

TERMS OF REFERENCE FOR FAECAL SLUDGE MANAGEMENT MODEL UNDER THE KAMPALA URBAN POOR SANITATION IMPROVEMENT PROJECT (KUPSIP)

1.0 Project Background

Uganda is rapidly urbanizing with slums and informal settlements housing approximately 45% of its urban population. In the capital city, Kampala, most inhabitants live in low lying areas of reclaimed swamps, prone to flooding during heavy rains. The sanitation coverage in urban areas is estimated at 81% (FY2010/2011), while functioning hand-washing facilities are estimated at 30%.

However, disparities are very visible with informal settlements like in Kawempe having latrine coverage to as low as 36% mostly made up of make shift structures which are opened up in the drainage channels whenever it rains posing huge health and environmental challenges. The target area of Kawempe Municipality is one of the five municipalities that make up Kampala. The Municipality has 24 parishes made up mainly of large informal settlements with poor environmental sanitation and with toilet facilities that are very dirty, filled up or at the verge of collapse (SSWARS, 2008).

1.1 Project Objectives

The objective of the Kawempe Urban Poor Sanitation Improvement Project (KUPSIP) is to provide affordable and sustainable sanitation services to the urban poor in Kawempe Municipality. This will contribute to improved living conditions as well as attaining the Government of Uganda's National Development Plan (NDP) and Vision 2040 targets as well as meeting the Millennium Development Goals (MDG) goals.

1.2 Project Description

The project will provide sanitation facilities for households, schools and the public or urban poor areas. This intervention will promote principles of sanitation marketing, offer a pro-poor sanitation financing mechanism for accessing affordable and improved sanitation infrastructure; define a sustainable faecal sludge management and safe reuse strategy; and develop strategies, information, education and communication tools to promote sanitation demand and better sanitation practices. The project will be executed by the Community Integrated Development Initiatives, (CIDI), in partnership with Kawempe Municipality of the Kampala Capital City Authority (KCCA) and the National Water and Sewerage Corporation (NWSC). CIDI will further collaborate with the private sector to identify appropriate sanitation technologies and with agronomical research institutions to undertake studies, develop tools and strategies; capture, document processes and support the dissemination of knowledge products through the whole sanitation chain.

The project comprises of 05 components: Component 1 is the development of Sanitation Infrastructure including the development of appropriate technologies; construction of 240 public sanitation units with a hand washing facility and household facilities for both landlord households (700) and vulnerable households (84); training of masons and establishment of operations and maintenance systems. Component 2 concerns Improved Sanitation and Hygiene Promotion covering the preparation of targeted IEC tools; hygiene and sanitation

promotion campaigns, sanitation marketing; school sanitation and hygiene promotion and sanitation infrastructure revolving-fund development. Component 3 deals with Faecal Sludge Management System (FSMS) and will undertake a faecal sludge management study; define an operational system for linking primary collection with services of cesspool truck emptier and an in-built O & M system; identify temporary collection points; and procure 2 cesspool trucks to support municipal subsidised collection and the private cesspool emptiers.

Component 4 covers the Safe Faecal Sludge Reuse and Management Strategy and will undertake technical assessment of processes of reuse; define guidelines for safe reuse; undertake institutional capacity strengthening for Ministry of Agriculture, MoWE, KCCA, and MoH; and prepare a marketing plan for targeted safe reuse. Component 5 is the Project and Knowledge Management.

1.3 Introduction to Faecal Sludge Management Model in Kampala.

In Kampala City, there are two main institutions mandated to provide sanitation services: These are Kampala Capital City Authority (KCCA), for on-site sanitation, and National Water and Sewerage Corporation (NWSC), for sewerage services. However, three main problems arise with this structure. Firstly, KCCA has proved to be institutionally weak, in its ability to enforce laws requiring proper latrine facilities in households and institutions, and to fulfill its obligation to provide such facilities in public places.

Secondly, because NWSC is only mandated to provide water-driven sewerage services, performance improvements in its water operations have only minimally been transferred to sanitation, as the number of people connected to its sewerage network has remained at only 8%, leaving out majority of the poor people living in slum areas. Thirdly many external (donor) interventions in slum areas have been highly subsidised and often free, based on the assumption that residents of informal settlements are too poor to pay for the development of their own sanitation facilities.

As a result, many poor urban residents have not only found unsafe ways of getting rid of the sludge, like opening the latrines during rainy seasons for the sludge to flow into the drainage channels, but also the formal service providers such as private cesspool emptiers have neglected them due to inaccessibility of their residences and are highly costly for the urban poor.

1.4 Proposed Sludge Management Model

To address these challenges NWSC (2009) piloted a small cesspool emptier truck to access the hard to reach slum areas known as UGAVAC technology. However the technology has not been operationalised and rollout to the poor communities due to a number of operational challenges like, lack of an operational concept (costing, management and accessibility of the technology). It is against this background that CIDI under the proposed Kawempe Urban Poor Sanitation Improvement Project (KUPSIP) would like to put this technology to use through establishing the operational model.

As part of the proposed project, CIDI in partnership with NWSC, Kawempe Municipality, NETWAS and Crestanks, have proposed that the UGAVACs be allocated to CIDI for management in order to effectively access the urban poor with efficient and affordable sludge emptying services. It is also proposed, as part of the grant from African Water

Facility (AWF), a cesspool emptier truck be procured for and stationed in the parishes where the UGAVACs can move out to the remote slums, empty and then drain in the cesspool emptier truck which will in turn transport the sewerage to the treatment plant.

An affordable user fee to the urban poor is also proposed for operational and maintenance of both the truck and the UGAVACs to effectively sustain the system. With this arrangement in place over 20,000 urban poor households are likely to access safe sludge management services in their community including those who are not directly receiving hardware facilities from the project. Further support for the operational concept will be developed to determine the actual locations, cost for emptying, detailed management plans and cresting demand for the sludge management services during the project implementation as part of the consultancy to study this proposed arrangement.

This Consultancy has three major outcomes:

- i. Design of an operational mechanism for faecal sludge emptying, collection, transportation and handling for re-use.
- ii. Undertake a study and disseminate guidelines on safe faecal waste treatment and handling for safe re-use
- iii. Develop and disseminate guidelines on safe faecal sludge handling and re-use

The project will be implemented in Kawempe Municipality which has a total population of approximately 400,000 people. All the 24 wards that form the municipality will be covered since they are all mainly informal neighborhoods with poor environmental sanitation.

The Consultant shall collaborate with the Key Stakeholders namely, CIDI, KCCA, NWSC and other government agencies as elaborated below:

a. Community Integrated Development Initiatives

As the implementing agency, CIDI has the mandate of overall project implementation and management - setting up an effective and competent project team, a field office and establishing linkages between the key partners; regular monitoring and supervision; and reporting to AWF. CIDI shall provide regular updates on the project to the Water and Sanitation Sector Working Group during the quarterly meetings to ensure the project is in line with and contributes to on-going sector processes.

b. Kampala Capital City Authority

As the local Authority, it is expected to mobilize landlords and support community meetings; enforce by-laws related to the right to sanitation; will provide access to cesspool trucks at subsidized transport cost of \$10 per trip; technical support to community sensitization and hygiene awareness creation.

c. National Water & Sewerage Corporation

This is hoped to provide subsidized access to faecal disposal at the new Lubigi faecal sludge treatment plant; contribution of 06 UGAVAC small household pit-emptying units;

installation of pro-poor pre-paid meters to support improved hygiene; and technical backstopping

d. NETWAS Uganda

This institution is expected to champion Information and knowledge management: documentation of processes and lessons learnt and knowledge products dissemination.

Other key actors in the KUPSIP project are the line government ministries responsible for water-borne sanitation; school sanitation; sanitation policy and household sanitation – The ministries of: i) Water and Environment; ii) Education and Sports; iii) Health, who are represented in the Project Steering Committee and will offer strategic guidance and support the planning of the relevant activities. Given its role in environmental regulation the project will work closely with the National Environmental Management Authority (NEMA) and the Directorate of Water Department (DWD). In order to strengthen the safe reuse of stabilized faecal sludge, the Ministry of Agriculture, Fisheries and Animal Husbandry ought to be actively involved in the research and studies that will lead to the development of guidelines, training manual and marketing plans. An agronomical research institution shall be identified to support these processes.

2.0 Objectives of this Consultancy

The following are the objectives of this consultancy:

- (i) Undertake a faecal sludge management study in Kawempe Municipality.
- (ii) Define an operational system for linking primary collection with services of cesspool truck emptiers and an in-built O & M system.
- (iii) Identify temporary sludge collection points within Kawempe Municipality
- (iv) Develop a Sludge Reuse and Management Strategy which undertakes technical assessment of processes of reuse

3.0 Scope of the Consultancy

3.1 General

Undertake a faecal sludge management study; define an operational system for linking primary collection (Households) with secondary collection network and services of cesspool truck emptier with in-built O & M system and identify temporary collection points.

Expected Outputs from the activities of this component which entails faecal sludge-emptying, collection and transportation are:

- a) Undertake a faecal sludge management study and prepare a report
- b) Develop an operational system/manual for faecal sludge collection and transportation
- c) Identify, train and contract household-level cesspool emptiers
- d) Establish and operationalize secondary collection and transport systems with cesspool emptier trucks.

To achieve the above outputs, the following activities will form this component

- 1) The consultant shall carry out Faecal sludge management study: To complement the NWSC's sector efforts to provide sanitation services to the slums, and to establish innovative ways of addressing current limitations to the removal and transportation of the large amounts of waste produced within Kawempe, a study to define an operational faecal sludge management system shall be undertaken.

This FSM study shall identify existing emptying services; cost for emptying, existing disposal mechanisms; possible incentives for small scale service providers to collect and transport and the levels of affordability and willingness to pay. In addition, the study will also advise on the necessity of undertaking an Environmental Impact Assessment (EIA) related to collection and transportation of the fecal sludge using the proposed system.

- 2) Put in place an operational and sustainable system for faecal sludge collection and transportation: As a direct outcome of this study, a detailed operational, management and enforcement plans (including social systems); maintenance systems; and institutional arrangements to facilitate faecal sludge emptying and transport shall be developed for the two levels namely:
 - i) Primary collection from the households using mobile small cesspool emptiers; and
 - ii) Secondary collection from established collection points by a big cesspool truck for on-ward transportation to the wastewater and faecal sludge treatment plant (WTP) at Lubigi.
- 3) Identify, train and contract household-level cesspool emptiers: The FSM study and in consultations with the Private Cesspool Emptiers Association (PCEA) will provide guidance on the identification, and training of the household level private cesspool emptiers. Training will focus on providing emptiers with guidelines about on-site sanitation management, safety, hygiene, environmental protection and financial management. A partnership agreement between NWSC and KCCA will define responsibilities related to awareness-raising on available discharge and treatment sites, discharge fees and regulation of the operators which will be achieved through signed agreements with the operators. While the PCEA's have shown interest in the training of the household emptiers once the operational concept is put in place, there is a lack of commitment to get directly involved in the primary or secondary collection since they already have demand and an established service prices.

To support the primary collection, NWSC will initially provide, as part of their contribution to the project, free 6 UGAVAC units – a technology of small cesspool emptying services (90 cm by 250 cm with capacity of ½ cubic meter, capable of emptying, one regular pit latrine, twice), already tested by NWSC (2009) in collaboration with the Private Cesspool Emptiers' Association (PCEA) in the target area. The UGAVACs have been manufactured locally, with the pump and engine procured from China. NWSC is committed to providing necessary technical support; training (in collaboration with the existing private cesspool emptier association); and possible financial support to the project to facilitate effective and sustainable operation and maintenance of the UGAVACs including provision of safe parking space. There are assurances for the stocking of the UGAVACs which would subsequently be acquired by private operators under contractual franchising

agreements to be defined by NWSC and KCCA for scaling up the FSM operational concept.

- 4) Establish and operationalize secondary collection and transport system with cesspool emptier trucks: The operationalisation of the secondary collection and transport will be undertaken through purchase of 06 cesspool emptying trucks (under AWF funding) which shall be supplemented with KCCA's cesspool trucks made available to the project at a minimal transport charge of \$10 for fuel to transport sewerage to the plant per trip within Kawempe municipality. The willingness to pay (approximately 10,000 to 15,000 Uganda Shillings per pit), was already confirmed through the testing of the UGAVAC prototype. However, the tariff-setting shall further be informed by the results of the FSM study and shall be agreed with DWD/NWSC and KCCA.

3.2 Output of the Consultancy.

In summary the expected outputs of this consultancy are:

- (i) Faecal sludge management study Report;
- (ii) Manual for Operational and sustainable system for Faecal Sludge collection and transportation in place;
- (iii) Household-level cesspool emptiers identified, trained and contracted;
- (iv) Secondary collection and transport system with cesspool emptier trucks established and operational.

3.5 Man Power Requirements for this Consultancy

It is anticipated that the study will be conducted by a well qualified and experienced Sanitary Engineer with adequate knowledge in Socio-Economics, Institutional Expertise and Environmental protection and/or improvement.

3.6 Duration of Consultancy and Manpower input.

The study duration is 03 calendar months and the manpower input is anticipated at a total of 2 man-months.

4.0 REPORTING

4.1 General

The Consultant shall submit the following reports:-

- (i) Inception Report,
- (ii) Monthly Progress Reports,
- (iii) Sludge Handling Draft Guidelines,
- (iv) Draft Final Report

- (v) Final Report

4.2 Monthly Reports

The Consultant shall submit monthly reports to the Component Coordinator for the duration of the project.

The monthly report will contain the following information:-

- (i) A summary of activities carried out within the month.
- (ii) Projected activities and position for the following month.

4.3 Inception Report.

The inception report shall contain the following:

- a) Summary of the consultants' initial findings.
- b) First assessment of available data, past reports and a general literature review.
- c) An outline of the methodology the consultants propose to use in tackling the issue of Faecal Sludge Management, Marketing Strategy and Re-use.
- d) A detailed program of activities to be carried out during the project period, timings and target achievements.
- e) An indication of parallel activities that need to be carried out by sister departments in order to achieve the targets set out in (d) above.

4.4 Faecal Sludge Management Manual

The Operational and sustainable system for Faecal Sludge collection and transportation manual shall contain procedures and regulations; guidelines and policies that will have been incorporated into the day to day operations of households and public toilets for the purpose of promoting public health.

4.5 Draft Final Report

The Draft Final Report shall detail out the methods used in the execution of the assignment, recommendations for future actions.

4.6 Final Report

The Final Report will incorporate any amendments that the client will have made available to the consultant within one month after receipt of the Draft Final Report.

4.7 Timing and Quantities of Report

The consultant shall provide the following reports and documents in the quantities and timing indicated:

	No. of copies to CIDI	No. of copies to NWSC	No. of copies AfDB	Timing in months from start
Inception Report	6	2	2	1
Monthly Progress Report	6	2	2	every month
Faecal Sludge Management Manual	6	2	2	2
Draft Final Report	6	2	2	2
Final Report	6	2	2	2

5.0 DATA AND SERVICES TO BE PROVIDED BY THE CLIENT

5.1 Data

The Client shall provide all available relevant data and reports to the services including but not limited to:

- a) Previous studies carried out on faecal sludge management and re-use in Kampala.
- b) Previous studies carried out under the Urban Poor project,
- c) The National Environmental statute
- d) The National Water & Sewerage Corporation Statute (2000)

5.2 Counterpart staff

The Client, through NWSC shall provide suitably qualified counterpart staff to work with the Consultant team.