Terms of Reference for a Drainage Expert

Improvements to the drainage system in Ahero

Ahero, Kisumu County, Kenya

Title	Design of the drainage system in Ahero town
Location	Ahero, Kisumu County
Specialist(s)	Drainage Expert
Calendar time	December 2018
Inputs	National Drainage Expert (10 days)

Background

Ahero town is located 25 kilometers south-east of the county capital, Kisumu. It is part of Nyando District of what was formerly Nyanza Province. Nyando one of the seven sub-counties in Kisumu. Ahero comprises Kakola Ahero, Tura, South Kochogo, Kakola Ombaka, Kochogo Central, and Kochogo North Sub-locations. The town is segmented into 4 quadrants, dissected by the Nairobi-Kisumu highway East to West and by Nyando River North to south, and this creates one of the major structural elements that shape this town.

The Nyando River flows through central Ahero and helps irrigate its many paddies. The river, however, is not utilized for any water-based transport, and it is eroded and polluted by liquid and solid waste.

Ahero hosts an urban population of 7,891 and a total population of 61,556 (2009 census). The town will be defined a municipality when it reaches a population of 70,000. It is estimated that 63.7% of the population falls below the poverty line and that the dependency ratio is very high, 100:99.

During the process of developing the USR, the stakeholders group identified different challenges that they felt if and when addressed would make Ahero a good town. The lack of modern public sanitary facilities with accessible toilets to be used by traders, visitors and the residents was one of them. The town is also poorly lit, which contributes to the security issues as most residents are afraid of operating when it gets dark for fear of being mugged. Waste management, which include both solid and liquid waste, contributed to in part by the poor drainage system and lack of a waste management system has led to most water ending up in the Nyando River leading to pollution and contamination of the river which the residents use as their main source of water.

Ahero change project will focus on the following four components:

1. Reduced pollution load to Nyando River, this will involve construction of an effective wetland that treats surface run off water before being into the river
2. Improved waste management system and sanitation within the market and along River Nyando through installation of integrated waste collection bins in different parts of Ahero in addition to

this, a site will be set aside for Composting site of the organic waste from the litterbins & Material Recovery Facility

3. Improved access to recreational facilities and green spaces for all by setting aside space for a park with amenities that include an eatery, benches, canopies, lights, trees, shops
4. Improved livelihood opportunities will be achieved by building new stalls within the market as well as a general shade to be used by the traders within the market

An international expert has been commissioned for the planning and design of component 1 (construction of an artificial wetland).

Objective(s)

The main objective of the assignment is to provide support to the design of an artificial wetland by analysing and suggesting improvements to the existing drainage system serving the proposed wetland.

Method

The assignment will be carried out by a national drainage expert. It is critical that the assignment is undertaken in *close cooperation* with the Kisumu SymbioCity Pilot Coordinator / Working Group, Ahero stakeholders, the contracted Artificial Wetlands Specialist and County Officers preparing other elements of the detailed design, and the SymbioCity program officer. It is anticipated that the assignment will consider the following:

1. In consultation with the team, determine a 'catchment area' relevant to the wetland/market area
2. Conduct a situational analysis of the agreed area identifying key issues in the existing drainage system
   a) Cross-check existing drainage maps vs reality and update accordingly.
   b) Identify what the sources of wastewater are and what type of water this is (sewerage, industrial, commercial, sanitation, stormwater) and how polluted it is.
   c) Identify the drainage system outlets and (very roughly) estimate volumes and level/type of pollution.
3. Make a plan for improving/optimizing the drainage system
   a) Where do we need to improve existing drains and how?
   b) Where do we need to build new drains and how?
   c) How can we treat/clean the water from solid waste throughout the system? (technically, through maintenance or through sensitization)?
4. Support the international wetlands expert in the preparation of a plan for an artificial wetlands, including a BoQ and costing.

Outputs

The consultants will be expected to deliver the following:

- Updated drainage maps
- A situational analysis identifying key issues and needs for improvement
- A proposal for improvements to the drainage system
- Bills of quantity and costing for (limited) improvements to the drainage system
- Input to bills of quantity and costing for the artificial wetland (designed by the international expert)

Inputs / human resources required

The assignment will be carried out by a National Drainage Expert. The work of the consultant will be guided by the Project Proposal for the development of Ahero and the consultants will have access to the Kisumu Working Group, Technical Specialists for other sectors and the SymbioCity Programme Officer.

The **consultant will have:**

- A Bachelor's degree in Civil Engineering from a recognized university
- Registration with EBK with a minimum of 5 years' relevant experience.
- Demonstrated experience of at least two previous assignments of a similar nature
- Knowledge of the operations at the county governments in Kenya
- Previous experience in working with county governments employees in Kenya
- Experience in sustainable development projects
- Ability to collaborate and achieve agreed goals with other Technical Specialists
- Excellent communication skills oral and written

Time frame

The total duration will be 10 working days, carried out over a period of approximately 4 weeks from commencement to finalisation.

Management of the contract

The contract will be signed between the consultant and SKL international**.** The consultant will work closely with the SymbioCity Kenya Kisumu pilot coordinator and Program officer based in Nairobi.
Financial management of the contract will be done by SKL International.

Instructions for Submission

Interested individuals should send in their bid which should include:

- Curriculum vitae
- Profile clearly indicating relevant assignments
- Availability to carry on the assignment in December 2018

Bids to be submitted by **28th November 2018** to Maureen.njoga@symbiocitykenya.org info@symbiocitykenya.org