ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) FOR THE REHABILITATION WORKS IN STATE TECHNICAL COLLEGES (STCs) IN BENUE STATE.

FEDERAL MINISTRY OF EDUCATION

Innovation Development and Effectiveness in the Acquisition of Skills (IDEAS) Project

IDEAS

Final Report

Environmental and Social Management Plan (ESMP) for the Rehabilitation Works in State Technical Colleges (STCs) in Benue State

October, 2023

EXECUTIVE SUMMARY

ES 1: Background

The Government of Nigeria has secured USD200 Million from the World Bank for the Innovation Development and Effectiveness in the Acquisition of Skills (IDEAS) Project which aims to strengthen the country's Technical and Vocational Education and Training (TVET) system. The Project Development Objective (PDO) of IDEAS is to enhance the capacity of the Nigerian skills development system to produce relevant skills for the formal and informal sectors. The IDEAS project aims to improve skills acquisition in Nigeria using a comprehensive approach by addressing key aspects of the skills development delivery system. It leverages industry involvement for better labour "market-fit" and "crowding-in" of private resources in the formal training system. The project is structured into four components viz: – i) Incentivizing Public-Private Partnerships (PPPs) for enhanced quality and labour-market orientation of skills development in public Technical Colleges; ii) Improving skills formation for the informal sector; iii) Increasing the availability of competent and motivated technical teachers and instructors in the Nigerian skills space; and iv) Strengthening the regulatory environment and public management capacities for market-oriented skills development, through the Technology and Science Education Department (TSED), National Board of Technical Education (NBTE) as well as the state governments of the participating states. ***(refer to Chapter 2: subsection 2.4 for more information)*** A total number of 38 Technical Colleges (TCs) – twenty (20) Federal Science Technical Colleges (FSTCs) and eighteen (18) State Technical Colleges (STCs) have been identified for rehabilitation in twenty-two (22) states of the country, under the project. The project will provide grant funding for the rehabilitation and upgrading of these Technical Colleges with the aim of transforming their operational models into PPPs, in which industry partners assume a prominent role in institutional governance, management and planning, training and service delivery. Consequent on the above, there will be several civil works, involving rehabilitation and expansion activities. These civil works will raise Environmental and Social (E&S) safeguards risks and impacts and have triggered the World Bank's safeguard policies on Environmental Assessment (EA) (OP 4.01) and Involuntary Resettlement (OP 4.12). On this basis, part of the funds earmarked for Benue State has been set aside to procure consultancy services for the development of an Environmental and Social Management Plan (ESMP) for the Rehabilitation works in the 3 selected STCs (Government Science and Technical College (GSTC) Otukpo, Government Science and Technical College (GSTC) Zaki-Biam and Government Science and Technical College (GSTC) Gbajimba) all in Benue State. The ESMP will be carried out to establish modalities of implementing the project in line with World Bank (WB) Safeguard Policies, while taking into consideration the E&S procedures of the Federal Government of Nigeria (FGN).

ES 2: Rationale for ESMP

The project has been identified as Category B according to the World Bank (WB) Environmental Assessment (EA) screening criteria, meaning that impacts will be site specific and manageable (the activities will involve limited adverse social or environmental impacts that are few in number, generally site-specific, largely reversible, and readily addressed through mitigation measures). For projects with site-specific impacts such as this, the most suitable EA safeguard instrument is an ESMP. The proposed project in the three (3) technical colleges will generally comprise of civil, electromechanical and engineering works to be carried out within the premises of the schools. These works will inevitably result in some E&S impacts thus triggering the World Bank's Operational Policy on Environmental Assessment OP 4.01. The ESMP will identify the E&S impacts of the proposed project and define the roles and responsibilities of all critical stakeholders throughout the project life cycle in order to ensure that mitigation measures including cost estimates are implemented and overall sustainability of the project is assured.

ES 3: Overview of Project Locations

The proposed rehabilitation and renovation works will be carried out within and around technical workshops, laboratories, and offices at selected Government Science and Technical Colleges (GSTCs) in Benue State, these are outlined in the table below.

S/N	Technical College	No of structural Rehabilitations	Geographical Coordinates	
			Latitude	Longitude
1.	Government Science and Technical College (GSTC) Otukpo	5 Structures	N7.100581	E7.660840
2.	Government Science and Technical College (GSTC) Zaki-Biam	5 Structures	N7.521421	E9.630626
3.	Government Science and Technical College (GSTC) Gbajimba	7 Structures	N7.821648	E8.853398

ES 4: Scope of Intervention Works

Based on the CIPs, the proposed rehabilitation, renovation and expansion of the TCs will generally include the following civil works:

Rehabilitation Activities:

1. **Roofing** – Removal of old and dilapidated roofing sheets and replacement with aluminium roofing.
2. **Ceiling Finishes** – Removal of old, damaged, and dilapidated Polyvinyl Chlorides (PVCs), Asbestos ceilings and Board ceilings.
3. **Floor Finishes** – Removal and rehabilitation of damaged floors along technical workshops, project offices, classrooms, etc.
4. **Doors and Windows** – Replacement of doors and windows with steel types.
5. **Wall Finishing** – Wall filling and smearing and finishing with cement.
6. **Painting** – Wall screeding and painting.
7. **Electrical Installations** – New electrical installations and connections; including re-conductoring of existing electrical connections and installation of energy saving Light-Emitting Diode (LED) bulbs, switches, fans, etc.
8. **External Works** – This will include cement, sand, gravel and water mixing. It will also include the transport of materials for civil works into college premises.
9. **Mechanical and Plumbing Works** – These will include several fittings and fixtures as well as the installation of Water Sanitation and Hygiene (WASH) facilities such as:
    a. **Toilets** – Rehabilitation of dilapidated and abandoned toilets; including construction of new ones. Toilet rehabilitation and renovation will also include water reticulation to ensure equitable water supply to toilets and sanitary infrastructure such as hand basins.
    b. **Boreholes** – Installation of boreholes. Installation of overhead tanks and water reticulation to offices, workshops, etc. where use of water may be required.
    c. **Septic Tanks** – Rehabilitation of collapsed or dilapidated septic tanks serving the technical workshops, offices and classrooms.

Refer to chapter 3 for specific rehabilitations for the TCs in order of priority works.

ES 5: Environmental and Social Baseline Description of the Project Areas

Site-Specific E&S Description of the Project Intervention Sites

Technical College	E&S Description
Government Science and Technical College (GSTC) Otukpo	Government Science and Technical College (GSTC) Otukpo (N7.100581 E7.660840) was initially established in 1967. It is situated at the heart of Otukpo LGA along Salem Hospital Road, a feeder road off-Gboko Expressway. It was formerly an all-male college prior to its conversion to a coeducational government science and technical college in the year 2000. The college environment is completely built up and densely populated. The school itself occupies a land area of 10 hectares with a perimeter fencing of about 1.26km. Technical trades such as Motor Vehicle Mechanic Works, Electrical Repairs, Catering Practice, Woodworks, Metal works, etc. are firmly established in the college. Following the IDEAS intervention, the college's admissions have significantly increased, particularly among female technical students. The student population has risen sharply from under 300 to over 800 students, with a male-to-female ratio of 55:45. Technical workshops such as Motor Vehicle Mechanic, Carpentry and Joinery, ICT Workshop and Agricultural Implementation Laboratories has been earmarked for structural rehabilitations and extension. These buildings exhibit signs of disrepair characterized by roof leaks and damage to roof members caused by windstorms. Furthermore, there is need to rehabilitate the existing toilets within these structures and reequip the workshops with technical equipment. Following stakeholder engagement with the Project Manager (PM) of the College, it was revealed that the school currently experiences challenges as regards access to water as a result of the low water table in Otukpo. Consequent to this, students depend on two shallow dug well that runs dry in dry season and/or water tankers to deliver water to the school and this is an

Technical College	E&S Description
	ineffective method because the school lacks sufficient water storage facilities. The school intends to procure more water storage tanks in order to improve the availability of water for its students and staff living within the school vicinity. There are three (3) sanitary facilities present in the entire school and this has been non – functional for 8 years. The student and staff of the college practice open defecation. Consequent to this, the school intends to construct toilet facilities as part of their priority works to completely eliminate open defecation within the college
Government Science and Technical College (GSTC) Zaki-Biam	GSTC Zaki-Biam (N7.521421 E9.630626) as established in the year 1975 as a Government Teachers College, before being converted into a Government Science and Technical College (GSTC) in 2002. Zaki-Biam is a peri urban boundary town in Ukum LGA of Benue State which shares border with Wukari LGA in Taraba State. The college is situated along the Zaki-Biam – Wukari road in Ukum LGA of Benue State, directly opposite the Zaki-Biam General Hospital. The college has established technical trades which includes: Motor Vehicle Mechanic (MVM), ICT, Carpentry, Garment Making, and Catering Practice, all conveniently located within a single building facility referred to as the "Workshop Complex." Facilities such as the workshop complex has been totally abandoned due to its dilapidated condition. While this is good measure to ensure the continuous safety of both students and Staff of the College, this situation has forced the reduction in the quality of education available to students at this college. Additionally, there is the need to reequip the workshops with adequate technical equipment. Following stakeholder engagement with the Project Manager (PM) of the College, it was revealed that there are six (6) wells being utilized by staff and students of the college. However, the water level reduces during the dry season which results to water scarcity within the college. The school intends to install borehole to enhance availability of water for the students and staff of the college. Currently, there are two (2) public latrine sanitary facilities present outside the male and female hostels (one for each hostel), and three (3) water closets available for the staff in the staff room making it a total of 5 sanitary facilities in the entire college. Consequent to this, the school intends to construct toilet facilities as part of their priority works. Furthermore, one-on-one stakeholders' engagement with the PM, revealed that there is a physically challenged student currently enrolled in school with difficulties in walking and consideration are being made to ensure that the proposed rehabilitation will include features that supports people with walking disabilities to have easy access to the workshops (e.g., ramps).
Government Science and Technical College (GSTC) Gbajimba	GSTC Gbajimba was established in 1982 as a Government Techers College. It exists currently as Government Science and Technical College (GSTC), Gbajimba. The college is located in a small fishing village at the confluence of River Benue and River Kastina-Ala in Guma LGA of Benue state. The school is situated on Markurdi-Gbajimba road. The college is located in a rural area with a low population density. The school itself occupies a land area of approx. 7.5 hectares with a perimeter of about 1.08km. The college, while entirely unfenced, is readily accessible to both community locals and visitors. It primarily operates as a day secondary school, offering a range of technical trades including construction, agriculture, ICT, technical drawing, and engineering. The science department, which encompasses science laboratories, classrooms, and administrative offices, shares the same block. Due to a significant increase in student enrolment over the years, the existing laboratories are no longer adequate to accommodate the growing population. This necessitated the proposed expansion outlined in the CIP. Following stakeholder engagement with the PM of the College, it was revealed that the school currently has one borehole which is situated at the staff quarters. The staff quarter is about 1km from the classrooms and is not sufficient for both students and staff of the college. Consequent to this, the school intends to install borehole to improve the availability of water for its students and staff within the school vicinity. There are twelve (12) sanitary facilities present around the modern classroom block (which consist of staff room, offices, laboratories, ICT and classrooms). Considering the number of students (326) and staff (44) within the college, these sanitary facilities are not sufficient to cater for the for the population and most times, students opt for open defecation. Consequent to this, the school intends to construct an extra twelve (12) toilet facilities as part of their priority works to enhance the sanitary practices within the college.

Environmental Baseline Studies

Baseline data was acquired during field visits within the colleges. This is in order to ensure management of project-related adverse impacts on the baseline levels of these parameters.

Sampling Methodology

Water samples were collected from wells (in GSTC Otukpo and GSTC Zaki-Biam) and functional borehole (in GSTC Gbajimba) so as to establish baseline on groundwater quality in the colleges. The air quality within and around the vicinity of the workshops and classrooms proposed for rehabilitation in each college was also analyzed using a Testo 350 XL to serve as basis for future air quality monitoring. Measurements were taken at different locations around the project corridors (selected structures and priority rehabilitations) with the same coordinates for noise. Ambient noise levels around these areas were measured using a Testo 815 Noise meter. The sampling locations, date and time, GPS coordinates are provided in table 9 below. All samples (ground water, air and noise) were collected and measured from 6th – 8th of February, 2023.

Groundwater Analysis

Groundwater samples were collected at the onset of the dry season using sterile dark coloured100ml bijou bottles. Samples for heavy metals and physiochemical studies were also collected in their respective coded plastic containers and stored in ice-packed coolers. Samples were preserved in refrigerators at 4°C prior to laboratory analysis. Fast changing physiochemical parameters such as Temperature, pH, Dissolved Oxygen (DO), Conductivity, Total Dissolved Solids (TDS) etc. were measured in-situ using an in-situ water analyzer.

Physiochemical and Heavy Metal Properties of Groundwater Samples

According to the physiochemical study, the average values of all groundwater samples tested were within the FMEnv Maximum Permissible Limit (MPL). The samples were also subjected to heavy metal analysis. Heavy metals Nickel (Ni), Zinc (Zn), Lead (Pb) and Iron (Fe) were analyzed and results were taken. Based on the results obtained from the analysis, all samples were within the FMEnv permissible limits limits for Ni, Zn, Pb and Fe which are 0.10,3.00, 0.01 and 0.30 respectively. Across the three colleges groundwater sample results for Ni ranged from 0.001- 0.36, Zn ranged from 1.025 – 1.163, Pb 0.0002 - 0.001 and Fe ranged from 0.097 – 0.215. ***Refer to Chapter 4, Subsection 4.4.1 Tables 10 and 11.***

Air Quality

Air Quality (AQ) analysis was carried out using a Testo 350 XL. Measurements were taken around the project corridors (priority workshops, structures proposed for rehabilitation) for each of the three (3) technical colleges. Locations sampled showed results for the technical colleges, CO, NOx, SOx, NH3, and H2S levels were below 0.01µg/m3, meeting the FMEnv permissible limit of 10µg/m3, 0.04-0.06µg/m3, 0.01µg/m3, 0.2µg/m3, and 11.4-22.8µg/m3 respectively. VOC levels were within limits, ranging from 0.006-0.01µg/m3 across locations. Total Suspended Particulate Matter (SPM) were also within the FMEnv permissible limit (<250µg/m3), with readings ranging from 79µg/m3 to 110µg/m3 across sampled locations at the TCs. ***Refer to Chapter 4, Subsection 4.4.1 Table 12.***

Noise Levels

Noise Levels (NL) were measured using a Testo 815 Noise meter. Noise samples were measured with the corresponding coordinates as those for air samples. Results obtained revealed that noise levels at GSTC Otukpo were 31dB (Corridors of the MVM Workshop), 34dB (Around the Carpentry and Joinery Workshop), and 30dB (Computer/ICT Laboratory). Similarly, GSTC Zaki-Biam 's Workshop Complex had an average level of 28.5dB. At GSTC Gbajimba, Agricultural Workshop, Construction Trade, and Engineering Workshop recorded averages of 36dB, 30.5dB, and 25.5dB. All readings are within The National Environment (Noise Standard and Control) Regulation Limit (Part I section 2 of NESREA (2009). ***Refer to Chapter 4, Subsection 4.4.1 Table 12.***

Socioeconomic Baseline Studies

Among the surveyed population in GSTC Otukpo, GSTC Zaki-Biam, and GSTC Gbajimba, majority of respondents were male, constituting approximately 61.54% (32), 60% (48), and 53.33% (32), respectively. Female respondents made up 38.46% (20), 40% (12), and 46.67% (28) in the respective colleges. Across all three colleges, the largest group of respondents, accounting for 49.42% (85), fell within the age range of 35-64 years. Respondents between 25-34 years comprised 28.49% (49), while others aged 15-24 made up the remaining 22.09% (38) of respondents. Regarding religion, 128 (74.42%) of the 172 respondents identified as predominantly Christians, while the remaining 44 (25.58%) were Muslims. The socioeconomic survey revealed that a significant number of respondents, specifically 46.5% (80 individuals), had achieved a tertiary education level. In addition, among the sampled group, 40.7% (70) were single, 44.2% (76) were married, 7.6% (13) were divorced, and 7.6% (13) were either widows or widowers. With regards to monthly income, the majority of respondents in all three colleges had varied earnings: 15.12% (26 individuals) earned between N100,000 – N200,000, while 27.91% (48), 40.69% (70), and 16.28% (28) had monthly incomes ranging between N50,000 – N100,000; N20,000 – N50,000; and N0 – N20,000, respectively. At the time of the visit, GSTC Otukpo and GSTC Zaki-Biam were classified as **"Medium Sized"** colleges with over 500 students, while GSTC Gbajimba was considered "Small Sized" with fewer than 500 students. The survey identified malaria as the most prevalent disease within the colleges, affecting 44.2% (76) of the respondents. Cough was reported by 36% (62) of respondents, while Typhoid affected 19.8% (34). The survey results also revealed that the access roads to all Colleges were generally in good condition which was also confirmed during site visits. Access to healthcare facilities (such as Federal Medical Center, Otukpo, Benue State

University Teaching Hospital, Makurdi, General Hospital Gboko etc.) and potable water was generally rated as "poor" by most respondents across the sample areas. However, these resources were noted to be limited in supply and not readily accessible when needed. Enquiries were also made as regards the colleges' capacity to adjust to the rehabilitation works. The responses obtained revealed some coping mechanisms which includes: a) relocating students to alternate/free classrooms, b) leveraging off peaks (weekends, holidays, off school hours, etc.) for rehabilitation works, c) rescheduling workshop practices; and d) contractor scheduling rehabilitation in batches to allow for classes to occur intermittently. In the Idoma-speaking areas like Otukpo, the community leader is typically referred to as the "Och'Idoma," which means the "King of the Idoma people. Zaki-Biam is predominantly a Tiv-speaking area. In Tivland, community leaders are often known as "Ter," which is equivalent to a chief or king. Therefore, in Zaki-Biam, the community leader might be addressed as the "Ter of Zaki-Biam. Gbajimba is also located in Tivland. Similar to Zaki-Biam, the community leader in Gbajimba might be referred to as the "Ter of Gbajimba.

Gender and Gender Based Violence (GBV) Statistics (Benue State)

According to records provided on ReportGBV[1] – the National Gender-Based Violence dashboard of the Federal Ministry of Women Affairs to report on violence against women and girls in Nigeria, there are currently 142 reported incidences of GBV in Benue State. Of the reported cases (largely constituting false calls, fatal cases, open and closed cases, etc.), about 108 are currently under investigation, with 23.9% (34 cases) successfully closed and 76.1% (108 cases) open and unresolved. A total of one hundred and forty-two (142) GBV cases have been reported in the state within the 1st and 2nd quarter of the year 2023. Generally, the referral pathways for victims of sexual assaults is weak and underdeveloped with the main types of services provided being Psychosocial/Counselling (95.6%), Livelihood/Social Welfare Services (1%) and others[2] (3.4%). Currently, there are about forty - five (45) functional Civil Society Organizations (CSOs) and GBV service providers in the state distributed across its twenty – three (23) LGAs.

GBV Prevalence at Project Areas and Locations

According to records provided on ReportGBV, there are six (6) recorded closed cases in the project LGAs (one (1) case in Otukpo LGA, five (5) in Ukum LGA, and none in Guma LGA). These recorded cases have been closed and there is no recorded case in Guma LGA. Several GBV service providers were identified to be domiciled in the local government and communities some of which include: Enewa Victory Foundation and Support for Women & Widows Empowerment NGO, Ohonyeta Care Givers (OCAG), AOZ Helping Hand Foundation, Leadership Aflame Foundation, Otukpo, etc.

Stakeholder engagement with the Principal, Staff, Students and NYSC Corp members across the colleges revealed that there has been no past incidence or records of GBV. All of the colleges have a disciplinary committee saddled with the responsibility of addressing matters pertaining to GBV and imposing adequate penalties to culpable parties and perpetrators. The disciplinary committee of these colleges is also tasked with all follow-up activities as regards GBV including hand-over to the appropriate service providers. The current procedures established to assist individuals affected by GBV comprise counseling services offered by the school's guidance and counseling unit, as well as involvement of the disciplinary committee. Additionally, immediate on-site administration of first aid is provided, followed by arrangements for transferring survivors to the nearest medical facility. Furthermore, it was suggested that the management of the colleges should establish a Gender Focal Person that will help to escalate GBV issues (Sexual Exploitation and Abuse (SEA)/Sexual Harassment (SH)) to the recognized GBV service providers in the state. The committees will also be trained to cascade the required GBV sensitization and capacity building among the students.

ES 6: Identified Potential Environmental and Social Impacts

Identified Positive Impacts

The project impacts have been robustly presented in Chapter 4 of this document. Nonetheless, the aspects considered when assessing the potential impacts of the project are listed below:

Positive Impacts

[1] **Nigeria FMWASD –** ReportGBV

[2] **Other Services –** Include Referral, Medical/Health Service, Education, Safe House/Shelter, Service of Police/Other Security Actors, Legal Assistance.

- The project will open up the potential for an expanded enrolment of secondary students at GSTC Otukpo, GSTC Zaki-Biam, GSTC Gbajimba. This increase in admissions will consequently lead to a growth in revenue generation for the colleges.
- The rehabilitated structures, workshops, IDEAS Project Offices and provided amenities and equipment in the colleges, will provide more conducive learning environment.
- The construction phase of the rehabilitations may likely create short-term employment opportunities for unskilled workers most of whom are based within proximal communities around the colleges This will foster improved communities' perception and stakeholders' satisfaction of the IDEAS project.
- Considering that the technical workshops do not only serve as a practical space for the students, the proposed rehabilitation and expansion of the facilities will increase technical and vocational service delivery to the communities surrounding the colleges, thereby increasing the colleges Internally Generated Revenue (IGR).
- The proposed rehabilitation at the three technical colleges will improve job satisfaction for the teaching staff as well as the technical workshop instructors as a result of the provision of and access to better work facilities. Furthermore, staff productivity and quality of service delivery will be enhanced.
- The project will create an avenue for continuity or future investment including Public Private Partnerships (PPPs).
- The conversion and use of solar powered boreholes will reduce the negative effects of using diesel-powered generators to pump water thereby reducing operational cost and fostering a healthy, sustainable, and eco-friendly environment.

Negative Impacts

The potential adverse impacts of the proposed rehabilitation/renovation work across the colleges are summarized below.

PRE-REHABILITATION PHASE

Environmental Impacts

- Vehicle movements to and from the technical colleges for material supply could lead to carbon emissions, impacting local air quality.
- The mobilization and transportation of tools, machinery, materials, and workers along access routes leading to workshops within the colleges may generate fugitive dust, potentially causing respiratory issues or exacerbating existing conditions for students, staff, and NYSC corps members.
- Minor, localized increases in noise levels may occur during mobilization to project sites.
- Leakages from stored equipment containing oil. Oil spill may contaminate soil and eventually groundwater.

Social Impacts

- The Otukpo – Gboko road (leading to GSTC Otukpo), Zaki-Biam – Wukari (leading o GSTC Zaki-Biam), and Makurdi – Gbajimba (leading o GSTC Gbajimba) faces heavy traffic throughout the day and until around 4 pm. Transporting materials to the college during this period could worsen traffic, causing significant travel delays for commuters.
- Teenage and adolescent females in the colleges may be predisposed to Gender Based Violence (GBV) during workers' mobilization to site, offload of supplied materials, etc.

REHABILITATION PHASE

Environmental Impacts

- The impact on groundwater quality is predictable; peradventure the proposed borehole is installed near existing septic tanks within the colleges. Vertical infiltration and seepages may occur, potentially contaminating groundwater.
- Drilling activity during borehole installation (in GSTC Zaki-Biam and GSTC Gbajimba) may constitute ground-borne vibrations as well as an increase in ambient noise level around the project corridor. Depending on the duration of exposure, this activity may cause disruption of classes, communication interference, tinnitus (ringing in the ears), fatigue, etc.
- Site-specific increase in noise level during rehabilitation works which may cause nuisance and disturbance to staff and students' administering and attending lectures respectively.

- Slurry and spills from civil work activities such as masonry (including cement mixing, plastering, brick work, etc.), painting, etc. may contaminate the soil.
- Dust generation during materials transport to site through earth road leading to the workshops.
- Minor dust generation during digging of foundation for the extension of some workshops. Dust could also be generated during masonry, cement/POP mixing and use, etc.
- Use of vehicles, generators and construction equipment may also result in GHG emission.
- Potential for increased open defecation by contractor workers during rehabilitation works at the colleges.
- Generation of waste streams, including a) construction and demolition wastes (e.g., wood, large stones, cement/POP bags, metal rods, pipes, disused fixtures, ceramics, sinks, etc.); b) stockpiles of electrical waste (sockets, switches, wires, cables, circuit boards, cathode ray/mercury bulbs, etc.); c) food and other biodegradable wastes (food remains, sachet and bottle water, etc.).
- Occupational Health and Safety (OHS) risks for workers during a) electrical work (injuries, explosions, electrical fires, falls, release of hazardous energy, accidents, etc.); b) mechanical work (exposure to welding fumes, dust, and paints leading to eye irritation, respiratory issues, Musculoskeletal Disorders, noise); c) work at heights (falls, injuries, death).

Social Impacts

- Temporary electricity supply interruptions may affect ICT workshops and the IDEAS office during electrical repairs, disrupting activities reliant on electricity such as lighting, fans, and computer-based tasks.
- Mechanical and plumbing works may lead to temporary interruption of water supply and temporary closure and denial of access to toilet and convenience within the schools.
- Risks of on-site and off-site social issues, including physical assaults (fights, harassment, vandalism), and substance abuse due to an increased labour force.
- Potential for social conflicts between school staff and some construction workers due to non-compliance with school rules.
- An influx of contractor workers and followers offering additional goods and services on school premises.
- Heightened risk of theft of construction materials by local residents, delinquents, or hoodlums from the project communities.
- The possibility of female teachers, corps members, and male/female students (within the school premises) being exposed to sexual exploitation, abuse, and harassment in interactions with construction workers and their followers.
- Spread of communicable diseases including Sexually Transmitted Diseases (STDs), Sexually Transmitted Infections (STIs), etc.
- Students may be at risk of various forms of bullying and violence during interactions with construction workers, particularly if asked to assist with tasks such as purchasing food items or moving materials/equipment.
- Anticipated grievances from students and school staff who may need to temporarily vacate their classrooms, workshops, laboratories, etc., during rehabilitation work within the schools.
- Considering that all civil work occurs within the school premises, public health and safety is crucial, as improperly labelled and stored construction and demolition materials could lead to cuts, injuries, and exposure to hazardous chemicals for students, workers, and staff.
- Students or stray children engaged in horseplay may be at risk of being struck by incoming project vehicles during the transport of construction equipment to and from project sites.

OPERATION PHASE

Environmental Impacts

- Operation of newly installed electrical fittings and lightbulbs may lead to excessive energy consumption.
- Use of rehabilitated workshops, laboratories, offices, etc. may lead to the generation and indiscriminate disposal of solid wastes.

ES 6: Mitigation Measures

The table below summarizes some proffered mitigation measures for the identified adverse impacts. ***Refer to Chapter 5; table 18 - 20 for the detailed ESMP mitigation and monitoring matrix table.***

Identified Impacts	Mitigation Measures
Environmental Risks	
• Vehicle movement to and from technical colleges for material supply may lead to carbon emissions, affecting local air quality.	• Use vehicles, plants and equipment that are in good condition generally less than 5 years old. • Ensure Vehicles are serviced regularly, depending on the frequency of use.
• Fugitive dust generation during mobilization and transportation of materials.	• Reduce vehicle speed when driving through unpaved roads (20km/hr. in schools and 30km/hr. for Residential Areas) • Vehicles transporting material should be covered with tarpaulin • Ensure watering of access route and project site prior to incoming of vehicles and transporting materials into schools.
• Transport of materials as well as demolition activities may result in localized noise level increase. This may lead to hearing impairments, headaches or disruption of learning activities particularly in locations where demolition sites are close to classrooms, staff offices, etc. • Increase in noise levels above the FMEnv permissible limit as a result of borehole drilling activity	• Where possible, retrofit all hired vehicle exhausts with mufflers/silencers to minimize noise from heavy machineries • Convey materials and reschedule noise intensive activities e.g. demolitions for evenings or night hours when classes are over and schools are closed for the day (weekends, holidays, mid-term breaks, etc.). • Schedule drilling activity for weekends or off school hours • Provision and use of PPE for contractor workers.
• Localized, minor and short-term soil contamination from improper management of slurry (mixture of cement), oil, fuel, water, lubricants, paint, etc.	• Collect slurry into designated containers; label appropriately before final disposal by Licensed Private waste collector • Tighten loosed equipment oil valves; • Provide stacking points for project equipment
• Generation of waste streams, including a) construction and demolition wastes (e.g., wood, large stones, cement/POP bags, metal rods, pipes, disused fixtures, ceramics, sinks, etc.); b) stockpiles of electrical waste (sockets, switches, wires, cables, circuit boards, cathode ray/mercury bulbs, etc.); c) food and other biodegradable wastes (food remains, sachet and bottle water, etc.).	• Provision of waste bins. • Food waste and other organic and biodegradable waste should be composted and reused for maintenance of gardens and flowers and flora within the school premises. • Designate a temporary site for collecting waste generated prior to sorting and management. • Ensure proper sorting, storage and final disposal by an accredited third-party waste disposal agency • Implement waste management plan (WMP) (See Annex 5).
• Workers may be predisposed to OHS risks during: a) electrical works (including injuries, explosions, electrical fires, falls, release of hazardous energy, accidents, etc.); b) mechanical works (exposure to welding fumes during welding of doors/windows, inhalation of asbestos dust and exposure to paints may result to asbestosis, eye irritations and respiratory issues, Musculoskeletal Disorders (MSDs), Noise); c) works at heights (falls, injuries, death); d) work at abandoned sites (risk of poisonous bites from snakes and scorpion stings).	• Conduct electrical safety trainings; Implement OHS Management Plan (OHSMP). *(See Annex 6)* • Conduct OHS Training and Education. • Conduct Job Hazard Analysis (JHA) & Process Hazard Analysis (PHA). • Use of PPEs. • Use fall protection equipment. • Safe Work Practices. • Make available polyvalent antivenin. • Enforce the use of PPEs (nose masks, eye googles, etc.) when necessary during rehabilitation activities.
Social Risks	
• The Otukpo – Gboko road (leading to GSTC Otukpo), Zaki-Biam – Wukari (leading o GSTC Zaki-Biam), and Makurdi – Gbajimba (leading o GSTC Gbajimba) faces heavy traffic, especially on market days (Tuesdays and Fridays) throughout the day and until around 10 pm. Transporting materials to the college during this period could worsen traffic, causing significant travel delays for commuters.	• Plan the procurement and delivery of construction equipment and materials during non-market days and weekends when school activities that contribute to traffic congestion are minimized. • Implement Traffic Management Plan (TMP). *(See Annex 4)*
• Temporary electricity supply interruptions in workshops, classrooms, and offices during electrical repairs and fitting may briefly disrupt activities dependent on electricity (e.g., classroom lighting, ceiling fans, computer labs).	• Early and adequate notification of students and teachers of the schools, prior to commencement of works and subsequent power cut offs. • Additionally, carry out works at non-operational hours such as evenings, weekends and public holidays.
• Mechanical and plumbing works may lead to temporary interruption of water supply and temporary closure and denial of access to toilet and convenience within the schools.	• Early and adequate notification of students and teachers prior to commencement of works and where works must be carried out during

Identified Impacts	Mitigation Measures
	operational hours, they shall be done in phases, in a manner that doesn't shutdown water supply completely • Alternative water supply sources should be made available prior to commencement of water works e.g., use of water vendors for supply of water.
• Risks of on-site and off-site social issues, including physical assaults (fights, harassment, vandalism), and substance abuse due to an increased labor force. • Potential for social conflicts between school staff and some construction workers due to non-compliance with school rules. • An influx of contractor workers and followers offering additional goods and services on school premises.	• Ensure workers understand and sign a CoC • Ensure fair wages is paid to Contractor workers. and ensure unskilled labour is sourced within the community. • Establish and maintain a Grievance Redress Mechanism within schools • Continuous trainings and sensitization of students, school staff and corps members. • Reduce labour influx by sourcing required unskilled labour locally.
• Heightened risk of theft of construction materials by local residents, delinquents, or hoodlums from the project communities and banditry in GSTC Gbajimba.	• Employ trained security personnel to guard the construction site. • Establish designated entry and exit points that are monitored by security personnel. • Provide secure storage facilities within the construction site for tools, equipment, and valuable materials.
• The possibility of female teachers, corps members, and male/female students (within the school premises) being exposed to sexual exploitation, abuse, and harassment in interactions with construction workers and their followers.	• Ensure all workers sign the Code of Conduct (CoC). ***See Annex 7*** • Organize trainings and workshops on GBV and SEA/SH and sensitize workers on zero tolerance for sexual integration with students/community. • Guidance and Counselling Unit and Parents Teachers Association (PTA) to sensitize students on safety habits and reporting mechanism for SEA/SH incidents.
• Potential injuries to students due to rough play around demolition waste and construction materials stockpiles.	• Ensure to properly label and store away all construction and demolition materials. • Install danger signs and cordon off areas where hazardous materials are stored. • After use ensure that all hazardous materials are safely disposed by an approved vendor.
• Anticipated grievances from students and school staff who may need to temporarily vacate their classrooms, workshops, laboratories, etc., during rehabilitation work within the schools.	• Early notification of affected classrooms, offices, workshops used for learning. • Propose alternative classrooms for temporarily displaced students. • Carryout rehabilitation works at a time that is not likely to disrupt learning and training activities such as holidays, weekends, etc.

ES 8: ESMP Cost Estimates

To effectively implement the mitigation and monitoring measures recommended in this ESMP, necessary provision will have to be made. The cost of these measures has been estimated and included in the ESMP and presented in the table below. The cost of mitigation by the Contractor will be included in the contract as part of the implementation cost by the Contractor. The overall total estimated cost for the ESMP implementation, monitoring, capacity building, GRM Implementation, Contingency, an ESMP disclosure across the three (3) technical colleges is estimated at **Fifty – Three Thousand, Seven Hundred and Thirty – Five US Dollars, Seven Cents Only** (**USD 53,735.7).** This is equivalent to **Forty – One Million, Five Hundred and Twelve Thousand, Nine Hundred and Seventy – Seven Naira, Seven Kobo Only (N41,512,977.7).** Specifically, the total estimated cost per technical college is estimated as follows:

- ***GSTC Otukpo***; **Sixteen Thousand, Three Hundred and Sixty – Eight US Dollars, One Cent Only** (**USD 16,368.1**). This is equivalent to **Twelve Million, Six Hundred and Forty – Five Thousand, and Twelve Naira Only (NGN 12,645,012).**
- ***GSTC Zaki-Biam***; **Seventeen Thousand, Seven Hundred and Twelve US Dollars, Three Cents Only** (**USD 17,712.3**). This is equivalent to **Thirteen Million, Six Hundred and Eighty – Three Thousand, Four Hundred and Sixty Naira, Two Kobo Only** (**NGN 13,683,460.2).**

- ***GSTC Gbajimba***: **Eighteen Thousand, Three Hundred and Fifty – Nine US Dollars, One Cent Only** (**USD 18,359.1**). This is equivalent to **Fourteen Million, One Hundred and Eighty – Three Thousand, One Hundred and Thirty – Nine Naira, One Kobo Only** (**NGN 14,183,139.1).**

ESMP Overall Estimate

Currency	Mitigation	Monitoring	Capacity Building	GRM Implementation	Contingency	Total
	(A)	(B)	(C)		(10% of A+B+C)	
GSTC Otukpo						
NGN	7,178,442	2,399,509	1,462,418	500,745	1,104,036.9	**12,645,012**
USD	9,292	3,106	1,893	648	1,429.1	**16,368.1**
GSTC Zaki-Biam						
NGN	8,085,404	2,436,591	1,462,418	500,745	1,198,441.3	**13,683,460.2**
USD	10,466	3,154	1,893	648	1,551.3	**17,712.3**
GSTC Gbajimba						
NGN	8,336,153	2,639,901	1,462,418	500,745	1,243,866.7	**14,183,139.1**
USD	10,791	3,417	1,893	648	1,610.1	**18,359.1**
ESMP Disclosure						
NGN	**Lump Sum**					**1,500,729**
USD						**1,943**
					Grand Total NGN	**42,012,656.6**
					Grand Total USD	**54,382.5**

Note: USD to Naira exchange rates as at October, 2023 (1 USD = 772.54 Naira) was applied and figures rounded up

The activities related to environmental and social risk management and monitoring will be integrated in the overall rehabilitation schedule. The ESMP mitigation costs will be included in the biding documents for Contractors, to enable them, implement intervention works in a manner consistent with environmental and social requirements of this ESMP document.

ES 9: ESMP Disclosure

S/N	Action	Remarks
1	**Registration of ESMP with FMEnv**	Following clearance of the ESMP by the Bank, the SPIU shall proceed with the registration of the ESMP at the FMEnv through its website. A payment of N50,000 will be made via remita per project site–Three **(3) technical colleges (N150,000)**. Afterwards, two (2) hard copies and one (1) soft copy of the report will be sent together with the receipt of payment and a letter of **"Request for Disclosure"** addressed to the Minister or Permanent Secretary of the FMEnv as the case may be.
2	**Letter of Approval by the FMEnv**	After all necessary inputs have been incorporated the SPIU will receive an acknowledgement by the FMEnv in form of a letter approving the disclosure of the ESMP.
3.	**Disclosure of the Cleared ESMP in One (1) National Dailies, one (1) State/Local Dailies and radio advertisement or as directed by the Federal Ministry of Environment**	The SPIU will then proceed to disclose the ESMP in one (1) national dailies, one state/local dailies and radio advertisement as required by the Nigeria EIA public notice and review procedures. The purpose will be to inform stakeholders about the project activities; environmental and social risks and impacts anticipated as well as the proposed mitigation measures for identified impacts.
4.	**Disclosure at the World Bank External Website**	The ESMP will be disclosed according to the World Bank Disclosure Policy (OP 17.50).

ES 10: Stakeholder Engagement

A summary of the consultation at the Colleges and host communities is presented below.

Date of Consultation	9th August 2023
Project Location	Benue State Environmental Sanitation Authority (BENSESA), Tarka Road, High Level 970101, Makurdi, Benue
Name of Stakeholder(s)	Director, Benue State Environmental Sanitation Authority (BENSESA)
Language of communication	English
Subject Matter	Management of asbestos wastes and other construction wastes from project sites

Questions/Concerns/Complaints/ Suggestions (From Stakeholders)	Some areas of concern were as well as constraints. • The specific works/scope of sub-project(s) • The specific areas where the proposed works will be carried out
Response / Suggestions (By the Consultant)	• Specifically, the project will involve expansion and rehabilitation of existing structures, removal of asbestos and drywall ceilings, etc. • The wastes will be generated mainly at the respective colleges /Project intervention sites (GSTC Otukpo, GSTC Zaki Biam and GSTC Gbajimba).
Date of Consultation	6th – 8th of February 2023
Project Location	GSTC Otukpo, GSTC Zaki-Biam and GSTC Gbajimba
Name of Stakeholder(s)	GSTC Otukpo (Project Manager, ESSG Officer, Procurement Officer, Gender Officer, Students, Staff), GSTC Zaki-Biam (Principal, Project Manager (PM), ESSG Officer, Students, Staff) and GSTC Gbajimba (Principal, Project Manager (PM), Procurement Officer, Communication Officer, Accountant, ESSG Officer, Students, Staff).
Language of communication	English
Subject Matter	Brief overview on the ESMP for envisaged potential environmental and social concerns during implementation of intervention works
	The Consultant gave a brief overview on the ESMP for the proposed rehabilitation of workshops and sensitized the stakeholders on some envisaged potential adverse E&S risks & impacts including beneficial impacts likely to occur during the pre-rehabilitation, rehabilitation, and operation phases of project implementation; and how the project aims to redress these issues. The project manager explained the scope of the proposed rehabilitation for the colleges to the Consultant in order of priority. The Project Manager alongside other members of the CIU of the three colleges led the consultant to proposed location for rehabilitation or expansion for a physical inspection to ascertain the modalities as well as current state of these structures and how it may have adverse effect on the school environmentally and socially. The consultant inquired about the availability and state of various basic amenities within the colleges such as water, electricity supply, clinic/sickbay etc. Information on Waste management practices within the colleges was also obtained of which it was learned that wastes generated in all the colleges are collected and burned at a specific location within the school premises.
Questions/Concerns/Complaints/ Suggestions (From Stakeholders) in GSTC Otukpo	• The Project managers of GSTC Otukpo raised a concern about the water scarcity faced by the entire Otukpo community
Response / Suggestions (By the Consultant)	• With regards to equitable water supply, the Consultant made clear that each school has prepared its own CIP which includes a list of priority interventions as appraised, assessed and confirmed by their respective SPIUs. They went further to state that water supply and reticulation works will be carried out in consistence to the CIPs. While the civil works are targeted at improving water supply in toilets specifically, they may not cater for supply all through the school premises in some cases. • The consultant suggested that intentions to drill borehole should be reconsidered and instead, water storage facilities be constructed, enough to hold water that can serve the school for a few days owing to that fact that several unsuccessful drilling attempts have been made. This is due to very low water table in the Otukpo region of Benue state.
Date of Consultation	10th - 11th August 2023
Project Location	Otukpo, Zaki Biam and Gbajimba communities
Name of Stakeholder(s)	Otukpo (Traders Farmers, Artisans), Zaki Biam (Fishermen, Traders, Farmers), Gbajimba (Fishermen, Farmers)
Language of communication	English

Subject Matter	Brief overview on the ESMP for envisaged potential environmental and social concerns during implementation of intervention works
Questions/Concerns/Complaints/ Suggestions (From Stakeholders)	The stakeholders across all three communities welcomed the Consultant and the following concerns were raised: • A trader in Otukpo enquired to know if the students in the college will vacate the classrooms as well as the college premises during the rehabilitation works. • A fisherman in Zaki Biam complained about the current situation of the sanitary facilitates within the GSTC Zaki Biam as he stated that his children who are students of the college often complains during the visiting days and holidays about the dilapidated state and unavailability of the sanitary facilities available within the college. Furthermore, he inquired to know if construction of new toilets is part of the rehabilitation works proposed for the college. • An artisan in Gbajimba expressed his joy on the upcoming rehabilitation works in GSTC Gbajimba. He also enquired to know when the rehabilitation works will commence. Additionally, he introduced himself as a welder and enquired to know if the college will employ his services during the rehabilitation works.
Response / Suggestions (By the Consultant)	• The Consultant responded by saying that it has been advised in the ESMP report that the rehabilitation works should be undertaken during weekends, and holiday periods. He further stated that if the timeframe for the rehabilitation works is short, alternatives will be proffered. He ended by saying that the rehabilitation works will not deprive the students from learning. • The Consultant noted his complaints and responded by saying that each college prepared CIPs in order of priorities and GSTC Zaki Biam incorporated construction of modern toilets in their CIPS. He further stated that this means sanitary facilities will be constructed by the IDEAS project to eliminate the unavailability of sanitary facilities. • The Consultant responded by saying that unskilled labour will be sourced locally (within the host communities). He further stated that the Contractors will engage the unskilled labour formally. However, he concluded by stating the employment will be short term and last for as long as the services are needed.