ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT REPORT

FOR

PROJECT: CONSTRUCTION AND REHABILITATION OF TVET LEARNING FACILITIES - LECTURE HALLS, EQUIPPED WORKSHOP AND LABORATORY

AT

THE SCHOOL OF NATURAL RESOURCES AND ENVIRONMENTAL STUDIES

UNIVERSITY OF JUBA, CENTRAL EQUATORIAL STATE, SOUTH SUDAN

Implementing Agency	Consultant	Funding Agency	Submitted to
Ministry of Agriculture Food Security	ESIA Consultants for the Ministry of Agriculture and Food Security	The Africa Development Bank Group	Ministry of Environment and Forestry, South Sudan

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NOTES

Public Consultation/Disclosure Notice

Date 20/02/2024

The Ministry of Agriculture and Food Security (MAFS) is requesting feedback on the attached draft Environmental and Social Impact Assessment and associated Management Plan for this project. Comments and questions can be sent to the following address:

Physical Address: Ministry of Agriculture and Food Security, Ministry Complex, Juba, South Sudan.
Email: info@mafs.gov.ss
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The last date of Receiving comments **XXX**

This document and its contents have been prepared and are intended for RSS, and AfDB's information and use about the project "**Construction of TVET Learning Facilities - Lecture Halls, Offices, Equipped Workshop and Laboratory"** a sub-component of Climate Resilient Agri-Food system Transformation (CRAFT) project in South Sudan. The report was prepared by the International and National Environmental Consultants and reviewed by the Accredited Entity (Ministry of Environment and Forestry) in line with the Environmental and Social Management Framework in South Sudan and AfDB.

DECLARATION

We, the undersigned, hereby declare that this ESIA Study Report represents the facts about the proposed **CONSTRUCTION AND REHABILITATION OF TVET LEARNING FACILITIES - LECTURE HALLS, OFFICES, EQUIPPED WORKSHOP AND LABORATORY** at the School of Natural Resources and Environmental Studies University of Juba about the proposed "**CLIMATE RESILIENT AGRI-FOOD SYSTEM TRANSFORMATION (CRAFT) PROJECT, *SUB COMPONENT 3.2*** - South Sudan by the Ministry of Agriculture and Food Security.

ON BEHALF OF MINISTRY OF AGRICULTURE AND FOOD SECURITY (MAFS) SOUTH SUDAN

Sign _____

Date _____

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Dated: **16/03/2024**

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Dated: **16/03/2024**

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LIST OF ACRONYMS AND ABBREVIATIONS

AAAP	Africa Adaptation Acceleration Program
ABC	Aggregation Business Centres
ADF	African Development Fund
ADRiFi	Africa Disaster Risk Financing Programme
AfDB	African Development Bank
AIRS	Aweil Irrigation Rice Scheme
AMVAT	Agriculture, Markets and Value Addition
BREFONS	Building Resilience of Food and Nutrition Security in the Horn of Africa
CAMP	Comprehensive Agricultural Master Plan
CAW	Climate Action Window
CRFA	Country Resilience and Fragility Assessment
CSP	Country Strategy Paper
DP	Development partners
EA	Executing Agency
E&S	Environment and Social Safeguards
EIRR	Economic Internal Rate of Return
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FC	Foreign Currency
FFBS	Farmer Field and Business School
GALS	Gender Action Learning System
GCA	Global Center on Adaptation
GBV	Gender-Based Violence
GEF	Global Environment Facility
GHG	Green House Gases
GRM	Grievance Redress Mechanism
I-CSP	Interim-Country Strategy Paper African Development Bank
ICTs	Information and Communication Technologies
IDMP	Irrigation Development Master Plan
IFAD	International Fund for Agricultural Development
IFRs	Interim Financial Reports
IPC	Integrated Food Security Phase Classification
IRM	Independent Recourse Mechanism
JICA	Japan International Cooperation Agency

KM	Knowledge Management
LC	Local Currency
LDC	Least Developed Country
M&E	Monitoring and Evaluation
MAFS	Ministry of Agriculture and food Security
MHA	Minister of Humanitarian Affairs
MAFSF	Minister of Livestock and Fisheries
MoWI	Ministry of Water and Irrigation
NDS	National Development Strategy
NGOs	Non-Governmental Organization
NPV	Net Present Value
O&M	Operations & Maintenance
OCB	Open Competitive Bidding
PAR	Project Appraisal Report
PBA	Performance Based Allocation
PCN	Project Concept Note
PCR	Project Completion Report
PCU	Project Coordination Unit
PFM	Public Finance Management
PIU	Project Implementation Unit
PCUs	Project Coordination Unit
PO	Producer Organizations
PSC	Project Steering Committee
RALP	Resilient Agricultural Livelihoods Project
RAP	Resettlement Action Plan
RBLF	Result-Based Logical Framework
RMF	Results Measurement Framework
R-NDS	Revised National Development Strategy
RPA	Revitalised Peace Agreement
SAAM	Sustainable asset acquisition and management
SDG	Sustainable Development Goals
SEAH	Sexual Exploitation and Harassment
SEPAREF	Strengthening Emergency Preparedness and Response to Food Crisis
SPCU	Single Project Coordination Unit
SSEFPP	South Sudan Emergency Food Production Program
TAAT	Technologies for African Agricultural Transformation Project
TPIA	Third Party Implementing Agency

TSF	Transition Support Facility
TVET	Technical and Vocational Education and Training
UA	Unit of Account
UN	United Nations
UoJ	University of Juba
VSLA	Village Savings and Loans Associations
WB	World Bank
WFP	World Food Programme
WUA	Water User Associations

EXECUTIVE SUMMARY

1. Overview of the project

Introduction: The Republic of South Sudan's "**C**limate **R**esilient **A**gri-**F**ood Systems **T**ransformation **(CRAFT)** Project" (**sub-component 3.2: development of agricultural and fisheries education and skills development),** involves the construction of TVET learning facilities at the School of Natural Resources and Environmental Studies, University of Juba (UofJ), is government proposed sub-project to be financed by the African Development Bank (AfDB) and shall be implemented by the Ministry of Agriculture and Food Security (MAFS). The project activities include; the development of competency-based curricula at UofJ for programmes in seed system development, agriculture/fisheries extension services, water and irrigation management, soil fertility management and food science, and mechanization. This will also involve enhancing capacity of 10 faculties at the School of Natural Resources and Environmental Studies through technical courses and providing technical/vocational skills training for 30 TVET instructors, including at least 12 women. The activities will provide technical support for formal and informal short-term training in agriculture, fisheries, and agri-business at community level, and facilitate collaboration between technical assistance and UofJ research in these areas. The project will provide 150 scholarships for technical and vocational training to women and marginalized students to promote agricultural productivity and enhance value-chain and enterprise development through improving skills.

Project Development Objective

The project development objective is to increase agricultural production and productivity, create jobs, and build resilience for the people of South Sudan. Specific objectives include: (i) scaling up climate-adaptive technologies and production systems; (ii) developing women and youth-led businesses in priority value chains, (iii) promoting digital agricultural and climate advisory solutions, and (iv) building technical and entrepreneurship skills for addressing some of the root causes of fragility.

Project Components

The CRAFT project has 4 components as outlined below

Component 1: Climate-Adaptive Production Systems Subcomponent 1.1*: Scaling up Climate-Smart Production Systems: Subcomponent 1.2: Improved Rural Infrastructure.*

Component 2: Value Chain Development, and Women and Youth Entrepreneurship Support

Sub-component 2.1 Strengthen producer marketing organizations and youth and women enterprises.

Component 3: Digitalization, Skills Development, Entrepreneurship, and Capacity Building (*UA 9.0 million) Sub-component 3.1: Strengthening the digital ecosystem and climate advisory services: Sub-component 3.2: Strengthen Agricultural and Fisheries Education and Skills Development Capacity:* This sub-component aims to build the capacity of training institutes to deliver competency-based training in agriculture and fisheries value chain development. Specifically, this sub-component will support activities such as (a.) enhancing training institute infrastructures and equipment: the activities to be supported include (i) assessment for the re-establishment of Yambio and Padak Training Institutes; (ii) ***Construction and renovation of the teaching space at University of Juba (UofJ)*** *School of Natural Resources and Environmental Studies (UoJ-SNRES) and* (iii) provision of training equipment to UoJ-SNRES (b.) delivering quality technical training in agricultural and fisheries education and skills development: the specific activities include (i) develop and/or update/review of competency-based training curricula; (ii) capacity building of 15 faculty staff and 30 technicians in priority areas in agriculture/fisheries; (iii) provision of textbooks and journals; (iv) provision of scholarships to 50 female and other marginalized students(c.) supporting non-formal training and capacity development programmes for agriculture and fisheries value chain actors: the specific activities to be supported include (i) updating of training materials for extension service provision at communities level (manuals, audio visuals, pictorials, illustrations and demonstration); (ii) develop/review training materials for entrepreneurship and agribusiness; (iii) refresher training of 150 field extension officers (crop and fisheries and cooperatives); (iv) training of 200 POs along crop (160) and fish (40) value chains(v) training of 400 youth and women in entrepreneurship and agribusiness; (vi) training of 50 business development advisors; and (vii) mapping of agricultural and fisheries related skills among returnees and refugees and (d) capacity development in research for development: activities to be supported include (i) train 10 local researchers in seed systems development, climate smart-agriculture and sustainable fisheries management; (ii) collaboration with specialised research institutions in testing and promotion of appropriate technologies. ***Sub-component 3.3 Policy Development and Institutional Strengthening of Agricultural Ministries.***

Component 4: Project Coordination and Management ***Sub-component 4.1 Project Coordination, Monitoring, and Evaluation:***

Project Alternative In order to enable the proposed project to seek different ways of minimizing its impacts on the environment and at the same time achieve its objectives several alternatives were assessed. After the analysis of alternatives in this case are limited, taking into account environmental and social impacts including views from Stakeholders it was recommended, that the current site selected was optimal in terms of minimizing environmental and social impacts from the project. This will support the capacity and enhance technical and vocational training institution aimed at producing skilled and semi-skilled manpower that will be required for effective leveraging of the country's economy on Agriculture. As such there were no better alternatives, additionally, the selected site was on government land, and therefore no need to compensate the land owners as well as developing a relocation action plan. The recommended Alternative considering the environmental and social impacts including views from Stakeholders alternative was the current identified sites.

2. Brief description of the sub project site and the major environmental and social stakes/challenges
The sub-project Area is at the University of Juba (UoFJ), Juba South Sudan, therefore the environmental and social baseline context is Juba. The city is situated on the White Nile and also serves as the national capital of the Central Equatorial State (UN-OCHA 2007). It is estimated that Juba covers approximately 336 km2, however, the city has been expanding over the years. Juba, comprises three of the 16 params of Juba County: Juba, Kator and Munuki. UN-OCHA (2007). It is estimated to cover 336 km2, with the majority of growth happening westwards and southwards.
Biophysical Environment: The terrain in the project sites are relatively flat. Generally the UofJ campus is a buildup area within the central business district, the unbuilt areas is presently a grassland and generally littered with solid waste (plastics, papers etc.). Erosion on the ground surface by rain water, due to absence of proper drainage system, is insignificant.

The climate of Juba is mainly influenced by its low altitude location and absence of relief barriers.(i) Temperatures: Juba is basically considered to be relatively hot: The city has an average annual high temperature of 34.5°C and an average annual low of 21.6°C. Where average minimum monthly temperatures range from 20 to 24 and average maximum monthly average ranges between 30°C to 38°C.[1](ii) Rainfall: records for the last 10 years for Juba, mean annual rainfall averages 1096.1 mm. The wettest year 1996 with 1340mm while 2000 was the driest year when only 884mm was recorded. Annual rainfall is delivered in one long wet season lasting 7 months from April to December. Each of the 7 months of the wet season receives on averages above 100mm of rainfall. April and October are the wettest months receiving on average 154.2 and 145mm of rainfall respectively. November to march is the dry season when rainfall on average is below 50mm[2]. (iii) Relative humidity: Juba is relatively humid for most of the year with RH values averaging 65.6% but generally being above 60% for the months between April and December. Relative Humidity is highest in both July and August when it averages 80%[3].

Present conditions at the site (baseline). The proposed project sites (UofJ) do not support any wildlife as they are built-up areas and has no wildlife habitats. Historically the sites were covered by mixed vegetation of savannas and forests. Currently, birds and other small wildlife has disappeared. Very few trees exist in both sites (almost nonexistent).[4] The land where the constructions will be undertaken belongs to the institution and there will be no need to apply change of user as the proposed sites are surrounded by buildings used for similar purposes as the proposed constructions. The site neighbors built up areas on greyish soils. There is no cultural heritage at the site. All the sites' general topography of the area is flat and the terrain has slight undulations with pronounced depressions forming the drainage of the general area. Soils are typical for South Sudan's black loamy soils with poor drainage.

Juba's population has increased steadily over the years, expansion further accelerated in the post-CPA period. More than 2 million IDPs were said to have returned to Southern Sudan, Reports in recent population projections put Juba's population to be over one million. Populations as per the last census and population densities in Central Equatoria state. Data from the International Labour Organization indicates that the unemployment rate in South Sudan remained relatively stable since the country gained independence, with

[1] https://www.weather-atlas.com/en/south-sudan/juba-climate,
[2] https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/juba_south-sudan_373303
[3] https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/juba_south-sudan_373303

[4] https://www.fauna-flora.org/countries/south-sudan/,

estimated values of 12.6 % in 2010 and 12.7 % in 2020 (ILO, 20212). Significant variations are reported between age groups and gender categories, with the highest unemployment rate observed among youth aged 15-24 (18.6 %) and women (13.2 %) compared to males (10.9%) in 2019 (ILOSTAT database, 2020). The high unemployment rate due to a slowdown in economic activity and low literacy rates is likely to further undermine South Sudan's economic prospects in the medium to long term. South Sudan has low levels of development and social equality. Human Development Index HDI is low standing at 0.433 in 2019 and ranking the country at 185 out of 189 countries and territories).

3. Policy, Institutional and legal framework for implementation of the project

Policy, and Legislative, Framework: there are several policies, laws and regulations addressing specific environmental management in the sectors within which this project falls under. Therefore, relevant to environmental and social safeguards issues about the proposed construction of TVET infrastructure development subproject in South Sudan include: The Constitution of the Republic of South Sudan of 2011, South Sudan Vision 2040, South Sudan National Environment Policy 2015 to 2025, South Sudan Draft Environment Bill (2023),South Sudan National Agriculture and Livestock Extension Policy, The Agriculture Sector Policy Framework (ASPF), 2012-2017, Comprehensive Agriculture Master Plan (CAMP) and the Irrigation Development Master Plan (IDMP) 2012-2017, The draft National Land Policy 2023, Draft Forest policy 2023, Health Policy 2016-2025, South Sudan Forest Policy (2019), Fisheries and Aquaculture Policy 2012-2017, Government of Southern Sudan Water Policy (2007), The Land Act of 2009: The South Sudan Forest Policy (2019), National Agriculture and Livestock Extension Policy, The Public Health (Water and Sanitation) Act (2008) The Labour Act (Act No. 64 of 2017), The Child Act (Act No. 10 of 2008): The South Sudan Education policy, General Education Act, 2012The National General Education Policy, 2017-2027, Gender Policy and South Sudan National Women's Strategy 2016

Relevant International Conventions include: South Sudan is a signatory to and has ratified several international instruments on environmental conservation and management such as conventions and regulations are South Sudan is a signatory to and has ratified several international instruments on environmental conservation and management. Among such conventions and regulations are (i) African Regional Policy Instruments (ii) The African Convention on the Conservation of Nature (1968) (iii) The Ramsar Convention of 1971 on Wetlands of International Importance; especially as Waterfowl Habitats (RAMSAR) (iv) The Protection of World and Cultural Heritage Convention (1972); (iv) The United Nations Framework Convention on Climate Change (UNFCCC, 1992). (v) United Nations Convention on Biological Diversity (vi) Convention on the Rights of the Child

While the AfDB Safeguard Policies: have been considered as that the project intends to be financed with AfDB. The Bank's policies prompted for this project include: OS1- Environmental Assessments
OS2 Involuntary Resettlement: Land Acquisition, population displacement & Compensation
OS3 Biodiversity and Ecosystem Services OS 4: Pollution Prevention and Control, Greenhouse Gases, Hazardous Materials and OS 5 Labour Conditions, Health and Safety

Institutional and legal framework for implementation The Project will adopt a hybrid model of implementation arrangement based on the strengths of a Third Party Implementation Agency in transition states and the need to gradually build institutional capacity while managing fiduciary and technical risks.

Governance and Oversight*:*
The Ministry of Agriculture and Food Security (MAFS) will be the Executing Agency and will have overall oversight and responsibility of the project.
High-level oversight and guidance on project implementation will be provided by the National Advisory Committee (NAC), an existing body comprising Undersecretaries of the Ministry of Finance and Planning (MoFP), MAFS, Livestock and Fisheries, Water Resources and Irrigation, Ministry of Environment and Forestry (MoEF), Ministry of Gender, Child and Social Welfare, Ministry of Youth and Sports, Ministry of Higher Education, and other relevant ministries[5], and representatives of participating states, as well as a representative from the Food Security Council. The main responsibilities of NAC among others will be to provide oversight on policy and strategic matters as well as approve the annual work plan and budget of the project.
The National Technical Committee (NTC) comprising of the Director Generals or Directors of the above line ministries will provide technical guidance during project implementation and is chaired by the Director General of MAFS. The main responsibility of the NTC is to provide technical guidance; ensure project is

[5] Ministry of Trade; Ministry of Roads and Bridges and representatives of Farmers Producers Unions, Chambers of Commerce, Financial institutions other relevant ministries.

implemented in line with the approved project document (narrative and budget); review, discuss and agree and recommend proposed on work plan, budget and other changes for approval by NAC.

***Single Project Coordination Unit (SPCU*)**:**
A Project Coordination Unit **(SPCU)** is already established in MAFS with the technical support under of FAO South Sudan who will provide the overall management of CRAFT-1. It will also house the seconded staff from MAFS and other project-implementing ministries.
The Ministry of Agriculture, as executing agency, will appoint seconded SPCU staff comprising of Project Manager, M&E Officer, Procurement Officer, Financial Management Officer, Accountant, Gender, and Social Inclusion Officer, and Environmental and Safeguards Officer including an irrigation engineer from MWRI and fisheries expert from MoLF. The Curriculum Vitae (CVs) of the appointed staff will be sent to the Bank for review and no objection before the personnel can be posted.
The **SPCU** will inter alia perform functions including M&E, work planning, capacity building, and maintain independent accounts for the MAFS-financed activities by sound international accounting practices under the guidance of FAO. The MAFS will sign letters of agreement with relevant organizations including specialized international and national research institutions) to provide technical assistance in the project. The responsibility of implementing E&S activities will rest with FAO, which will work closely with the SPCU to gradually build its capacity on E&S activity implementation.
At the state level:
Four (4) state-level PMTs will be established, leveraging existing office space and other resources of the FAO-SS. Key staff will include a State-level PMT Coordinator and M&E Officer, Accountant, and Field Extension Agents. Additionally, in the four (4) States, Project Support Officers will be seconded by the State Ministry of Agriculture and Food Security office to be housed in FAO-Field Offices and be directly involved in the project as part of local capacity, and will also work with the existing development committees established at various levels. The State-Level PMT's main task will be: to ensure oversight, coordination, and timely and quality implementation of activities; engage with relevant state-level ministry staff and CADs and other partners for the effective implementation and coordination of activities; build partnerships; provide comprehensive inputs to the AWPBs in a participatory manner; ensure data collection for M&E and activity progress monitoring; undertake regular supervision/support field missions including with NAC and the M&E missions from national-level.

Third-Party Implementation Agency (TPIA):
Under the Third-Party Implementation arrangement, FAO-SS, based on their technical comparative advantage, was selected as TPIA of CRAFT-1 project based on the assessment conducted of potential implementing agencies among UN-system. FAO-SS will establish a dedicated Project Management Team-FAO (PMT) comprising of a project coordinator, M&E Officer, Procurement Officer, Financial Management Officer, Environmental and social safeguards Officer, Communication and Knowledge management officer, and an admin officer. Additional technical officers including Senior Irrigation and Rural Infrastructure Engineer; Value chain/Agribusiness Expert, Agronomist/seed and climate change specialist, Fisheries Specialist, Rural Finance Expert, and Farmer Organization Expert will be recruited as technical assistance to support specific project activities. All other national, regional, and international institutions that will be engaged during project implementation and reviews shall be selected based on cost-effectiveness and their technical competence to complement FAO and to add value, especially their capacity to enhance and strengthen the technical and institutional capacity of the directorates/ department of the relevant government institutions.
FAO-SS as the technical implementation arm of the project, will be responsible for provision of support in financial management, procurement, working closely with the SPCU in the preparation of the Annual Work Programs (AWBP), and will provide the necessary backup for monitoring and reporting in terms of activity progress to the MAFS- PCU.

4. Public Consultations and Stakeholder Analysis: The consultant with support from the project team conducted public consultation. This was carried out through key informant interviews (KIIs), focused group discussion, and site meetings (see Appendix 4).The key issues raised by the stakeholders during consultation are as follows: 1). the environmental concerns raised include: Noise and Vibration during construction, air pollution from dust to be generated during construction; and solid waste production and littering the environment. 2). the socio-economic concerns raised include: Increased pressure on utilities/services, community health and safety concerns, socio cultural disruptions, among others. 3) Student potential relocation to another campus, avoiding disrupting normal businesses and leaning activities. 4). Social interactions that could lead to social challenges including health risks, social conflicts, among other challenges. 5). Solid waste generation from excavation and construction materials. The Consultant responded

to the stakeholders' concerns by reassurance that all the issues raised will be addressed as part of the mitigation measures proposed in the ESIA report and to be implemented and monitored during the project period.

5 Environmental and Social Impact: the study identified several environmental and social impacts for the entire life cycle of the project. The identified impacts of the proposed project are presented in Table 7-1 below follows in terms of the project phase where they occur.

Table 7-1 Summary of Potential Impacts

Phase	Potential Impacts	Significance	Mitigation Needed
	Sourcing bulk materials for construction	++	**Yes**
Mobilization /Construction	Removal of topsoil and landscape alteration	+	**No**
	Solid waste generation and Disposal of construction waste	++	**Yes**
	Loss of Flora and fauna	+	**No**
	Pollution from liquid waste generation	++	**Yes**
	Fuel and oil spillage accidental	++	**No**
	Increase demand for scarce freshwater resources and energy	+	**No**
	Noise and Vibration	++	**Yes**
	Air pollution	++	**Yes**
	Occupational Health and Safety Risks	+++	**Yes**
	Community Health and Safety Impacts	++	**Yes**
	Land Acquisition, Resettlement and Relocation of Alternative Livelihood	+	**No**
	Potential threats from GBV/SEA	+	**No**
operational phase	Solid waste management	++	**Yes**
	Pollution from liquid waste generation.	++	**No**
	Chemical Management	++	**Yes**
	Occupational Health and Safety Risks	++	**Yes**
	Community Health and Safety Impacts	++	**Yes**
	Management of Social Risks	++	**Yes**
	Increased demand for goods and services	++	**Yes**
Decommissioning phase	Solid waste generation and Disposal	+++	**Yes**
	Pollution from liquid waste generation	++	**Yes**
	Air pollution	++	**Yes**
	Occupational Health and Safety Risks	+++	**Yes**
	landscape alteration	++	**Yes**
	Noise and vibration pollution	+++	**Yes**
	+ not significant ++ Significant +++ Very significant		

6. Environmental and social management plan (ESMP):
Has been developed to implement the proposed environmental mitigation measures during mobilization, construction operation and decommissioning of the project. The plan focuses on measures to be applied in the field and management actions to minimize potentially adverse impacts and enhance positive impacts.

SUB COMPONENT I CONSTRUCTION OF TVET FACILITIES AT UofJ					
Design and Construction Phase					
Aspect	**Anticipated Environmental and Social Impacts**	**Proposed mitigation**	**Monitoring Indicators**	**Responsible Institutions**	**Cost estimate (USD)**
Design related	The design may be Poorly designs that may drive demand for raw materials increase GHEs out of character with the culture of the area	• Project designs to take cognizant of environmental best practices in energy and water conservation. • use alternative energy like solar, propose fixtures that enhance water and energy efficiency • Design with Nature and culture in mind	• The energy efficiency the of building and the equipment installed • Building materials promoted • Environmentally sensitive designs	Architects Constructor &PIT	5000
Social Impacts	Un managed community expectations may lead to conflicts Project activities that may not align with social, cultural and religious norms	• Public participation /sensitization on the project • Stakeholder view on project components and execution	No. of stakeholder sensitization sessions General awareness level on project	MAFS through PIT	2000
Sub total					7000
Construction Phase					
Aspect	**Anticipated Environmental and Social Impacts**	**Proposed mitigation**	**Monitoring Indicators**	**Responsible Institutions**	**Cost estimate (USD)**
Land degradation	• Extraction of raw materials (sand, ballast, rocks, timber and poles) may lead to Loss, degradation or fragmentation of ecologically sensitive areas • Earthworks and clearance may lead to the loss of plant species and habitats • Potential for adverse effects from alteration of soil structure and increased runoff from paved surfaces leading to changes in water flow and drainage as well as soil erosion,	• Raw materials like sand, ballast and stones sourced from licensed quarries. • Rehabilitation of cleared areas with native species	• Proper sourcing of raw materials • Compliance with transportation rules • Land restoration and revegetation after construction and or rehabilitation works	***PIT&*** ***Contractor***	4000
Air Pollution	• Dust and Fugitive gases from transportation tracks • Emissions by machineries (NOx and Sox and fugitive dust from disturbed soil surfaces	• Loose materials to be covered during transportation to reduce fugitive gas • Transportation trucks to observe speed limits. Where possible put measures for traffic calming like bumps near settlements, around corners etc. • Reducing machinery idling times to cut on emissions	• Ambient air quality	***PIT&*** ***Contractor***	1000

Accident Risks during Transport	• Accident risks by transportation vehicles to and from site	• Erect adequate signage warning of different hazards: e.g. heavy trucks turning, observe speed limits among others • Transportation trucks to observe speed limits. Where possible put measures for traffic calming like bumps near settlements, around corners etc. • Sensitize the machine operators on need for safe practices • Machinery to be operated only by qualified personnel	• Observe speed limits • Traffic calming like erection of bumps on blind spots • Proper signage	***PIT&*** ***Contractor***	1000
Waste Management	• Pollution risks to soils and water due to poor disposal of construction waste • Generation of wastes (liquid and solid waste	• Waste must be disposed of in licenses sites only and in compliance with local laws and bylaws • Contractor to prepare a detailed waste management plan • Provision of adequate facilities for solid and liquid waste management at the sites. Sensitize workers on proper waste management including 3Rs • Facilitate programs/measures to ensure appropriate sanitary and medical facilities are available	• Solid waste separation and recycling/disposal measures adopted in camp settlements • Proper waste management practices related to construction works, • Solid and liquid waste management practices and status.	***PIT&*** ***Contractor***	4000
Noise and Vibration	• Noise and Vibration • Health and safety concerns	• Strict adherence to regulations on noise and vibration, including use of silencers and mufflers for loud equipment • Work to be carried out within stipulated hours to reduce nuisance • Proper PPE provision	• Compliance with laws and regulations on noise and vibration • Hours of operation by contractor • Compliance with the Environmental Guidelines • Environmental audits	Contractor PIT	2000
Chemicals Management	• Risk of oil spills, fires etc. from servicing of equipment • Fire risks	• Proper housekeeping within workshops for equipment to reduce fire and pollution risks • Prepare an emergency management plan	• Compliance with the Environmental Guidelines • Environmental audits	Contractor PIT	1000
Conflicts and Grievances Redress	• Labour related disputes • Differences (Perceived or real) in working conditions between workers may lead to resentment, • Risk of gender related violence and crimes	• Development of transparent and culturally appropriate communication with communities an Employment Plan, with clear employment requirements, and procedures for the construction and operational /maintenance workforce,	• Employment records • Grievance redress records • Level of awareness on gender issues, HIV, •	Contractor PIT UoJ Administration	5000

		• Fair and transparent hiring and staff management procedures, • Staff training and awareness raising in communities, • Implementation of a Grievance Procedure, • Ensure the participation and benefit of marginalized and vulnerable part of the communities (poor, landless, minority groups, women, old and youth) throughout and after the project.			
Occupational Health and Safety	• **The construction workers will be exposed to respiratory diseases due to dust, fumes and cement.** • **Workers exposed to accidents injuries, etc.**	• develop and implement relevant C-ESMP • develop An Occupational Health and Safety Management Plan • Environmental, Health and Safety (EHS) plan. • Management and Safety of Hazardous Materials • Labour Management Procedures • -GBV/SEA and Child Protection Action Plan • Emergency Preparedness and Response Plan • HIV and AIDS Awareness	• Compliance with EHS • Compliance with GBV/SEA & Child Protection • C-ESMP	Contractor PIT UoJ Administration	5000
University Community and students health and safety	• Risk of Occurrence of communicable diseases, including HIV/AIDS, and sexually transmitted diseases (STDs). • Social differences may lead to discrimination and harassment, • Real or perceived disruption to normal community life, through the physical presence of a workforce; in particular, potential for conflicts to occur over resources,	• Development of public health protocols including provision of adequate hand wash facilities etc. • Training and awareness raising and Implementation of a health management for workforce and their dependents on HIV/AIDS and other STDs, and communicable diseases; health awareness raising campaigns for communities on similar topics, • Community grievance redress mechanism	• Observance of COVID 19 protocols • Provision of materials for sexual health awareness • Grievance redress records • Level of awareness on gender issues, HIV,	Contractor PIT UoJ Administration	6000
Sub total					**24000**
Operational Phase					

Aspect	Anticipated Environmental and Social Impacts	Proposed mitigation	Monitoring Indicators	Responsible Institutions	Cost estimate (USD)
Waste Management (**(Solid, liquid)**	• Generation of wastes (Liquid and solid) by student and staff population • Pollution risks from the generated waste • Waste waters from the laboratories • Management of hazardous chemicals for use in the laboratories	• Each institution to have infrastructure for solid and liquid waste management based on Best Available Technologies • Programs for promoting best environmental practices include adoption of 3Rs in waste management • Chlorination of laboratories waters • Pool water recirculation system: • discharged into the municipal sewer • substitute the hazardous chemicals with less hazardous	• Status of waste management • Quality of general environment	Institution administration	2000
Pressure on Resources (Increased demand For Goods and services)	• Increased pressure on resources (water, energy) • Influx of population to capitalize on demand for laboratories as well as good services to support the student population • Increased use of water for the laboratories	• Sensitize students on resource efficiency measures like keeping taps closed, witching off lights • Use of resource efficient fixtures like energy efficient lighting and electronic appliances, water efficient fixtures among others • Programs for self-sustained within the TVETs including agriculture • Using an automatic pumping	• Presence of local development plans • Adoption of resource efficiency measures	UofJ Administration PIT	3000
Occupational Health and Safety	• **The employee and students will be exposed to respiratory diseases due to dust, and fumes hazardous chemicals**	• Develop laboratory Environmental, Health and Safety (EHS) plan. • Emergency Preparedness and Response Plan	• Compliance with EHS • Compliance • Good housekeeping procedures adopted. • Laboratories standard operation procedures developed	Contractor PIT UoJ Administration	5000
University Community and students health and safety	• Risk of Occurrence of communicable diseases, including HIV/AIDS, and sexually transmitted diseases (STDs). • Social differences may lead to discrimination and harassment, • Real or perceived disruption to normal community life, through the physical presence of a workforce; in particular,	• Development of public health protocols including provision of adequate hand wash facilities etc. • Training and awareness raising and Implementation of a health management for workforce and their dependents on HIV/AIDS and other STDs, and communicable diseases; health awareness raising campaigns for communities on similar topics, Community grievance redress mechanism	• Observance of COVID 19 protocols • Provision of materials for sexual health awareness • Grievance redress records • Level of awareness on gender issues, HIV,	Contractor PIT UoJ Administration	6000

	potential for conflicts to occur over resources,				
Sub Total	•	•	•		16000
Decommissioning Phase					
Aspect	**Anticipated Environmental and Social Impacts**	**Proposed mitigation**	**Monitoring Indicators**	**Responsible Institutions**	**Cost estimate (USD)**
Waste Management	• Construction waste containing ballast, rocks, timber, poles and roofing materials) that need disposal • Generation of wastes (liquid and solid waste •	• Usable materials like construction blocks, roofing, steel, etc. to be sold off to recyclers for recycling and re-use. • Remaining materials to be used for burrowing or disposed off in designated sites. Can also be used for backfilling access roads	• Safe disposal of construction waste • Solid waste separation and recycling/disposal measures adopted in camp settlements •	UoJ to take lead through PIT	*3000*
Air Pollution	• Dust and Fugitive gases from transportation tracks • Emissions by machineries (NOx and SOx and fugitive dust from disturbed soil surfaces	• Loose materials to be covered during transportation to reduce fugitive gas • Transportation trucks to observe speed limits. • Reduce machinery idling time	• Air quality during demolition •	PIT Contractor	1000
Accident Risks	• Traffic related accidents • Machinery related accidents	• Transportation trucks to observe speed limits. Where possible put measures for traffic calming like bumps near settlements, around corners etc. • Only Qualified personnel to operate machinery • Provide PPEs to all workers and visitors in the construction areas • Sensitize workers on health and safety • Fencing of construction areas to reduce unauthorised access • Proper signage warning of different hazards	• Accident/incidence reports	PIT Contractor	3000
Occupational Health and Safety	• **The construction workers will be exposed to respiratory diseases due to dust, fumes and cement.** **Workers exposed to accidents injuries, etc.**	• develop and implement relevant C-ESMP • develop An Occupational Health and Safety Management Plan • Environmental, Health and Safety (EHS) plan. • Management and Safety of Hazardous Materials • Labour Management Procedures	• Compliance with EHS • Compliance with C-ESMP	Contractor PIT UoJ Administration	5000

		• Emergency Preparedness and Response Plan			
SUBTOTAL					**12000**
OVERALL TOTAL					**57,000**

Project Alternative: The consideration of alternatives or options to a project proposal, which will achieve the project's objectives is a requirement of many ESIA systems. It lies at the heart of the ESIA process and methodology. During the scoping process, alternatives to a proposal can be generated or refined, either directly or by reference to the key issues identified. A comparison of alternatives will help to determine the best method of achieving project objectives while minimizing environmental impacts or, more creatively, indicate the most environmentally friendly or best practicable environmental option.

***1. The 'No Action Alternative'*:** environmentally speaking, not carrying out the development ("No Project Alternative") may be the best option, as the area would remain a relatively undisturbed area providing a habitat for the varied flora and fauna presently observed. Although this area will continue to be impacted, though minimally, by anthropogenic and natural factors but from a socio-economic perspective the "no action" alternative may not be the best alternative as the numerous benefits to be gained from the development both locally and nationally would not be realized and the resources in the area would continue to be underutilized.

2 Alternative Site: this option involves pursuing the proposal but on a different site meaning its impacts that are relevant to the proposed site or occur due it will be avoided. The avoidance of these *in-situ* and *ex-situ* regional impacts would be the main benefit of this option but there will also be other impacts specific to the alternative site and due to specifications of the proposed project, a different site away from the current sites, would also increase logistic costs. Alternative sites are also not readily available since availability of land is limited. Additionally, the selected sites are in government land and therefore no need to compensate the land owners as well as developing a relocation action plan. Both sites at YAI and UoJ developments are in line with the land uses within the institution.

3. Alternative Schedule: this option entails carrying out the proposal at a later time thereby offsetting its impacts to that time. Only benefit is if there are improvements in baseline conditions and technologies that may be involved with the proposal. However, in this case, there are no guaranteed and it may only lead delays in development, therefore carrying out the proposed project with mitigation would be a preferred option due to this uncertainty. In addition, carrying out the proposed project at later time may lead to more operational and logistic costs due to increasing inflation and standards of living.

4. Alternative Design: This option curtails undertaking the project but with different infrastructural designs that encompass: buildings, roads, power, water and sewerage etc. The project design will be achieved by considering the options available that would ensure cost-effectiveness and avoid or reduce environmental and social impacts as much as possible. Additionally, several of the other possible designs may result in higher building densities and less internal transport/path optimization. This would mean the project would use more energy and resources as compared to the preferred project option.

Recommended Alternative*:* After analysis of alternatives, taking into account environmental and social impacts including views from Stakeholders it was recommended, that the current sites selected were optimal in terms of minimizing environmental and social impacts from the project. Siting at alternative locations: the needs assessment carried out by the government of the Republic of South Sudan identified a need to build the facilities at YAI and the University of Juba Campuses. The women's Hostel will go a long way in supporting vocational training and technical skills upgrading. All the two will support the capacity of the technical and vocational training institutions to be able to train and produce skilled and semi-skilled man-power that will be required for effective leveraging of the country's Agriculture the based economy. As such there were no better alternatives, additionally the selected sites were in government/ institutional land and therefore no need to compensate the land owners as well as developing a relocation action plan.

The recommended Alternative considering the environmental and social impacts including views from Stakeholders alternative was the current identified site*.*

Environmental Monitoring Plan: An Environmental Monitoring Plan has been developed to monitor the efficiency of the environmental mitigation measures and socio-economic initiatives specified in the ESMP. It supports the ESMP by maintaining a record of environmental performance and enabling adjustments to be made to mitigate environmental and socio-economic impacts during the lifetime of the project. The Monitoring Plan consists of the set monitoring parameter, and institutional measures to be taken during construction and operation of the project to eliminate, offset, or reduces adverse environmental and social impacts.

Grievance Redress Mechanism: The AfDB defines project GRM as a systematic process for receiving, evaluating and facilitating resolution of affected people's project-related concerns, complaints and grievances about the borrower's/client's social and environmental performance on a project. AfDB requires its clients to be aware of and respond to stakeholders' concerns related to the project in a timely manner. In OS 1, the Bank requires the borrower/client to establish a "credible, independent and empowered local grievance and redress

mechanism to receive, facilitate and follow up on the resolution of the affected people's grievances and concerns regarding the environmental and social performance of the project.

The process by which the GRM is designed should be integrated into the overall approach to project preparation as prescribed in the Bank's ISS. The Bank ISS through its (IESIA) Guidelines Notes provides guidance on development and implementation of GRM. It should also be included on a case by case basis, for Category 2 projects that exhibit specific potential social tensions.

The GRM in the AfDB-GRAFT- project will be established under the guidance provided in the ISS Bank ISS through its (IESIA) Guidelines Notes. The first step is to determine the primary goal of the GRM which would generally be to resolve specific grievances in a manner that meets both project management and community needs, but with important local variations. The scope of the grievances that may legitimately be brought forward by the communities and/or individuals affected shall be defined in advance.

The project will involve the formulation of GRCs at project level in the two sites, i.e. GRM staff, The GRM members should be qualified, experienced, and competent personnel who can win respect and confidence of the affected communities. It is also important to maintain a gender balance within the GRMs.

General Costs for ESMP Implementation and Monitoring: The ESMP implementation budget refers to all costs that will be incurred to implement the requirements or recommendations in this ESIA. In the ESMP the requirements are to ensure that implementation of the project integrates environmental and social issues for the sustainability of the project as well as its components and sub-components. ESMP recommends the following key issues; Preparation of site-specific ESIAs, training and capacity building, reviewing and monitoring mechanisms. The total cost for implementing Environmental Management Plan including the Monitoring Plan is tuned to **USD 147000**

Conclusion and Recommendations:
Conclusion: the ESIA study results show that, despite, some limited negative environmental implications of the **project, "Construction and Rehabilitation of TVET Learning Facilities - Lecture Halls, Offices, Equipped Workshop, and Laboratory"** will have high socio-economic benefits to the people of South Sudan and adjoining regions. The associated negative impacts will be minimized through good engineering design and envisaged construction practices. Specific mitigation measures have been suggested in this report to offset the inherent adverse impacts. In implementing these mitigation measures there would be an improvement of environmental soundness of the project.

It is, therefore, concluded that, implementation CRAFT project sub component will entail no detrimental impacts on the environment, social and physical cultural resources if the recommended mitigation measures are adequately and timely put in place. The identified adverse impacts shall be managed through the proposed mitigation measures and implementation regime laid down in this ESIA. MAFS through PIT is committed in implementing all the recommendations given in the ESIA and further carrying out the environmental monitoring.

Recommendations: i). Aspect of the project will require a multi-sectoral and a multi-disciplinary approach in the overall implementation. Therefore, it is important that during the implementation, relevant stakeholders are effectively engaged. ii)The implementation of CRAFT activities is likely to have multiplier effects and proliferation of other economic activities hence engaging other stakeholders, and especially the private sector may help in addressing some of the cross cutting challenges. iii) The contractors and the project proponent should take into consideration all the legislative measures put in place so as to ensure the due process is followed. iv) The mitigation measures provided are based on the recommendations of this ESMP and they should be followed so as to address the environmental issues that may arise in the course of the implementation of this project. But contractors should enrich the ESMPs and develop their site specific ESMPs

1. CHAPTER ONE: GENERAL PROJECT INFORMATION

1.1 Introduction

Republic of South Sudan's "**C**limate **R**esilient **A**gri-**F**ood systems **T**ransformation **(CRAFT)** Project" (**sub-component 3.2: development of agricultural and fisheries education and skills development),** involves the construction of TVET Learning Facilities at the School of Natural Resources and Environmental Studies, University of Juba (UofJ) is government proposed project activities to be financed by the African Development Bank (AfDB) and shall be executed by the Ministry of Agriculture and Food Security (MAFS).

The Project is aligned to the sustainable development goals (SDGs): SDG1 (no poverty), SDG2 (zero hunger), SDG 4 (education, technical and vocation skills for decent jobs), SDG 5 (gender equality), and SDG 8 (productive employment), and SDG 13 (climate action). It is also aligned with the African Union's (AU) Agenda 2063 for a Prosperous Africa, based on Inclusive Growth and Sustainable Development. The project also aligned with the Bank's Interim-Country Strategy Paper (I-CSP, 2022-24) that aims to provide an enabling environment for a diversified and resilient socio-economic development and reducing fragility. The I-CSP's single priority objective is ***Agriculture value chains development for economic diversification and resilience*** and thus is expected to boost production and productivity to ensure food and nutrition security; diversified the economy, creating jobs and contributing to cross-cutting issues such as addressing climate resilience, green growth, gender inclusion and fragility.

The initiative is anticipated to build on Bank-supported activities implemented by FAO: Building Resilience of Food and Nutrition Security in the Horn of Africa (BREFONS) South Sudan, and the related Africa Disaster Risk Financing Programme (ADRiFi); Strengthening Emergency Preparedness and Response to Food Crisis (SEPAREF); South Sudan Emergency Food Production Programme (SSEFPP); and Agriculture, Markets and Value Addition (AMVAT). The project builds on the Netherland's-supported Fisher Community Resilience Enhancement Project; and will optimize synergies with World Bank's (WB) Resilient Agricultural Livelihoods Project), IFAD Rural Livelihood Project (SSRLP), IFAD Rural Enterprises for Agricultural Development, and World Food Programme (WFP) home-grown school feeding to be launched in 2024. Project interventions will address these challenges directly through implementation of activities under 3 project components: 1) Developing climate adaptive and resilient production systems; 2) Strengthening value chain development, women and youth entrepreneurship and private sector development, and 3) Digitalization and skills for jobs and entrepreneurship.

The sub project Development Objective**:** The project development objective is to increase agricultural production and productivity, create jobs, and build resilience for the people of South Sudan. Specific objectives building technical and entrepreneurship skills for addressing some of the root causes of fragility

1.2 The Need/ Rationale for an Environmental and Social Impact Assessment.

Infrastructure developments impacts the environment and societies in several ways during the different phases of their project life cycles. This involves construction which would requires building material (quarrying, mining and processing of metals, cement production), land clearing erection of the buildings (noise, dust, hazardous materials) and during operation generation of both solid and liquid wastes etc. Therefore construction of TVET Learning Facilities - Lecture Halls, Offices, Equipped Workshop and Laboratory may be rated as category 2 under the African Development Bank's Integrated Safeguards System (ISS). Consequently, environmental and social assessment and related safeguard measures should be put in place and updated during the project implementation phase. The ESIA process will identify and assess the potential environmental and social impacts of the proposed construction activities, evaluate alternatives, as well as design and implement appropriate mitigations, management, and monitoring measures. Based on the outcomes of the environmental and social impact assessment, is an Environmental and Social Management Plan

(ESMP), in compliance with the South Sudan ESIA regulations as well as the African Development Bank's Environmental and Social Safeguards Policy requirements. The aim is to develop mitigation measures that will address any adverse environmental and social impacts the project activities may bring about, including the cost implications of implementing those mitigation measures, develop a monitoring timeframe and assign responsibilities to implement the measures. The ESIA will guide the program implementers to make sure sub-projects financed under this project remain in Category II based on their environmental and social impacts. These risks are expected to be addressed satisfactorily through available mitigation and management measures implemented at the sub-project level. The Ministry of Agriculture and Food Security, (MAFS) is committed to mainstream social and environmental sustainability in the project

1.3 Terms of Reference *(*ToRs) of the Assessment

The EIA study was conducted as per the approved ToR, pursuant to Environment Assessment Regulations in Southern Sudan. To achieve this, AfDB in collaboration with the MAFS, has engaged Environmental and Social Safeguards Consultants to conduct environmental and social impact assessment prior to the approvals of the Project activities. The Consultant working closely with a counterpart E&S support team comprising: Environmental and Social Safeguards experts from RSS who provided local knowledge on the context, regulatory issues, approval processes and guidance on stakeholder engagement protocols. The consultants; in consultation with the CRAFT project Task Manager, the Banks ESIA experts and with the RSS Ministry of Agriculture and Food Security, (MAFS) and the Southern Sudan Ministry of Environment and Forestry: prepared ESIA for "**Construction of TVET Learning Facilities - Lecture Halls, Offices, Equipped Workshop and Laboratory at the School of Natural Resources and Environmental Studies, University of Juba"**.

As advocated in the study ToRs, the proponent of the project is the Ministry of Agriculture and Food Security (MAFS) South Sudan, on behalf of the Government of the Republic of South Sudan (RSS). The specific objectives of the ESIA are to:

(a) describe the nature of construction to be undertaken;
(b) verify compliance with environmental laws, policies and regulations as well as industry best practice and standards;
(c) identify and analyze alternatives to the envisaged project;
(d) Identify, analyze and propose mitigation measures for positive and negative impacts and enhancement measures for positive impacts to be undertaken during and after the implementation of the project including; recommending cost effective measures to be used to mitigate against the anticipated negative impacts;
(e) seek the views of affected persons;
(f) Identification of specific roles and responsibilities, and outlining the necessary reporting procedures for managing and monitoring environmental and social risks related to subprojects,
(g) Establishing project funding required to implement the ESMP requirements and
(h) Providing lessons learned for application to future projects.
(i) Prepare an Environmental and Social Management Plan (ESMP) report compliant with the Bank Environmental and Social Safeguards Requirements.

1.4 The Approach

The ESIA has been prepared in accordance with the requirements stipulated by the Government of South Sudan (GoSS) through South Sudan Ministry of Environment And Forestry. An interactive approach was undertaken between the project management team and the environmental and social assessment consultants. The approach used is commensurate with the Environment Assessment Regulations of the Government of South Sudan. This approach emphasized key elements of the ESIA i.e.: scoping; stakeholder engagement; baseline data collection; project description; assessment of impacts and identification of mitigation measures.

The study conducted an in-depth evaluation of potential impacts in order to create harmony with the affected and interested stakeholders. It also aimed at ensuring that the proposed project/infrastructure would be constructed based on applicable building standards of South Sudan and other international building codes i.e. ISO standards etc. The construction should, in addition, incorporate environmental guidelines, and health and safety measures.

1.5 Methodology

Various data collection and analyses techniques were used in the assessment:

1.5.1 Desk Review

Deskwork was expected to provide a description of the project with respect to spatial location and coverage. Relevant documents were reviewed to obtain information on the baseline information in general but specifically at the project site. Land use, local micro-environmental conditions, land use practices, as well as the policy and legal documents among others. Others included area maps, National Development and Economic Surveys, relevant legislations, regulations and guidelines and standards.

1.5.2 Field Assessment

Physical evaluation of the project area was carried out with specific focus on landform trends, land use patterns, biodiversity, natural resources, hydrology and climatic variations. This was also an evaluation of the current environmental status with respect to physical, biological and socio-cultural perspectives. It was a systematic field inspection backed with available documentation and direct interviews. Field evaluation was planned to enable determination of the exact physical environmental features to be affected within the proximity of the project site. In addition to identifying the potential positive and negative impacts, field assessments contributed understanding the proposed works to be undertaken.

The field work adopted various techniques of baseline data collection on the existing environmental conditions, namely:

- Field observations and recordings including photography the project site and its vicinity.
- Use of checklists for determining potential environmental impacts of the proposed project.
- Consultations and public participation within the neighborhood of the project site.

1.5.3 Observations

Detailed field observation assessment was undertaken to enable determination of the exact socio-economic activities within the proximity of the project site. Among the broad focal areas for which observation was done included settlement patterns, land use, commerce, trade and industry among others.

1.5.4 Public and Stakeholders Engagement

Structured stakeholder engagement was undertaken in the neighborhood of the proposed project site to capture the views and concerns of interested and affected parties. The engagement process entailed face to face meetings / interviews. Here, stakeholders, that include the institution management Team, students, neighbors to the proposed site were interviewed, in order to get their views, expectations, projected economic and social effects regarding the proposed project activities and location.

1.5.5 Data Analysis and Evaluation of Alternatives

Use of checklists and the threshold limits were used in data analysis; while the proposed site location, scale of construction, potential environmental impacts, capital and operating costs, suitability under local conditions, and institutional, training, and monitoring requirements were considered in the evaluation of alternatives. The proposed project's impacts were identified using a developed

checklist, public consultation information, literature and professional knowledge. Impacts were first distinguished as either positive or negative. The proposed project's negative impacts were analyzed to denote their significance based on their characteristics and this was also impacts per project phase. Significance was judged based on their capacity to change baseline conditions beyond acceptable standards or legislative provisions. A qualitative scoring matrix was used to give a value/score of each impact on the environment.

1.5.6 Preparation of the ESIA Project Report

This ESIA project has been prepared and is in the process of approval and registration by the Ministry of Environment and Forestry (MEF) as per the provisions of the environment impact assessment policy and process in South Sudan.

1.6 Limitations and Assumptions of the Study

Most of the baseline information for the study relied on secondary information. The study assumes that the respondents provided information that are reliable on the implementation of the project; the study also assumes that the project team and contractors will fully adhere to ESMP.

1.7 Organization of the ESIA Report

This Environmental and Social Impact Report is organized in chapters; including

Cover Page
Table of Content
Table of Abbreviations
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Executive Summary
Chapter 1: General project information and Introduction to ESIA
Chapter 2: The Project Description
Chapter 3: Administration Policies, Legal and Regulatory Framework
Chapter 4: Baseline Information of the Project Area
Chapter 5: Project Alternatives
Chapter 6: Consultations and Public Participation
Chapter 7: Potential Environmental and Social Impacts and Mitigation and Measures
Chapter 8: The Environmental and Social Management Plan and Monitoring
Chapter 9: Conclusions and recommendations
Bibliography
Annexes/ Appendix

2. CHAPTER TWO: THE PROJECT DESCRIPTION

2.1 Introduction

TVET infrastructure development is a subcomponent of the **C**limate **R**esilient **A**gri-**F**ood System **T**ransformation **(CRAFT)** sub-project component prioritizes technical and vocational training by investing in competency-based training infrastructure (construction of TVET learning facilities - lecture halls, offices, equipped workshop and laboratory). That is sub-component 3.2: development of agricultural and fisheries education and skills development), involves the construction of TVET Learning Facilities at the School of Natural Resources and Environmental Studies, University of Juba (UofJ). The project activities include; the development of competency-based curricula at UofJ for programmes in seed system development, agriculture/fisheries extension services, water and irrigation agronomy, soil fertility management and food science and mechanisation, enhance capacity of 10 faculty at the School of Natural Resources and Environmental Studies through technical courses and provide technical/vocational skills training in TVET schools for 30 TVET instructors, including 12 women. The activity will provide technical support for formal and informal short-term training in agriculture, fisheries, and agri-business at community level, and facilitate collaboration between technical assistance and UofJ research in these areas. The project will provide 150 scholarships for technical and vocational training to women and marginalized students to promote agricultural productivity, enhance value-chain and enterprise development through improving skills.

The project activities includes: the construction/upgrading and equipping of laboratories, workshops, offices training and classrooms at UofJ, School of Natural resources. It is anticipated that this development will enhance and improve access, quality and relevant Technical and Vocational Education Training and entrepreneurship training for youth employment so as to contribute to the Republic of South Sudan efforts to increase the supply of skilled labour in the areas of agriculture value chain development and other related sectors.

Figure 1: Aerial set up of the University of Juba

2.1.1 Land Tenure, Use, Ownership and Management

The properties under reference are to be at the University of Juba: a higher education facility in Juba. The Juba campus is a facility with offices, lecture theaters, laboratories, workshops, staff quarters single dwellings and student residential buildings therefore the proponent does not need to apply for a change of user as sites will have closely similar activities and the land in each case belongs to the institution.

The proposed buildings are intended to be multipurpose infrastructure and will house high tech facility, lecture theaters offices workshops and laboratories. The Buildings are intended to facilitate; equipping learners with skills to apply the proper techniques, scientific principles, methods and innovations to improve traditional processing, package and storage of Agricultural value chains (fisheries, rice , Sorghum and sesame) of food products in south Sudan by using revised, competency based curriculums and appropriate high tech equipment in the workshops/laboratories.

2.1.2 Project Design

The Construction at UoJ will be a modern building housing the following; Offices, lecture halls and equipped laboratories. Each of the construction sites, will also include internal roads for vehicles that will be for the workforce, students, lecturers' customers, services and ancillary operations.

2.1.3 Processes, Equipment, Materials, Output and Expected Waste

For the purposes of better understanding the proposed project and the identification and analysis of impact, the proposed project is categorized in terms of its processes, equipment, materials, outputs and expected wastes. These have been pigeonholed in terms of the project phases; design, construction, operation, and decommissioning).

2.1.4 Utilities

For the project to achieve its objectives varying quantities of utilities will be necessary as ancillary and primary inputs. These utilities and facilities, whose sources, include; Water, Electricity, Sewerage, Storm Water Drainage, Transport and Traffic, and Fire Reticulation.

Water: There will be demand for potable water for the development there it is anticipated that South Sudan Urban Water Corporation (SSUWC) a public utility will allow the development to connect to their main line feeding the current establishment. Therefore, a feed from this to the project will be maintained and the residual volume and pressure will be available for the development from this main line and will be determined in liaison with SSUWC.

Electricity There is an existing overhead line at sites, currently lies adjacent to the sites. Therefore, Offsite Power Supply by **The Juba Electricity Distribution Company Ltd (JEDCO)** will supply the facilities. Although the project should consider to opportunity to utilize. ***Renewable Electricity Supply Options*** as an Alternative sources of on-site energy generation (e.g. photovoltaic) should be in the project consideration if sufficient supporting funding can be sourced. However, the project will be mostly reliant on JEDCO supply.

Sewerage*:* There is no existing trunk sewer line in both the project areas. Therefore, the development will have to consider a system for discharging sewage water subject to necessary design reviews by SSUWC. Therefore, the sewerage discharge from the development may be taken offsite, on site retention or on-site sewerage treatment. This will be confirmed with the relevant authorities.

Storm Water Drainage: The topography of both the development sites is generally flat. It may be assumed that the entire development site will be impermeable, whether through building development or hard landscape areas and roads. The extent of future soft landscaping will reduce the runoff volumes but it may be anticipated that these areas will be small (10-15% maximum) of

the development areas and therefore not significant for the initial consideration, therefore a need to consider provisions for the storm waters management.

On-site Drainage:
The current topography on sites are generally flat therefore on-site drainage can be dealt with by reshaping the site with bulk earthworks. The cost of this in terms of earthworks and environmental aspects must be considered.

Transport and Traffic
The traffic loads and peaks have to be considered as the primary access to the developments will be through the existing roads.

2.2 Project construction Phase

2.2.1 Project Mobilization & Construction Phase

The mobilization and construction phase will take place subsequently to the issuing of Environmental Impact Assessment Certificate, building/construction permits and once a construction contract with a suitable contractor is signed. The mobilization and construction phase will involve different activities as summarized below:

- Site clearance, and earthworks construction
- Acquisition of materials from a reliable sources and storage;
- Testing of the construction materials;
- Acquisition of other permits such as water use permits;
- Confirmation of data and accuracy of topographical survey;
- Mobilization of labour force, equipment and plant for construction works;
- Transportation of equipment, workers, materials and storage;
- Abstraction and transportation of water to the construction site;
- Collection, storage, transportation, treatment and disposal of wastes generated from construction activities;
- Actual construction works;
- Movement of heavy equipment and machines
- Occupational health and safety management;

During the construction phase, both skilled and unskilled temporary employment opportunities will be created. It is difficult to specify the actual number of employment opportunities that will be created at this stage; however approximately over 500 direct and indirect employment opportunities are expected to be created during the construction phase at each site. It should however be noted that employment during the construction phase will be temporary, whilst being long-term during the operational phase.

2.2.2. Equipment and machinery requirements

Use of heavy construction equipment is expected for this project. At construction phase the project will employ various types of construction equipment and machineries for successful implantation of project activities. All construction equipment and machineries will be delivered by specialized trucks. They will use the existing road network in Juba. It will be the responsibility of the contractor to take necessary measures to ensure safety for the community and workers this includes proper scheduling delivery and obtain appropriate transportation and safety permits.

2.3 Project Operation Phase

Once the construction phase is completed, the offices, classrooms Workshops and accommodation facilities as well as the roads, parking yards, walkways and recreational areas will start to operate to serve the intended purposes. The activities that are expected to be executed during operational phase include: Transportation, classroom training, workshop activities, student housing activities and mobility in the corridor and recreational activities/Leisure among others.

2.3.1 Building and Facilities Maintenance

Due to consistent use of the buildings during operational phase there will be a routine housekeeping and maintenance as the results of wear and tear of the infrastructure that will affect its quality. Therefore, the Buildings will require maintenance throughout the project life. Among others, the maintenance works will include: o repainting of building.

o Repairing cracks on the structures

o Routine maintenance of the buildings

2.3.1.1 Project Supported Sewerage maintenance

In All the project sites there will be sewerage network servicing Most of the Buildings. Therefore, institution management will have to set aside funds to supported facilities, for operation and maintenance this includes cleaning and repair, payment of water and electricity bills and buying necessary items for cleaning (e.g. detergent, disinfectant, gloves, hand wash soap etc.).

2.3.2 Utilities

Water and Energy Supply

Water supply in project areas is obtained from South Sudan Water Authority. The project will use existing water sources. Therefore, main source of water for construction and operation phases will be from SSUWC as the authority responsible for development and maintenance of infrastructure for water supply.

The power supply in the project areas is likely to be from South Sudan Electrical Company (SSEC) through an overhead line. Power supply for the project will be provided by (SSEC) and supplemented by standby generators for performing hot works, lighting etc.

Construction Materials

Aggregates, and Borrow Materials Construction materials in South Sudan are regulated and controlled by the government. All the quarry, borrow pit and sand mining sites are owned and operated by government through the department of forestry to ensure equal access to the materials and control overexploitation. The project will obtain the aggregates and borrow materials from these sources by applying for the permit from forestry department.

2.3.3 Waste Management

2.3.3.1 Solid Wastes

The operation of the Training Institution is not expected to generate huge quantity of solid waste. It is likely; most of the waste will be generated due to Training /business activities that will be undertaken in the areas. In view of this, food waste and packaging waste such as paper and boxes will be the main type of waste generated in the areas. Thus, the management of waste generated with the proposed projects will use the existing system during operation phase of the project.

The system will have waste management infrastructures to include waste bins (outdoor bins and skip buckets) which will be placed in strategic locations throughout the project areas and waste trucks for transportation to treatment or disposal site. Solid wastes management could be a concern during construction phase as there will be construction related wastes as well as additional wastes due to

presence of construction workers at site. In this regard waste management plan shall be developed and implemented accordingly by the contractor.

2.3.3.2 Liquid Waste

During construction and operation phases of the project, generation of sanitary waste is expected. Sanitary waste shall be handled through the existing system in the area.

2.3.4 Storm Water Storm

Water in the project sites is currently collected though constructed drains or natural channel to the river. Existing storm water drainage will be rehabilitated and improved to accommodate storm water from the project site. Collected storm water will be directed to the existing drainage patterns of the area.

2.4 Project Decommission Phase

Decommissioning is an important phase in the project cycle and comes last to wind up the operational activities of a particular project. It refers to the final disposal of the project and associated materials at the expiry of the project lifespan. If such a stage is reached, the proponent needs to remove all materials resulting from the demolition/ decommissioning from the site. The following should be undertaken to restore the environment.

- Remove all underground facilities from the site
- The site should be well landscaped by flattening the mounds of soil and Planting indigenous trees and flowers
- All the equipment should be removed from the site
- Fence and signpost unsafe areas until natural stabilization occurs
- Backfill surface openings if practical

Demolition waste includes: paper, polythene, metal shavings, cement, concrete, welding particles, plastics, sand, grey water, adhesives, paints, soil, cloth, rubber).

Air emissions from burning fossil fuels (COx and SOx).

Particulate emissions (dusts, metal, wood and cardboard shavings);

Sewerage, Office and Laboratory waste, all will need to be managed and disposed off.

3. CHAPTER THREE: ADMINISRATION, POLICIES, LEGAL & REGULATORY FRAMEWORK

3.1 Relevant National Policies

The Government of The Republic of South Sudan (RSS) is committed to follow a sustainable development pathway through the sustainable use of her natural resources base and to incorporate measures that safeguard the environment in all of their development activities. In this pursuit, the government of South Sudan has in place policies, laws and regulations to mainstream environmental management. This is also being driven by the fact that it is a constitutional right of every South Sudan citizen to dwell in a clean and safe environment. This ESIA study has reviewed the relevant policies and legislative framework (national, Internal agreements ratified by the RSS and the AfDB's policy guidelines on Environmental and Social safeguards); this is to ensure that the project activities observe and strives to actualize, and is in the spirit of the policy and legislative landscape of the land.

ESIAs are carried out to identify potential positive and negative impacts associated with the proposed project to take advantage of the positive impacts and develop mitigation measures for the negative ones. Therefore, the proponent will need to observe the provisions of the various policies that are aimed at maintaining a clean, healthy and sustainable environment**.** The policies and laws provide procedures to be followed in the planning and implementation of activities to utilize resources and execute programs to maximum benefit.

There are several policies, laws, and regulations addressing specific environmental management in the sectors within which this project falls under. Therefore, this section discusses the relevant sectorial policies and legislation, that are relevant to environmental and social safeguards issues pertaining to the proposed Project **CRAFT project (sub-component 3.2: development of agricultural and fisheries education and skills development),** The policies that address environmental management as far as this project is concerned and which form the cornerstone of the present study include inter alia.

3.1.1 The Constitution of the Republic of South Sudan of 2011

The Constitution of the Republic of South Sudan of 2011 includes numerous provisions that have a bearing on the environment. Article 41 (1) provides that the people of South Sudan shall have a right to a clean and healthy environment and (2) that every person shall be obliged to protect the environment and (3) that future generations shall have the right to inherit an environment protected for the benefit of present and future generations. Specific measures to ensure the objectives above include: The prevention of pollution and ecological degradation, the promotion of conservation and the securing of ecologically sustainable development and the use of natural resources while promoting rational economic and social development to protect the biodiversity of South Sudan. Furthermore, Article 166 (6) expects local governments to involve communities in decision-making in the promotion of a safe and healthy environment. Thus the basis of undertaking ESIA for the project activities to comply with the spirit of the constitution and the consequent policies and legislation that are either formulated or in the process of formulation.

3.1.2 South Sudan Vision 2040

The foundation document guiding the future development of South Sudan is the entitled "Towards Freedom, Equality, Justice, Peace and Prosperity for All". The overarching goals of Vision 2040 are to create a vibrant, competitive and diversified economy driven by agriculture, industry, mining, tourism and services that attracts investors. The Vision does also promise the Government of South Sudan's commitment to sustainable

environmental management alongside limiting environmental pollution due to other development programs such as industrialization. The Vision emphasizes the need to minimize greenhouse gas emissions as a measure against climate change while building on traditional knowledge and supporting community-based resilience. The vision is well capture in the current project as implementation of the said project will lead towards freedom, equality, justice, peace and prosperity within the project's area of influence as well as create a vibrant, competitive and diversified economy driven by Skilled personnel trained in TVET facilities. Medium-term development plan (Revised National Development Strategy for South Sudan - 2021-2024) includes; Increase support to the social sector for human capital development and protect the vulnerable population, to leave no one behind and Mainstream gender in all development policies and programmes and empower women and youth as drivers of growth and nation-building. Key component of developing TVET facilities.

3.1.3 South Sudan National Environment Policy 2015 to 2025

The strategic goal of the policy is to ensure the protection, conservation and sustainable use of the natural resources of South Sudan without compromising the tenets of inter-generational equity. The policy will pursue and archive to develop laws, regulations and guidelines to ensure sustainable management of the environment as well as the prudent utilization of natural resources. This policy introduces a national environmental response framework and strategies to be implemented by all key actors in the public, private, and community domains. The foundation of the National Environmental Policy is to protect and improve the environment in a manner which contributes to the quality of life of both present and future generations. The policy attempts to harmonize environmental protection with other factors such as occupational safety and health. In particular, the Environmental Policy aims to guide economic activities in ways that will be sustainable and will not harm the environment in the long term. The policy is a response to the challenges posed by existing environmental problems, such as pollution and depletion of natural resources. It recognizes the essential links between sustainable development and sound environmental management and takes account of the special limitations of island ecosystems. The proposed project has the potential to cause environmental pollution during the construction and operation phases and these issues are addressed in the ESIA document. Also by undertaking the ESIA, MAFS has observed one of the requirements of the national environmental policy and will continue to observe the requirements of the policy during the whole life cycle of the project. The policy aims at minimizing land degradation caused by excavation of non-renewable natural resources and rehabilitation of the excavated lands. In this regard, the Government will promote the rational use of non-renewable natural resources and rehabilitation, with minimal damage to the environment. This policy is adopted in this ESIA because it provides general guidelines and principles to be followed in environmental management during the implementation of the proposed project and other projects in the agriculture sector.

3.1.4 South Sudan Draft Environment Bill (2023)

The purpose is to protect the environment and to promote ecologically sustainable development that improves the quality of life for both the present and future generations. Section 18 of the South Sudan Draft Environmental and Protection Bill introduces the requirement for Environmental Impact Assessments. An Environmental Impact Assessment (EIA) is defined as a systematic examination conducted to determine whether or not a project will have any adverse impact on the environment and prescribe mitigation measures. The objective of the EIA is to ensure that environmental considerations are explicitly addressed and incorporated into the development decision-making process and to anticipate and avoid, minimize or offset the adverse significant biophysical, social and other relevant effects of development proposal, among others.

In addition, Section 32, Cap 5, intends to introduce the requirement for Environmental Audits. An Environmental Audit is defined as the systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing in conserving the environment and its resources. The main objectives of an Environmental Audit are to: Assess how far project activities and programs conform with the approved environmental management plans as well as to the required environmental quality standards. To provide mechanisms for coherent implementation procedures of a project so as to mitigate adverse environmental impacts and provide regulatory bodies with a framework for ensuring compliance with, and the performance of an environmental management plan.

Section 20, Cap 5, intends to introduce the requirement for Environmental Monitoring. Which is defined as the continuous determination of actual and potential effects of any activity or phenomenon on the environment, whether short or long term. The bill mandates the line ministries to: Monitor environmental phenomena with a view to assessing possible changes in the environment and their possible impacts. In addition, they must monitor the operations of any industry, project or activity with a view to determining its immediate and long-term effect on the environment. They need to compel the proponent to carry out a baseline survey to identify basic environmental parameters in the project area before implementation (except where a baseline survey has been carried out) Finally, they have to determine the parameters and measurable indicators to be used in monitoring of projects and conduct measurement of environmental changes that have occurred during implementation.

3.1.5 The Land Act of 2009 (State of Southern Sudan):

One of the key objectives of the Land Act is to promote a land management system, which can protect and preserve the environment and ecology for the sustainable development of South Sudan. It also provides for fair and prompt compensation to any person whose right of occupancy, ownership or recognized long-standing occupancy or customary use of land is revoked or otherwise interfered with by the Government. The land ownership must be provided by the proponent.

The Land Act reinforces the Government's recognition of customary land tenure: 'Customary land rights including those held in common shall have equal force and effect in law with freehold or leasehold rights.' Community land can be allocated to investors as long as investment activity 'reflects an important interest for the community' and 'contributes economically and socially to the development of the local community'. It also requires that state authorities approve land acquisitions above 250 feddans (105 hectares) and create a regulated ceiling on land allocations. The act also requires that project proponents must also conduct environmental and social impact assessments (ESIAs) before undertaking any activity that might affect people or the environment.

3.1.6 ***The Public Health (Water and Sanitation) Act (2008)***

Emphasizes the prevention of the pollution of air and water and also encourages improvement in sanitation. Key provisions include the protection of the sanitation of the environment and it encompasses the measure to address the pollution of water and air. The following are measures geared towards control of pollution of water: Measures to prevent pollution of water for consumption; Measures destined to prevent pollution of potable water; Anyone who offers the public water to drink or human food, and which includes frozen food should ensure that the water conforms to the portability regulations; Management and disposal of hazardous wastes; and storage of wastes on the premises of waste generators. The Public Health Act (2008) also provides the need for the

protection of pollution of water through the enforcement of regulations and measures necessary to combat all elements of pollution and protect the natural level of the environment and public health.

3.1.7 The Labour Act (Act No. 64 of 2017)

The Act establishes a legal framework for the minimum conditions of employment, labor relations, labor institutions, dispute resolution and provisions for health and safety in the workplace. It further reinforces the right to equal remuneration for work of equal value as guaranteed by the constitution. Section 6(1) of the Labour Act provides that 'No person shall discriminate, directly or indirectly, against an employee or job applicant in any work policy or practice'. Section 6(2) also forbids discrimination by any Trade Union, Employers Association or Federation. Section 6(3) defines discrimination as 'any distinction, exclusion or preference with the effect of nullifying or impairing equality of opportunity or treatment in employment or occupation' based on a series of grounds including sex and pregnancy or childbirth.

3.1.8 The Child Act (Act No. 10 of 2008):

The Child Act regulates the prohibition of child labor, the protection of children and young persons and hazardous child labor. Project labor requirements must adhere to the country's Laws and avoid engaging children in their labour force.

3.1.9 The South Sudan Education policy

The vision of the Higher Education Policy Framework 2021-2025 is to provide accessible quality, relevant, inclusive education, training, and research for prosperous, productive, and innovative nation. The Project is a TVET Skills development therefore must adhere to the Educational policy of South Sudan.

3.1.10 General Education Act, 2012.

The National General Education Policy. The Strategic Plan is aiming to achieve four important national priorities: to increase equitable access to general education; to improve the quality of general education; to enhance the management capacity of senior staff of the Ministry, State Ministries, the County Education Department and affiliated institutions; and to promote Technical and Vocational Education and Training (TVET) to improve the employability of youth and adults in the next five years. Set out a broad vision and framework for the medium- and long-term development of education system. The policy document translated the broader vision of the Government of South Sudan set out in vision 2050, The South Sudan Growth and Poverty Reduction Strategy as well as international commitments on education such as Education for All by the year 2015 and Sustainable Development Goals (SDGs).

3.1.11 *Gender Policy*

The Government of South Sudan has committed to gender equality for women and men, girls and boys and to protect women and girls from harmful social norms. The Government has endorsed pledges to end female genital mutilation (FGM) and child marriage and prevent and respond to gender-based violence (GBV).

3.2 Analysis of Relevant International Conventions

South Sudan is a signatory to and has ratified several international instruments on environmental conservation and management. Among such conventions and regulations are (i) African Regional Policy Instruments (iii) The African Convention on the Conservation of Nature (1968) (ii) The Ramsar Convention of 1971 on Wetlands of International Importance; especially as Waterfowl

Habitats (RAMSAR) (iii) The Protection of World and Cultural Heritage Convention (1972); (iv) The United Nations Framework Convention on Climate Change (UNFCCC, 1992). (v) United Nations Convention on Biological Diversity (vi) Convention on the Rights of the Child.

3.2.1 The African Convention on the Conservation of Nature (1968)

This is aimed at encouraging individual and joint action for the conservation, utilization and development of soil, water, flora and fauna for the present and future welfare of mankind, from an economic, nutritional, scientific, educational, cultural and aesthetic point of view. Thus the project should comply during construction and operational phases.

3.2.2 Ramsar Convention on Wetlands.

The Convention's mission is "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world". Wetlands are among the most diverse and productive ecosystems. They provide essential services and supply all our fresh water. The Convention uses a broad definition of wetlands. It includes all lakes and rivers, underground aquifers, swamps and marshes, wet grasslands, peatlands, oases, estuaries, deltas and tidal flats, mangroves and other coastal areas and all human made sites such as fish ponds, rice paddies, reservoirs and salt pans. Under the "three pillars" of the Convention, the Contracting Parties commit to work towards the wise use of all their wetlands; designate suitable wetlands for the list of Wetlands of International Importance (the "Ramsar List") and ensure their effective management; cooperate internationally on Trans boundary wetlands, shared wetland systems and shared specie. The Convention recognizes the fundamental ecological functions of wetlands and their economic, cultural, scientific and recreational value. South Sudan has been party to the Convention since 10 October 2013. South Sudan has currently one site designated as Wetlands of International Importance. This site will not be affected by the current project activity.

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

The UNFCCC's goal is to prevent "dangerous" human interference with the climate system. The ultimate objective of the Convention is to stabilize greenhouse gas concentrations at a level that would prevent dangerous anthropogenic (human-induced) interference with the climate system." It states that "such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner. Thus curriculum and training will emphasizes climate smart agriculture productivity.

3.2.6 Convention on the Rights of the Child

The Convention on the Rights of the Child from 1989 is the most comprehensive compilation of international legal standards for the protection of the human rights of children. It acknowledges children as individuals with rights and responsibilities according to their age and development, as well as members of a family or community. This includes non-discrimination, the best interest of the child, the right to life, survival and development and the right to participation. South Sudan has been party to the Convention since 23 January 2015.

3.2.7 ILO 182 Worst Forms of Child Labor Convention (1999).

The convention calls for immediate action to prohibit and eliminate the worst forms of child labor. The predefined forms of child labor include all forms of slavery, trafficking of children, debt bondage or any other form of bonded labor, forced or compulsory labor, and commercial sexual exploitation

of children, prostitution and the production of pornography, as well as work that is likely to harm the health, safety or morals of children. South Sudan ratified the convention in 2012.

3.2.8 ILO Convention 111 on Discrimination:

The convention calls upon states to enable legislation prohibiting all forms of discrimination and exclusion on any basis, including race, sex, religion, etc. South Sudan ratified the convention in 2012.Thus will be applied in this case during the construction and operation phase of the project.

3.3 The African Development Bank (AfDB) Environmental and Social Safeguards

South Sudan's "**Construction and Rehabilitation of Technical and Vocational Education and Training (TVET) Learning Facilities - Lecture Halls, Offices, and Equipped Workshop and Laboratory"** will be developed and implemented according to the requirements of the African Development Bank Operational Environmental and Social Safeguards. This ESMP has been prepared to forestall environmental and social impacts that will arise during the development and operational implementation of this project as per Operational Safeguard Policies of the AfDB and all the applicable environmental policies, laws and regulations of the national laws of The Government of South Sudan; with due consideration of other international environmental requirements. The AfDB's 5 Operational Safeguard Policies as outlined and summarized in in the table below informed the development of this report. The AfDB Safeguards Policies include: (1) Environmental Assessment (OS1); (2) Involuntary Resettlement including Land Acquisition, Population Displacement and Compensation (OS2)**;** (3) Biodiversity and Ecosystem Services (OS3); (4) Pollution Prevention and Control, Greenhouse Gases, Hazardous Materials and Resource efficiency (OS4); and, (5) Labour Conditions, Health and Safety (OS5)

Table 3.1 Summary of AfDB Operational Safeguards objectives including when they are triggered

OPERATIONAL SAFEGUARD	OBJECTIVE	TRIGGER FOR THE POLICY
OS1- Environmental Assessments	-To identify and assess the environmental and social impacts (including gender) and climate change vulnerability issues of Bank lending and grant financed operations in their area of influence -To avoid or if not possible minimize, mitigate and compensate for adverse impacts on the environment and on affected communities; -To ensure that affected communities have timely access to information in suitable forms about Bank operations and are consulted meaningfully about issues that may affect them	This OS is elicited through the Environmental and Social Screening Process. It assists in the categorization of the project in a Category based upon its potential environmental and social risks and impacts. These potential risks and impacts include physical, biological, socio-economic, health, safety, cultural property, trans boundary impacts and global impacts including Greenhouse Gas (GHG) emissions and vulnerability to climate change effects.
OS2 Involuntary Resettlement: Land Acquisition, Population Displacement & Compensation	-To avoid involuntary resettlement where feasible, or minimize resettlement impacts where involuntary resettlement is unavoidable through project design; -To ensure that displaced people receive significant resettlement assistance, preferably under the project, so that their standards of living, income earning capacity, production levels and overall means of livelihood are improved beyond pre-project levels;	This OS is triggered if projects require the involuntary acquisition of land, involuntary acquisition of other assets or restrictions on land use and on access to local natural resources which result in: Relocation or loss of shelter by the people in the project area; Loss of assets or restriction of access to assets including national parks, protected areas or natural resources; or

	-To set up a mechanism for monitoring the performance of involuntary resettlement programs in Bank operations and remedying problems as they arise so as to safeguard against ill-prepared and poorly implemented resettlement plans	Loss of income sources or means of livelihood due to the project, whether or not the PAPs are required to move.
OS3 Biodiversity and Ecosystem Services	-To preserve biological diversity by avoiding, or if not possible, reducing and minimizing impacts on biodiversity; -In cases where some impacts are unavoidable, to endeavor to reinstate or restore biodiversity including, where required, the implementation of biodiversity offsets to achieve "not net loss but net gain" of biodiversity; -To protect natural, modified and critical habitats; -To sustain the availability and productivity of priority ecosystem services to maintain benefits to the affected communities and to sustain project performance. -To inhibit introduction of new organisms into a local environment	This OS is triggered if a project is to be located in a habitat where there may be potential biodiversity impacts or in areas providing ecosystem services upon which potentially affected stakeholders are dependent for survival, sustenance, livelihood or primary income, or which are used for sustaining the project. It is also triggered if the project is designed to extract natural resources as a main purpose (e.g. plantation forestry, commercial harvesting, agriculture, livestock, fisheries and aquaculture). It is also triggered where there is extensive interference with the ecosystem including introduction of new organisms not endemic to the locality
OS 4: Pollution Prevention and Control, Greenhouse Gases, Hazardous Materials	-To manage and reduce pollutants likely to be caused by a project so that they shall not pose harmful risks to human health and the environment, including hazardous, non-hazardous waste and GHG emissions. -To set a framework for efficiently utilizing all a project's raw materials and natural resources especially focusing on energy and water.	This OS is triggered if the project is likely to cause significant adverse environmental or social impacts owing to the emission of pollutants, waste or hazardous materials covered by national legislation, international conventions or internationally recognized standards or by unsustainable resource use. It is also triggered by potentially significant levels of GHG emissions.
OS 5 Labour Conditions, Health and Safety	-To protect the workers' rights and to establish, maintain, and improve the employee – employer relationship; -To promote compliance with national legal requirements and provide due diligence in case national laws are silent or inconsistent with the OS; -To provide broad consistency with the relevant International Labour Organization (ILO) Conventions, ILO Core Labour Standards and the UNICEF Convention on the Rights of the Child in cases where national laws do not provide equivalent protection; -To protect the workforce from inequality, social exclusion, child labour and forced labour; and -To establish requirements to provide safe and healthy working conditions	This OS is prompted if the project involves the establishment of a temporary or permanent workforce.

Operational Safeguards Triggered By STVET -VCD	YES	NO
OS1	**X**	
OS2		**X**
OS3		**X**
OS 4:	**X**	
OS 5	**X**	

3.4 Institutional and Implementation Arrangements

The Project will adopt a hybrid model of implementation arrangement based on the strengths of a Third Party Implementation Agency in transition states and the need to gradually build institutional capacity while managing fiduciary and technical risks.

***Governance and Oversight**:*

The Ministry of Agriculture and Food Security (MAFS) will be the Executing Agency and will have overall oversight and responsibility of the project.

High-level oversight and guidance on project implementation will be provided by the National Advisory Committee (NAC), an existing body comprising Undersecretaries of the Ministry of Finance and Planning (MoFP), MAFS, Livestock and Fisheries, Water Resources and Irrigation, Ministry of Environment and Forestry (MoEF), Ministry of Gender, Child and Social Welfare, Ministry of Youth and Sports, Ministry of Higher Education, and other relevant ministries[6], and representatives of participating states, as well as a representative from the Food Security Council. The main responsibilities of NAC among others will be to provide oversight on policy and strategic matters as well as approve the annual work plan and budget of the project.

The National Technical Committee (NTC) comprising of the Director Generals or Directors of the above line ministries will provide technical guidance during project implementation and is chaired by the Director General of MAFS. The main responsibility of the NTC is to provide technical guidance; ensure project is implemented in line with the approved project document (narrative and budget); review, discuss and agree and recommend proposed on work plan, budget and other changes for approval by NAC.

***Single Project Coordination Unit (SPCU*)**:

A Project Coordination Unit **(SPCU)** is already established in MAFS with the technical support under of FAO South Sudan who will provide the overall management of CRAFT-1. It will also house the seconded staff from MAFS and other project-implementing ministries.

The Ministry of Agriculture, as executing agency, will appoint seconded SPCU staff comprising of Project Manager, M&E Officer, Procurement Officer, Financial Management Officer, Accountant, Gender, and Social Inclusion Officer, and Environmental and Safeguards Officer including an irrigation engineer from MWRI and fisheries expert from MoLF. The Curriculum Vitae (CVs) of the appointed staff will be sent to the Bank for review and no objection before the personnel can be posted.

The **SPCU** will inter alia perform functions including M&E, work planning, capacity building, and maintain independent accounts for the MAFS-financed activities by sound international accounting

[6] Ministry of Trade; Ministry of Roads and Bridges and representatives of Farmers Producers Unions, Chambers of Commerce, Financial institutions other relevant ministries.

practices under the guidance of FAO. The MAFS will sign letters of agreement with relevant organizations including specialized international and national research institutions) to provide technical assistance in the project. The responsibility of implementing E&S activities will rest with FAO, which will work closely with the SPCU to gradually build its capacity on E&S activity implementation.

At the state level:

Four (4) state-level PMTs will be established, leveraging existing office space and other resources of the FAO-SS. Key staff will include a State-level PMT Coordinator and M&E Officer, Accountant, and Field Extension Agents. Additionally, in the four (4) States, Project Support Officers will be seconded by the State Ministry of Agriculture and Food Security office to be housed in FAO-Field Offices and be directly involved in the project as part of local capacity, and will also work with the existing development committees established at various levels. The State-Level PMT's main task will be: to ensure oversight, coordination, and timely and quality implementation of activities; engage with relevant state-level ministry staff and CADs and other partners for the effective implementation and coordination of activities; build partnerships; provide comprehensive inputs to the AWPBs in a participatory manner; ensure data collection for M&E and activity progress monitoring; undertake regular supervision/support field missions including with NAC and the M&E missions from national-level.

Third-Party Implementation Agency (TPIA):

Under the Third-Party Implementation arrangement, FAO-SS, based on their technical comparative advantage, was selected as TPIA of CRAFT-1 project based on the assessment conducted of potential implementing agencies among UN-system. FAO-SS will establish a dedicated Project Management Team- FAO (PMT) comprising of a project coordinator, M&E Officer, Procurement Officer, Financial Management Officer, Environmental and social safeguards Officer, Communication and Knowledge management officer, and an admin officer. Additional technical officers including Senior Irrigation and Rural Infrastructure Engineer; Value chain/Agribusiness Expert, Agronomist/seed and climate change specialist, Fisheries Specialist, Rural Finance Expert, and Farmer Organization Expert will be recruited as technical assistance to support specific project activities. All other national, regional, and international institutions that will be engaged during project implementation and reviews shall be selected based on cost-effectiveness and their technical competence to complement FAO and to add value, especially their capacity to enhance and strengthen the technical and institutional capacity of the directorates/ department of the relevant government institutions.

FAO-SS as the technical implementation arm of the project, will be responsible for provision of support in financial management, procurement, working closely with the SPCU in the preparation of the Annual Work Programs (AWBP), and will provide the necessary backup for monitoring and reporting in terms of activity progress to the MAFS- PCU.

4. CHAPTER FOUR: BASELINE ENVIRONMENTAL AND SOCIOECONOMIC CONDITIONS

4.1 Introduction

The Project Area is at the University of Juba (UoFJ), South Sudan, therefore the environmental and social baseline context is Juba. The city is situated on the White Nile and also serves as the national capital of the Central Equatoria State (UN-OCHA 2007). It is estimated that Juba covers approximately 336 km2, however the city has been expanding over the years. Juba, comprises three of the 16 payams of Juba County: Juba, Kator and Munuki. UN-OCHA (2007). It is estimated to cover 336 km2, with majority of growth happening westwards and southwards.

4.2 Biophysical Environment

Topography

The terrain in the project sites are relatively flat. Generally the UofJ campus is a buildup area within the central business district, the unbuilt areas is presently a grassland and generally littered with solid waste (plastics, papers etc.). Erosion on the ground surface by rain water, due to absence of proper drainage system, is insignificant.

Meteorology

The climate of Juba is mainly influenced by its low altitude location and absence of relief barriers.

(i) Temperatures: Juba is basically considered to be relatively hot: The city has an average annual high temperature of 34.5°C and an average annual low of 21.6°C. Where average minimum monthly temperatures range from 20 to 24 and average maximum monthly average ranges between 30°C to 38°C.[7]

(ii) Rainfall: records for the last 10 years for Juba, mean annual rainfall averages 1096.1 mm. The wettest year 1996 with 1340mm while 2000 was the driest year when only 884mm was recorded. Annual rainfall is delivered in one long wet season lasting 7 months from April to December. Each of the 7 months of the wet season receives on averages above 100mm of rainfall. April and October are the wettest months receiving on average 154.2 and 145mm of rainfall respectively. November to march is the dry season when rainfall on average is below 50mm[8].

(iii) Relative humidity: Juba is relatively humid for most of the year with RH values averaging 65.6% but generally being above 60% for the months between April and December. Relative Humidity is highest in both July and August when it averages 80%[9].

Fauna, Flora and Biodiversity

The proposed project sites (UofJ) do not support any wildlife as they are built-up areas and has no wildlife habitats. Historically the sites were covered by mixed vegetation of savannas and forests. Currently, birds and other small wildlife has disappeared. Very few trees exist in both sites (almost nonexistent).[10]

[7] https://www.weather-atlas.com/en/south-sudan/juba-climate,
[8] https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/juba_south-sudan_373303
[9] https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/juba_south-sudan_373303

[10] https://www.fauna-flora.org/countries/south-sudan/,

The proposed construction sites UoFJ

Present conditions at the site (baseline).

The land where the constructions will be undertaken belongs to the institution and there will be no need to apply change of user as the proposed sites are surrounded by buildings used for similar purposes as the proposed constructions. The site neighbors built up areas on greyish soils. There is no cultural heritage at the site.

All the sites' general topography of the area is flat and the terrain has slight undulations with pronounced depressions forming the drainage of the general area. Soils are typical for South Sudan's black loamy soils with poor drainage.

Table 4-1 Description of site-specific baseline information

	Project activity	Soil characteristic	Land use/land cover type	Ecological sensitivity	Livelihood activities on site
1	Construction of a modern building (Offices, lecture Halls workshops, field offices, and Laboratory) at the University of Juba	Black Loamy Sandy soils	Built up area within the Campus Characterized with planted trees and grass Has access road and water & electricity supply	*Non*	Part of the institution's land (University land)

Employment, poverty trends and quality of life

Data from the International Labour Organization indicates that the unemployment rate in South Sudan remained relatively stable since the country gained independence, with estimated values of 12.6 % in 2010 and 12.7 % in 2020 (ILO, 20212). Significant variations are reported between age groups and gender categories, with the highest unemployment rate observed among youth aged 15-24 (18.6 %) and women (13.2 %) compared to male (10.9%) in 2019 (ILOSTAT database, 2020). The high unemployment rate due to slowdown in economic activity and low literacy rates is likely to further undermine South Sudan's economic prospects in the medium to long term. South Sudan

has low levels of development and social equality. Human Development Index HDI is low standing at 0.433 in 2019 and ranking the country at 185 out of 189 countries and territories). The poverty headcount ratio was at 76.4% in 2016, suggesting that 7 out of 10 people were living on less than $1.9 a day at 2011 international prices (World Bank, 2021). As a measure of the depth of poverty. Food insecurity in the population is considerably high in South Sudan, with a reported value of 84.9% in 2018 (FAO, Faostat 2020). The high level of food insecurity could possibly be attributed to massive displacement of populations that have disrupted agriculture crop production and market systems, resulting from economic crises and the effects of years of conflict. In 2018, the percentage of people who lived in households classified as severely food insecure3 was 63.7 % indicating that most households were not able to meet their basic food needs (FAO, Faostat 2020).

In terms of health conditions, life expectancy at birth for the total population was estimated at 57.6 years in 2018. Women generally live longer than males (life expectancy at birth: females 59.1 being their male counterparts and 56.1 years) (UNDESA, 2018).

Electricity and access to technology

According to the World Bank data, less than half of South Sudan's urban population (46.8 %) had access to electricity in 2018. progress in increasing access to the electric grid has been slow and the country is striving for a system that runs primarily on renewable energy and reaches more homes (World Bank, 2021). In 2017, only about 8 % of South Sudan's population used the internet (International Telecommunication Union (ITU), World Telecommunication/ICT Indicators. (Database, 2020).

Water and sanitation

As the urban population of South Sudan continues to rapidly expand, basic services such as sanitation have failed to keep pace with the change has produced regular estimates. According to the 2017 The WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP); the urban population with access to at least basic drinking water services was 64.8 % (WHO & UNICEF, 2017). About 20.4 % of the urban population in South Sudan used improved basic drinking water services that require collection time of more than 30 minutes and are therefore classified as having access to limited drinking water services. In 2017, it was estimated that the urban population with access to at least basic sanitation services was 36.8 %, Dirty water, poor hygiene practices and a lack of sanitation significantly increases the risk of diseases like cholera and acute diarrhea among other diseases.WASH coverage is also still very low a t 41% coverage with basic water supply,11 % coverage with basic sanitation and with 63% of the population s till practicing open defecation a according to the UNICEF-WHO 2019 Joint Monitoring Programme. The situation is further compounded by the lack of sustainable operational and maintenance systems for existing WASH Facilities and infrastructure as a result of governance challenges

Air Pollution (Baseline)

Actual monitoring for air pollution was not undertaken but the site being within the central business. The roads have significantly heavy traffic and the air pollution is likely to emanate from vehicular emissions. As shown in the table below.

Table 4-3 *Table showing ambient air pollution monitoring in Juba downtown* ***(source GOSS Ministry of Roads and Bridges Republic of South Sudan 2011).***

Air pollutio				**Average of 5 locations**	**WHO**

	Dust		µg/m3	39	20-125 (daily) 500 (10min.)
	Sulphur dioxide		µg/m3	52	Yearly 40 (guideline) Hourly 200 (guideline)
	Nitrogen dioxide		µg/m3	24	-
	Carbon monoxide		µg/m3	434	-
	Photochemical oxidants		µg/m3	0	-
	VOC	Benzene	µg/m3	21	
		Trichloro-ethylene	µg/m3		
		Tetrachloro-ethylene	µg/m3		
		Dichloro-ethylene	µg/m3		

The average air pollution concentrations are less than the environmental standards set even in this traffic congested town.

Population

Juba's population has increased steadily over the years, expansion further accelerated in the post-CPA period. More than 2 million IDPs were said to have returned to Southern Sudan, Reports in 2007 and 2008 put Juba's population as high as one million people. Other studies estimated Juba's population during the 2005 – 2010 period at between 406,000 and 600,000. In terms of health conditions, life expectancy at birth for the total population is estimated at 57.6 years in 2018. Women generally live longer (life expectancy at birth: females 59.1, male 56.1 years) (UNDESA, 2018).

The Campus

University of Juba is a non-profit public higher education institution located in the suburban setting of the medium city of Juba (Juba population range of 250,000-499,999 inhabitants), Central Equatoria. Officially recognized by the Ministry of Education, Science and Technology of South Sudan, University of Juba (JU) is a large-sized (uniRank enrollment range: 10,000-14,999 students) coeducational South Sudanese higher education institution. University of Juba (JU) offers courses and programs leading to officially recognized higher education degrees such as pre-bachelor's

degrees (i.e. certificates, diplomas, associate or foundation), bachelor's degrees, master's degrees and doctorate degrees in several areas of study.

UofJ is a 49-year-old South Sudanese higher-education institution has a selective admission policy based on students' past academic records and grades. The acceptance rate range is 60-69% making this South Sudanese higher education organization a moderately selective institution. International students are welcome to apply for enrollment. UofJ also provides several academic and non-academic facilities and services to students including a library, sports facilities, financial aids and/or scholarships, study abroad and exchange programs, online courses and distance learning opportunities, as well as administrative services.

Soil pollution (Baseline)

Generally there is limited soil contaminating activities such as fuel storage or dumping of harmful material at the project sites. Soil contamination monitoring will be implemented before especially during the construction of the project.

Solid Waste (Baseline)

There are many domestic waste including plastic bottles scattered all over the site. They are sometimes collected in the open holes anywhere and incinerated.

Noise and vibration (Baseline)

Similarly as the case of air pollution, no noise pollution was measured, traffic noise in obvious in the city roads. The existing data from other studies was taken as baseline data. Table below indicates the back ground of noise and vibration. Vibration data is just estimated as representative values from experience.

Table 4-4 Results of noise and vibration monitoring (Average Sample mean at 5 points within the city of Juba)

			Average Sample mean at 5 points within the	Japanese Standards
Noise and vibration	Noise	dB	54-60	At road boundary; - 70 (day time)
	Vibration	dB	30-50	At the area mixed of residence and business activities - 70 (day time) - 65 (night time)

As shown, no serious noise or vibration is suffered in general as would beyond allowable limits compared in the case with Japanese standards. This data may be utilized as baseline data for

future prediction of noise and vibration caused by the project in the safety side estimation. Finally based on the monitoring before construction, noise and vibration are estimated at right location and the mitigation measures, if necessary, shall be planned.

Sanitation (Baseline)

Sanitation levels in all the areas are quite poor and a significant portion of households indicated that they did not have a basic pit latrine. Many households have constructed shallow pit latrines on plot perimeters that tend to overflow during heavy rain onto public pathways, a clear public health hazard.

Electricity and access to technology

According to the World Bank data, less than half of South Sudan's urban population (46.8 %) had access to electricity in 2018. progress in increasing access to the electric grid has been slow and the country is striving for a system that runs primarily on renewable energy and reaches more homes (World Bank, 2021). In 2017, only about 8 % of South Sudan's population used the internet (International Telecommunication Union (ITU), World Telecommunication/ICT Indicators Database, 2020).

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South Sudan has low levels of development and social equality. Human Development Index HDI is low standing at 0.433 in 2019 and ranking the country at 185 out of 189 countries and territories). The poverty headcount ratio is at 76.4% in 2016, suggesting that 7 out of 10 people were living on less than $1.9 a day at 2011 (World Bank, 2021). As a measure of the depth of poverty. Food insecurity in the population is considerably high in South Sudan, with a reported value of 84.9% in 2018 (FAO, Faostat 2020). The high level of food insecurity could possibly be attributed to massive displacement of populations that have disrupted agriculture crop production and market systems, resulting from economic crises and the effects of years of conflict. In 2018, 63.7 % people lived in households classified as severely food insecure, indicating that most households were not able to meet their basic food needs (FAO, Faostat 2020).

Infectious Diseases such as HIV/AIDS (Baseline)

According to the resent studies the following can be conclude[11]:Baseline research in Southern Sudan showed that HIV prevalence states among youth ages 15-24 is 2.6% overall, 1.1% in male and 3.1 % in female Juba an overall HIV/AIDS prevalence rate of 20.6% among VCT[12].

Gender (Baseline)

Female in South Sudan faces issues of:

- Patrilineal society with limited roles and rights
- Early marriage due to poverty (dowry) and conflict (fear of death)
- Polygamy (based on economic conditions)
- Low education
- Female genital mutilation (2% of female population)
- HIV/AIDS

Children's Rights (Baseline)

There are two issues about children in South Sudan child labor and child soldier.

Child labor is one of the major problems facing for young children in their quest for an education in South Sudan. UNICEF found that 58.3% of boys and 79.6% of girls' ages 5-17 help with household chores instead of schooling. And youth often work outside the home to supplement the family's income, 52.6% of boys and 42.8% of girls (UNICEF MICS). High levels of underdevelopment, poverty and population growth force children and youth to work to help provide for basic needs. Even after decades of conflict, the population in South Sudan has not seen education as a means to a better standard of living. Girls of school going age spend most of their time at home undertaking household chores: washing, cooking, cleaning and caring for younger siblings. Boys, as well, spend much assisting in workshops. It is also much less likely they will receive HIV/AIDS education. The types of works children are engaged in Juba include:

-Young school going boys were involved in money creating activities such as shoe shine business where they walk around with brushes and shoe polish looking for any ready customer.

- Several young boys deal in money exchange in the streets (the Black Market for foreign currency exchange).

- Motorcycle transport business around the city.

-Others are involved in daily family chores such as looking for younger siblings within the family and drawing water from the borehole.

[11] Hakim et al. BMC Public Health (2022) 22:132 https://doi.org/10.1186/s12889-022-12533-1

[12] Sarah Krosh, Rapid Assessment of Gender and HIV/AIDS: Juba County and Yei County (2006)

5. CHAPTER FIVE: PROJECT ALTERNATIVE

5.1 Overview

The consideration of alternatives or options to a project proposal, which will achieve the project's objectives is a requirement of many ESIA systems. It lies at the heart of the ESIA process and methodology. During the scoping process, alternatives to a proposal can be generated or refined, either directly or by reference to the key issues identified. A comparison of alternatives will help to determine the best method of achieving project objectives while minimizing environmental impacts or, more creatively, indicate the most environmentally friendly or best practicable environmental option.

In order to enable the proposed project to seek different ways of minimizing its impacts on the environment and at the same time achieve its objectives several alternatives were assessed.

5.2 Alternative Site

This option involves pursuing the proposal but on a different site meaning its impacts that are relevant to the proposed site or occur due to the development will be avoided. In This case the issue of alternative sites does not arise as the construction of the buildings is taking place in the institutions compounds. Alternative sites are also not readily available since availability of land is limited. The construction and building usage are in line with the land uses within the institution.

5.3 Alternative Schedule

This option entails carrying out the proposal at a later time thereby offsetting its impacts to that time. Only benefit is if there are improvements in baseline conditions and technologies that may be involved with the proposal. However, in this case, there are no guarantee and it may only lead delays in development, therefore carrying out the proposed project with mitigation would be a preferred option due to this uncertainty. In addition, carrying out the proposed project at later time may lead to more operational and logistic costs due to increasing inflation and standards of living.

5.4 Alternative Design

This option entails undertaking the project but with different infrastructural designs that encompass: buildings, roads, power, water and sewerage etc. The project design will be achieved by considering the options available that would ensure cost-effectiveness and avoid or reduce environmental and social impacts as much as possible.

5.5 The 'NO Action Alternative'

This alternative involves leaving out the construction and rehabilitation of the buildings. The "No Project" alternative implies the project does not proceed thereby maintaining the status quo. The status of the environmental resources is not likely to neither improve nor worsens since the state of the resources is not interfered with. In order for South Sudan to develop and benefit from increased capacity of TVET. The labour demand assessment in the Agribusiness subsector showed that there will be very rapid demand of qualified labour in the near future as the country is focused on utilizing these resources to grow her economy. A skilled labour force with competency based vocational training background will be on demand to drive the investment in the agricultural production and Agribusiness subsector. This has high potential to build skillful personnel to

support agricultural productivity and generate products and business ideas to support wealth creation especially in the three value chains being targeted by the broader project (fisheries, rice sorghum and sesame)**.** As such the "No Project" alternative means limited support for enhanced productivity and value additions products enhancement and business development and innovations. There will be no training of the skilled and semi-skilled craftsmen and artisans that are critically required in the country.

5.6 Recommended Alternative

After the analysis of alternatives in this case are limited, taking into account environmental and social impacts including views from Stakeholders it was recommended, that the current site selected was optimal in terms of minimizing environmental and social impacts from the project. This will support the capacity and enhance technical and vocational training institution aimed at producing skilled and semi-skilled manpower that will be required for effective leveraging of the country's economy on Agriculture. As such there were no better alternatives, additionally, the selected site was on government land, and therefore no need to compensate the land owners as well as developing a relocation action plan. The recommended Alternative considering the environmental and social impacts including views from Stakeholders alternative was the current identified sites.

6. CHAPTER SIX: STAKEHOLDER ANALYSIS AND PUBLIC CONSULTATIONS

6.1 Introduction

This chapter describes the stakeholder identification process, the consultation methodology used, identified stakeholder issues and concerns regarding **construction and rehabilitation of TVET Learning Facilities** at the project sites. Consultation was conducted according to the requirements of **AfDB OS 1** and ESIA ToR as guided by South Sudan Ministry of Environment and Forestry. Ongoing consultation will continue during the disclosure of this ESIA report and throughout the implementation of the project. Therefore, the proponent/ contractor (MAFS) is expected to engage community and the other stakeholders at the project sites to update them regarding construction activities. Community engagement will also be used to provide stakeholders an opportunity to submit grievances that could result from project activities in relation to environmental, social and safety impacts throughout the project implementation.

The disclosure of this ESIA will be according to **AfDB OS 1** to enable the community access project specific information in timely manner and understand expected project activities. The ESIA report (hard copy) will be available at MAFS – Juba, and UofJ. ESIA report will also be disclosed through MAFS and AfDB websites.

Public engagement is also emphasized by the Environmental and Social Impact Assessment Guidelines issued by the Ministry of Environment and Forestry. The engagement process for this study started by the ESIA Project team, with support from the client, identified initial stakeholders. Thereafter stakeholder's analysis was conducted in order to determine:

- The relevant stakeholders
- How they are affected by the project
- Their spatial location
- Their degree of influence over, and dependence on the project; and
- Key issues critical to them

6.2 Stakeholders Identification

ESIA Project team used initial list of stakeholders to identify key stakeholders of TVET infrastructures project including those who are directly or indirectly likely to be affected by the project (Project Affected Persons - PAPs), authorities and the interested or concerned parties. This list was expanded based on field work analysis considering the needs, wants and expectations of stakeholders.

Table 6-1 Stakeholder Identification and Analysis Key Stakeholders Interest, Role and Influence.

Key Stakeholders	Interest, Role and Influence
Development Partner (AfDB)	Funding the projects
MAFS and FAOSS	Facilitates planning, support and coordination of Project implementation issues. Negotiating and administering major project construction and management issues.
University of Juba	Provide land for the construction Activities

Ministry in charge of Finance and Planning; South Sudan	Facilitates planning, support and coordination of national financial and development issues. Negotiating and administering financial arrangement with donors for proposed project implementation.
Ministry of General Education, Agriculture and livestock development, Higher Education, general education	Project information dissemination and awareness Policy guidance for planned activities, and investment in the agriculture value chain subsector
Youth, Women Job seekers and contractors	labour and employment during construction and implementation of project, particularly on labour employment
The Ministry Regional Administration, Local Government and Special Units	Coordination and administration of the connection between different tiers of government: Regional Administration and Local government and Municipal Council.
Students Community	Create awareness and raise any concerns
Ministry of Environment And Forestry	Enforcement of laws and regulations for environmental management and protection. Advisor to the government on all environmental matters, and technical arbitration in environmental Audits and ESIAs.
South Sudan Water Authority (SSUWC).	Management of water resources and water supply for urban areas including in the project sites
South Sudan Electrical Company and JETCO	Provide and maintain electricity utility in the project sites
Commissioner for Lands, Chief Government Valuer Department of Lands and Registration Department of Survey and Urban Planning	Issuing right of occupancy on land, oversees land use planning and issues related to compensation and resettlement. Streamline Procedures for Land Acquisition, Valuation, Compensation and Allocation Regularization of Informal Settlements. Preparation of legal Framework for Land Valuation Approval of compensation schedule
Other stakeholders: These are identified as those with ability to influence the project either as regulators or because they have special knowledge that can contribute to its design and implementation. These stakeholders include:	
South Sudan Chamber of Commerce Department of Lands and Registration Department of Land and Registration Department of Land Administration Department of Survey and Mapping South Sudan Agricultural Research Institute MPs and Representatives Directorate of Occupational Health and Safety (DoSH) Constructors Association Suppliers. Students and Potential students	

6.3 Stakeholders Consultation and Stakeholder Engagement Plan

Consultation with the public and stakeholders is considered as an important activity of the environmental assessment study for the project. It provides valuable input to bring about sustainable and acceptable project design as well as ease of implementation and operation to user community. Consultation with the public in the project area were made at the National level as well as at the project site (UofJ) and through key informant interview and focused group discussions.

The main objectives of the public and other stakeholder consultation were:

- Disseminate information about **construction and rehabilitation of TVET Learning Facilities** at UoFJ
- To provide stakeholders with an opportunity to assure that the benefits of the project are maximized and major adverse impacts are taken care of in the project planning;
- To develop and increase public confidence as well as develop a better transparency and accountability in administration and decision making;
- To obtain information to improve the baseline environmental data and key area of social and environmental concerns;

The methodology adopted for the purpose includes: -

- Arrange meeting and undertake discussion and data consultation with relevant sector offices through prepared consultation and data collection environmental checklist
- A brief information about the proposed rehabilitation work was provided at the start of every consultative meeting, followed by relevant discussion regard to the natural resource use.

Consultations were conducted with various relevant sector offices in South Sudan.

6.3.1 Meetings to initiate contact, schedule project presentations and start to build alliances.

The consultant with support from The Ministry of Agriculture and Food security during preparation of Stakeholders Engagement Plan (SEP) initiated relationships with key stakeholders identified, through initial meeting with stakeholders for the purpose of collecting information of stakeholders, including institution, reference person, telephone number and email address which were used to develop a Contact Database.

6.3.2 Meetings with strategic stakeholders to gain support, advice

There were Key Informant meeting which served to collect preliminary concerns and needs and is likely to develop strategic alliances to gain support, advice or prepare/schedule engagement activities with other stakeholders.

6.3.3 Meetings to present project and benefits, educate on project concepts, collect inputs, inspire and build coalition.

The meetings were focused group discussion with; MAF, the University of Juba administration, current students at the faculties, Ministry of Environment and Forestry, South Sudan Construction Ministry of Education: TVET Directorate, Bureau of standards . The intention was to raise awareness, inform the Undersecretary and Directors of the different departments about the

project's vision, and discuss environmental and social impacts of the project both negative and positive. This was to inform build consensus, collect needs, ideas and input from the state holders. Session includes the following:

- Introduce the basic concepts of Environmental and social safeguards requirements.
- Create momentum for the project.
- Introduce and gain support for mobility concepts in the project.
- Obtain information, opinions and suggestions about the project Environmental and social Impacts as well as a framework for environmental management and monitoring plans.

The following agencies representatives participated in the consultation meetings: (table below

- Ministry of Agriculture and Food security
- University of juba
- Ministry of Labour
- Bureau of standards
- Ministry of Environment and Forestry
- Ministry of General education
- Ministry of Higher education
- Students Community

6.4 Key Issues for Stakeholder Engagements

The comments stakeholders raised were collated and analyzed to see which issues are of concern and should be addressed through this ESIA. The following subsections list these stakeholders and the comments they raised. This was done in respect to the fact that public concern is fundamental to the delineation and management of the project's significant risks. A number of issues were identified that were useful during stakeholder engagements.

I. ***Identification of environmental impacts***
These include both negative and positive environmental impacts of the programme. These cover issues such as environmental degradation, vegetation clearing, potential increase in level of levels of pollution – noise pollution, water pollution, air pollution, issues such as oil spills, generation of wastes, etc. All this issues were discussed and remedial measures proposed to address the concerns.

II. Socio-economic and socio-cultural issues
These include both negative and positive socioeconomic and socio-cultural impacts that will be associated with the project were discussed. What are the potential positive impacts which are likely to emanate from the project implementation? How is the project going to negatively influence social cultural well-being as well as economic well-being? etc. These were analysed and adequately addressed in this ESMP.

III. Occupational health and safety
Possible occupational health and safety of workers as well as community health challenges during the project development phase as well as operational phase were discussed and analysed.

Table 6-2 Summary of consultation events and timeline

TIME	INSTITUTION	Objective/Key issues for discussion (Stephen to complete)
3 Feb 2024		
10:30 – 12:30 am	Introductory meeting with the Ministry of MAFS	Objective of the mission, discussion on the draft programme and confirmation of scheduled appointments with various stakeholders Introduction to the Relevant Officers and making Consultations with key personnel regarding Environmental and Social Issues of the Project. Hold discussions with the project management and implementation team.
14:00-16:00pm	Meeting with the Ministry of Environment and Natural Forestry	Consultation on the ESIA processes, regulatory and legal requirements as per GoSS
2:00-4:30	Meeting with Management of Juba Multiservice Training Centre (MTC) - Site visit, assessments and consultation with stakeholders	Site visit and stakeholder engagement. Identify key areas of environmental and social safeguards concerns.
4 March 2023		
9:00-12:00	Continue with stakeholder engagement at UofJ	Site visit and stakeholder engagement
2:00-4:30 pm	Meeting with the management of the University of Juba - Site visit, Assessments, and consultation with stakeholders	Site visit and stakeholder engagement Identify key areas of environmental and social safeguards concerns.
5 March 2024		
9:00-12:00	Con't stakeholder engagement at the University of Juba	Site visit and stakeholder engagement
01:00 – 3:00	University of Juba, School of Natural resources (Dean and respective heads of department	Brief introduction of the staff School of Natural Resources. UofJ Brief background of the School The project concept was discussed Areas of potential positive and negative environmental impacts were discussed and analyzed.
6th March 2024		
9:00-10:00	Debriefing with CM, COSS	Debriefing and informing the CM COSS on the preliminary findings and ironing out any Challenges
10:30-12:30	Joint debriefing meeting with MAFS, MEF, and Management of UofJ	Debriefing and informing on the preliminary findings and ironing out any Challenges
2:00-4:00 pm	Wrap up with Under-Secretary, MAF	Final debriefing meeting with the project Management team and charting way forward

7. CHAPTER SEVEN: IMPACT IDENTIFICATION ANALYSIS AND MITIGATION

7.1 Introduction

The development of projects usually causes a wide range of environmental and social impacts. The impacts may be direct or indirect and may be short-term or long-term in duration. Many constructions related impacts will be short-term. Long term impact would persist after construction and include those that are resulting from the operation of the project. Direct impacts are physical impacts caused by construction and operations of the project. Indirect impacts are those, which may be encouraged or enabled due to the presence of the project or, during construction, due to the presence of construction works, facilities, jobs, and other construction-related features. The main impacts associated with the anticipated improvement of the proposed project include socio-economic, physical resources (hydrology, surface water quality, soils, air quality and noise); ecological resources (eco-system); material assets, public health and safety, aesthetics and landscape.

In order to assess the significance of the proposed project's impacts, the impacts were first identified from their source which are the project's activities/equipment/processes/materials and then the impact receptor which are the baseline environmental and social conditions. This was carried out through the use of the Impact Checklist, which only identifies an impact. This process was also informed by the public participation exercise.

The impacts were then classified as either positive or negative and the project phase whence which they will occur and then they were discussed individually in the later subsections of this chapter. The impacts were lastly analyzed in terms of their characteristics on the aforementioned baselines to define their significance by using a matrix and this was also informed by the public participation exercise to identify the acceptable risks.

Lastly through literature reviews, professional knowledge, engagements with the proponent and engagements with stakeholders, mitigation measures were developed commensurate to the significance of impacts. This facilitated the development of the Environmental and Social Management Plan in this report.

7.2 Identification of impacts

Impact identification is a process designed to ensure that all potential significant impacts are identified and taken into account in project design and implementation. The Impacts identified were classified into two major groups i.e., Positive impacts and Negative impacts. The impacts have been assessed through the project cycle i.e. mobilization phase/construction phase, operation phase and decommissioning phase

7.2.1 Positive Impacts

Among the positive impacts identified include:

a) Design and Construction Phase

(i) The project is anticipated to contribute to local employment for both skilled and unskilled labours.

(ii) The project will create employment and business opportunities for various professionals/consultants who will be involved in the planning stages of the project. They will include: project managers, engineers, architects, building economists, land surveyors, environmentalists, economists, planners among others.

(iii) In addition, procurement of materials from local sources will be a positive aspect of the project, as it will reduce the cost of the project and benefit local producers and suppliers'

(iv) Environmental opportunities: the project will also present opportunities for green/sustainable designing of the project, which support the minimization of environmental impacts whilst fortifying the project to achieve its intended objectives. It's at this stage that the opportunities which will enable the project achieve a sustainable development are considered, explored and integrated into the project.

(v) Increased Economic Activities and Government Revenue: the project will also increase the economic activities that will be carried in the area through those that will be primarily as a result of: the project's internal and ancillary activities; its supply chain; its value chain, and those that will be formed as a result of the project to support its occupants. The latter includes businesses that may form around the project site such as shops, kiosks and transport.

(vi) Increased commercial viability: The establishment of the project, will increase the commercial viability of the goods and services offered in the areas.

(vii) Impetus to Improve Amenities and Services: An increase in population to the area will provide an impetus for the municipal council to improve the much needed amenities and infrastructure to the area.

b) Operational Phase: The project will contribute to

(i) Increase technical training opportunities for school leavers and the workforce in the selected value chains.

(ii) Increased pool of domestically certified technical labour through improved quality and demand driven competence based training delivery;

(iii) Enhanced institutional capacity for innovation and product development to deliver high quality demand-driven products and service provision.

(iv) Increased agricultural productivity and investment opportunities in Agribusiness and other related Agribusiness sub sectors employability. The project will directly benefit youths and other workers in the sector by providing training and practical skills upgrading.

(v) Increased Agricultural productivity will create employment opportunities for people in the community across the different agricultural value chains.

(vi) Support to South Sudan's National local content desire in the Agricultural productivity and value chain addition therefore promote active participation of young people in the Agribusiness enterprises.

(vii) Diversification of local economy and promotion of investment at the project sites: apart from opportunities for self-employment, there will be increased income-generating activities like selling food and other merchandise to the construction workforce during construction and increased student and other visiting population during operation.

(viii) Promotion of employment opportunities and poverty reduction: the project will attract employment during construction and operation.

(ix) Enhance industry partnership with the institutions after acquiring advance technology equipment, which the industry may utilize and build partnership.

(x) Likelihood of stimulating economic activities and social development considering new skills and knowledge.

7.2.2 Negative Environmental and Social Impacts

Generally, the project activities are expected to have moderate impacts on the biophysical and socio-economic environment specifically during the construction phase. This is because the Project is not complex and/or large, does not involve activities that have a high potential human health or the environment. As such, the potential risks and impacts and issues are likely to have the following characteristics: (i) predictable and expected to be temporary and/or reversible; (ii) low in magnitude; (iii) site-specific, without likelihood of impacts beyond the actual footprint of the Project; and (iv) low probability of serious adverse effects to human health and/or the environment. The social risk is also **moderate**, because the potential adverse risk and impacts on human populations and environment are not likely to be significant as the project activities are site specific, without likelihood of impacts beyond the actual footprint of the project. Therefore the project's risks and impacts may be easily mitigated in a predictable manner. The overall potential negative impacts are remained as Category II. These impacts will be minimized by incorporating the required mitigation measures. The potential negative impacts of the project are highlighted as follows:

a) Construction Phase

(i) **Loss of Flora and fauna:** Removal of vegetation during excavation works is likely to lead to loss of plants and animal habitats. The biodiversity that may be affected includes insects, small mammals, reptiles and birds. Although the construction works will be in already built up areas therefore the project sites are unlikely to be pristine or having ecological sensitive flora and fauna.

Mitigation
i) Re-plant vegetation as much as possible once work is completed. ii) Spare the vegetation that must not necessarily be removed such as or replace the trees. iii) Minimize the amount of destruction caused by machinery by promoting non-mechanized methods of construction

(ii) **Noise and Vibration**

Noise and vibration will be generated during construction especially when using motorized equipment. Generally, construction noise exceeding a noise level of 70 decibels (dB) has significant impacts on surrounding sensitive receptors within 50m of the construction site. Construction activities are likely to lead to noise quality impacts due to the use of construction equipment like excavators, trucks, generators etc.

Mitigation
i) Avoid night time construction when noise is loudest. ii)No discretionary use of noisy machinery iii) Good maintenance and proper operation of construction machinery to minimize noise generation. iv)Where possible, ensure non-mechanized construction to reduce the use of machinery v)Undertake regular maintenance of generator

(iii) **Solid waste generation:** Moreover, temporal camp construction in the project areas in order to undertake construction activities, the contractor will need to set up site facilities or camps for worker's accommodation, offices, stores and parking in the project area. General construction wastes will be generated including among others cement bags, used wrapping materials, wood, glass etc. If improperly disposed, general wastes could result in pollution of water bodies, soil and impact on flora and fauna.

Mitigation
i) Develop waste management plan for construction wastes. This plan will include possibility of use of such construction waste in the rehabilitation of borrow areas from which some of the sand materials used in the construction process were extracted. Liaison with the local authority will be essential since the local authority's waste management plan would highlight where such filler construction waste would be required as backfilling material ii) Provide waste disposal receptors on site (bins) iii) Provide training and orientation to workers on waste management. iv) Reduce, Re-use and Recycle wastes whenever possible

(iv) **Pollution from liquid waste generation** Wastewater generated from campsite will increase liquid waste generation in the area eventually impose more loading to

sanitation facilities to handle. Wastewater generated from campsites, may be contaminated by fuel, oils and/or other chemical spills. If unattended, such wastewater generation would cause pollution to the environment and may result the outbreak of water borne diseases. Therefore, this impact is considered negative, of medium term duration and of high significance**.**

Mitigation
i) Use personal protective equipment PPE. ii) Hazardous waste disposal plan iii) All the vehicles and construction machinery should be operated in compliance with relevant vehicle emission standards and Manufacturer's specification to minimize leakages and oil spills. iv) Use non-mechanized (motorized) equipment as much as possible

(v) **Fuel and oil spillage accidental** spillage of fuel, lubricants and other chemicals used in the construction process would likely be a source of water contamination, / will pollute the surrounding environment.

Mitigation
i) Use personal protective equipment PPE. ii) Hazardous waste disposal plan iii) All the vehicles and construction machinery should be operated in compliance with relevant vehicle emission standards and Manufacturer's specification to minimize leakages and oil spills. iv) Use non-mechanized (motorized) equipment as much as possible

(vi) **Air pollution:** during construction phases air pollution from suspended particulates such as dust particles and emissions /from vehicles movement, during loading and quarrying could be substantial. Due to existence of settlements around some of the areas where construction works are carried out there could be air pollution through dust emission from excavation works more likely/will be carried out in the dry season, and it can be expected that these will lead for dust emission to the local surrounding environment.

Mitigation
i) Use personal protective clothing like dust masks. ii) Construction sites to be water-sprayed regularly iii) All the vehicles and construction machinery should be operated in compliance with relevant vehicle emission standards and Manufacturer's specification to minimize air pollution. iv) Use non-mechanized (motorized) equipment as much as possible

(vii) **Occupational Health and Safety** Occupational Health and Safety Risks The construction workers will be exposed to respiratory diseases due to dust, fumes and

cement. During construction, the workers may be at high risks of injuries due to construction machine operations. Construction workers may fall from the construction equipment and be injured or causing death. Among others, the occupational Health and Safety problems include: Injuries or death due to lack or poor separation of working areas and traffic area; the construction activities will expose workers, visitors and the general public to different physical hazards (e.g. from falling into trenches or being hit by falling objects, striking against object, overexertion, electric shock, fire and explosion, etc.), chemical hazards (contact with skin, inhalation of harmful chemical etc.), etc. This is predicted to be negative, short term and of high significance.

Mitigation
Contractor to risk assess the project activities, develop and implement relevant C-ESMP which will include but not limited to: - An Occupational Health and Safety Management Plan -Environmental, Health and Safety (EHS) plan. -Management and Safety of Hazardous Materials -Labour Management Procedures -Labour influx strategy -GBV/SEA and Child Protection Action Plan -Traffic and Road Safety Plan -Employment plans -Emergency Preparedness and Response Plan HIV and AIDS Awareness

(viii) **Community Health and Safety Risks** the general public will be exposed to safety hazards arising from construction activities under the project. Materials delivery may generate dust that will pollute the air and this may result in increase in the respiratory diseases. While increase in traffic may result increased accident levels. Construction sites may also be a source of both liquid and solid wastes and may affect he health of the community. During construction, it is also likely to attract migrant workers resulting into high interaction with the institution community. The interaction may provoke higher rates of violence, injury, alcohol and drug consumption and sexually transmitted diseases, Gender-Based Violence (GBV), Sexual Exploitation and Abuse (SEA) as well as attitude and behavior changes in the local population. All these may lead to community health and safety risks.

Mitigation
Contractor to risk assess the project activities, develop and implement relevant C-ESMP which will include but not limited to: --Environmental, Health and Safety (EHS) plan. -Traffic and Road Safety Plan -GBV/SEA and Child Protection Action Plan -GRM -Stakeholders engagement and communication plan; -Community HIV and AIDS Awareness

(b) Operation Phase

(i) Waste Management: The activities during operations will generate considerable solid waste in the form of papers plastic bottles, glass, plastics and other debris as well as drained water. Therefore the institutions must have adequate facilities for liquid and solid waste management within the project designs. The waste management systems must comply with the environmental regulations of the country. The wastes produced will be collected and disposed of at designated landfill/ waste disposal site.

Mitigation
i)Introduction of waste disposal bins, warning notices, "Dos &Don'ts" etc. posted at strategic points, within the Institution ii) No, on site burial or open burning of solid waste shall be permitted iii) The waste generation will be avoided and reduced during Operations.

(ii) **Water pollution:** Water pollution will can be caused by improper management of solid and liquid waste. Increased paved areas due to construction can also lead to increased runoff thus erosion risk that may further contaminate surface water resources. However, the greatest risk is from poor management of sewer from the learning institutions.

Mitigation
i) Ensure that the facilities is connected to a sewer line or develop a stand lone waste management facility ii) Adequate drainage system is in place to manage storm waters iii) Waste water generation minimised during Operations

(iii) Chemicals Management chemical generated from the laboratories

Wastewater generated from the laboratories may contain hazardous chemical and this may require careful/special handling. If unattended, such wastewater may be hazardous to human health and the environment.

Mitigation
i) All chemicals should be stored in budding areas and clearly labelled, specifying the nature and amount of chemicals in individual containers ii) Good housekeeping procedures to be adopted. Entry into hazardous storage point is limited to authorized personnel only ii) Laboratories must develop standard operation procedures to reduce chemical spillage well as put in place disposal mechanism

(iv) **Occupational Health and Safety Risks;** the laboratories users will be exposed; to fumes, chemical contact with skin, inhalation of harmful chemical etc. As well as high risks of injuries due to equipment and machine operations. Other hazards include; electric shock, fire and explosion, etc. chemical hazards etc. This is predicted to be negative, continuous risk of high significance.

Mitigation
i) Develop and implement relevant Occupational Health and Safety Management Plan ii) Emergency Preparedness and Response Plan iii) Environmental, Health and Safety (EHS) plan.

(v) **Management of Social Risks:** students and staff will be exposed to safety hazards arising from their interactions. The interaction may result in higher rates of violence, injury, alcohol and drug consumption and sexually transmitted diseases, Gender-Based Violence (GBV), Sexual Exploitation and Abuse (SEA) as well as attitude and behaviour changes in the institutions pollution. All these may lead to the population health and safety risks.

Mitigation
i) The Institutions develop an induction programme, including a Code of Conduct, for all students and staff. ii) All students and staff will sign code of conduct, iii) Enforce compliance to the institutional rules and regulation iv) Public education programs and awareness creation on HIV Aids and public health practices v) Provision of drug prevention and management programs

(vi) Increased demand for goods and services: Increased enrolment of students would generate additional demand for goods and services such as water, electricity etc. the increased will attract student populations, as well as other service providers, driving the demand for goods and services. There are expected effects of "spin-off "actions such as increased student's numbers/ movement access into high functional areas such as library/ Kitchen/ market place etc. may add to the cumulative effects.

Mitigation
i) The institutions to sensitize students and staff on resource conservation such as water and energy conservation measures (e.g. switching off lights when not in use, shutting taps etc.)

ii) The institutions to utilise energy efficient appliances such as energy saving lighting, low discharge toilet cisterns, Push taps among others.

iii) The government to develop local land use and develop plans for the project areas to manage the spin off effects that will come with the population of the education institutions.

7.3 Summary and Analysis of Impacts

The identified impacts of the proposed project are presented in Table 7-1 below follows in terms of the project phase where they occur.

Table 7-1 Summary of Potential Impacts

Phase	Potential Impacts	Significance	Mitigation Needed
	Sourcing bulk materials for construction	++	**Yes**
Mobilization /Construction	Removal of topsoil and landscape alteration	+	**No**
	Solid waste generation and Disposal of construction waste	++	**Yes**
	Loss of Flora and fauna	+	**No**
	Pollution from liquid waste generation	++	**Yes**
	Fuel and oil spillage accidental	++	**No**
	Increase demand for scarce freshwater resources and energy	+	**No**
	Noise and Vibration	++	**Yes**
	Air pollution	++	**Yes**
	Occupational Health and Safety Risks	+++	**Yes**
	Community Health and Safety Impacts	++	**Yes**
	Land Acquisition, Resettlement and Relocation of Alternative Livelihood	+	**No**
	Potential threats from GBV/SEA	+	**No**
operational phase	Solid waste management	++	**Yes**
	Pollution from liquid waste generation.	++	**No**
	Chemical Management	++	**Yes**
	Occupational Health and Safety Risks	++	**Yes**
	Community Health and Safety Impacts	++	**Yes**
	Management of Social Risks	++	**Yes**
	Increased demand for goods and services	++	**Yes**
Decommissioning phase	Solid waste generation and Disposal	+++	**Yes**
	Pollution from liquid waste generation	++	**Yes**
	Air pollution	++	**Yes**
	Occupational Health and Safety Risks	+++	**Yes**
	landscape alteration	++	**Yes**
	Noise and vibration pollution	+++	**Yes**
	+ not significant ++ Significant +++ Very significant		

8. CHAPTER EIGHT: ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

8.1 Introduction

This ESMP is developed with an aim to outlines actions necessary to prevent, mitigate and control possible negative impacts or disadvantages during the different phases of the project onto the environment and to analyze steps that could be taken in eliminating or minimizing this negative impacts. This chapter sets out an ESMP through which the proposed project will manage its Health, Safety and Environmental risks commensurate to the significance and magnitude of these risks. The purpose of this management plan is not only to ensure that the project complies with the relevant legislation and guidelines but also that it avoids (where possible), reduces or minimizes its risks. The Environmental actions proposed in the ESMP will synergistically enable the project to set environmental performance objectives, goals and targets and achieve them. This Management Plan is guided by both national Health Safety and Environment (HSE) /Occupational Safety and Health Act. And The Banks Environmental safeguards as well as the WHO Guidelines on indoor and outdoor Air Pollution.

The ESMP also fulfills the African Development Bank's environmental and social safeguards policy on borrower requirements to prepare a framework for Environmental and Social Management Plan (ESMP).

Based on the assessment undertaken as part of the ESIA, a series of mitigation measures have been identified which aim to reduce and / or eliminate the predicted impacts of the project. It is important that these mitigation measures are appropriately applied to the project mobilization, construction and operation phases, and decommissioning phase. This management plan provides a strategic framework for their implementation. Some of the mitigation measures related to engineering aspects, will be included in the detailed engineering design as appropriate and related costs will also be included in the engineering costs. The proposed environmental and social mitigation measures should be incorporated in the detailed engineering design and be part of the Bidding documents. The estimated costs for implementing the mitigation measures are just indicative to enable project proponent budget the necessary funds.

8.2 Objective of the ESMP

The objective of this ESMP is to describe the measures that should be implemented by the Contractor, PIT and implementing partners during the implementation of the project to eliminate or reduce to acceptable levels key potential impacts i.e. environmental, social and health impacts related to project activities. The specific measures set out in the ESMP must be fully adhered to by all the project parties. In particular, the project must strive to avoid significant impacts on the bio-physical, social and health aspects during implementation. Avoidance through good detailed design of site-specific works and through preparation of the **detailed site-specific contractor's**

ESMPs will be key to success of the overall plan. Where impacts cannot be avoided they must be minimized using appropriate measures. The ESMP has been developed to:

- Bring the project to comply with Government of South Sudan applicable national environmental and social legal requirements as well as AfDB environmental and social safeguards standards;
- Outline the mitigating, monitoring, consultative and institutional measures required to prevent, minimize or compensate for adverse environmental, social and cultural heritage impacts.
- Provide an operational reference and tool for environmental management during project construction as well as operation activities.

All contractual and legal obligations relating to the ESMP apply to the main Contractor and any Sub-Contractors appointed to undertake the project activities. It is the responsibility of the construction contractors to provide adequate resources to ensure effective implementation and control of the ESMP. Sub-contractors are responsible to its respective contractor for compliance with the measures presented in the ESMP. It is also the responsibility of the construction contractors and their sub-contractors to ensure that all project workers are trained and procedures are understood and followed.

8.3 Institutional Capacity and Implementation

PIT has overall responsibility of implementing this ESMP. PIT in collaboration with MAFS Technical Implementation Agency (MAFS -TIA) will supervise and monitor all components implemented by the contractor and operators. PIT shall provide the necessary supervisory oversight to ensure the mitigation measures are implemented. In order to ensure effective implementation of the ESMP, it is important to identify and define the responsibilities and authority of the various persons and organizations involved in the project. The following entities will be involved on the implementation of this ESMP:

I. MAFS
II. FAOSS
III. University of Juba (UofJ)
IV. Consultants;
V. Contractor;
VI. Ministry of Environment and Forestry
VII. Funding Institution (AfDB)

8.3.1 Ministry Of Agriculture and Food security (MAFS)

The overall project implementation will be coordinated by MAFS through Project Implementation Team (PIT). Who has the responsibility for ensuring that mitigation measures specified in this ESMP and the contract documents are implemented. **The Environmental and Social Safeguards Team** from PIT and where possible, representatives

from Ministry of Environment and Forestry will undertake monitoring during construction and operation phases of the project. PIT should also appoint an Environmental and Safety Officer/Consultant and Social Officer/Consultant who will be responsible for the following tasks:

- Recommending solutions for specific environmental problems;
- He /She shall facilitate the creation of liaison group with the stakeholders and shall monitor the compliance with ESMP;
- Organizing consultations at key stages of the project with the stakeholders and interested parties;
- She/he will be required to liaise with the Ministry of Environment and Forestry and OSHA on the level of compliance with the ESMP achieved by the project on a regular basis for the duration of the contract;
- Supervising the implementation of the ESMP;

8.3.2 Supervision

The Supervision Consultant through its Environmental Specialist will be required to oversee the construction programme and construction activities performed by the Contractor, in compliance with the ESMP. It is recommended that prior to commencement of actual construction; the Consultant should submit a work plan that complies with the national and AfDB environmental guidelines and an updated ESMP for the different phases of the work. The environmental plan should specify in particular the location of sources of materials, disposal area of construction debris and arrangements for waste management during operations.

8.3.3 The Contractor

Contractor will be responsible for construction works of the project in accordance with the Technical Specifications required. The Contractor will implement the project fully in accordance with the ESIA mitigation measures. During mobilization phase, the contractor will review the ESMP and develop specific ESMP (contractor's ESMP) for implementation of specific proposed mitigation measures. The contractor will nominate an Environmental and Safety Officer (ESO), Social Officer (SO) to implement the mitigation measures outlined in this ESMP and will be the contractor's focal point for all environmental, social and traffic control matters. The SO and ESO will be routinely on-site for the duration of the construction works. These officers will also be responsible for:

- Supervising the implementation of the ESMP and C-ESMP;
- Undertaking consultations with the stakeholders;
- Managing project environmental and social issues
- Training of workers and daily site inspection
- Preparing environmental progress reports on the status of implementation of mitigation measures at site.

8.3.4 Ministry of Environment Forestry

Ministry of Environment and Forestry will play a key role in monitoring the project during the construction and operational phases to ensure that the mitigation measures set out in chapter 7 above are fully implemented.

8.3.5 Funding Institutions

The Government of South Sudan through MAFS has prepared an application for funding this project from AfDB. The funding organization will have overarching responsibility to ensure that the Project is carried out to the highest environmental and social safeguards standards, at least, in accordance with the ESIA and the mitigation measures set out therein. Additionally, it is a requirement that environmental and social impacts are managed in accordance to AfDB safeguards standards.

8.3.6 Capacity building for implementation of ESMP

Capacity of PIT and implementing partners is critical for ensuring successful implementation of this ESMP. Participants from implementing partners sector specialists, environmental officer and staff from departments responsible social planning/community development, Economic Planning, Agribusiness, Land and Health as well as PIT will be trained. Training shall focus on

I. Environmental Monitoring procedures
II. Indicators for Environmental Monitoring
III. Health and Safety
IV. Implementation of ESMPs
V. Grievance management
VI. Environmental reporting

8.4 ESMP Resources and Responsibility

An important part of the ESMP is to delineate all the resources required for its effective implementation so as to ensure it remains as cost effective as possible. This will be duty of the PIT all resources human and financial should be listed alongside the remedial actions employed against each of the project's risks. Financial records should be maintained to ensure the Health Safety and Environment remains accountable and basically makes business sense by showing the costs avoided by maintaining the system in terms of lives saved, man hours saved, health care etc.

Whereas the human resources responsible for undertaking all activities that carry or create risk should be kept in record and maintained. This will ensure the project has a documented, maintained and established method of managing HSE responsibilities. This will in addition keep

all the staff undertaking these activities abreast with not only the policies in place but also with the risks involved with their activities and importantly know how to manage the risks and carry out their duties safely. This information will also be vital when undertaking audits and targeting training towards the staff and foster greater accountability in the staff in terms of monitoring and reporting since all duties will be known and documented.

8.5 Environmental and Social Management Plan

The ESMP has been developed with project knowledge and information available to date. As project commencement and scheduling plans are developed and changed, components of the ESMP might require amending. This is therefore a life document, which can be updated whenever new information is received or there are changes on site conditions. Table 8.1 below presents the ESMP. It outlines corresponding management strategies proposed in Chapter 7 that will be employed to mitigate potential adverse environmental impacts and assigns responsibility for the implementation of the mitigation measures.

Table 8-1 Environmental and Social Management Plan (ESMP)

SUB COMPONENT I CONSTRUCTION OF TVET FACILITIES AT UofJ					
Design and Construction Phase					
Aspect	**Anticipated Environmental and Social Impacts**	**Proposed mitigation**	**Monitoring Indicators**	**Responsible Institutions**	**Cost estimate (USD)**
Design related	The design may be Poorly designs that may drive demand for raw materials increase GHEs out of character with the culture of the area	• Project designs to take cognizant of environmental best practices in energy and water conservation. • use alternative energy like solar, propose fixtures that enhance water and energy efficiency • Design with Nature and culture in mind	• The energy efficiency the of building and the equipment installed • Building materials promoted • Environmentally sensitive designs	Architects Constructor &PIT	5000
Social Impacts	Un managed community expectations may lead to conflicts Project activities that may not align with social, cultural and religious norms	• Public participation /sensitization on the project • Stakeholder view on project components and execution	No. of stakeholder sensitization sessions General awareness level on project	MAFS through PIT	2000
Sub total					7000
Construction Phase					
Aspect	**Anticipated Environmental and Social Impacts**	**Proposed mitigation**	**Monitoring Indicators**	**Responsible Institutions**	**Cost estimate (USD)**
Land degradation	• Extraction of raw materials (sand, ballast, rocks, timber and poles) may lead to Loss, degradation or fragmentation of ecologically sensitive areas • Earthworks and clearance may lead to the loss of plant species and habitats • Potential for adverse effects from alteration of soil structure and increased runoff from paved surfaces leading to changes in water flow and drainage as well as soil erosion,	• Raw materials like sand, ballast and stones sourced from licensed quarries. • Rehabilitation of cleared areas with native species	• Proper sourcing of raw materials • Compliance with transportation rules • Land restoration and revegetation after construction and or rehabilitation works	***PIT&*** ***Contractor***	4000

Air Pollution	• Dust and Fugitive gases from transportation tracks • Emissions by machineries (NOx and Sox and fugitive dust from disturbed soil surfaces	• Loose materials to be covered during transportation to reduce fugitive gas • Transportation trucks to observe speed limits. Where possible put measures for traffic calming like bumps near settlements, around corners etc. • Reducing machinery idling times to cut on emissions	• Ambient air quality	***PIT&*** ***Contractor***	1000
Accident Risks during Transport	• Accident risks by transportation vehicles to and from site	• Erect adequate signage warning of different hazards: e.g. heavy trucks turning, observe speed limits among others • Transportation trucks to observe speed limits. Where possible put measures for traffic calming like bumps near settlements, around corners etc. • Sensitize the machine operators on need for safe practices • Machinery to be operated only by qualified personnel	• Observe speed limits • Traffic calming like erection of bumps on blind spots • Proper signage	***PIT&*** ***Contractor***	1000
Waste Management	• Pollution risks to soils and water due to poor disposal of construction waste • Generation of wastes (liquid and solid waste	• Waste must be disposed of in licenses sites only and in compliance with local laws and bylaws • Contractor to prepare a detailed waste management plan • Provision of adequate facilities for solid and liquid waste management at the sites. Sensitize workers on proper waste management including 3Rs • Facilitate programs/measures to ensure appropriate sanitary and medical facilities are available	• Solid waste separation and recycling/disposal measures adopted in camp settlements • Proper waste management practices related to construction works, • Solid and liquid waste management practices and status.	***PIT&*** ***Contractor***	4000
Noise and Vibration	• Noise and Vibration • Health and safety concerns	• Strict adherence to regulations on noise and vibration, including use of silencers and mufflers for loud equipment • Work to be carried out within stipulated hours to reduce nuisance • Proper PPE provision	• Compliance with laws and regulations on noise and vibration • Hours of operation by contractor • Compliance with the Environmental Guidelines • Environmental audits	Contractor PIT	2000

Chemicals Management	• Risk of oil spills, fires etc. from servicing of equipment • Fire risks	• Proper housekeeping within workshops for equipment to reduce fire and pollution risks • Prepare an emergency management plan	• Compliance with the Environmental Guidelines • Environmental audits	Contractor PIT	1000
	•	•	•		
Conflicts and Grievances Redress	• Labour related disputes • Differences (Perceived or real) in working conditions between workers may lead to resentment, • Risk of gender related violence and crimes	• Development of transparent and culturally appropriate communication with communities an Employment Plan, with clear employment requirements, and procedures for the construction and operational /maintenance workforce, • Fair and transparent hiring and staff management procedures, • Staff training and awareness raising in communities, • Implementation of a Grievance Procedure, • Ensure the participation and benefit of marginalized and vulnerable part of the communities (poor, landless, minority groups, women, old and youth) throughout and after the project.	• Employment records • Grievance redress records • Level of awareness on gender issues, HIV, •	Contractor PIT UoJ Administration	5000
Occupational Health and Safety	• **The construction workers will be exposed to respiratory diseases due to dust, fumes and cement.** • **Workers exposed to accidents injuries, etc.**	• develop and implement relevant C-ESMP • develop An Occupational Health and Safety Management Plan • Environmental, Health and Safety (EHS) plan. • Management and Safety of Hazardous Materials • Labour Management Procedures • -GBV/SEA and Child Protection Action Plan • Emergency Preparedness and Response Plan • HIV and AIDS Awareness	• Compliance with EHS • Compliance with GBV/SEA & Child Protection • C-ESMP	Contractor PIT UoJ Administration	5000
University Community and students health and safety	• Risk of Occurrence of communicable diseases, including HIV/AIDS, and sexually transmitted diseases (STDs).	• Development of public health protocols including provision of adequate hand wash facilities etc.	• Observance of COVID 19 protocols • Provision of materials for sexual health awareness	Contractor PIT	6000

	• Social differences may lead to discrimination and harassment, • Real or perceived disruption to normal community life, through the physical presence of a workforce; in particular, potential for conflicts to occur over resources,	• Training and awareness raising and Implementation of a health management for workforce and their dependents on HIV/AIDS and other STDs, and communicable diseases; health awareness raising campaigns for communities on similar topics, • Community grievance redress mechanism	• Grievance redress records • Level of awareness on gender issues, HIV,	UoJ Administration	
Sub total					**24000**
Operational Phase					
Aspect	**Anticipated Environmental and Social Impacts**	**Proposed mitigation**	**Monitoring Indicators**	**Responsible Institutions**	**Cost estimate (USD)**
Waste Management (**(Solid, liquid)**	• Generation of wastes (Liquid and solid) by student and staff population • Pollution risks from the generated waste • Waste waters from the laboratories • Management of hazardous chemicals for use in the laboratories	• Each institution to have infrastructure for solid and liquid waste management based on Best Available Technologies • Programs for promoting best environmental practices include adoption of 3Rs in waste management • Chlorination of laboratories waters • Pool water recirculation system: • discharged into the municipal sewer • substitute the hazardous chemicals with less hazardous	• Status of waste management • Quality of general environment	Institution administration	2000
Pressure on Resources (Increased demand For Goods and services)	• Increased pressure on resources (water, energy) • Influx of population to capitalize on demand for laboratories as well as good services to support the student population • Increased use of water for the laboratories	• Sensitize students on resource efficiency measures like keeping taps closed, witching off lights • Use of resource efficient fixtures like energy efficient lighting and electronic appliances, water efficient fixtures among others • Programs for self-sustained within the TVETs including agriculture • Using an automatic pumping	• Presence of local development plans • Adoption of resource efficiency measures	UofJ Administration PIT	3000
Occupational Health and Safety	• **The employee and students will be exposed to respiratory diseases due**	• Develop laboratory Environmental, Health and Safety (EHS) plan.	• Compliance with EHS • Compliance	Contractor PIT	5000

	to dust, and fumes hazardous chemicals	• Emergency Preparedness and Response Plan	• Good housekeeping procedures adopted. • Laboratories standard operation procedures developed	UoJ Administration	
University Community and students health and safety	• Risk of Occurrence of communicable diseases, including HIV/AIDS, and sexually transmitted diseases (STDs). • Social differences may lead to discrimination and harassment, • Real or perceived disruption to normal community life, through the physical presence of a workforce; in particular, potential for conflicts to occur over resources,	• Development of public health protocols including provision of adequate hand wash facilities etc. • Training and awareness raising and Implementation of a health management for workforce and their dependents on HIV/AIDS and other STDs, and communicable diseases; health awareness raising campaigns for communities on similar topics, Community grievance redress mechanism	• Observance of COVID 19 protocols • Provision of materials for sexual health awareness • Grievance redress records • Level of awareness on gender issues, HIV,	Contractor PIT UoJ Administration	6000
Sub Total	•	•	•		16000
Decommissioning Phase					
Aspect	**Anticipated Environmental and Social Impacts**	**Proposed mitigation**	**Monitoring Indicators**	**Responsible Institutions**	**Cost estimate (USD)**
Waste Management	• Construction waste containing ballast, rocks, timber, poles and roofing materials) that need disposal • Generation of wastes (liquid and solid waste •	• Usable materials like construction blocks, roofing, steel, etc to be sold off to recyclers for recycling and re-use. • Remaining materials to be used for burrowing or disposed off in designated sites. Can also be used for backfilling access roads	• Safe disposal of construction waste • Solid waste separation and recycling/disposal measures adopted in camp settlements •	UoJ to take lead through PIT	*3000*
Air Pollution	• Dust and Fugitive gases from transportation tracks • Emissions by machineries (NOx and SOx and fugitive dust from disturbed soil surfaces	• Loose materials to be covered during transportation to reduce fugitive gas • Transportation trucks to observe speed limits. • Reduce machinery idling time	• Air quality during demolition •	PIT Contractor	1000
Accident Risks	• Traffic related accidents • Machinery related accidents	• Transportation trucks to observe speed limits. Where possible put measures for traffic calming like bumps near settlements, around corners etc. • Only Qualified personnel to operate machinery • Provide PPEs to all workers and visitors in the construction areas • Sensitize workers on health and safety	• Accident/incidence reports	PIT Contractor	3000

		• Fencing of construction areas to reduce unauthorised access • Proper signage warning of different hazards			
Occupational Health and Safety	• **The construction workers will be exposed to respiratory diseases due to dust, fumes and cement.** **Workers exposed to accidents injuries, etc.**	• develop and implement relevant C-ESMP • develop An Occupational Health and Safety Management Plan • Environmental, Health and Safety (EHS) plan. • Management and Safety of Hazardous Materials • Labour Management Procedures • Emergency Preparedness and Response Plan	• Compliance with EHS • Compliance with C-ESMP	Contractor PIT UoJ Administration	5000
SUBTOTAL					**12000**
OVERALL TOTAL					**57,000**

8.6 Environmental and Social Impact Assessment Monitoring

The purpose of this section is to outline the key monitoring requirements identified through the ESIA process to monitor the environmental and social performance of the project. The overall objectives of the monitoring activities are to:

- Ensure regulatory requirements are met;
- Check that impacts do not exceed national environmental and safety standards
- Verify predictions made in the ESIA by obtaining real time measurements;
- Verify that mitigation measures are effective and implemented in the manner described in Chapter 7
- Provide early warning of potential environmental impacts; and
- Inform future operations and contribute to continuous improvement in the management of environmental and social issues related to the project.

Monitoring will be carried out by the project contractor pursuant to her/his contractual obligations to undertake inspections, monitoring and reporting.

The following four types of inspections and monitoring must be employed.

a. Inspections: planned and conducted on a regular basis to ensure that mitigation measures and commitments are properly maintained and implemented, and that specific management procedures are followed.
b. Receptor monitoring: undertaken to verify predictions made in the ESIA and to confirm that the activities at the site are not resulting in an unacceptable deterioration i.e. monitoring disturbance to affected residents (through a grievance mechanism).
c. Compliance monitoring: involving periodic sampling or continuous recording of specific environmental quality indicators or discharge levels to ensure compliance of discharges and emissions with project standards.

Monitoring results will be presented in regular reports and reviewed at monthly and quarterly site meetings. The results of the inspection and monitoring activities will be reported to the Client. Monitoring should check if and to what extent the impacts are mitigated, benefits have been enhanced, and new environmental, social and cultural heritage issues are adequately addressed.

The selection of the parameters to be monitored is based on the high likelihood of occurrences of the selected parameters. Monitoring of these parameters will be done in various stages of the project as follows:

Mobilization stage: Monitoring of the parameters at this stage is meant to establish the baseline information of the target parameters in the project area.

Construction stage: Monitoring at this stage is meant to establish the pollution levels and impacts in the community around the project site that arise from the construction activities. It is also to verify the effectiveness of the mitigation measures and to allow Contractor to take corrective and preventive actions if necessary.

Operation stage: Monitoring at this stage is meant to check on the impacts that might arise as the result of normal use of the infrastructure.

Decommissioning stage: Monitoring at this stage means the project is winding up the operational activities and is mainly concerned with impacts that might arise at the end of the project. The final disposal of the project and associated materials at the expiry of the project lifespan.

8.7.1 Monitoring Responsibility

Ministry Agriculture and Food security through PIT in collaboration with UofJ and YAI, and Ministry of Environment and Forestry will implement the ESMP, supervise and monitor all components of the plan and maintain detailed records of monitoring outcomes. PIT should ensure that there is technical capacity and human resources to successfully conduct supervisory oversight of ESMP implementation.

8.7.2 The role of AfDB in the Implementation of the ESIA/ESMP

The Safeguards and Compliance Department of the Bank plays a significant role in the ESMP implementation through reviewing and clearing of the ESIA and ESMP and through supervision missions. It is a mandatory requirement by the AfDB that all Bank funded projects undergo mandatory review processes at all the project cycles. The project ESIA must be reviewed and cleared prior to country and Bank disclosures. It is also a mandatory requirement that all Category 1 and Category 2 Projects that are funded by the Bank be supervised during implementation. As such the Bank will be monitoring ESIA/ESMP implementation through regular bi-annual supervision missions. The Safeguards and Compliance Department will also ensure that periodic environmental and social safeguards performance reports are regularly prepared and meet the required standards.

8.7.3 Environmental and Social Monitoring Plan

The details of environmental, and social economic issues, proposed parameter to be monitored and timing, agencies responsible for execution of proposed actions during mobilization, construction and operation and stages are presented in Tables 8.3 below.

Construction Phase							
Impact	Proposed mitigation measure	Implementation tool	Monitoring Indicators	Means of verification	Monitoring frequency	Responsibility	Estimated Cost USD
Air/noise pollution	• Use local routes away from sensitive areas • Site construction facilities away from sensitive areas • Use equipment fitted with abatement devices and good maintenance regime • Prohibit working at night working if possible • Observe seasonal sensitivities • Give due notices for settlements/sensitive receptors	Part of contract agreement with contractor Contractor's maintenance program or plan for equipment/ machinery	Contractors plan and report Grievances recorded	Independent checks by project engineers and ESS Maintenance records verified by project engineers and PIT Self-check by Contractor	Construction stage	Contractor (s) and PIT	3,000
Water Pollution	• Construction of a functional waste management infrastructure at each facility • Adoption of Best environmental practices in waste management • Good drainage system to reduce erosion • Proper siting of drainage outfalls • Water abstraction to adhere to the local laws so as to avoid over extraction of ground water	Industry-specific standards, for water quality monitoring Standards for drainage works construction Construction site management plans	Water quality analysis Visibility of oil and other pollution materials on water bodies	Incidences of pollution reported Water quality results	• Regular Monthly report • Occasional checks and observations by project engineers and PIT • Periodic reports on performance by Contractor	Contractor (s) and PIT	4,000
Solid waste generation and disposal	Develop waste management plan including for hazardous waste; construction waste, general waste and kitchen waste	Part of contract agreement with Contractor Contractor's waste management plan; Industry-specific standards, particularly the EHS Guidelines	Number of waste management infrastructure provided Final waste disposal records	Periodic reports	Monthly	Contractor(s) and PIT	6,000

Impact on flora and fauna	• Demarcate and avoid areas of unique flora and fauna • In case of any identified ecologically sensitive areas, conserve them • Rehabilitate cleared areas with native species, and ecosystem restoration in habitats of conservation value	Data base on flora and fauna	Abundance and presence of Flora and fauna	Activity reports Site remediation reports	Construction	Contractor/ PIT	2,000
Marginalization of women	• Provide women interventions Target the women and other vulnerable groups in the allocation of Project resources and benefits	ESMP	Number of women benefiting from Project activities Number of women and other vulnerable groups enrolled for training	baseline data and project implementation report	During Project implementation	PIT	2,000
Interaction between workforce and Student community communities	Carry out training and awareness training for the workforce and their dependents on COVID-19, HIV/AIDS and other sexually transmitted illnesses, and communicable diseases Carry out health awareness-raising campaigns for communities on similar topics	ESMP; Industry-specific standards, particularly the EHS Guidelines	Health and safety incident register Grievance records Number of training and awareness sessions held Number of women and other vulnerable groups that participated	Site visit and Observations by ESS/Contractor	Construction and operation	Contractor and PIT	1,000
Labor and working conditions	Employment practices and working conditions should conform to ILO standards and national regulations Institute a clear and comprehensive health and safety reporting and grievance procedure system freely available to all of the workforce	Industry-specific standards,	Comprehensive health and safety reporting and grievance procedure	Periodic reports by performance ESS/Contractor	Construction and operation	Contractor and PIT	1,000

Economic Development and Employment	Contractor to develop an Employment Plan, with clear employment requirements and procedures for the construction and operational/ maintenance workforce Institute fair and transparent hiring and staff management procedures	Industry-specific standards, and Guidelines ESMP	Employment Plan	Periodic reports by performance ESS/Contractor	Construction n and operation	Contractor and PIT	2,000
Total	**TOAL**						**21,000**
Operations Phase							
Impact	Proposed mitigation measure	Implementation tool	Monitoring Indicators	Means of verification	Monitoring frequency	Responsibility	Estimated Cost
Water Pollution	Operation of functional waste management infrastructure at each facility Adoption of Best environmental practices in waste management Good drainage system to reduce erosion Water abstraction to adhere to the local laws so as to avoid over extraction of ground water	Industry-specific standards, for water quality monitoring Standards for drainage works construction Site management plans	Water quality analysis Visibility of oil and other pollution materials on water bodies	Incidences of pollution reported Water quality results	• Regular Monthly report • Occasional checks and observations by project engineers and PIT • Periodic reports on performance by Contractor	PIT	1,000
Solid waste generation and disposal	- Solid Waste Generation and Management - Regular inspection and maintenance of the waste disposal systems during operation phase - Establish a collective waste disposal and management system - Provide waste disposal bins to each house well protected from adverse weather and animals - Ensure waste materials are disposed of on Council and MININISTRY OF ENVIRONMENT AND FORESTRY approved sites	• Part of contract agreement with Contractor • Contractor's waste management plan; • Industry-specific standards, particularly the EHS Guidelines	• Number of waste management infrastructure provided • Final waste disposal records	Periodic reports	Monthly	PIT	2,000

	- Use of the 3rs – Reduce, Re-use, Re-cycle						
Interaction between workforce and local communities	Carry out training and awareness training for the workforce and their dependents on COVID-19, HIV/AIDS and other sexually transmitted illnesses, and communicable diseases Carry out health awareness-raising campaigns for communities on similar topics	ESMP; Industry-specific standards, particularly the EHS Guidelines	Health and safety incident register Grievance records Number of training and awareness sessions held Number of women and other vulnerable groups that participated	Site visit and Observations by ESS/Contractor	Construction and operation	PIT	1,000
Economic Development and Employment	Innovators to develop products and services and investment opportunities maintenance workforce Institute fair and transparent hiring and staff management procedures Students to train and undertake swimming operations and utilizing the skills	Industry-specific standards, and Guidelines	Products and services developed	Periodic reports by performance ESS/Contractor	Institutions in operation	Contractor and PIT	2,000
Total	**TOTAL**						**9.000**
Decommission Phase							
Impact	Proposed mitigation measure	Implementation tool	Monitoring Indicators	Means of verification	Monitoring frequency	Responsibility	Estimated Cost
Air/noise pollution	Site demolition facilities Use equipment fitted with abatement devices and good maintenance regime Prohibit working at night working if possible	Part of contract agreement with contractor Contractor's maintenance program or plan for equipment/ machinery	Contractors plan and report Grievances recorded	Independent checks by project engineers and ESS Maintenance records verified by project engineers and PIT Self-check by Contractor	demolition stage	Contractor (s) and PIT	1000

Water Pollution	Adoption of Best environmental practices in waste management Good drainage system to reduce erosion Proper siting of drainage outfalls Water abstraction to adhere to the local laws so as to avoid over extraction of ground water	Industry-specific standards, for water quality monitoring Standards for drainage works construction Construction site management plans	Water quality analysis Visibility of oil and other pollution materials on water bodies	Incidences of pollution reported Water quality results	• Regular Monthly report • Occasional checks and observations by project engineers and PIT • Periodic reports on performance by Contractor	Contractor (s) and PIT	1,000
Solid waste generation and disposal	Develop waste management plan including for hazardous waste; construction waste, general waste and kitchen waste	Part of contract agreement with Contractor Contractor's waste management plan; Industry-specific standards, particularly the EHS Guidelines	• Number of waste management infrastructure provided • Final waste disposal records	Periodic reports	Monthly	PIT	1,000
Interaction between workforce and local communities	Carry out training and awareness training for the workforce and their dependents on COVID-19, HIV/AIDS and other sexually transmitted illnesses, and communicable diseases Carry out health awareness-raising campaigns for communities on similar topics	ESMP; Industry-specific standards, particularly the EHS Guidelines	Health and safety incident register Grievance records Number of training and awareness sessions held Number of women and other vulnerable groups that participated	Site visit and Observations by ESS/Contractor	Construction and operation	PIT	2000
Labor and working conditions	Employment practices and working conditions should conform to ILO standards and national regulations Institute a clear and comprehensive health and safety reporting and grievance procedure system	Industry-specific standards,	Comprehensive health and safety reporting and grievance procedure	Periodic reports by performance ESS/Contractor	Demolition and operation	Contractor and PIT	1,000

Accidents/Injuries	Securing the Site by fencing off	ESMP	Comprehensive health and safety reporting and grievance procedure	Periodic reports by performance ESS/Contractor	Demolition and operation	Contractor/Proponent	2000
Subtotal							**8000**
Overall Total							**38,000**

Table 0-3 Environmental Monitoring Plan

8.8 Grievance Redress Mechanism

The AfDB defines project GRM as a systematic process for receiving, evaluating and facilitating resolution of affected people's project-related concerns, complaints and grievances about the borrower's/client's social and environmental performance on a project. AfDB requires its clients to be aware of and respond to stakeholders' concerns related to the project in a timely manner. In OS 1, the Bank requires the borrower/client to establish a "credible, independent and empowered local grievance and redress mechanism to receive, facilitate and follow up on the resolution of the affected people's grievances and concerns regarding the environmental and social performance of the project. The local grievance mechanism needs to be sufficiently independent, empowered and accessible to the stakeholders at all times during project cycle and all responses to grievances shall be recorded and included in project supervision formats and reports."

The process by which the GRM is designed should be integrated into the overall approach to project preparation as prescribed in the Bank's ISS. The Bank ISS through its (IESIA) Guidelines Notes provides guidance on development and Implementation of GRM. It should also be included in the concrete actions required in the Environmental and Social Management Plan (ESMP) for Category 2 projects and, on a case by case basis, for Category 2 projects that exhibit specific potential social tensions, in particular risks of mismanagement of compensation/resettlement schemes or the presence of particularly vulnerable groups in the project's area of influence.

AfDB has also established its own accountability mechanism, the Independent Review Mechanism (IRM). The IRM seeks to assess whether a Bank approved project complies with relevant the AfDB's ISS. The IRM makes itself accessible to any group (a minimum of 2 persons living in the project's area of influence) actually or potentially negatively affected by a Bank- funded project. The IRM reports to the Bank's Board of Directors and is thus independent of Bank management. The IRM has been set up by the Bank to achieve more transparency. It is also a costly mechanism to trigger. The establishment of local GRMs can help to alleviate the need for plaintiffs to resort to the IRM, while problem-solving can be more rapidly and cost-effectively done locally. The cultural context in which GRMs operate also helps to defuse complaints and to find appropriate and commensurate solutions.

The grievance redress mechanism will make provision for two tier amicable mediation and settlement. The first tier will involve the grievance redress committee resolving the issue at the institution/community level. If the issue is not resolved at the local level, then the 2^{nd} $_{tier}$ should involve the PIT to constitute an appropriate team including regional/national stakeholders including the Administration head for the area (or his/her representative) to resolve the matter. When these two tiers of amicable mediation arrangement fail, the complainant is free to seek redress at the court of law.

8.8.1 GRM at project level

The GRM in the **Construction and Rehabilitation of TVET Learning Facilities - Lecture Halls, Equipped Workshop and Laboratory at UofJ and Yambio Agricultural Institute** project sub component will be established under the guidance provided in the ISS Bank ISS through its (IESIA) Guidelines Notes. The first step is to determine the primary goal of the GRM which would generally be

to resolve specific grievances in a manner that meets both project management and community needs, but with important local variations. The scope of the grievances that may legitimately be brought forward by the communities and/or individuals affected shall be defined in advance. That scope will generally cover most, if not all, of the issues raised in a typical Environmental and Social Assessment: natural resources, pollution, cultural property, land acquisition, the income of resettled/displaced populations, the welfare of vulnerable groups, etc.

The second step is to design the GRM by:

- Preparing a preliminary design.
- Selecting ways and means to receive, register, assess and respond to grievances.
- Select grievance resolution approaches.
- Design a means to track and monitor grievances.
- Develop the grievance mechanism infrastructure.
- Review and refine the design.

The GRM shall be designed based on the following principles:

1. Involvement of individuals of mixed levels and functions from the entity (e.g., operations, environmental affairs, community relations, legal affairs, contractors). Staffing the design team from just one function such as community relations or human resources is unwise.
2. The inclusion of a balanced group of representatives from the community, representing the range of constituencies and demographics that will be using the grievance mechanism, while keeping the team small enough to be responsive.
3. GRM Relying upon clear terms of reference and a work plan that outlines team goals, roles, and responsibilities, level of decision-making authority, reporting lines, tasks, time frame, and products.
4. Making the use of multiple channels (e.g., face to face, phone conversation, mail, text or e-mail, message on a dedicated website), sensitive to cultural customs and traditional methods that may influence or impede the expression of grievances.
5. The existence of a central point of contact that will receive complaints and log them into a central register.
6. Existence and operation of designated complaint resolution staff.
7. Processes for acknowledging the receipt of a grievance and informing the complainant about the time frame in which a response can be expected.

8.8.2 Appointing members of Grievance Redress Committees (GRC)

The project will involve the formulation of Grievance Redress Committees (GRCs) at project level in the two islands, i.e. GRM staff, for handling grievances. Generally, all project staff, the management staff of agencies involved in the project, and government administrators will take on grievance handling as a responsibility. The GRM members should be qualified, experienced, and competent personnel who can win respect and confidence of the affected communities. It is also important to maintain a gender balance within the GRMs. Criteria for selecting members of GRMs will include the following:

- Knowledge of the project, its objectives, and outcomes
- Technical knowledge and expertise to understand project design and requirements;
- Understanding of the social, economic, and cultural environments and the dynamics of the communities;
- Capacity to absorb the issues dealt with and to contribute actively to decision-making processes;
- Social recognition and standing; and
- Equitable representation of males and females.

The GRC at project level shall constitute among other members, an officer from MAFS, e.g. Environmental Control Officers, Project Coordinators, a member from a recognized Non-Government Organization and a community representative. The GRC shall have the right to request the project technical staff, and officers from relevant state or non- state institutions to attend the meetings and provide information. A complainant has the right to appear in person, to be accompanied by a community member, and/or to request to be represented by a community elder. GRCs shall be established at the project level to assure accessibility for aggrieved persons.

8.8.3 *Procedures, complaints channels and time frame for Grievance Redress Mechanisms*

As there is no ideal model or one-size-fits-all approach to grievance resolution, the best solutions to conflicts are generally achieved through localized mechanisms that take account of the specific issues, cultural context, local customs, and project conditions and scale. The process by which a complaint will be accepted or rejected needs shall be carefully designed, and shall maximize interactivity and cultural sensitivity. The acceptance/rejection of a complaint will go through a discussion stage where the plaintiff and the **GRM staff** interact on the grounds and motives of the complaint, after which the plaintiff should clearly and transparently be told whether or not the complaint is eligible and will be processed.

The acceptance/rejection of the complaint shall be based on objective criteria that are posted by the GRM, including a written copy displayed in the public access area of the GRM in an appropriate language.

The processing of the complaint, if accepted should go through various phases:

- Filing of the complaint and labelling with an identification code communicated immediately to the plaintiff. (see annex 5 for sample Grievance Form)
- Assessment of the complaint (including severity of the risk/impact).
- Formulation of the response.

Selection of the grievance resolution approach is a key. There are four general approaches to choose from:

- The project's management proposes a solution.
- The community and the project's management decide together.
- The project's management and the community defer to a third party to decide.

- The project's management and the community utilize traditional or customary practices to reach a solution.

The Bank ISS recommends the application of a "Decide together" approach that is usually the most accessible, natural and unthreatening ways for communities and a project's management to resolve differences. With the potential to resolve perhaps the majority of all grievances, "decide together" should be the center-piece of any grievance mechanism's resolution options.

The grievance mechanism will comprise of the following primary components:

- ✓ Receive and register a complaint.
- ✓ Screen and validate the complaint (based on the nature and type of a complaint).
- ✓ Formulate a response.
- ✓ Select a resolution approach, based on consultation with affected person/group.
- ✓ Implement the approach.
- ✓ Settle the issues.
- ✓ Track and evaluate results.
- ✓ Learn from the experience and communicate back to all parties involved.

The time for the Grievance Redress Committees to be held shall be agreed and documented, depending on the nature and severity of the complaint. A number of mechanisms will be available to aggrieved parties to access redress. These shall include institutions specific (internal) to a project and set up from its inception or others that might have emerged over time in response to needs identified while the project evolved. Other institutions which are already established within a country's judicial, administrative, and/or political systems and exist outside a project shall also be used. These include the government bureaucracy; judicial institutions; and political institutions such as District Councils, Village Councils, etc. In addition, the Bank itself sometimes shall provide a forum for grievance redress. GRMs shall include avenues for resolving conflicts between aggrieved persons or other stakeholders and can provide information sought by the public on the project.

The channels of presenting complaints could include the presentation of complaints via third parties (e.g., village elites/traditional leaders, community-based organizations, lawyers, non- government organizations [NGOs], etc.); face-to-face meetings; facsimile, telephone, and email communications; written complaints; etc.

If the complainant is not satisfied, the complainant will have to appeal to the Project Management Unit.

9. CHAPTER NINE: CONCLUSION AND RECOMMENDATIONS

9. Conclusions

The proposed project will have several positive economic impacts during its different phases that include: creation of employment; stimulating development through revenue, taxes and income, creating needed skills as well as developed innovations that will steer business development, provide investment opportunities expand goods and services, in the market, create business opportunities for various companies and individuals. These will contribute to the achievement of strategic and contribute to making South Sudan increase the infrastructure for TVET and enhance National food security and Agribusiness Enterprises. The project will also have high socio-economic benefits to the people along the project area and adjoining regions.

However, the project will present environmental and OSH risks similar to most building and infrastructure projects, which include: the generation of wastes (municipal, construction and demolition wastes; vegetation clearing, changes in soil characteristics; emission of air pollutants amongst others. Specific mitigation measures have been suggested in this report to offset the specific inherent adverse impacts. In implementing these mitigation measures there would be an increase of environmental soundness and social acceptability of the project. These risks can be adequately managed and monitored through the proposed mitigation measures that include frameworks for developing waste management plans, OSH plans and hazardous materials safety plans. The total cost for implementing the Environmental Management Plan including the Monitoring Plan is tuned to **USD 147000** the identified adverse impacts shall be managed through the proposed implementation regime laid down in this ESIA. Ministry of Agriculture and Food Security through PIT is committed in implementing all the recommendations given in the ESIA and further carrying out the environmental monitoring schedules.

Therefore, Ministry of Environment and Forestry is advised to license the project subject to it following the proposed annual environmental audits and ESMP and complying with all other statutory requirements that the project subscribes to. The project should also develop a plan for continuous engagement with stakeholders that include members of the public (its neighbors) and government bodies. This will be in compliance with the country's environmental management policies and laws.

Table.1 the summary of the ESMP

Activity	Timeframe	Responsibility	Cost (USD)
Estimated Mitigation Measures	Design Construction implementation & decommissioning period	PIT/MAFS/ CONSTRUCTORS/ Ministry of Environment And Forestry AfDB	57,000
ESMP Monitoring	Entire project period until hand-over	PIT/MAFS/ Ministry of Environment And Forestry AfDB	38,000
Establishing & Building Capacity of the GRM	Design Construction & implementation period	PIT/MAFS/ Constructors/ Ministry of	20,000

		Environment And Forestry	
Capacity building cost on ESMP (institutions identified in the report)	Project implementation period	PIT/MAFS/ Constructors/ Ministry of Environment And Forestry AfDB	10,000
Annual Environmental audits	Entire project period until hand-over	PIT/MAFS/ Constructors/ Ministry of Environment And Forestry	5,000
Regular supervisions – environmental aspects	Entire project period until hand-over	PIT/MAFS/ Constructors/ Ministry Of Environment And Forestry AfDB	10,000
Sub Total			**140,000**
5% Miscellaneous			**7000**
			147000

10.1Recommendations

1. Aspect of the project will require a multi-sectoral and a multi-disciplinary approach in the overall implementation. Therefore, it is important that during the implementation, relevant stakeholders are effectively engaged.

2. The implementation of CRAFT project subcomponent (Construction of TVET Infrastructure at UofJ) is likely to have multiplier effects and proliferation of other economic activities hence engaging other stakeholders, including the private sector may help in addressing some of the cross cutting challenges.

3. The contractors and the project proponent should take into consideration all the legislative measures put in place so as to ensure the due process is followed.

4. The mitigation measures provided are based on the recommendations of this ESMP and they should be followed so as to address the environmental issues that may arise in the course of the implementation of this project, but contractors should enrich the ESMPs and develop their site specific ESMPs.

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11 APPENDICES

Appendix 1: Tools

Checklist **(**Literature and Documents**)**

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT CHECKLIST FOR "THE CONSTRUCTION AND REHABILITATION OF TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) LEARNING FACILITIES - LECTURE HALLS, OFFICES, AND EQUIPPED WORKSHOP AND LABORATORY" in JUBA

1. DESCRIPTION OF THE PROJECT AREA
    a. Project Location (Administrative Location, Site Location, Access to the Sites, Area of Influence,
    b. Environmental setting (Topography and slope, Soils, Geology, Climate, Land Use and Land Cover
    c. Biodiversity Assessment (Flora and Fauna)

2. SOCIAL –ECONOMIC SETTING (Population Size, Well-being, Mortality, Education, Livelihoods, Employment, Poverty, Vulnerable groups, Infrastructure services (Road Networks, Schools, Health facilities), gender, GVB

3. DESCRIPTION OF DEVELOPMENT PROPOSALS
    a. The Project (The Project Setting, Site access, Land ownership, Proposed Project Description, Scope of Works, Project Cost)
    b. Expected Project Activities, Planning and Design Activity component, Construction Activity component, activities during operation.
    c. Analysis of project alternatives(No Project Alternative, Alternative Site Location, Alternative technology)
    d. Capacity of the implementation agency to implement ESMP
4. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

- **Overview of the Policy Framework:** Policy on Environment and Development: National Environment Policy, Land and land use Policy, Water policy, Biodiversity policy, and Wildlife Policy etc.
- **Overview of the Legislative Framework** (The country Constitution, The Environmental Management and Co-ordination law, The Environmental (Impact Assessment and Audit) Regulations, The Environmental Management and Coordination, (Water Quality) Regulations, Environmental Management and Co-ordination (Waste Management) Regulations, Environmental Management and Coordination (Fossil Fuel Emission Control) Regulations, Environmental Management and Coordination (Noise and Excessive Vibration Pollution) Control Regulations, Water Act, The Water Resources Management Rules, Occupational Health and Safety Act, 2007, The Physical and land use Planning Act, The Traffic Act, The Public Health Act etc.)
- **Institutional Framework** (GoSS- Water Resources Authority, Ministry of Education in charge of TVET training etc.)

5. LICENCES AND PERMITS PROCEDURES
6. ENVIRONMENTAL AND SOCIAL GUIDELINES AND SAFEGUARDS POLICY

- The Banks Integrated Safeguards System (ISS)

7. MEAs

8. CONFLICT/ GRIEVANCES RESOLUTION MECHANISM

I. Key Informant Interview (KII) Guide

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT QUESTIONNAIRE GUIDE FOR THE PROPOSED "THE CONSTRUCTION AND REHABILITATION OF TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) LEARNING FACILITIES - LECTURE HALLS, OFFICES, AND EQUIPPED WORKSHOP AND LABORATORY" IN JUBA SOUTH SUDAN.

Dear Sir/Madam,

The Government of Southern Sudan is engaged in a "**THE CONSTRUCTION AND REHABILITATION OF TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) LEARNING FACILITIES - LECTURE HALLS, OFFICES, AND EQUIPPED WORKSHOP AND LABORATORY" IN JUBA, SOUTH SUDAN".** As part of the statutory requirement, the Bank has commissioned an Environmental and Social Impact Assessment for the proposed project. As a key component of public participation process, this questionnaire serves to inform and engage you about the development, as well as capture any issues of concern that you may have, so as to ensure the project remains environmentally, socially and economically sustainable.

As a key stakeholder, we would appreciate if you provided us with the follow

1. **Discuss Project site description**
   Including The land on which the construction will be located, land ownership Site Access Details, The main land cover/use etc.)
   PROBE
   - *i. Description of project and justification*
   - *ii. Are the project sites located in areas considered ecologically sensitive? e.g. areas covered under Ramsar Convention - wet lands, etc.*
   - *iii. Are wetlands sites located in protected areas such as protected forests, areas with endangered species, etc.?*
   - *iv. Are the project sites in culturally important areas?*
   - *v. Is the project going to involve extensive construction work, which will involve extensive excavations?*
   - *vi. Are the project works going to involve involuntary resettlement of populations? Compensation?*
   - *vii. How are the people or their livelihoods going to be affected by the project? – Interference with daily economic activities, closure of roads, etc.*

2. **Explain the Key Project Highlights**

3. **Discuss the Anticipated Positive Project Impacts During project construction and implementation, and propose Mitigation Measures**

   PROBE

Potential impacts	**Descriptions**
Employment Creation	

Future employment opportunities	
Revenue generation	
Employment opportunities	
Increased recreation facilities:	
Conservation:	
Strategic partnerships:	
Increased security	
Others specify	

4. **Discuss the Anticipated Negative Impacts and proposed Mitigation Measures During project construction and implementation**

PROBE

Potential impacts	
Loss of Biodiversity	
Livelihood Disruption	
Community Health and Safety Concerns	
Noise generation and Vibration	
Air pollution	
Waste management	
Others specify	

5. **Discuss Issues to be addressed in detail within the EMP (including Issues Raised During Public Participation, Unplanned/contingency impacts etc.)**
   Management measures, actions, roles and responsibilities, timeframes, monitoring and cost of implementation

6. **Discuss how The proponent is committed to minimizing the environmental impact of the project operations:** through complying with applicable environmental law and providing staff with adequate training to see the successful completion of the project. And therefore the ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP): - *including Labour migration, Cultural conflicts, etc.*

7. **Give any other information that may be necessary in regard to this ESIA**

8. **Do you approve this project? Yes [ ] No [ ]**

Name: _____Cell phone: _____

Organization: _____

Position in the organization_____ Date: _____

Signature/Initials: _____I. D No._____

(*Please note that these details are required for the purposes of authenticity*)

- **END and Thank you***

II. Focused Group Discussion (FGD)

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT QUESTIONNAIRE GUIDE FOR THE PROPOSED "CONSTRUCTION AND REHABILITATION OF TVET LEARNING FACILITIES - LECTURE HALLS, EQUIPPED WORKSHOP AND LABORATORY AT UOFJ" SOUTH SUDAN

Dear Sir/Madam,
The Government of Southern Sudan is engaged in a "**Construction and Rehabilitation of TVET Learning Facilities - Lecture Halls, Equipped Workshop and Laboratory at UofJ South Sudan"** As part of the statutory requirement, the Bank has commissioned an Environmental and Social Impact Assessment for the proposed project. As a key component of public participation process, this questionnaire serves to inform and engage you about the development, as well as capture any issues of concern that you may have, so as to ensure the project remains environmentally, social and economically sustainable.

As key stakeholders, we would appreciate if you provided us with the following information

Name of the Group/ Community: _____
Contact person and Cell phone: _____
Names and ID of the participants

Name	ID	Membership	Signature

(Please note that these details are required for the purposes of authenticity)

1. **Describe how the project will affect the group/ community activities-**
(Including The land on which the construction will be located, land ownership Site Access Details, The main land cover/use etc.)

2. **Discuss the Key Project Highlights and how they relate with group/community livelihood**

3. **Are you aware of any environmentally sensitive area near the proposed sites; (**wetlands, streams, forest land, cultural sites etc.). If yes, state and describe including approximate distances).

4. **Is there any land conflict you are aware of; regarding the project site where the institute will be constructed? Yes [] No [].**

If yes, kindly explain the nature of conflict.

5. **What injuries are likely to occur to the public during the project construction and operation activities?**

6. **What measures do you recommend to ensure public safety?**

7. **Discuss the Anticipated Positive Project Impacts.**

PROBE

i. What will be the social impacts of the project? - social interactions, improvement of life quality/living standards
ii. What are the economic impacts of the project? – change in income levels, development programmes, change in economic activities, etc. Are the changes perceived or real?
iii. Is the project going to involve extensive land use change/ infrastructural or create a complete change of the ecosystem?
iv. Are there any specific interventions that you may want incorporated in the design to enhance the positive issues?

8. **Discuss the Anticipated Negative Impacts and proposed Mitigation Measures During construction** and project implementation.

PROBE

i. What will be the social impacts of the project? - social interactions, change of life quality/living standards
ii. What are the economic impacts of the project? – change in income levels, development programmes etc. Are the changes perceived or real?
iii. Is the project going to involve extensive deforestation/wetland conversion/ or create a complete change of the ecosystem/pollution/waste generation etc.?

iv. Are there any specific interventions that you may want incorporated in the design/ during construction to address the negative issues?

9. **Discuss Issues to be addressed in detail within the ESMP**

PROBE

i. Discuss how the proponent is committed to minimizing the environmental impact of the project operations through complying with applicable environmental law and providing staff with adequate training to see the successful completion of the project.

ii. Discuss Environmental and Social Management Plan (ESMP): - including Labor migration, Cultural conflicts, etc.

10. **Do you approve this project? Yes [ ] No [ ]**

END AND THANK YOU

Appendix 2: Stakeholder's Consultative Meetings

a) Consultative meeting with MININISTRY OF ENVIRONMENT AND FORESTRY

Food and Agriculture Organization of the United Nations

State Ministry of Agric, Env. and Forestry
State Minist of Cooperatives & Rural Development

South Sudan Food and Agriculture Delivery Compact (SS-COMPACT)

ESIA and Stakeholder Engagement in Aweil

Date 19--/01/2024

S/No.	Name	Institution/Designation	Gender	Cell No.	Signature
1.	Mayiik Majak M.	Director of Agriculture	m	0920333221	
2-	Ajiet Garang Ajiet	Director coops Dept	M	0922262313	
3-	Marol Dhol Kuach	Director for Administration	m	0920809922	
4.	Santino Deng Ngap	FP BRACED	M	0921679892	
5	Samuel Ajiing	SMART	m	0929906222	
6	James Guot Garang	FLDA	M	0925045212	

(1)

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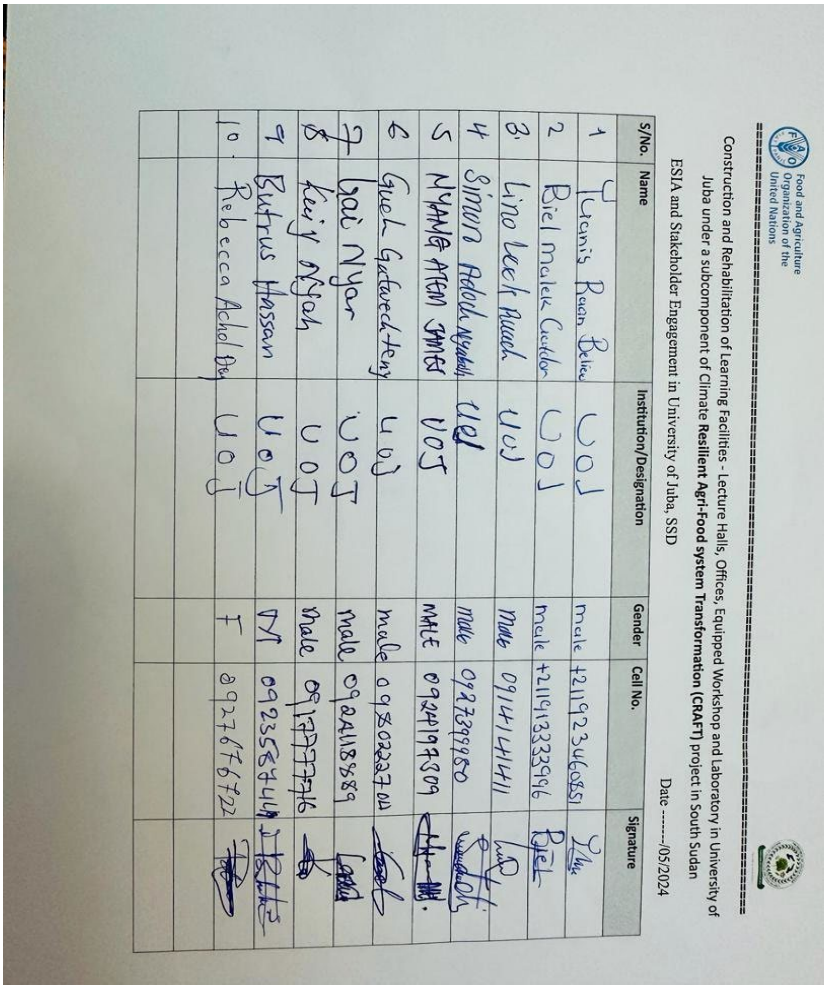
Appendix Stakeholder Engagements- Attendance Lists



Food and Agriculture Organization of the United Nations

Construction and Rehabilitation of Learning Facilities - Lecture Halls, Offices, Equipped Workshop and Laboratory in University of Juba under a subcomponent of Climate **Resilient Agri-Food system Transformation (CRAFT)** project in South Sudan

ESIA and Stakeholder Engagement in University of Juba, SSD

Date -------/05/2024

S/No.	Name	Institution/Designation	Gender	Cell No.	Signature
1	Yuanis Ruan Beliew	UOJ	male	+211923460851	
2	Biel Malek Gatdor	UOJ	male	+211913333996	
3.	Lino Leek Auach	UOJ	male	0914141411	
4	Simon Adoch Nyabol	UoJ	male	0927399980	
5	NYAMG ATEM JAMES	UOJ	MALE	0924197309	
6	Gueh Gatwech-teny	UOJ	male	0980222704	
7	Gai Nyar	UOJ	male	0924118889	
8	Keij Nyah	UOJ	male	0917777716	
9	Butrus Hassan	UoJ	M	0923587449	
10.	Rebecca Achol Deng	UOJ	F	0927676722	

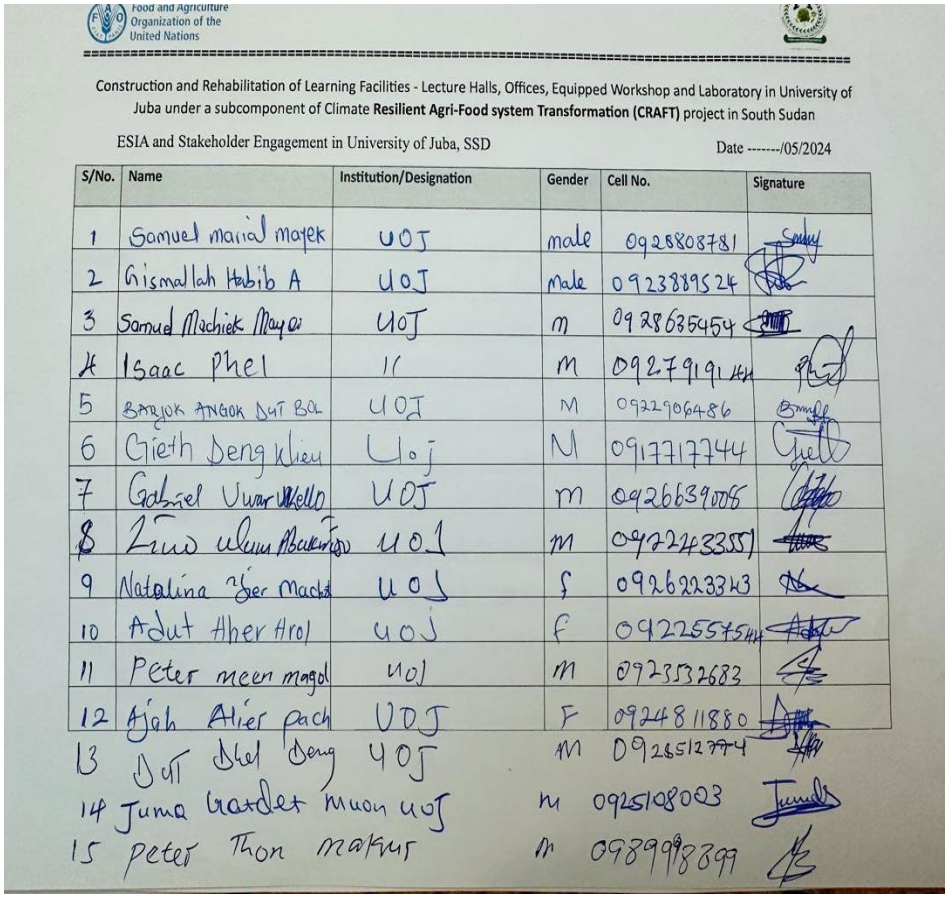
Food and Agriculture Organization of the United Nations

Construction and Rehabilitation of Learning Facilities - Lecture Halls, Offices, Equipped Workshop and Laboratory in University of Juba under a subcomponent of Climate **Resilient Agri-Food system Transformation (CRAFT)** project in South Sudan

ESIA and Stakeholder Engagement in University of Juba, SSD

Date ------/05/2024

S/No.	Name	Institution/Designation	Gender	Cell No.	Signature
1	Beatiu Nyandong	UOJ	male	0919446992	
2	Sidot Lieng peter	UOJ	male	0915333779	
3	Peter Kon Ahieu	UOJ	male	0946466690	
4	Kuol Kech	UOJ	male	0915666864	
5	Tech Nhial Thiong	UOJ	Male	0928194483	
6	Albriano Abel Agoth	UOJ	M	0972361852	
7	Bonglai mayai chol	UOJ	M	0929087966	
8	Juma Ubaa Uchalla	UOJ	M	0922947878	
9	Anei Manot Anei	UOJ	M	0922267777	
10	Akol Deng Akol	UOJ	M	0912350092	
11	Garang Kuek	UOJ	M	0917733911	
12	Adhar Kuach Pin	UOJ	M	0922930946	



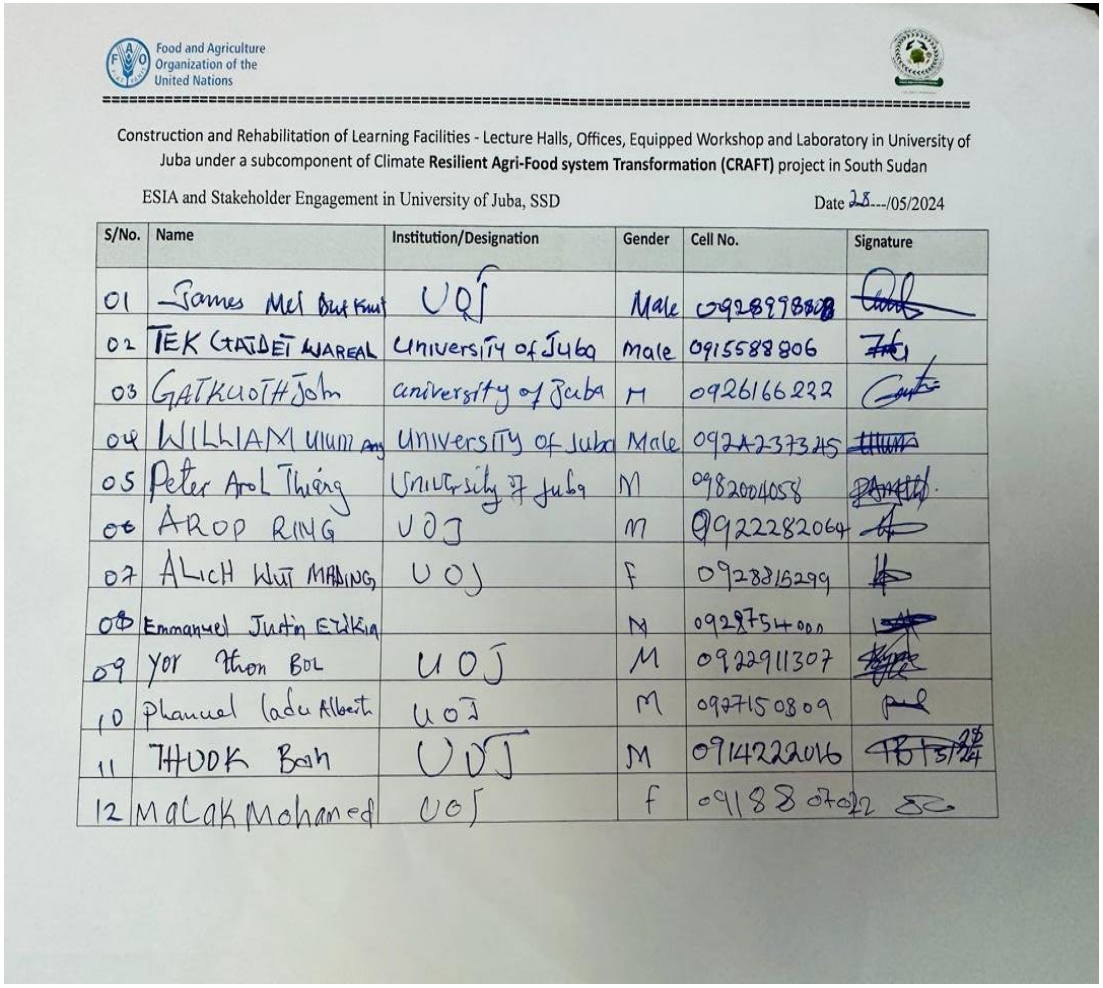
Food and Agriculture Organization of the United Nations

Construction and Rehabilitation of Learning Facilities - Lecture Halls, Offices, Equipped Workshop and Laboratory in University of Juba under a subcomponent of Climate **Resilient Agri-Food system Transformation (CRAFT)** project in South Sudan

ESIA and Stakeholder Engagement in University of Juba, SSD

Date -------/05/2024

S/No.	Name	Institution/Designation	Gender	Cell No.	Signature
1	Samuel maial mayek	UOJ	male	092880878l	
2	Gismallah Habib A	UOJ	male	0923889524	
3	Samuel Machiek Mayen	UOJ	m	0928635454	
4	Isaac Phel	UOJ	m	0927919144	
5	BARJOK ANGOK DUT BOL	UOJ	M	0922906486	
6	Gieth Deng Kuei	UOJ	M	0917717744	
7	Gabriel Uwar Wello	UOJ	m	0926639086	
8	Zino ulum Abdumajid	UOJ	m	0922243355	
9	Natalina Zeer Machot	UOJ	f	0926223343	
10	Adut Aher Arol	UOJ	f	0922557544	
11	Peter meen magol	UOJ	m	0923532683	
12	Ajah Alier pach	UOJ	F	0924811880	
13	Dut Abel Deng	UOJ	M	0926512774	
14	Juma Gatdet Muon	UOJ	M	0925108003	
15	peter Thon makuc		M	0989998899	



Food and Agriculture Organization of the United Nations

Construction and Rehabilitation of Learning Facilities - Lecture Halls, Offices, Equipped Workshop and Laboratory in University of Juba under a subcomponent of Climate **Resilient Agri-Food system Transformation (CRAFT)** project in South Sudan

ESIA and Stakeholder Engagement in University of Juba, SSD

Date 28---/05/2024

S/No.	Name	Institution/Designation	Gender	Cell No.	Signature
01	James Mel Buthkuc	UOJ	Male	092897880[illegible]	
02	TEK GAIDET WAREAL	University of Juba	Male	0915588806	
03	GATKUOTH John	university of Juba	M	0926166222	
04	WILLIAM [illegible]	University of Juba	Male	0922237345	
05	Peter Arol Thiang	University of Juba	M	0982004058	
06	AROP RING	UOJ	M	0922282064	
07	ALICH WUT MADING	UOJ	f	092881[illegible]299	
08	Emmanuel Justin Etiking		M	092875400[illegible]	
09	Yor Thon Bol	UOJ	M	0922911307	
10	Phanuel Ladu Albert	UOJ	M	092715080[illegible]	
11	THUOK Bath	UOJ	M	0914222016	28/5/24
12	MaLak Mohamed	UOJ	f	0918807022	

Food and Agriculture Organization of the United Nations

Construction and Rehabilitation of Learning Facilities - Lecture Halls, Offices, Equipped Workshop and Laboratory in University of Juba under a subcomponent of Climate **Resilient Agri-Food system Transformation (CRAFT)** project in South Sudan

ESIA and Stakeholder Engagement in University of Juba, SSD

Date ------/05/2024

S/No.	Name	Institution/Designation	Gender	Cell No.	Signature
1	Wilfred Kuc Mabil	University of Juba	M	0927727942	
2	Maker Nai Angui	university of Juba	M	0921533000	
3	Bawbila Akuc Jerry	UoJ	F	0926282666	
4	Aluel Bol Deng	University	F	0922444884	
5	RUFAS MORO DOMINIC	University of Juba	M	0921322013	
6	Lilian Poni Liberio	University of Juba	F	0923201625	
7	Agueek makuc ajuel	University of Juba	M	0929795888	
8.	Basilica Samuel	University of Juba	F	0928786884	
9	John Manbar Nikur	University of Juba	M	0926266661	
10	John moyom Duc	University of Juba	M	0922467339	
11	Nelson Pitia Emmanuel	UoJ	M	0921270868	
12	Awad Kinda	university of Juba	m	0922122837	

Food and Agriculture Organization of the United Nations

South Sudan Food and Agriculture Delivery Compact (SS-COMPACT)

ESIA and Stakeholder Engagement in Yambio Technical Institute, WES

Date 5/3/2024

S/No.	Name	Institution/Designation	Gender	Cell No.	Signature
1	Prof Sampson Binyason	Principal WEUTC	male	0924543460	Sampson Binyason
2	John Erisa Ndiri	Administrator	Male	0925118732	
3	Charles Isaac Bangbe	Director	Male	0928487171	
4	SUZAN VICTOR JAMI	Human Resources	F	0980974496	
5	Bongafu Justin Gardino	Logistics	M	0924867107	
6	Martin yotama	General Services	M	0924455580	
7	Robert John		M	0927210900	

WESTERN EQUATORIA COLLEGE OF AGRICULTURE
- 5 MAR 2024

b) Stakeholders meeting with students at UOJ

Food and Agriculture Organization of the United Nations

South Sudan Food and Agriculture Delivery Compact (SS-COMPACT)

ESIA and Stakeholder Engagement At University Of Juba, CES Date ----------

S/No.	Name	Institution/Designation	Gender	Cell No.	Signature
1.	Thomas Francis Lado	University of Juba / D/Dean	M	0926086097	
2	Beatrice C. Langue	University of Juba	F	0922568570	
3	John Selit Benson	University of Juba	M	0923360009	
4	JACOB K. LUPAI	UNIVERSITY OF JUBA	M	0927434037	

Appendix 3:

Appendix 3 b Project site at UOJ

***Appendix 4**: Sample Grievance Application Form and Grievance Log*

Sample Public Grievance Form

Reference No:	
Full Name:	
Contact Information Please mark how you wish to be contacted (telephone, mail, E-mail).	By Telephone: _____ By Post: Please provide mailing address: _____ _____ By E-mail _____
Description of Grievance:	What happened? Where did it happen? Who did it happen to? What is the result of the problem? Has the grievance triggered an incident investigation? (*Continue on additional pages as required*)
Date of Grievance ----------	One time grievance (date _____) Happened more than once (how many times? _____) On-going (currently experiencing problem)
What would you like to see happen to resolve the problem?	
Signature: _____ Date: Please return this form to:	

Action identified to resolve the grievance	*Date taken*	*By whom*

Complainant satisfaction with implemented action?	

Sample Grievance Log _____

REF No.	Description of Complaint	Date Identified	Corrective/Preventative Action	Responsible Party	Date Resolved	Other information/Status Update

NOTE: This log will be expanded as necessary when in use.