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Annex A: Environmental Review Form for Sudan Rural Land Governance Project

A. Applicant information

Organization: Tetra Tech ARD	Parent grant or project: Sudan Rural Land Governance (SRLG) Project, Contract No. EDH-I-00-05-00006, Task Order 12
Individual contact and title: Eluzai John Matata Program Technical Assistant	Address, phone & email (if available): Plot: No. 329, Block 3K South Juba Na Bari Juba, South Sudan
Proposed activity (brief description): Bor and Yambio County Land Authority Office Buildings The project seeks to support the Bor and Yambio County Land Authorities through the construction of office and meeting space and the provision of equipment and furniture. The office space will provide the County Land Authorities with a space to meet and conduct work towards greater land tenure security in their counties. The project will build two offices, a meeting room, two latrines, a plumbing system and a rainwater catchment system for each county.	Amount of funding requested: \$120,000 total, \$60,000 each for the Yambio and Bor sites
	Period of performance: December 1, 2012 – April 30, 2013
	Location(s) of proposed activities: Bor town, Bor South County, Jonglei State and Yambio town, Yambio County, Western Equatoria State

B. Activities, screening results, and findings

Bor and Yambio County Land Authority Office Buildings	Screening result (Step 3 of instructions)			Findings (Step 6 of instructions. Complete for all moderate/unknown and high-risk activities ONLY)		
	Very Low Risk	High-Risk*	Moderate or unknown risk*	significant adverse impacts are very unlikely	With specified mitigation, significant adverse impacts are very unlikely	Significant Adverse impacts are possible
1. Planning and design phase	✓			✓		
2. Construction work: Construction of office and meeting space and the provision of equipment and furniture. The project will build two new offices, a meeting room, two latrines, a plumbing system and a rainwater catchment systems			✓		✓	
3. Operation	✓			✓		

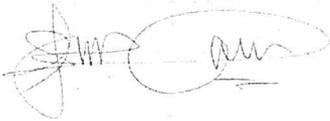
C. Summary of recommended determinations

The proposal contains		(Equivalent Regulation CFR 216 terminology)
X	Very low risk activities	Categorical exclusions(s)
	After environment review, activities determined to have no significant adverse impacts	Negative determination(s)
X	After environment review, activities determined to have no significant adverse impacts, given specified mitigation and monitoring	Negative determination(s) with conditions
	After environment review, activities determined to have no significant adverse impacts	Positive determination(s)

D. Certification:

I, the undersigned, certify that:

1. The information on this form and accompanying environmental review report (if any) is correct and complete.
2. Implementation of these activities will not go forward until specific approval is received from the C/AOR.
3. All mitigation and monitoring measures specified in the Environmental Review Report will be implemented in their entirety, and that staff charged with this implementation will have the authority, capacity and knowledge for successful implementation.



ELUZAI JOHN MATATA

June 15, 2012
SRLG Program Technical Assistant

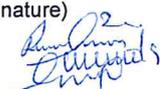
Note: if screening results for any activities are "high risk" or "moderate or unknown risk," this form is not complete unless accompanied by an environmental review report.

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Notes:

1. For clearance to be granted, the activity MUST be within the scope of the activities for which use of the ERF is authorized in the governing IEE. **Review IEE before signature.** If activities are outside this scope, deny clearance and provide explanation in comments section. The Partner, C/AOR, MEO and REA must then confer regarding next steps: activity re-design, an IEE or EA.
2. Clearing an ERF containing one or more findings that **significant adverse impacts are possible** indicates agreement with the analysis and findings. It does NOT authorize activities for which "significant adverse impacts are possible" to go forward. It DOES authorize other activities to go forward. The Partner, C/AOR, MEO and REA must then confer regarding next steps: activity re-design, an IEE or EA.

Clearance record

C/AOR	(print name)	(signature)	(date)
<input type="checkbox"/> Clearance given <input type="checkbox"/> Clearance denied	Lokosang Lemu		12-11-12
<input checked="" type="checkbox"/> Clearance given <input type="checkbox"/> Clearance denied	Richard Nyarsute		12/11/12
<input type="checkbox"/> Clearance given <input type="checkbox"/> Clearance denied			
<input type="checkbox"/> Clearance given <input type="checkbox"/> Clearance denied			

C/AOR, MEO and REA clearance is required. BEO clearance is required for all "high risk" screening results and for findings of "significant adverse impacts possible. The BEO may review." If clearance is denied, comments must be provided to applicant (use space below & attach sheets if necessary).



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Annex B: Environmental Review Report

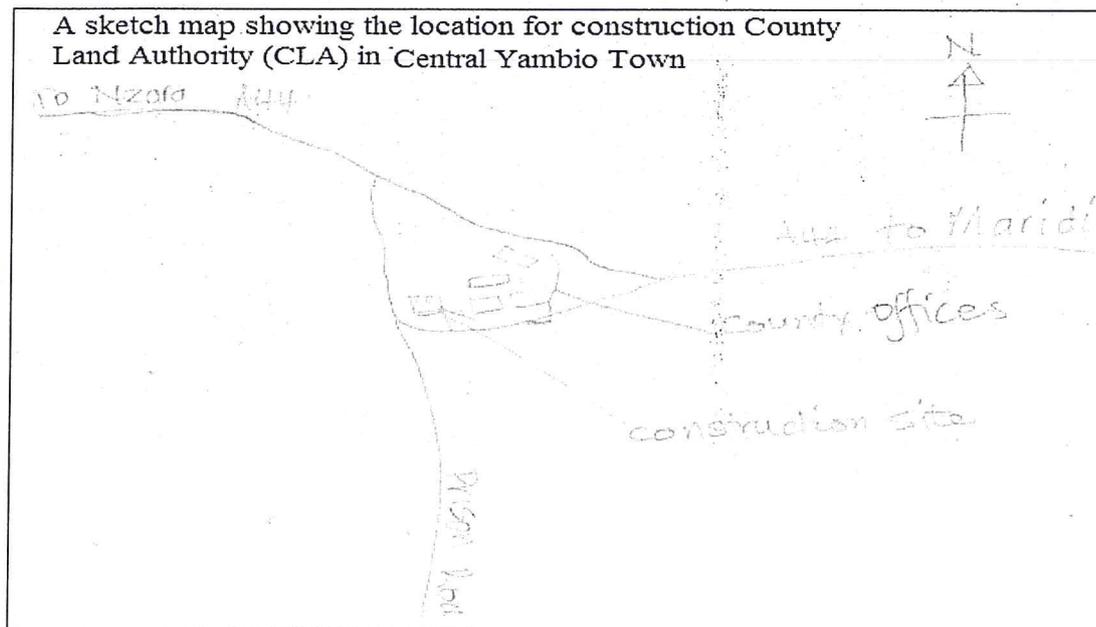
A. Project Title

Bor and Yambio County Land Authority Office Buildings

B. Environmental Situation

The topography of the areas of land allotted for the construction of County Land Authority (CLA) offices are relatively flat and gently slope for over 100 meters. They are located on the property of the county head offices on government land. The area has short grass, planted trees and a few scattered natural trees. Except for Yambio, the area is bare, regularly cleaned as part of a larger administration arena. The soils in the Bor plot are black cotton clays and loam. In Yambio, the soils are loam and silt loam. The proposed construction will take place on secure local government land, ideally reserved for housing government offices/departments. Neither massive vegetation clearance nor displacements and land grading are required. There are no water bodies in about five hundred meters square of the sites, but the construction works shall be supplied with water from either the River Nile by water tank trucks or locally from bore holes in the case of Bor. In Yambio, water will be obtained from the distant river Sue or the natural dammed reserve at the town periphery. The water table in Bor and Yambio is low for over 10 meters deep. Even drilling of boreholes requires a drilling machine (AMREF, 2005; INTERSOS, 2010)





C. Standards

The Environmental Guidelines for Small-Scale Activities in Africa (EGSSAA) standards will be used to guide the construction activities at the two sites in Bor, Jonglei State and Yambio, Western Equatoria State.

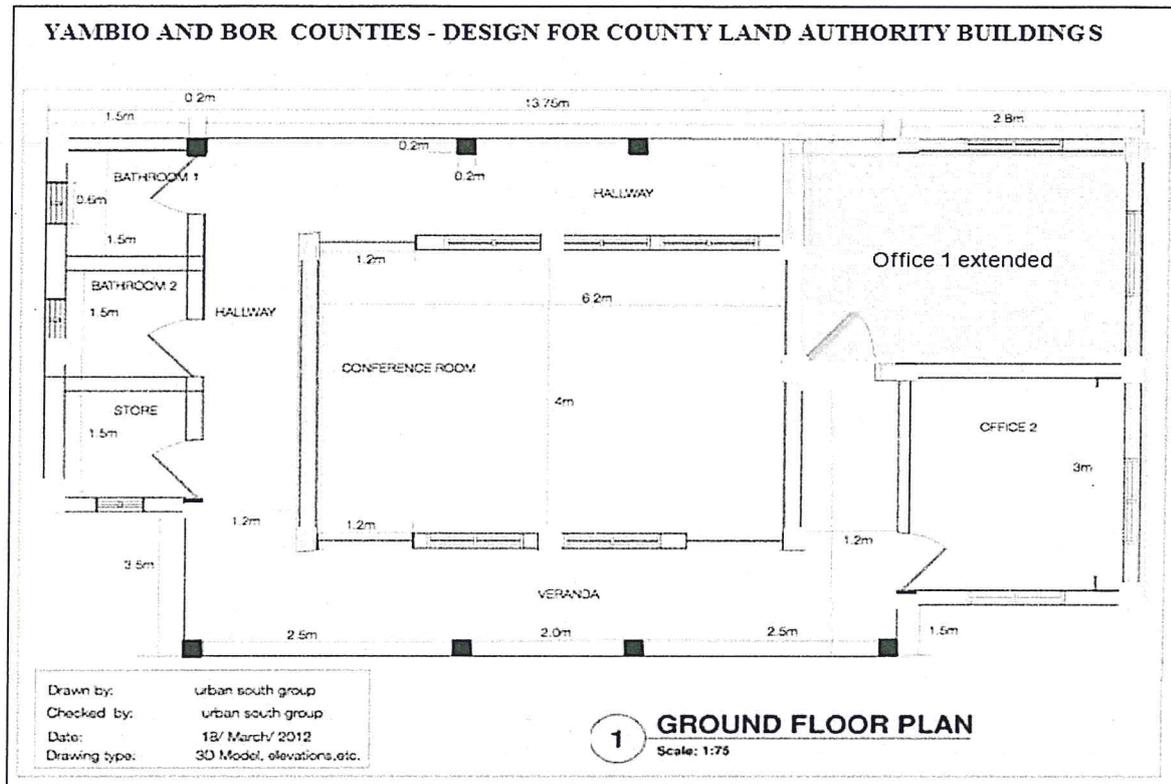
- EGSSAA: Small Scale construction www.encapafrica.org/SmallScaleGuidelines.htm and
- EGSSAA: Water Supply and Sanitation

D. Activity Description

The project seeks to support the Bor and Yambio County Land Authorities through the construction of office and meeting space and the provision of equipment and furniture. The office space will provide the County Land Authorities with a space to meet and conduct work towards greater land tenure security in their counties. The project will build two offices, a meeting room, two latrines, a plumbing system and a rainwater catchment system for each county.

County Land Authority office block: The County Land Authority (CLA) office block will be approximately 14x8 meters (112 sq. m) (see below for building designs). It will constitute two office rooms, two toilet facilities, one store, one conference hall, and front deck/veranda. The office block will be constructed of concrete subbing of foundations, use of locally available construction materials e.g. burnt bricks, corrugated iron sheets, hard wood timber, paint and wood for window systems. The use of cement, aggregate and sand for the foundation and wall building will reinforce initial works. The construction phases include detailed design, competitive bidding process to select a qualified subcontractor, awarding of the subcontractor, concrete slab construction, wall building, roofing and finishes.

Brief of the project deliverables for each office construction: two offices (size of each room: 8.4 sq. m); one conference room (size 24.8 sq. m); two toilet facilities (size 2.25 sq. m); veranda (size 25.6 sq. m); storage room (size 2.25 sq. m); and hallway (size 6.72 sq. m).



Generator: SRLG project will procure and install an 18 KVA near the office premises. It will be housed in a 4x4 meters room with sufficient wall vents, concrete floor and iron sheet roof. The selected generator will include a sound attenuator to minimize decibel level of operating generator and current technology to minimize exhaust and air pollution. In all, the generator will be sheltered with a door which can be locked to prevent unauthorized access.

Plumbing system and toilet construction:

Septic Tank: (6.6 X 1.4X 1.6M deep)- approximately 200 users; Excavation of pit for septic tank; Backfilling around walling; Removal/spreading excess soil from the site

Concrete works: 1:3:6/38mm aggregate mass concrete in 200mm thick floor slab; Reinforced vibrated in-situ 1:2:4/20mm; aggregate concrete in 150mm thick suspended top slab

Block work: Well cured and rationed concrete block in 1:4 mortar in 200mm thick walling

Formwork: Sawn timber formwork to soffits of suspended slab; Vertical sides of the septic tank

Reinforcement bars: High tensile steel bars to 12mm diameter at 200mm c/c both sides

Floor and wall finishes: 15mm thick 1:3 water proof cement plaster (surfaces of wall) 30mm thick 1:3 screed trowelled hard Surfaces of floor slab; Surfaces of top suspended slab

Manholes and Drainage: 450 x600mm; Standard manhole including cover; 300mm x300mm gully trap and cover; 100mm diameter uPVC drain pipe; Between manholes including trenching.

Soak pit (4.0M diameter x 2.4Mdeep); Soak pit including excavation and hardcore fill. The water table in Bor and Yambio is low for over 10 meters deep. Even drilling of boreholes requires a drilling machine (AMREF, 2005)

Sanitary Fittings: Vitreous china WC suite comprising pan with 9litre nominal capacity flushing cistern and fittings, pan connector with and including connection to drainage system; Wash hand basin complete with bib taps, waste basin; Shower unit complete with tray, rose and stick; Double drain double bowl stainless steel kitchen sink

complete; Recessed ceramic soap dish; Recessed ceramic toilet roll holder; Chromium plated towel rail and fittings
Water heater 25lit capacity of approved manufacture

Rainwater catchment system: A series of water gutters will collect rainwater from the roof and channel a water tank. The water from the catchment system will be channeled through gravity fed distribution system, to be constructed, connecting two tap water stands (for hand washing), office cleaning, irrigating compound trees, *paspalum* grasses and flowers.

E. Evaluation of Activities, Environmental Impact Potential, and Proposed Mitigation Actions

Project Phase and Activity	Potential Environmental Impact	Mitigation Action (to be monitored by on-site SRLG project Field Representatives)
1. Planning and Design		
Site selection, competitive bidding process to select a qualified sub contractor and awarding of the subcontractor	<ul style="list-style-type: none"> a) The contractor/subcontractor may ignore the particular site for construction and choose plot of land not recommended by the project b) The contractor may assume that the project approves of all materials supplied for construction works/ the contractor may not be sensitive of environmentally friendly products and certain countries/companies to trade with. 	<ul style="list-style-type: none"> a. Delivery to the project site and all parts thereof necessary for the successful execution of all works on the project to the subcontractor within certain mutually agreed limitations or obstructions from the subcontractor b. Submission of project performance bond by the contractor c. Submission of the project work implementation schedule by the subcontractor d. Receipt by the subcontractor of the consultant's Formal Notice to Proceed with Execution of the works
2. Construction of the office building		
Site clearing, excavation for sub-grade leveling for CLA office building construction	<ul style="list-style-type: none"> a) Potential pollution or degradation of water sources either ground or surface water b) Potential soil erosion during construction stages c) The risk of storm water drainage patterns d) Potential damage or destruction of sensitive ecosystems (flora and fauna) in the course of the site clearing/preparation, excavation and construction e) Dust will occur during this activity, which could lead to air pollution f) Stock pile of raw materials (sand, marrum) will erode and cause large sediment loads downstream of the site g) Environmental health (and safety of construction workers) h) Environmental health and long term impacts of the CLA offices i) Disposal of excess excavation material 	<ul style="list-style-type: none"> a) There are no water bodies at the site of the construction. The risk of water pollution or degradation is minimal b) The topography of the sites of construction is flat and gentle and so the risk of soil erosion is minimal to none. c) The construction sites are located near the county head offices of the local government where storm ways are already controlled d) The construction sites are located in the vicinity of local government land reserves which are bare as in Yambio and just little vegetation in Bor. e) The contractor will be instructed to use water for top surface to avoid creating dust. f) Plastic sheeting will be used to cover raw materials in the event that they are pending use. g) Sanitation facilities (toilets, water) will be available for the contractor's workers. The

		<p>contractor will be instructed to ensure that his or her work personnel use safety procedures.</p> <p>h) Long term sanitation improvements include renovation of the plumbing systems and water tanks.</p> <p>i) Excess soils from the excavation will be backfilled in and around the foundation and used for leveling the compound grounds. The town council has designated dumping sites for construction debris. The contractor will be informed to abide by the local council procedure for waste management.</p>
Substructure/ Foundation and reinforced concrete superstructure	<p>a. Excavation of hard core materials –stones and sand may cause dereliction at quarrying sites</p> <p>b. Foundation may be weak and later cause building to crack and risk users</p>	<p>a. Stones will be obtained from licensed suppliers monitored by the local government council</p> <p>b. A damp proofing work of 1000 gauge polythene sheeting will be applied to prevent water soaking walls, concrete of aggregate mix 38mm, 50mm concrete blinding, 200mm thick strip foundation. Standard masonry and reinforced works will be ensured.</p>
Walling	<p>a. Excavation of sand for blocks, mortar mixtures and collection of water may cause land degradation and water pollution</p>	<p>a. Blocks will be purchased from licensed suppliers whose activities are already being monitored by the local government's town council. Water will be supplied by water tank trucks locally available</p>
Roofing , windows, doors and external finishes	<p>a. Corrugated iron sheets may contain asbestos substance. Timber supplies encourage tree logging</p>	<p>a. The subcontractor will submit samples of all building materials and sources from which they are obtained. All construction materials will be purchased from licensed businesses.</p>
3. Construction of hand washing station		
Construct a hand washing station that will include two tap stands, one to the toilet outside wall and one to the conference outside conference wall. Water will be channeled from a tank that collects water from the rainfall catchment system and flow by gravity distributing water to washing station. Electric pump will be used to deliver water to the elevated tank.	<p>a. Quality of water may be poor or contaminated</p> <p>b. Leaks may occur that creates stagnant water and may lead to increased vector-borne diseases</p> <p>c. A septic tank will be constructed where all the plumbing systems are connected to dispose liquid waste</p>	<p>a. The water tank will be cleaned at regular basis. Water guard tablets will be applied to purify water.</p> <p>b. The construction supervisor will inspect all the joints during pressure testing and make that the pipes, valves; elbows are properly connected/fixed and sealed to prevent leakage.</p> <p>c. The septic tank will be drained at regular basis by sewage tankers/trucks already in use by local hotels.</p>
4. Construction of water catchment system		
Construct a water catchment system that will consist of roof gutters and piping that channels rainwater into	<p>a. Leaks may occur, thus leading to ground contamination</p> <p>b. Water in tanks may become</p>	<p>a. The construction supervisor will inspect all the joints during pressure testing and make that the</p>

<p>water tanks positioned on concrete basements. The water will be used for hand washing, office cleaning, irrigating compound trees, <i>paspalum</i> grasses and flowers.</p>	<p>stagnant or a source of insect-borne diseases</p>	<p>pipes, valves; elbows are properly connected/fixed and sealed to prevent leakage. b. An access devise will be installed on the top of the tanks. This will allow for periodic flushing of the tanks.</p>
<p>5. Construction of toilet</p>		
<p>Construction of a toilet with a complete plumbing system to be installed including digging and building of a septic tank for sewage</p>	<p>a. Underground water may be polluted or leads to seepage of sewage into underground/ water table b. Leaks may occur in the sanitary fittings</p>	<p>a. A septic tank (6.6x1.4x1.6m deep) will be constructed, excavated soils will be backfilled around walling and removal/spreading excess spoil soil from the sites will be done. Also, concrete works for the septic tanks will include 1:3:6/38mm aggregate mass concrete in 200mm thick floor slab, reinforced vibrated in-situ 1:2:4/20mm aggregate concrete in 150mm thick suspended on the top slab. Well cured and rationed concrete block 1:4 mortar in 200mm thick walling. Sawn timber formwork to soffits of suspended slab on vertical side of the septic tank; support with reinforcement bars – high tensile steel bars 12mm diameter at 200mm c/c both sides. Concrete floor and wall finishes 15mm thick 1:3 water proof cement plaster on surface wall. A standard manhole will be made. b. The construction supervisor will inspect all the joints during pressure testing and make that the pipes, valves, flushing cisterns, and other assorted pipe fittings and accessories.</p>
<p>6. Operation and Handover</p>		
<p>The CLA office</p>	<p>a. The county local government may not fund repair and maintenance of the office building, if it is under resourced.</p>	<p>a. The overall responsibility for operation and maintenance of the office building shall be supported by the project in the initial stages and an MOU will lay out government responsibilities for maintenance.</p>
<p>The toilet</p>	<p>a. Increase in transmission of water-borne diseases b. Lack of cleaning and hygiene of the toilet c. Poor hygiene by the toilet users</p>	<p>a. The toilet will be constructed as per permitted design specifications with complete plumbing systems, water supply and a septic tank. The Vitreous china WC suite comprising of pan with nominal flushing cistern and fittings pan connector with and including a connection to the drainage system. Wash hand basin complete with bib taps, waste</p>

		<p>basin, shower unit complete with tray, rose and stick; double drain bowl stainless steel kitchen complete; recessed ceramic soap dish, toilet roll holder etc.</p> <p>b. The county local government already has a land committee, land office, survey office etc. which have already tasked their staff roles and responsibilities. The project helped to establish County Land Authority for each county and thus staff to maintain these facilities is drawn from within the local government.</p> <p>c. A hand washing station will be constructed with two tap stands, one to the toilet wall outside. Water will be channeled from a tank that collects water from the rainfall catchment system and flow by gravity distributing. Soap will be provided at the tap stand.</p>
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G. Monitoring

The project Field Representatives to Bor, Jonglei State and Yambio, Western Equatoria State will be tasked and supported by the main office staff in Juba (COP, Program Technical Assistant and the Home Office Senior Technical Advisor/ Manager) to provide technical guidance in ensuring environmental compliance during construction and implementation phases. The selected contractor will be advised, guided and monitored to adhere to construction activities that complies with the environmental determinations and specified standards in EGSSAA, along with the above mentioned mitigation measures which will be part of the subcontract. A regular visit for monitoring at each construction phase will be done and reported by the project staff.

- a. *A weekly progress report shall be submitted to Tetra Tech ARD, Inc. during the construction period.*
- b. *A final report shall be submitted to Tetra Tech ARD, Inc. 5 days before the completion of the subcontract.*

H. Findings

Appropriate mitigation measures have been taken prior to commencement of construction activities. The project offered technical oversight on environmental compliance for construction design and planning of CLA building; toilet; construction of hand washing station; construction of water catchment system; operation and maintenance support in the initial stages. There is no high risk of land/soil degradation, water pollution, or air pollution. No high potential risks against the environment were found.

There is no water body or borehole at the vicinity of the plots for the latrine/toilet pit/septic tank. The septic tank construction is given due attention. The proposed plumbing system is secured to standard requirements which the contractor is expected to observe. Thus there is neither any risk of sewage contaminating underground water nor risk of vector-borne diseases.

The CLA office building will be co-managed by the project and the local government’s County Land Authority during the period of the project implementation in Yambio and Bor. The project will cost share the operation and maintenance with the county local government.