1. Introduction

Sudan's Poverty Reduction strategy 2012-2016 puts emphasis on strengthening Governance and institutional capacity, human resources development, and employment creation. In this regard, the National Development Plan for the same period entails five key result areas of which building institutional capacities is among the prominent areas. Also, the Sudan's Capacity Building 2014-2016 focuses on Governance and accountability from one side and Skills and Technology to supporting the country human and institutional capacity required to better respond to its fragility and rapidly changing situation from another side.

Although the Strategy and Development Plan provide a wide vision for the attainment of the set goals, skills mismatch continues to have a high incidence on unemployment among youth population in Sudan and the lack of innovative pedagogies and efficient training system leads to poor education output and high leakages. Also, investment in TEVT is very low and negative perception/ experience of TEVT still prevails, especially for girls.

To address the country's current fragility, the Republic of Sudan has approached the African Development Bank seeking support project with its skills development strategy, which contributes towards the country's development policy framework. The project shall contribute to addressing the social and economic fragility drivers identified by the Fragility Assessment in Sudan. In supporting the country to build the more critical skills in industry, agriculture and technology, the project aims at reducing fragility in TEVT system, focusing on two of the most vulnerable states to conflict, namely White Nile and Northern Kordofan, to additionally addressing the unequal allocation of public resources and public services.

The development objective of the project is aimed at supporting capacity building, for the education and training sector in Sudan and the development of technical and vocational skills needed in the Sudanese economy. Thus, the project beneficiaries are teachers, trainers, education planners and administrators, students and the people of Sudan in general.
2. Brief Project Description and Key Components

The project will consist of three components:

Component I – Support to Capacity building for improved Governance

The purpose of this component is to strengthen the strategic and operational capacity of the education and training system to sustain the major functions of planning, management and evaluation that are necessary to produce the required national human capital. It is divided into two subcomponents:

Subcomponent 1.1: Education policy and management development

The project will upgrade the capacities of a critical mass of teachers, teachers' trainers, 450 educational planners, managers, faculty lecturers and assistants to effectively contribute towards the realization of the national education goals.

The sub-component will support: (i) the training of 30 lecturers and teaching assistants in educational management and the organization of training courses for 15 faculty members of staff and education administrators (within the FMoGE) (ii) the provision of masters degrees in education planning; (iii) the development and dissemination of a basic module on the principles of educational administration and management, and (iv) the implementation of an advance module on monitoring and evaluation as well as education decentralization.

Subcomponent 1.2: Support to transformative in-service teachers training

To enhance long term teacher professional development, the project will provide funding for: (i) the construction and equipment of the National Center for Teacher Training in Sudan (NCToT); (ii) the rehabilitation of the Bakht-Alrida national center for curriculum development and educational research to establish the Training center (Bakht-Alrida NCCDER) for 200 trainers and equip it with high quality designing computers, heavy duty printers, photocopiers and scanners for textbook printing and designing ; (iii) the rehabilitation and equipment of the Faculty of Technical Education at Al-Jaraf South for technical teachers training (Al-Jaraf South FTE); (iv) the development of a digital learning resources and ICT platform within the NCToT where teachers and trainers could access quality training resources.

Sub-component 1.3: Strategic technical assistance to the National Council for Training (NCT)

This subcomponent aims at providing the NCT with expertise to assess its working tools and strategies in order to identify the gaps and further come up with an up-grading operational training plan. The NCT will also be supported in the recruitment of a technical assistant to carry out a feasibility study for setting-up a national training find and the training of 10 NCT senior and technical management staff in specific short courses.

Component 2 - Increasing inclusive access to quality technical and vocational training.

The purpose of this component is to support the Government’s efforts to enhance access to equitable education and training by strengthening the capacity and improving the quality of the existing technical and vocational training facilities in the most disadvantaged areas.
Subcomponent 2.1 - Rehabilitation and equipment of TES and vocational institutes
Under this subcomponent, the project will renovate 6 technical schools, 3 vocational institutes in Khartoum, North Kordofan and White Nile States. The beneficiary institutions are: (i) the Omdurman Technical school for girls; (ii) the Omdurman Technical school for Boys; (iii) the Omdurman South Vocational institute for boys; (iv) the Selma NEMA Vocational institute for girls in Omdurman; (v) the Elobied Technical school for boys in North Kordofan; (vi) the Elobied Technical school for girls in North Kordofan; (vii) the Oum Rawaba Technical school for boys in North Kordofan; (viii) the Kosty Technical school for boys in White Nile; and (ix) the Rabak Mixed Vocational Institute in White Nile. In addition to the rehabilitation works, the acquisition of equipment for workshops and classrooms, an ICT lab will provided to each beneficiary school or institute.

Subcomponent 2.2 - Support to curriculum and pedagogy reforms and assessment
The project will also provide technical assistance to conduct three skills needs assessments in North Kordofan, in White Nile and in Khartoum. The development of the curricula for teachers’ training in 28 trades will be supported as well as the development and implementation of the training plan for the NCToT.

Component 3 - Project Management
This component will include specific support for project coordination, management and evaluation. It will, therefore, provide assistance and expertise in procurement, financial management, gender and skills upgrading for the project management team. Under this component, the project will organize training sessions on financial management and procurement at the federal and state levels. The project will finance the design of the monitoring and evaluation system and it will include a pilot impact evaluation on the introduction of ICT as an enabling pedagogical tool with a gender perspective in delivering ToT.

The potential activities that are likely to cause environmental and social impacts are confined to Subcomponents 1.2 and 2.1 activities, which include the rehabilitation and construction works of the training institutions and supply of equipment.

3. Major Environmental and Social Impacts and Climate Change Risk
The most significant benefit derived from this project will be well-developed institutional capability and capacity building for TEVT.

The project has been classified as Category 2. Even though the project is not expected to have significant adverse impacts on the environment, it includes construction elements of which rehabilitation works for technical schools and vocational institutes and new constructions for the teachers training centers and faculty. For this purpose, an environmental and social assessment (ESIA) of the project is being carried out.
The project activities will mainly comprise rehabilitation and renovation civil works, in addition to repairs and replacement of existing equipment, tools and machinery. This will have very limited negative impacts on the local environment with waste management and disposal being the significant source of impacts.

The potential impacts associated with the implementation of the educational infrastructure rehabilitation and renovation project and the significant adverse impacts associated with construction and operation of the project are listed in the following Table.

Environmental, Health and Safety Issues Relating to the Implementation of the Education Rehabilitation and Renovation Project and the Operation of the TEVT Schools and Institutes

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Potential Impacts During Implementation</th>
<th>Potential Impacts During Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Quality</td>
<td>Dust from construction activities. Traffic-related air quality impacts.</td>
<td>Impacts of emissions from workshop operations on ambient air quality.</td>
</tr>
<tr>
<td>Aquatic Environment</td>
<td>Control and management of site drainage. Wastewater discharge.</td>
<td>Oil, Diesel and Hazardous chemical spillage.</td>
</tr>
<tr>
<td>Noise and Vibration</td>
<td>Noise from rehabilitation / renovation activities.</td>
<td>Noise from workshop operations on surrounding land uses.</td>
</tr>
<tr>
<td>Flora and Fauna</td>
<td>Loss of habitat or species. Disturbance or damage to adjacent habitat of species.</td>
<td>Disturbance or damage to adjacent habitat. Contamination to surrounding habitat.</td>
</tr>
<tr>
<td>Major Accident Hazards</td>
<td>Risk to third-party hazardous activity.</td>
<td>Risk to third-party hazardous activity. Risk to TEVT institutions of third-party hazardous activity.</td>
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</tbody>
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<tbody>
<tr>
<td>Occupational Health and Safety</td>
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<tr>
<td>Accidents.</td>
<td>Accidents.</td>
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<tr>
<td>Effects on health of workforce.</td>
<td>Effects on health of students /</td>
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<tr>
<td>Safety at work.</td>
<td>workforce.</td>
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<td></td>
<td>Safety at work.</td>
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For each of these items, a concise description and evaluation of the significance of potential impacts of the TEVT schools and institutes is presented in the ESMP.

The social impact of the Development Project on Gender is absolutely positive, for the proposed maintenance and renovation works will provide equal opportunities for girls and encourage them to join technical and vocational education. The health and social improvements that the project will entail will make it safe concerning the basic hygienic services such as washing, modern clean toilets that are enclosed within covering walls. Also, many people hope that the technical and vocational schools and institutes will have internal accommodating sections for girls who come from distant rural poor areas.

The social impact of the Project is very attractive for all stakeholders given its role in connecting the technical and vocational schools and institutes with the neighboring communities, thus turning them into productive units serving the local economy and providing extra income that may be used in enhancing the social services for the students, especially those poor living in distant rural poor areas. Accordingly, there is expectation that the Development Project will enhance the level of learning and training process and will change the idea people now have about the technical and vocational schools, and thus will make these schools qualifying units that will attract new work opportunities in the industrial and commercial streams.

Non of the rehabilitate/ renovated and equipped TEVT schools and institutes is vulnerable to increased water levels and rain-floods or other extreme events in their specified areas within the three states of Khartoum, White Nile and South Kordofan.

The construction and renovation works undertaken under this project are not likely to affect the greenhouse gases emitted by Sudan that remains among the countries where the level of emission per capita is the lowest. The project will also impose a general positive impact on climate change. Indeed, in revising the curricula for teacher’s training the project will raise students and teachers’ awareness about the best practices to control the harmful effects of industry, mis-utilization of water and natural resources as well as non-environment-friendly equipment on climate change.

### 4. Enhancement/Mitigation Measures and Complementary Initiatives

Impacts associated with construction activities will be mitigated through proper supervision of the contractor, and by binding the contractor in the contract documents to ensure that impacts are avoided or minimised. The Project bidding documents contain an environmental and social management plan that specifies environmental, social and occupational health and safety
requirements for the contractor’s/workmen’s; excavation and earthworks; transportation and storage of materials and equipment; storage and handling of chemicals and dangerous substances; solid waste management; noise; traffic management; stormwater and wastewater; pest control; sanitary conditions; fire prevention and control; protection of environments and natural resources; control of impacts on historical, cultural and ethnic heritage; temporary disruption of infrastructure and services; requirements on completion of the works; and local community relations (including safety signage and providing information on any disruptions to the public).

Mitigation measures introduced into the design and rehabilitation/renovating phase of the project institutions will be carried forward into the operational phase by the Government Authority. Many mitigation measures have already been integrated into the design rehabilitation/renovation works of the project in order to minimize any operational impacts on the environment. Mitigation measures such as EHS good practice operations and water/sewage discharge controls are, for example, considered integral to the design rehabilitation/renovation works of the project.

Implementation of good site practices: rehabilitation/ renovation method is not blasting, but is top-down deconstruction for replaced/removed parts and equipment, in the reverse order to that of construction/erection, progressive, level by level having regard to type of replacement.

Mitigation activities will include: (i) no discharge of effluents into the surrounding environment - all effluents shall be collected and removed off site for treatment by approved firms; (ii) proper site management to minimize surface water run-off, soil erosion, soil remediation activities and the impacts of liquid effluents; and (iii) adequate maintenance of drainage systems to prevent any overflow.

There is a potential for finding Asbestos Containing Materials (ACM) during dismantling or rehabilitation/renovation processes for reconstruction or re-erection of rehabilitation/renovation parts. If found, standard good practice measures will be implemented as follows:

- removal of asbestos materials in certain locations may run more smoothly if both asbestos contractors and civil rehabilitation/renovation contractors work in tandem. This is due to the convenience of the main civil rehabilitation/renovation contractor providing access (scaffolding etc.) to the ACM, for the asbestos contractor and avoiding duplication of effort.

Collection, segregation, re-use, recycling, storage, transportation and disposal measures are recommended to avoid or minimize potential adverse impacts. The Contractor will incorporate these recommendations into a Waste Management Plan that incorporates site specific factors, such as the designation of areas for the segregation and temporary storage of reusable and recyclable materials.

Mitigation measures introduced into the design and construction phase of the project will be carried forward into the operational phase by the FMoE. Many mitigation measures, as described
above will be integrated into the design of the project in order to minimize any operational impacts on the environment. Mitigation measures such as, noise silencers and water effluent controls are for example considered integral to the design of the project.

Good local and international construction practice in Environment, Health and Safety (EHS) will be applied at all times during rehabilitation/ renovation construction activities and account will be taken of local customs, practices and attitudes.

**During Construction:** FMoGE will ensure that "construction activities are undertaken in a manner which does not present hazards to workers' health and safety. In particular, the project will establish and integrate policies and procedures on occupational health and safety into the construction and operation. Emergency and accident response procedures will also be included in an Environmental Health and Safety (EHS) manual for the schools and institutions. The following measures will be carried out during the construction phase: (i) compliance with international standards for good practice; (ii) adherence to local and international guidance and codes of practice on EHS management; (iii) management, supervision, monitoring and record-keeping as set out in the construction contracts; (iv) implementation of EHS procedures as a condition of all contracts; (v) clear definition of the EHS roles and responsibilities of the companies contracted to work on sites and to all their individual staff (including the nomination of EHS supervisors and/or coordinator); (vi) pre-construction and operation assessment of the EHS risks and hazards associated with construction and operation, including consideration of local cultural attitudes, education level of workforce and local work practices; (vii) provision of appropriate training on EHS issues for all employees on site, including initial induction and regular refresher training, taking into account local cultural issues; (viii) provision of health and safety information; (ix) regular inspection, review and recording of EHS performance; and (x) maintenance of a high standard of housekeeping at all times.

**During Operation:** The following mitigation and management measures will ensure that the health and safety of staff and any visitors on and to the specified sites is not jeopardized during operation of the project: (i) development and implementation of an Operational Health and Safety Plan with appropriate training; (ii) provision of training in use of protection equipment and chemical handling; (iii) clear marking of work site hazards and training in recognition of hazard symbols; (iv) installation of vapor detection equipment and control systems; (v) development of site emergency response plans; (vi) all personnel working or standing close to noisy equipment will be required to wear noise protectors; and (vii) drinking water will be supplied to the TEVT schools and institutions via local filtration facilities which will comply with drinking water standards published by the World Health Organization.

5. **Environmental and Social Monitoring Program**

An Environmental and Social Baseline Survey (ESBS) will be conducted for the TEVT institutions Rehabilitation/ Renovation Project to provide a systematic assessment of past and present environmental and social liabilities associated with the project prior to the physical implementation of the rehabilitation/ renovation program. The Survey results will constitute the findings, conclusions and recommendations that will be carried forward into the ESMP and
require follow-up actions. The findings will be used to revise, re-design, and improve the ESMP where necessary.

**Monitoring of Impacts During Construction and Operation**

- **Ambient Air Quality**

  The use of $\text{SO}_2$, NOx, CO and TSP/$\text{PM}_{10}$/PM$_{2.5}$ analyzer allows for baseline air quality monitoring. The provision of portable monitors will provide the basis for “validating” the conditions set in the ESMP.

- **Aquatic Environment**

  Monitoring of impacts on the aquatic environment will include monitoring of construction and operation actions concerning the effluents discharged.

  Monitoring data will be analyzed and reviewed at regular intervals and compared with guidelines of best practice. Records of monitoring results will be kept in a suitable format and will be reported (in summary format with any exceptions identified) to the responsible government authorities and the AfDB or any other concerned authority as required. As a result, the project Governmental bodies, in discussion with the AfDB, in addition to any other concerned authority, will review the need to implement any additional mitigation features, such as provision of water treatment facilities on site and also on the need to continue monitoring.

- **Waste Monitoring**

  Wastes generated on site and collected for disposal by skilled firms will be referenced, weighed and recorded. Environmental audits will be undertaken which will assess the quality and suitability of on- and off-site waste management procedures.

Issues that will be monitored during implementation and development of the project, capacity development and project management include:

- The development of environmental management plans, water quality monitoring plans, occupational health and safety plans, leakage monitoring plans, energy and chemical management plans.
- Hiring of the social / gender expert within the project Environmentall and Social Management Unit (ESMU) to assist the PMU, FMoE and SMoEG in mainstreaming gender in its operations and into its environmental and social safeguards.
- Strengthening of the environmental and social safeguards of the FMoE, SMoEG and TEVT institutions.
• Capacity building of the existing environmental and social safeguards of the FMoE, SMoEG and TEVT institutions through increased capacity of the Environmental, Health and Safety (EHS) Safeguards expert.
• Social mobilization initiatives and effective communication.
• Inclusive hygiene promotion.

Issues that will be monitored during rehabilitation and renovation of the TEVT institutions include:

• Dust emissions during earthworks.
• Traffic safety.
• Damage to electricity lines and water supply pipes.
• Disrupted access for the public due to construction works.
• Occupational health and safety of the labour force.
• Disposal of solid and liquid waste.
• Management of chemicals, oils, and other hazardous substances.

During operation of the TEVT institutions, monitoring of the following will be critical:

• Proper functioning of the water supply and sanitary sewage facilities to ensure full hygienic practices.
• Proper functioning of workshops.
• Strict commitment to EHS requirements.
• Disposal of solid waste.

6. Public Consultations and Disclosure Requirements


The key environmental issues raised during this consultation process included the following:
• All parties consulted expressed their overall approval for the project. Local Stakeholders commented that the project will be central to securing high quality technical and vocational education in the whole country and the project areas and will benefit the local economy through skilled labor opportunities.

• Local stakeholders and council leaders considered the social and economic impact of the project to be wholly positive. They also very much appreciated enhancement of the binding links between the technical / vocational education and the local communities, including industrial and commercial sectors.

• All local stakeholders expressed the highest concern about the quality of potable water and the quality of sanitary disposal of sewage and liquid effluents. The suggestion was made that residues of sewage wastewater could be re-used producing bio-fuel at site.

• There was concern over compliance with air quality standards and the effect that non-compliance could have on securing healthy respiratory environment, particularly within workshops and kitchens and related training and industrial processes. The suggestion was made that solar energy could be used as an alternative to the highly in-door polluting wood fuel.

• An underlying concern expressed by all local stakeholders was compliance with environmental regulations. Assurances from FMoE/SMoEG are sought to the effect that TEVT institutions will guarantee implementation of the environmental compliance measures which are stated in the Environmental and Social Management Plan.

These issues were subsequently taken into account in the preparation of ESMP documentation both for local permitting requirements and the operational reports.

7. Institutional Arrangements and Capacity Building Requirements

During rehabilitation/renovation, FMoE/SMoEG will ensure that all contracts with Contractors and sub-contractors stipulate all management measures (as given in this ESMP), operational design criteria and environment, and health and safety standards which must be implemented at the project site.

Implementation of these measures will be enforced and supervised by the Assistant Project Manager under direct supervision of FMoE/SMoEG and PMU-ESMU at the schools/institutes field level, who will have direct responsibility for the Environment, Safety and Quality Assurance program on site during rehabilitation/renovation and operation. The Assistant Manager is responsible for ensuring that rehabilitation/renovation works comply with the requirements of the ESMP and all environmental permits.
During operation, direct responsibility for environmental compliance and the implementation of the mitigation, management and monitoring measures described in the ESMP report, will continue to be with the Assistant Manager at the schools/institutes level. He will report directly to the General Manager of FMoE / SMoEG.

The training program will be designed to ensure that appropriate skilled staff are used to operate the TEVT institutions at all times. In addition to this environmental training for all staff employed at the project, special environmental training will be given to the staff employed for the Environmental Management Unit (EMU).

FMoE/SMoEG will establish and integrate policies and procedures on occupational health and safety into the operation of the project institutions which meet the requirements of the AfDB and Sudanese guidelines. The policies and procedures will also be designed to comply with all manufacturers safety data sheets, so as to provide a safe and healthy working environment.

Occupational health and safety programs will be supported by staff training for the project institutions and the appointment of the Assistant Manager.

8. Estimated Costs

Since many of the mitigation measures presented are considered an essential, integrated component of the rehabilitation/ renovation and operation works, it is not possible to separate the specific costs of their implementation from the overall construction and operation costs. However, an attempt for best estimate the relevant cost is presented in the ESMP tables. The total envisaged costs is around 1,445 million US Dollars.

9. Implementation Schedule and Reporting

It is expected that the project will commence in June 2015 and be completed by end of 2020.

The contractor will have an Environmental and Social Expert on his staff who will report to the Assistant Project Manager at the schools/institutes field level. The latter will then report on a weekly basis to the FMoE/ SMoEG management through the PMU/ESMU. This will be streamlined in the procurement documents. The Environmental and Social Management Unit (ESMU) (environmental specialists, health and safety expert and sociologist/gender expert) will monitor the implementation of the ESMP. A quarterly report will be sent to the Bank for review and follow-up.

10. Conclusion

It is anticipated that the project will provide a net positive socio-economic impact through the provision of the many direct and indirect benefits to the students and the community in large. In addition, the improvements of educational and training facilities, will maximize these positive
impacts through the development of local skill base and will also generate increased demand for TEVT.

Land expropriation is not likely for the project.

Overall, the assessment indicates that no significant environmental and social impacts will occur as a result of the construction or operation of the Development Project and, when taken together, the environmental and social adverse impact will not be significant and the overall environmental and social impact will provide a totally beneficial effect on the entire society.

11. References and Contacts

References:


Contacts:

- Ministry of Finance and National Economy (MoFNE) - Office of International Cooperation.
- Federal Ministry of Education (FMoE).
- Ministry of Environment, Forestry & Physical Development.
- Ministry of Agriculture & Irrigation.
- Omdurman South Vocational School for Boys.
- Ministry of Education and Guidance, Northern Kordofan State.
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• Kosty Technical Secondary School for Boys – White Nile State.
• Rabak Mixed Vocational Institute – White Nile State.
• Ministry of Education and Guidance – White Nile State.