eyes, ergonomic hazards, noise and air pollution, burns including chemical burns, electrocution and falls.

Working at heights

Various sections of the project will require workers to operate above ground level either on temporary or mounted platforms. Construction of bridges shall all involve working at heights. The associated risks are: falls, stress, sight and olfactory ailments and socio-psychological impairment.

Working in confined spaces

This type of hazard is mainly associated with repair works involving boilers, heating facilities etc. and they involve the following risks: getting trapped, exposure to radiation, respiratory failure, electrocution, burns and ergonomic ailments.

Vehicle movements on site

The following risks are possible: running over personnel, overturning heavy trucks, head-on collision of construction traffic, ramming into structures, compromised air quality, excessive noise and stress.

Handling and storage of hazardous substances and dangerous goods

Construction projects have the potential to accumulate stocks of hazardous substances including hazardous wastes and these expose workers and the community to the following risks:

Contamination of work place, Injuries to external body parts, fatal accidents, loss of equipment and materials, eye injuries, respiratory ailments, burns, exposure to radiation and fire outbreaks.

Electrical installations and repairs

The associated risks including the following:

Electrocution, falls from heights, falling objects, injuries due to sharps and exhaustion.

Stress

Construction operations and work schedules are physically and mentally demanding creating the following social risks: loss of concentration, accidents, and psychosocial disorders including mental disorders, drug abuse, poor quality outputs, falls and knocks and trapping between surfaces.

Poor Sanitation and Community Disrupting Relationships

The project construction and operation may result in poor sanitation and disruption of relationships with communities. This will create the following risks: High HI V/AIDS infection rates among workers and nearby communities, outbreaks of contagious diseases, lost work hours, increasing financial burden on workers' health and community.

Slippery surfaces

Slippery surfaces at work areas at construction present a very dangerous hazard. This creates the risks of fall.

Specific Environment, Social and Safety Management Plans/Policies

The following management plans will be used to manage risks foreseen in the project:

- Emergency Preparedness and Response Plan
- HIV/AIDS Workplace policy
- Occupational Safety and Health Plan
- Health and Safety Training Plan
- Gender Action Plan
- Communication and Stakeholders engagement Plan
- Waste Management Plan
- Fire management Plan
- Vehicle Safety Plan
- Security Management Plan

Appendix 2: Accident Investigation Report Format

Employee Information		
Last Name:	First Name:	Middle Initial(s):
Contact Number:	Gender:	Age:
Employment Information		
Site Location:	Job number:	
Date of Appointment:		
Occupation / Job at Time of Incident:	Length of Time in Occupation / Job: _____ Years _____ Months _____ Days	
Type of Employment: <input type="checkbox"/> Full Time <input type="checkbox"/> Part Time <input type="checkbox"/> Seasonal <input type="checkbox"/> Summer <input type="checkbox"/> Salary <input type="checkbox"/> Casual		
<input type="checkbox"/> Name of Company:		
Details of Investigation		
Site:	Department:	Exact Location of Incident on the Project:
Immediate Supervisor:		
Incident Date:	Month: Day: Year:	Time: am [] pm []
Date Reported:	Month: Day: Year:	Time: am [] pm []

Date of Investigation: Month: Day: Year: Time: am [] pm []	
TYPE: <input type="checkbox"/> Incident <input type="checkbox"/> Near Miss <input type="checkbox"/> Property Damage <input type="checkbox"/> Spill / Release <input type="checkbox"/> Fatality	
INJURY: <input type="checkbox"/> None <input type="checkbox"/> Minor <input type="checkbox"/> Major <input type="checkbox"/> Severe <input type="checkbox"/> Fatality	<input type="checkbox"/> No Lost Time <input type="checkbox"/> Lost Time
TREATMENT: <input type="checkbox"/> First Aid <input type="checkbox"/> Medical Aid <input type="checkbox"/> Hospital	
Part of Body Injured: (Provide a detailed description and specify left or right, front or back)	
Has the injured worker had a previous similar injury? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Describe in detail:	
Medical Treatment Information	
Name of First Aid Attendant:	Injury Recorded in First Aid Log? <input type="checkbox"/> Yes <input type="checkbox"/> No
Type of First Aid Administered:	
Clinic / Hospital sent to:	
Attending Physician / Paramedic (if known):	
Attending Police Officer (if known):	

Property	
Property Damaged:	Estimated Cost of Damage:
Description of Damaged Property:	
Witness Information	
Number of Witnesses: _____ ATTACH WITNESS STATEMENT(S) FOR EACH WITNESS	
Investigation Information	
Type of Incident: <input type="checkbox"/> Assault <input type="checkbox"/> Break <input type="checkbox"/> Caught In <input type="checkbox"/> Caught On <input type="checkbox"/> Caught Between <input type="checkbox"/> Cut On <input type="checkbox"/> Exposure <input type="checkbox"/> Fall <input type="checkbox"/> Over Exertion <input type="checkbox"/> Strain <input type="checkbox"/> Struck By <input type="checkbox"/> Struck Against <input type="checkbox"/> Trip <input type="checkbox"/> Other (specify): _____	
Contact With: <input type="checkbox"/> Cold <input type="checkbox"/> Heat <input type="checkbox"/> Electricity <input type="checkbox"/> Fire <input type="checkbox"/> Noise <input type="checkbox"/> Pressure <input type="checkbox"/> Equipment <input type="checkbox"/> Caustic Chemical (specify): _____ <input type="checkbox"/> Toxic Chemical (specify): _____ <input type="checkbox"/> Other (specify): _____	
Describe in detail the SEQUENCE OF EVENTS leading up to the incident. (i.e. Where the incident occurred; what the employee was doing at the time; the size, type and weight of equipment or materials involved; weather conditions, etc.). Use additional pages if required and provide diagrams, photographs and reports.	

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Diagram / Photographs attached Yes No

ALL EVIDENCE / INFORMATION GATHERED FOR INVESTIGATION TEAM ONLY

Identification of all UNSAFE ACTS which contributed to the incident: (check off as many as necessary)

<input type="checkbox"/> Unsafe Loading / Unloading	<input type="checkbox"/> Inadequate Lighting	<input type="checkbox"/> Using Defective Tools
<input type="checkbox"/> Unsafe Mixing / Combining	<input type="checkbox"/> Working at Unsafe Speed	<input type="checkbox"/> Using Defective Equipment
<input type="checkbox"/> Failure to Wear Proper PPE	<input type="checkbox"/> Horseplay – <input type="checkbox"/> Distracting	<input type="checkbox"/> Working on Moving Equipment
<input type="checkbox"/> Failure to Warn Properly	<input type="checkbox"/> Teasing <input type="checkbox"/> Harassment	<input type="checkbox"/> Improper Lifting

<input type="checkbox"/> Failure to Secure Properly	<input type="checkbox"/> Willful Misconduct	<input type="checkbox"/> Other (specify):
<input type="checkbox"/> Unsafe Position or Posture	<input type="checkbox"/> Hazardous Personal Attire	
<input type="checkbox"/> Making Safety Device Inoperable	<input type="checkbox"/> Under the influence of Alcohol and / or Drugs (either Illicit or Prescription)	
Identification of all UNSAFE CONDITIONS which contributed to the incident: (check off as many as necessary)		
<input type="checkbox"/> Inadequate Guards / Barriers	<input type="checkbox"/> Extreme Temperature(s)	<input type="checkbox"/> Unsafe Job Design
<input type="checkbox"/> Improper or Inadequate PPE	<input type="checkbox"/> Inadequate Lighting	<input type="checkbox"/> Extreme Weather Conditions
<input type="checkbox"/> Defective Tools or Equipment	<input type="checkbox"/> Hazardous Environmental Conditions	<input type="checkbox"/> Unsafe Mobile Equipment
<input type="checkbox"/> Defective Materials	<input type="checkbox"/> Gases <input type="checkbox"/> Dusts	<input type="checkbox"/> Explosion Hazard
<input type="checkbox"/> Congested Work Area	<input type="checkbox"/> Smoke <input type="checkbox"/> Fumes <input type="checkbox"/> Vapours	<input type="checkbox"/> Noise Exposure
<input type="checkbox"/> Inadequate Warning Systems	<input type="checkbox"/> Fire Hazard	<input type="checkbox"/> Poor Housekeeping
<input type="checkbox"/> Other (specify):		
Identification of all INDIRECT CAUSES which contributed to the incident: (check off as many as necessary)		

Personal Factors	Job Factors
<input type="checkbox"/> Inadequate Physical Capability	<input type="checkbox"/> Inadequate Leadership or Supervision
<input type="checkbox"/> Abuse or Misuse of Equipment	<input type="checkbox"/> Inadequate Engineering Controls
<input type="checkbox"/> Physical Stress	<input type="checkbox"/> Inadequate Purchasing
<input type="checkbox"/> Mental Stress	<input type="checkbox"/> Inadequate Maintenance (scheduled or preventative)
<input type="checkbox"/> Lack of Knowledge	<input type="checkbox"/> Inadequate Tools or Equipment
<input type="checkbox"/> Lack of Skill	<input type="checkbox"/> Inadequate Work Standards
<input type="checkbox"/> Improper Motivation	<input type="checkbox"/> Wear and Tear
<p>Prevention</p> <p>(Number those actions required to Prevent Recurrence of a similar incident, 1 being most critical in order of priority)</p>	
<input type="checkbox"/> Training / Retraining of Involved Worker(s)	<input type="checkbox"/> Improve Safety Inspection Process
<input type="checkbox"/> Job Procedure / Design Changes	<input type="checkbox"/> Reassignment of Involved Worker
<input type="checkbox"/> Equipment Repair or Replacement	<input type="checkbox"/> Liaison with Manufacture of Equipment / Tool

<input type="checkbox"/> Perform in depth Hazard Identification and Analysis	<input type="checkbox"/> Facilities Layout Review and Redesign
<input type="checkbox"/> Improved Hazard Controls (engineering / admin. / PPE)	<input type="checkbox"/> Installation of Safety Guards / Barriers
<input type="checkbox"/> Supervisory Communication	<input type="checkbox"/> Other (specify):
Describe Action(s) Taken to Prevent Recurrence (short term and long term)	

Appendix 3: Employee Code of Ethics and Conduct

Further to the terms stipulated in the contract of employment, all employees are required to abide by the code of ethics and Conduct set by the organization failure of which may lead to up to and including termination

All employees are expected to exercise maximum restraint, discipline live and work in a hygienic environmental, have good interpersonal skills as well as motivation to work in a highly demanding environment.

1. All employees must log in and log out at the gate and on to their respective time sheets. Failure to sign especially on time sheet, may result in forfeiting of employee's hours or days worked.
2. All employees must wear personal protective equipment (PPE) while on duty to avoid unnecessary injury; Violation of this code, leads to the staff being sent back home, issuing of warning letter, and or termination of the same
3. The employees' Dress code: All employees are mandated to dress decently while at work in order to provide a healthy work environment free from sexual harassment; for the females employees the inappropriate attire may include; sweat pants, leggings, exercise wear, tight shorts, low-rise, open sleeveless, top sleeveless, high – hugger pants, tight jeans, sandals, open-toe shoes; for male employees; the inappropriate attire or dressing and may include; shorts, open shoes, open chest- removal of shirts or overalls; Violation of this code, leads to the staff being sent back home, issuing of warning letter, and or termination of the same
4. All employees are required to follow instructions and report from and to their respective supervisors at all times. Violation of this code will be subject to appropriate disciplinary action, including termination. accordance with the disciplinary Code Schedule I, Employment Act 2006
5. Sexual relationships with minors or underage girls, school children, and married women as well as sexual harassment shall not be tolerated. If any employee is caught, reported or

suspected to engage in such acts, such employee will be investigated while on suspension and if proved guilty, will be summarily terminated. (refer to Sexual Harassment Policy)

6. All employees must respect the Children’s rights, it’s the responsibility of every employee to exercise child protection while conducting work on the construction site and the community, child abuse which among many may include; child labour, engaging children in sexual acts, bullying and many others; Violation of this rule and standard of conduct shall result In summary dismissal. The company also may bring the matter to the attention of appropriate enforcement authorities.
7. Alcoholism or use of any other illicit drugs, abusive language and fighting shall not be tolerated at work. Violation of this rule and standard of conduct shall result in disciplinary action, up to and including termination. The company also may bring the matter to the attention of appropriate enforcement authorities.
8. Syphoning fuel or theft of property attracts loss of employee benefits – deduction of salary to the tune equivalent to the stolen item or property and disciplinary action, up to and including summary termination. The company also may bring the matter to the attention of appropriate enforcement authorities as per Employment Act, 2006.
9. Confidential information is strictly confidential and employees are advised to refer to the Management in case of the necessary information to the Public through the Public Relations Manager, if an employee violates this rule they will be subject to disciplinary action, including termination, in accordance with the Disciplinary Code Schedule I of Employment Act 2006.
10. All other relevant code of ethics and conduct as stipulated in the Contract and Human Resource Manual and the Employees hand book must be adhered to.

Employees Sign

HR. Manager Sign

Project Manager

Date: -----

Date: -----

Date: -----

Appendix 3: Report on Photography

REPORT ON DOCUMENTED ACTIVITIES UNDER THE COMMUNICATIONS AND INNOVATIONS DEPARTMENT IN THE YEAR ENDED 2019

The communications and innovations department has been able to document some activities undertaken by the African center of Agroecology and livelihood systems [ACALISE] in the year ending 2019.

On 20th August 2019, a team of Tanzania tutors visited Uganda martyrs University [UMU] Nkozi.

The tutors led by a Government official in the Ministry of Agriculture Dr. Mashaka Mdangi was on a mission to request Uganda martyrs University assist them enrich the new Agriculture curriculum which is putting emphasis on seeking knowledge in organic and ecological farming to be used as teaching materials for tutors in Tanzania.

There was video documentation for this historic visit and the video production team has already designed a script and editing of the video is in progress.

A month later; on 20th September 2019, another memorable occasion took place at cardinal Nsubuga center in Nsambya. This occasion was the launch of a report on results of the baseline analysis conducted on the Agroecology and livelihood systems in Uganda which was launched by the Minister of Agriculture Animal Industries and fisheries Hon. Vicent Ssempijja.

This occasion had a number of activities of which included a panel discussion on a topic as to whether Uganda farmers are farming their way into the future; this preceded the official launch of the report.

The video production team in line with this activity has decided to have two editions produced for this occasion. The first edition would focus on a video production of how the presentation of the panel discussion to the public. The script of this activity has already been forwarded to the editor and if approved, editing of the video will commence upon receipt of the final version.

The activity of the actual launch will also be edited as a second version. This separating of these activities aimed at giving each of them prominence and their importance for Agroecology to be considered as an important area especially when it comes to farming practices in the country.

In the year ending 2019, Uganda Martyrs University also participated in the innovations and development International conference that took place at Speke resort Munyonyo in Kampala.

The African center of Agroecology and livelihood systems [ACALISE] project conceived an idea to produce innovative works to show case to conference participants at the exhibitions center.

A video on the black soldier fly whose larvae has been identified to be of use as a protein nutrient in Animal and poultry feeds was produced.

Relatedly, another video on aqua-phonics, to what has been described as a soilless garden was also produced for purposes to showcase how to utilize little land to grow simple horticultural crops.

There was also a production for the opening ceremony of the international conference at Speke resort munyonyo.

Also all activities undertaken have photographs taken for purposes of archiving events that take place.

TZ `OPENING A NEW KNOWLEDGE PAGE' TANZANIA AGRICULTURE TUTORS SEEK COLLABORATION WITH UGANDA MARTYRS UNIVERSITY NKOZI

ON 20TH AUGUST 2019 A TEAM OF TUTORS FROM VARIOUS AGRICULTURE TRAINING INSTITUTIONS FROM THE PEOPLES REPUBLIC OF TANZANIA LED BY THE ASSISTANT DIRECTOR INSTITUTES SUPPORT MINISTRY OF AGRICULTURE VISITED UGANDA MARTYRS UNIVERSITY [UMU] NKOZI WITH A MISSION TO ENTER PARTNERSHIP FOR KNOWLEDGE SHARING AND COLLABORATION.

THE KNOWLEDGE SOUGHT IS MAINLY IN ORGANIC FARMING PRACTICES AND WILL EVENTUALLY BE INTEGRATED INTO NEW MODULES TO TRAIN AGRICULTURE EXPERTS UNDER A NEW CURRICULUM IN THE OFFING.

THE NEW CURRICULUM ALSO TARGETS GENDER IN AGRICULTURE PLUS ENVIRONMENTAL MANAGEMENT.

Dr. JUDE SSEBUWUFU THE HEAD AFRICAN CENTER FOR AGROECOLOGY AND LIVELIHOOD SYSTEMS [ACALISE] ACCOMPANIED BY THE HEAD COMMUNICATIONS AND INNOVATIONS Dr. JOSEPH SSEMAKULA WELCOMED THE DELEGATION AND LED THEM ON A GUIDED TOUR AROUND THE UNIVERSITY.

LATER THE VISITORS AND THE UNIVERSITY MANAGEMENT HELD DISCUSSIONS IN THE UNIVERSTY BOARD ROOM, AIMED AT COMING UP WITH A MEMORANDUM OF UNDERSTANDING FOR PARTNERSHIP TO COLLABORATE AND SHARE KNOWLEDGE IN SUPPORT OF THJE NEW COURSES TANZANIA IS DESIGNING UNDER A NEW CURRICULUM.

THE NEW CURRICULUM WILL SERVE AS A TURNING POINT FOR TUTORS TO TEACH SUSTAINABLE AGRICULTURE PRACTICES.

THE TRIP FOR THE DELEGATION WAS FUNDED BY SUSTAINABLE AGRICULTURE TANZANIA [SAT] A LOCAL ORGANIZATION SPEARHEADING AN INITIATIVE IN ECOLOGICAL ORGANIC AGRICULTURE AND RELIEF RESEARCH ON ENVIRONMENTAL MATTERS: AND ADVOCACY IN TRAININGS FOR EXTENSION WORKS FOR FARMERS IN TANZANIA.

SAT CHIEF EXECUTIVE OFFICER JANAT MARO HIGHLIGHTED THE PURPOSE OF THEIR VISIT TO UGANDA MATTERS UNIVERSITY.

BYTE: JANET MARO; CEO SAT

Dr. MASHAKA MDANGI THE ASSISTANT DIRECTOR INSTITUTES SUPPORT IN THE MINISTRY OF AGRICULTURE TANZANIA LED THE DELEGATION OF SAT OFFICIALS AND THE TUTORS.

Dr. MDANGI SAID AS A COUNTRY, TANZANIA IS CONCERNED WITH ISSUES OF CLIMATE CHANGE TRENDS WHICH ARE NOW A GLOBAL THREAT TO BIODIVERSITY.

THE VISIT THEREFORE AIMS AT SEEKING NEW KNOWLEDGE THROUGH FORGING PARTNERSHIPS WITH RECOGNIZED INSTITUTIONS OF HIGHER LEARNING TO SHARE KNOWLEDGE AND EXPERIENCES OF ACADEMIC VALUE; WHICH CAN BE ADOPTED TO TEACH SUSTAINABLE AGRICULTURE IN LINE WITH THE NEW MODULES IN ADDITION TO HAVING UNIFORM KNOWLEDGE TAUGHT IN AGRICULTURE INSTITUTIONS IN THE COUNTRY.

BYTE: Dr. MASHAKA MDANGI; ASST. DIR. INSTITUTION SUPPORT PROG.

WELCOMING THE DELEGATION REV. Fr. Dr. JOHN CHRYSOSTOM MAVIIRI THE VICE CHANCELLOR UGANDA MARTYRS UNIVERSITY TOGETHER WITH THE DEPUTY VICE CHANCELLOR IN CHARGE ACADEMICS PROFESSOR JULIUS MAWA EXPRESSED GRATITUDE TO THE GOVERNMENT OF THE PEOPLES REPUBLIC OF TANZANIA FOR RECOGNIZING A PRIVATE INSTITUTION IN THE AREA OF KNOWLEDGE EXCHANGE AND COLLABORATION. THEY HIGHLIGHTED THE UNIVERSITY'S OPEN DOOR POLICY FOR PARTNERS IN SHARING EDUCATION AND TRAINING.

BYTE: REV. Fr. Dr. CHRYSOSTOM MAVIIRI; V/C UMU

BYTE: PROF. JULIUS MAWA; DEP.V/C ACADEMICS

THE WORLD BANK FUNDED AFRICAN CENTER OF EXCELLENCE IN AGROECOLOGY AND LIVELIHOOD SYSTEMS [ACALISE PROJECT] WHICH IS PROMOTING ORGANIC FARMING IS WHY THE TANZANIA DELEGATION WAS ATTRACTED TO UGANDA MARTYRS UNIVERSITY NKOZI.

BYTE: JANET MARO; CEO SAT

Dr. MDANGI DISCLOSED THAT TANZANIA IS PLANNING TO SPONSOR 2,500 STUDENTS TO UPGRADE FROM CERTIFICATE TO DIPLOMA LEVEL. HE WAS HOPEFUL THAT SOME OF THE STUDENTS CAN BE PLACED UNDER THE SPECIAL PROGRAMS THAT PROMOTE SUSTAINABLE AGRICULTURE.

BYTE: MDANGI

IN RESPONSE, Fr. MAVIIRI TOLD THE DELEGATION THAT SINCE INCEPTION, A NUMBER OF TANZANIA STUDENTS HAVE STUDIED THERE. HE WELCOMED THE PROPOSAL FOR TO HAVE SOME STUDENTS PLACED AT UMU UNDER AN EXCHANGE PROGRAM.

BYTE: REV. Fr. Dr. CHRYSOSTOM MAVIIRI; V/C UMU

EXPOUNDING FURTHER ON THE EXCHANGE PROGRAMS WHICH ALSO RELATE TO CAPACITY BUILDING, THAT BOTH INVOLVES UNIVERSITY STAFF AND STUDENTS AT A REGIONAL LEVEL; **PROF. JULIUS MAWA; TOLD THE GUESTS THAT THERE IS A COLLABORATION PROGRAM WITH THE INTER UNIVERSITY COUNCIL OF EAST AFRICA WHICH FACILITATES KNOWLEDGE EXCHANGE PROGRAMS.**

BYTE: PROF. JULIUS MAWA; DEP.V/C ACADEMICS

POSING FOR SNAP SHOTS WAS PART OF THE PROGRAM AND LATER THE VISITORS AND THE ACALISE STAFF HELD DISCUSSIONS SOLICITING UMU'S CONTRIBUTION TOWARDS DESIGNING THE NEW CURRICULUM FOR TUTORS AND FARMERS TANZANIA IS PUTTING IN PLACE. Dr. JUDE SSEBUWUFU THE HEAD AFRICAN CENTER FOR AGROECOLOGY AND LIVELIHOOD SYSTEMS OPENED THE DISCUSSION OUTLINING SOME OF THE POSSIBLE ACADEMIC OPPORTUNITIES UMU CAN OFFER.

BYTE: Dr. JUDE SSEBUWUFU; HEAD ACALISE

THE DISCUSSION OFFERED AN OPPORTUNITY TO THE VISITING TEAM TO LEARN ABOUT ORGANIC FARMING AND SUSTAINABLE AGRICULTURE PRACTICES IN RELATION TO THE ACALISE PROJECT AT UGANDA MARTYRS UNIVERSITY NKOZI.

DAUDI MGETA A PROGRAM OFFICER AT SUSTAINABLE AGRICULTURE TANZANIA RAISED A CONCERN ON HOW EASILY THEY COULD ACCESS READING AND LEARNING MATERIALS TO SERVE AS INFORMATION SUPPORT FOR INTEGRATION IN THE NEW CURRICULUM ESPECIALLY WITH EMPHASIS TO SUSTAINABLE AGRICULTURE.

QU. SOT MGETA

Dr. JOSEPH SSEMAKULA WAS THE FIRST TO GIVE A RESPONSE ON THE ISSUE OF SUPPORT MATERIALS TOWARDS FORMULATION OF A NEW TEACHING CURRICULUM FOR AGRICULTURE TEACHING INSTITUTIONS IN TANZANIA.

Dr. SSEMAKULA TOOK THE VISITORS THROUGH HOW THE UNIVERSITY HANDLED THE DESIGN OF THE ACALISE PROJECT. HE SAID THEY EMPLOYED THE APPROACH OF COLLABORATION WITH UNIVERSITIES OF REPUTE REGIONALLY AND INTERNATIONALLY.

BYTE: Dr. JOSEPH SSEMAKULA; HEAD COMMUNICATION AND INNOVATIONS
BROTHER MARIUS MURONGO AND Mr. BWOGI GODFREY STUDENTS ALSO SUPPLEMENTED ON THIS ISSUE OF HOW TO ACCESS MATERIALS ON TEACHING ORGANIC FARMING AS A PRACTICE TOWARDS PROMOTING SUSTAINABLE AGRICULTURE.

BYTE: MARIUS MURONGO

BYTE: BWOGI GODFREY

CONTRIBUTING FURTHER ON KNOWLEDGE BACKING MATERIALS THAT TANZANIA CAN EMPLOY IN ENRICHING THE AGRICULTURE COURSES AND THEREFORE THE NEW CURRICULUM; KALANZI CEPHAS ALSO A LECTURER AT THE FACULTY OF AGRICULTURE MENTIONED THE ALREADY AVAILABLE RESEARCH MATERIALS BY STUDENTS SOME OF WHICH HAVE BEEN PUBLISHED AS USEFUL SOURCES FOR KNOWLEDGE IN THE PRACTICE OF SUSTAINABLE AGRICULTURE.

BYTE: KALANZI CEPHAS; LECTURER

SHEDRACK KIHOMBO FROM KIROMBERO AGRICULTURE INSTITUTE RAISED A QUESTION AS TO WHETHER CONFIDENTLY ORGANIC OR AGROECOLOGY FARMING CAN REPLACE THE CONVENTIONAL METHOD OF FARMING OR PRODUCTION AND STILL MEET THE FOOD VOLUMES THE WORLD POPULATION NEEDS.

QU. SOT

CAN ORGANIC OR AGROECOLOGICAL FARMING BE ABLE TO REPLACE THE CONVENTIONAL WAYS OF FOOD PRODUCTION AND STILL MEET THE VOLUMES OF FOOD SUPPLY THAT THE WORLD POPULATION IS IN NEED?

BROTHER MARIUS MURONGO IN ANSWERING THE QUESTION AS TO WHETHER ORGANIC OR ECOLOGICAL FARMING CAN REPLACE CONVENTIONAL METHODS AND BE ABLE TO FEED THE WORLD CITED THE STATISTICAL DATA OF UGANDA WHICH INDICATES THAT 68% OF THE POPULATION IS ENGAGED IN SUBSISTANCE FARMING AND USING TRADITIONAL METHODS OF AGRICULTURE AND THE COUNTRY NOT EXPERIENCING ANY FOOD INSECURITY.

BYTE: BROTHER MARIUS MURONGO; LECTURER

ANOTHER QUESTION POSED BY SHEDRACK KIHOMBO WAS ABOUT AGROECOLOGY BEING ADOPTED BY FARMERS IN UGANDA.

QU. SOT SHEDRACK KIHOMBO; KIROMBERO AGRIC TRAINING INST.

TO WHAT EXTENT HAVE YOU SPREAD OVER; THIS IS AN AREA THAT WE WOULD LIKE TO TAKE ON BECAUSE WE WANT TO TAKE OUR INSTITUTIONS TO BE ONE OF THE ACTUAL LEARNING; PRACTICAL LEARNING OF ADOPTION OF THE NEW WAY OF RELIEVING THE CONVENTIONAL WAYS.

BYTE: CEPHAS KALANZI

TO PROVE THEIR WORK OF UTILIZING NATURE TO TEACH ORGANIC FARMING, THE ACALISE TEAM LED THE VISITORS TO A PROPOSEDLY DEMONSTRATION HOME. HERE ON SANDY SOILS THE SCIENTISTS HAVE INTRODUCED A BANANA PLANTATION SUPPORTED BY MULCHING FOR PRESERVATION OF SOIL MOISTURE; BUT ALSO INTRODUCING HUMUS IN THE SOILS THROUGH DECAY OF PLANT MATERIALS.

BYTE: Br. MARIUS MURONGO; FARM MANAGER/PHD STUDENT

VISITED ALSO WAS THE AQUAPONICS PLANT AN INNOVATION WHERE CROPS HAVE BEEN NATURED TO GROW ON WATER WITH THE SUPPORT OF LUNG FISH WHOSE FOOD SYSTEM ALSO SUPPLIES AMONIA GAS WHICH LATER RHE PLANTS USE IN THEIR GROWTH. CROPS HERE ARE NORMALLY HORTICULTURALS LIKE VEGETABLES.

BYTE: Br. MURONGO MARIUS; FARM MANAGER/PHD STUDENT

THE TEAM ALSO VISITED THE ANIMAL FEED SECTION WHERE FODDER IS PROCESSED FROM ORGANIC PLANT MATERIALS LIKE PEELS OF MATOOKE AND DRIED GRASS WHICH IS TURNED INTO HAY.

THE TEAM WAS FURTHER SHOWN THE FARM ANIMALS MANAGED WITH BOTH INDIGENUOUS AND THE EXOTIC BREEDS.

THE VISIT TO SOME OF THE PROJECTS TURNED A STIMULANT TOWARDS FORGING A WAY FORWARD TO DRAFT A MEMORANDUM OF UNDERSTANDING FOR COLLABORATION AND SHARING OF KNOWLEDGE.

BYTE: JANET MARO; SAT CEO

Dr. SSEMAKULA HOPED THAT MODALITIES TO START A COLLABORATION STARTS SOON WITHIN THE RUNNING PERIOD OF THE AFRICAN CENTER OF EXCELLENCE HENCE THE ACALISE PROJECT.

BYTE: Dr. JOSEPH SSEMAKULA; HEAD COMMUNICATION AND INNOVATIONS**BYTE: Dr. MASHAKA MDANGI; ASST. DIR. INSTITUTION SUPPORT PROG.**

ACALISE HEAD **Dr. JUDE SSEBUWUFU** APPRECIATED THE TANZANIA TEAM FOR SELECTING UGANDA MARTYRS UNIVERSITY FOR SUCH A COLLABORATION AND TELLING THE VISITORS THAT THE UNIVERSITY AWAITS THEIR FINAL

CONSULTATIONS BACK HOME FOR GREEN LIGHT TO START THE KNOWLEDGE SHARING AND COLLABORATIONS IN THE FIELD OF AGRICULTURE.

END

A TEAM OF AGRICULTURISTS [COSMOS]

A team of Agriculturists from various in Tanzania have expressed interest in collaborating with Uganda Martyrs University Nkozi in promoting sustainable Agriculture.

Dr. Mashaka Mdangi the director training in the Ministry of Agriculture Tanzania led the 13 member delegation which is traversing a number of countries to enrich available knowledge in the field of Agriculture.

DETAIL FOLLOW

SOT

The team of Agriculturists from Tanzania who had a one day visit to Uganda Martyrs University says the purpose of the visit aims at harmonizing knowledge through exchange visits to learning institutions.

According to the leader of the delegation Dr. Mashaka Mdangi the assistant director Agriculture institutions Ministry of Agriculture Tanzania, seeking new knowledge is because Tanzania is in the process of developing a new curriculum in the field of teaching Agriculture experts.

BYTE: Dr. Mashaka Mdangi; ASST. DIRECTOR TRAINING

Dr. Mdangi also added that the prevailing conditions characterized by climate change factors deserve a knowledge experience institutions specializing in Agricultural research can present to those who are at infancy stages.

In his welcome remarks the Vice chancellor Uganda Martyrs University Rev. Fr. Chrysostom Maviiri expressed gratitude to the Tanzanian delegation for selecting Nkozi, adding that the gesture emphasizes a knowledge seeking culture to enable the region have universal knowledge.

BYTE: Rev. Fr. Chrysostom Maviiri;V/C NKOZI UNIVERSITY

The chief executive officer Sustainable Agriculture Tanzania [SAT] Janet Maro organized the trip to Uganda Martyrs University.

BYTE: Janet Maro; CEO SAT TANZANIA

In the region, Uganda martyrs University is running the African center of excellence project in Agro ecology and livelihood systems a World Bank project has been deemed crucial for sustainable Agriculture.

It is this project that attracted the Tanzanian delegation to the University.

END

TAG: TANZANIA AGRICULTURE TUTORS SEEK KNOWLEDGE INTERGRATION