"Kampala Water – Lake Victoria Water and Sanitation Programme"

Development of an Appropriate Sanitation Concept, Review of Water Supply Aspects in Informal Settlements & Feasibility Study (Package 5a)

Terms of Reference:

Consultancy Services

November 2012

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LIST OF ACRONYMS

AFD	Agence Française de Développement
DEA	Directorate of Environment Affairs
DWD	Directorate of Water Development
DWRM	Directorate of Water Resource Management
EIB	European Investment Bank
EMP	Environmental Management Plan
FIDIC	Fédération Internationale Des Ingénieurs-Conseils (International Federation of Consulting Engineers)
FY	Financial Year
GIS	Geographical Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit - German Technical Cooperation
GoU	Government of Uganda
IDAMC	Internally Delegated Management Contract
ISO	International Standards Organization
ITF	International Trust Fund
KCC	Kampala City Council
KCCA	Kampala Capital City Authority
KfW	KfW Entwicklungsbank – German Financial Cooperation
KSMP	Kampala Sanitation Master Plan
KSP	Kampala Sanitation Programme
KW	Kampala Water
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MASL	Meters Above Sea Level
MGLSD	Ministry of Gender, Labour and Social Development
MoES	Ministry of Education and Sports
MoFPED	Ministry of Finance Planning and Economic Development
MRI	Mutual Reliance Initiative
MWE	Ministry of Water and Environment
NGOs	Non-Governmental Organisations
NRW	Non-Revenue Water
NWSC	National Water and Sewerage Corporation
PACE	Performance, Autonomy and Creativity Enhancement Contract
PC	Performance Contract
PEA	Project Execution Agency
PIU	Project Implementation Unit
SCADA	Supervisory Control and Data Acquisition System
SCT	Standard Conditions of Tender
UWASNET	Uganda Water and Sanitation NGO Network
UWSSS	Urban Water Supply and Sanitation Sector
WATSAN	Water and Sanitation
WHO	World Health Organisation
WTP	Water Treatment Plant

1. INTRODUCTION

1.1 General

Measures aimed at significantly improving access to water and sanitation services for the poor people in the municipal area of Kampala, especially in the 20 pre-selected parishes in informal settlements bundled in what is categorised as Package 5 will be financed out of funds from KfW, EIB, AFD and GoU contribution within the overall framework of the Kampala Water Lake Victoria -WatSan Project.

These TORs are for preparation of a general concept for integrated sanitation services in Kampala as a whole and specification of concrete investment packages for water supply and sanitation installations in the a. m. parishes in Kampala. The studies to be carried out will be based on the findings of the recent Kampala Sanitation Master Plan and will follow the so-called QVZ guidelines issued by the German Federal Ministry for Economic Cooperation and Development (cf. Annex 1).

1.2 Institutional Framework for Water Supply and Sanitation Services in Uganda

The Ministry of Water and Environment (MWE) is the lead agency for the provision and management of water supply and sanitation services in Uganda. The Ministry has three directorates: Directorate of Water Resources Management (DWRM) responsible for managing, monitoring and regulation of water resources through issuing water use, abstraction and wastewater discharge permits; Directorate of Water Development (DWD) responsible for providing technical oversight for the planning, implementation and supervision of the delivery of urban and rural water and sanitation services across the country, including water for production; and the Directorate of Environment Affairs (DEA) responsible for the management of all environment related affairs.

Functioning under the Ministry of Water and Environment, the National Water and Sewerage Corporation (NWSC) is a Government Parastatal that operates and provides water and sewerage services for 23 large urban centres. NWSC is mandated to provide water and sewerage services in its areas of operations in a commercially viable manner while maintaining social objectives in WatSan services delivery. Onsite sanitation, solid waste management and storm water drainage are the responsibility of City/Town Councils. At the District level, Local Governments (Districts, Town Councils, and Sub-Counties) are empowered by the Local Governments Act (2000) to provide water services. They receive funding from central government in the form of conditional grants and can also mobilize additional local resources for water and sanitation programmes. Local Governments, in consultation with MWE appoint and manage private operators for urban piped water schemes that are outside the jurisdiction of NWSC.

A number of other institutions and line ministries have important roles in the sector. These include; KCCA which is responsible for oversight of Health services through the directorate of Health services, solid waste management and garbage collection, provision of education services including general administration and management of educational institutions among others; the Ministry of Health (MoH) responsible for hygiene and sanitation promotion for households; the Ministry of Education and Sports (MoES) responsible for hygiene education and provision of sanitation facilities in primary schools; the Ministry of Gender, Labour and

Social Development (MGLSD), responsible for gender responsiveness and community development and mobilization; the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) which spearheads agricultural development; and the Ministry of Finance, Planning and Economic Development (MoFPED) which mobilizes funds, allocates them to sectors and coordinates Development Partner inputs. The NGOs working in the sector are coordinated at the national level through UWASNET, Uganda Water and Sanitation NGO Network an umbrella organization, which has been largely funded by sector development partners through MWE.

1.3 The Urban Water Supply and Sanitation Sector in Uganda

The Uganda Urban Water Sub-Sector covers about 200 towns, 33 of these (with populations above 15,000) are considered as "large urban centres" and account for about 80% of the total urban population. Kampala's population alone accounts for about 45% of the total urban population in Uganda.

The Government of Uganda (GoU) initiated reforms in the UWSSS with the long term objective of providing sustainable and affordable water supply and sanitation services to all segments of the population living in the City and towns through:

1. Improving the planning and design of projects to better match demand.
2. Placing the communities within a framework that is conducive for improving the quality of service and reducing its cost.
3. Limiting the role of Government to that of a policy maker, facilitator and regulator to increase investment and efficiency within the water sector.

Broad relevant policy objectives of the UWSSS in the context of the reform can be categorized as follows:

1. Service Coverage – To expand clean water service coverage to 100% of the urban population.
2. Sustainability – To achieve sustainability of service delivery.
3. Affordability – To ensure that a basic adequate level of service is available via low cost service delivery and the implementation of a subsidy and tariff framework which is equitable and beneficial to the poor.

Presently, the Water Supply and Sewerage Services in 23 of the large urban centres in Uganda are provided by National Water and Sewerage Corporation (NWSC). The remaining centres are under the Local Governments with technical assistance from the Directorate of Water Development (DWD).

1.4 NWSC Operational Framework in Kampala

The National Water and Sewerage Corporation (NWSC) was established in 1972 as a Government Parastatal with the role of developing, operating and maintaining water supply and sewerage services in urban areas of Uganda. NWSC falls under the Ministry of Water and Environment, and currently operates in twenty three towns in Uganda, i.e. Kampala, Jinja, Entebbe/Kajjansi, Mbale, Kasese, Fort Portal, Mbarara, Masaka, Tororo/Malaba, Lira, Kabale, Gulu, Bushenyi/Ishaka, Arua, Soroti/Kaberamaido, Iganga, Mubende, Masindi,

Hoima, Mukono, and Lugazi. A nine member Board appointed by the Minister of Water and Environment sets policies and monitors the performance of the Corporation.

To fulfil the GoU performance requirements, NWSC, as part of its restructuring, undertook reforms aimed at improving operational, commercial and financial performance. As part of the reforms, NWSC entered into Performance Contracts with each of the respective operational Areas with the water supply and sewerage services in Kampala being managed by Kampala Water (KW) Partnership, within the framework of the PACE Contract.

NWSC operates one wastewater treatment plant in Kampala and is mandated to provide sewerage services to customers connected to the network feeding the plant. However, in June 2006, a partnership agreement was signed between NWSC and KCC which has the overall responsibility for on-site sanitation particularly for cesspool emptier services. Nevertheless, through several donor funded projects and its internally generated funds, NWSC has implemented several onsite sanitation projects within Kampala. However, the responsibility for the operation and maintenance of these sanitation facilities does not lie with NWSC but with KCCA (former KCC, see § 1.5). The institutional interfaces between KCCA and NWSC have to be clearly defined for each of the different project proposals (drinking water, hygiene, faecal sludge management, toilets, O&M and social promotion).

1.5 KCCA Operational Framework

KCCA is the legal entity, established by the Ugandan Parliament and is the body charged with governing the Capital City of Kampala. It administers the Capital City on behalf of the central government subject to this Act. It replaced the former Kampala City Council (KCC).

KCCA is mandated with provision of services in the city that enable residents and businesses operating in the city function in an environment that supports development. This mandate includes facilitating and providing support to ensure health and productivity of citizens, a clean, habitable and sustainable community for citizens through efficient management of public health and the environment. The Authority has several departments which include the Engineering services department which is mandated to plan, design, construct and maintain the City infrastructure through road repair, maintenance and opening up of new roads, bridges flyovers and water channels. Managing drainage of major water channels such as Nakivubo channel, clearing of such drains to avoid flooding in the city, installation, repair and maintenance of street and traffic lights is also part of the responsibility of the Department. KCCA also has reinforced the commitment to onsite sanitation area as it has been shown for instance in launching of the Kampala Water and Sanitation Forum and other opportunities. Finally, the consideration of the institutional role of KCCA is a prerequisite for the development of a sustainable faecal sludge management model in Kampala. The institutional role consists in: definition of areas for public and communal toilets, implantation and control of operational models or public a communal toilets and cooperation in organisation of hygiene and sanitation promotion.

Additionally, KCCA is charged with physical planning through a department that plans the development of the functional urban design, infrastructure and administers land management of Kampala city. Overall, this Department ensures that development in the city is organized and does not exert stress on the existing functioning infrastructure. Other responsibilities of KCCA include oversight of the provision of health services, provision of education services including general administration and management of educational institutions**,** Gender

Mainstreaming, youth and community development, child care and protection especially for street children etc.

The future role and responsibilities of KCCA with regard to sanitation will be considered during the study including the interfaces with NWSC services and duties.

2. PROJECT BACKGROUND

2.1 Project Area

Kampala, the capital city of Uganda, has a population of about 2.5 million people within its larger metropolitan area, with annual population and industrialisation growth rates estimated at 5.6% and 16% respectively. About 1.0 million people live in informal settlements. The Kampala Water Supply and Sewerage Service Area, which includes areas of Mukono-Seeta, Zana, Nansana, Gayaza and Namugongo, has a water supply service coverage of about 74%. Sewerage coverage is only about 6%, mainly covering the central business district. Located on 21 hills and the valleys between, Kampala comprises both formal and informal settlements, with the city now mostly expanding eastwards.

KCCA's structure is such that there are several departments each with its own mandate but that are all geared towards supporting development in Kampala. Among these is the physical planning Department which is mandated to develop the functional urban design, infrastructure and administer land management of Kampala city in order to ensure that the development in the city is organized and does not exert stress on the existing functioning infrastructures.

Kampala city has had its share of infrastructure development backlog which has placed immense pressure on the capacity of NWSC to effectively deliver water and sewerage services. This experience is shared in all urban centres in Uganda that have undergone rapid growth. . In an effort to bridge the service delivery gap, NWSC, with the support of development partners and the Government of Uganda and through its internal revenue resources, has continued to implement a number of interventions, especially in Kampala. In spite these efforts, Kampala area is still faced with a number of challenges which include; dry zones in parts of the city, high non-revenue water and accumulation of arrears, and insufficient facilities for the urban poor.

After considering the different mandates of stakeholders that are involved in ensuring successful strategic planning, NWSC has realised the need to coordinate water and sanitation investments with infrastructure city planning to ensure sustainability. NWSC will therefore work in closely with KCCA to ensure successful implementation of water and sanitation investments within Kampala, as addressing these challenges will require an integrated approach.

2.2 Overview of Kampala's Water Supply & Sanitation

2.2.1 Water supply

Kampala is one of the twenty three urban centres in which NWSC is mandated to supply water as well as provide sewerage services. Water for Kampala is produced at Gaba Water

treatment plant. The Gaba Water Works consists of three treatment plants namely Gaba I,II and III that give a total production of 156,000m^3/day.

Water demand within the Kampala Water supply area is currently estimated at 200,000m3/day against actual production of 156,000m^3/day. This partly explains why many parts of Kampala experience intermittent water supply and others have completely run dry. The water demand in the Greater Kampala metropolitan area is projected to increase to 500,000m^3/day by the year 2019.

Over the last 20 years, infrastructure developments for water supply for Kampala have mainly focused on bulk production of water, transmission, pumping, a small increase in the storage capacity and the tertiary distribution network, with limited expansion on the primary and secondary distribution network. The Kampala water distribution network currently consists of a total of 2,253 km of pipeline of various materials, sizes and age. Because of the nature of Kampala's terrain, the distribution network is hydraulically managed under two (02) pressure zones, the high level zone and the low level zone, to limit the maximum pressure within the network.

In 2004, NWSC introduced a new connection policy, which simplified the previous new connection procedures targeted at increasing access to water supply by making it affordable. The number of customers in Kampala has, as a result, grown from 62,077 (2004) to the current 291,395 (2012). This growth in demand has surpassed the utility's capacity for effective provision of water supply services and, as a result, most of the sprawling peri-urban areas now suffer from intermittent water supply and low pressures including the informal settlements within the city.

Water supply in the urban poor areas of Kampala is ensured by water distribution through public stand pipes (PSP) and yard taps. NWSC that is responsible for the water supply and sewerage services in urban centres of Uganda has already installed a social tariff for water at public standpipes at 1,025 Ugandan shillings per cubic metre. However, despite the new connection policy and the Pro Poor tariff policy, most of the informal settlements within Kampala do not have domestic connections and are dependent upon scarce public standpipes, water kiosks or unprotected springs for provision of water. The main part of the population is supplied by public standpipes and by protected springs where water is free. However, the average walking distance from these settlements to the springs is over 1km, except for a few cases whose homes are close to the springs. PSP on the other hand, are operated by the owners of the land in which these PSPs are located. Most people do not own land and have to buy water from the land owners who double the tariff as PSP operators. The price goes for as much as UGX 100 per twenty litre jerry can. Since water supply is not always consistent in these areas, the cost of each jerrycan can go up to UGX 200 – 300 for times when there is no water. As such, many of the residents resort to other water sources like unprotected springs and in so doing are exposed to contaminated water that is polluted due to its proximity to pit latrines.

The average water consumption in the informal settlements has been estimated as being 8 litres per capita per day, which falls far below the recommended 50 litres of water per person per day as per WHO guidelines. The situation in the informal settlements is such that there are little or no payments due to the economic situation of the residents in this area, in which many of them earn less than a dollar a day. Subsequently, there are several cases of

water theft due to meter by passes in areas where there is piped water which poses challenges in water provision in these areas by NWSC.

Other challenges experienced by NWSC in service provision include the unplanned structure of the settlements where several of these settlements are located in areas with high water tables which poses a challenge during extension of water to these areas, there is also lack of maintenance of the prepaid meters that were put in place during previous projects due to increased costs of spares by the sole supplier etc. Water mains are not available in most of these informal settlements which limits the extent to which new kiosks or private connections can be installed.

2.2.2 Sanitation

The disposal of human excreta constitutes one of the critical aspects of environmental health in a city. Access to effective sanitation in Kampala, like in many African cities, is limited and is not keeping pace with the rapid rate of urbanization and industrial growth in the city. Approximately 6% of Kampala residents are served by a public sewer with the vast majority reliant on various forms of on-site sanitation of variable quality and effectiveness.

The responsibility for sanitation in Uganda was apportioned to three ministries, which in 2001 signed a Memorandum of Understanding (MoU). According to this MoU, the Ministry of Water and Environment (MWE) is responsible for planning of investments in sewerage services and public sanitation facilities in towns and rural growth centres, the Ministry of Health is responsible for house hold hygiene and sanitation, and the Ministry of Education and Sports is responsible for school latrine construction and hygiene education in schools.

NWSC, which is under the MWE, operates one wastewater treatment plant in Kampala that is situated at Bugolobi. This plant is connected to a sewer network containing three pumping stations and covers approximately 135 km. The Bugolobi WWTP has a capacity of 12.500m³/d wastewater and 200 m³/d faecal sludge treatment.

The sewerage services management is currently administered under a Performance Contract (PC) with Kampala Water, a service area of NWSC. Based on the Performance Contract, the Sewerage Services Department has a clear mandate to operate, maintain and protect the sewerage infrastructure in Kampala and to provide reliable services to the customers connected to the sewer network.

Due to the low sewer network coverage, the urgent need for the solution of the faecal sludge treatment problem in Kampala was considered in 2002 when NWSC commissioned a 30 year sanitation strategy and master plan (SSMP) for Kampala City with financial assistance from KfW in Collaboration with the former KCC and Ministry of Health. In 2004, a consortium of Fitchner, Mott MacDonald and M&E Associates of Uganda presented the SSMP for Kampala City. On this basis, the Kampala Sanitation Programme (KSP), co-financed by KfW, EU-Water facility and AfDB was developed in 2008.

Under the terms of the Kampala Sanitation Master Plan, the sewerage network connection rate will be augmented up to 30% by 2030 implying that 70% will still not be connected. Although it is planned that the interventions under this master plan will increase the capacity of faecal sludge treatment, it has become evident that an improved sanitation service for the whole municipal area of Kampala requires a comprehensive management model also for

non-sewer based sanitation. It will be necessary to update the Kampala Sanitation Master plan (2008) according to actual capacity needs for faecal sludge treatment. Probably there is a need for additional efficient treatment technologies for faecal sludge or other faecal material (fresh or dried faeces from mobile container or Urine Diversion toilets, stabilized compost from Sulabh toilets or other technologies) which might be provided in decentralized faecal sludge treatment places close to peri-urban areas. In this case adapted operational models (O&M) have to be included. The challenge is to develop feasible options for an integrated sanitation system (sewer based and non-sewer based sanitation solutions) which guarantee an adequate sanitation service for all citizens of Kampala.

The management system within Kampala is such that different organisations have different mandates as regards sanitation, with the key players being KCCA and NWSC. In June 2006, a Partnership Agreement was signed between NWSC and Kampala City Council (KCC). This Partnership Agreement recognises that KCC now KCCA, is responsible for on-site sanitation and, in particular, for the oversight of the cesspool emptier services. Private operators who are organised The Private Emptier Association of Uganda (PEAU) are responsible for cesspool emptying and transport. These operators work closely with NWSC.

In an attempt to improve the sanitation situation within Kampala, KCCA and NWSC have implemented several projects. Examples are Kampala Integrated and Environmental Management project (KIEMP) that was implemented by Kampala City Council with the support of Government of the Kingdom of Belgium through the Belgium Technical Corporation (BTC) from 2009 - 2010. The project was implemented in the parishes of Katwe I, Kisenyi II and Bwaise III. There was also Kampala Urban Sanitation Project (KUSP) which was implemented by Kampala City Council with support from the Republic of France through Agence Francaise de Development (AFD) from 2003-2006. The project objectives included construction of sanitation facilities, protection of water resources and springs, improvement of water supply in these areas. The other projects in Kagugube financed by AfDB and Global Partnership on Output based Aid financed by World Bank were implemented by NWSC.

Despite the above interventions, sanitation and water supply challenges within the informal settlements are still of concern and require a more holistic approach in order to substantially make a difference. As part of the attempt to execute this, NWSC which is currently implementing the Kampala Water-Lake Victoria WATSAN project, in close coordination with KCCA intend to undertake a study to develop this holistic approach.

2.3 Kampala Water – Lake Victoria Water and Sanitation Project

Kampala Water – Lake Victoria Water and Sanitation Project (KW-LV WATSAN Project), estimated to cost Euros 212 million, is to be implemented through funding from GoU and a consortium consisting of KfW, AFD and EIB. The project aims at providing long-term solutions to the water supply challenges of Kampala. The proposed project is based on a long-term rehabilitation and extension strategy for the water supply system of Kampala (2003, updated 2010) and is closely linked to the on-going and future implementation of the Kampala Sanitation Master Plan (2004). The overall strategy aims at meeting Kampala's water demand for the year 2035. It includes a systematic and phased approach to reduce water losses and operational costs while protecting the watershed, improving sanitation

conditions and serving the poor. The project is expected to consist of the following components:

1. Upgrading and rehabilitation of the Gaba water treatment plant complex: Increase water treatment capacity from 150,000m³/day to 230,000m³/day through appropriate rehabilitation and extension activities. Construction of a new reservoir, clear water pumps, and a new sludge treatment plant for mechanical removal of the chemicals used in the treatment process.
2. Network restructuring and rehabilitation: Restructuring and extension of the existing distribution network through construction and rehabilitation of transmission mains (25 km length of DN 1,200 mm) and primary distribution system (49.4 km of pipes of DN 200 mm to DN 700 mm) and associated reservoirs, densification and extension of the secondary network (156 km length of DN 500 mm to DN 200 mm) and extension, as well as rehabilitation, of the tertiary network (730 km length of DN150 mm to DN 50 mm). Implementation of district metering zones and improved pressure management, including a SCADA System for network monitoring, and of activities for technical and administrative water loss reduction.
3. Extension of water supply and sanitation in informal settlements: Improve water supply in 20 selected informal settlements through network densification and construction of nearly 3,000 public water points and yard taps with electronic pre-paid meters, to ensure access for additional 400,000 people to safe drinking water at affordable costs. Activities to promote user sensitization and organization. In close coordination with the Kampala Sanitation Programme, implementation of pro-poor oriented sanitation measures with a focus on faecal sludge management and social marketing programme with a target of at least 250,000 people.
4. Construction of a new water treatment plant east of Kampala and associated network: Construction of intake for 240,000m³/day at a new location east of Kampala, a water treatment plant with a capacity of 120,000m³/day, sludge handling facilities, a clear water pumping station, transmission mains (28 km length of DN1,200 mm) and primary network (41.5 km length of DN 400 mm to DN1,200 mm), as well as undertaking of other activities that are appropriate to protect the watershed.
5. Accompanying measures: Capacity development in the areas of overall investment planning, in particular better coordination of sanitation planning with expansion of water supply, operations management, network modelling, asset management, supervisory control and data acquisition (SCADA) system for network management, pressure management, and financial management. All these measures will be accompanied with relevant training and the provision of appropriate equipment.

Implementation of the above components of work is being undertaken in 7 packages most of which are interlinked in their implementation. Most of Component 3 is being implemented under Package 5. The package has been split into 5a (Study) and 5b (Implementation)

In implementing package 5 NWSC together with KCCA are drawing experience and technical support from GIZ. GIZ have been involved in the sector for a long time under such projects such as the Reform of Urban Water and Sanitation Sector which commenced in 2002. The experiences of the GIZ project related to the promotion of sanitation in Kampala through innovative sanitation marketing and the current GIZ cooperation with KCCA shall be taken

into consideration in both the conceptual and the implementation component of this consultancy.

3 DEVELOPMENT OF AN APPROPRIATE SANITATION CONCEPT, REVIEW OF WATER SUPPLY ASPECTS IN INFORMAL SETTLEMENTS & FEASIBILITY STUDY (PACKAGE 5A)

3.1 Background

The 2002 Census stated that approximately 120,000 households in Kampala were poor and in the same year UN Habitat estimated that 44% of the population of Kampala lived in Informal settlements. A study undertaken by the Ministry of Lands, Housing and Urban areas in 2008 estimated that 64% of the population of Kampala lived in slums, adding to approximately 170,000 households and a growth rate of nearly 6% per annum. MLHU's findings are echoed by WHO (2010) which states that 60% of the population of Kampala lived in slums, which cover up to 25% of the total area of the city. The density is 400 persons/ha compared to 73 persons/ha in other areas.

Informal settlements are varied in size, population, ethnic, social and cultural character, but share one common denominator – poverty. Residents are mainly engaged in petty trading and casual manual work. The surveys that have been carried out so far have revealed that almost 40% of males and 49% of females were engaged in small-scale informal activities and businesses that earn them less than one United States dollar per day, each, on average. Incomes range from UGX 10,000 to 285, 000 per month and is earned on a day-to-day basis. According to official statistics, about 35% of residents survive on less than one United States dollar per day.

The provision of basic water and sanitation services to all remains a necessary and urgent task in Kampala's informal settlements. Major deficiencies in the provision of that basic service contribute to serious environmental health problems and the degradation of the scarce water resources. It has been established that the average drinking water consumption by Pre Paid Meter is 8 litres per capita per day, which falls far below the recommended 50 litres of water per person per day as per WHO guidelines. The financial situation of the people within these settlements has had serious implications on their ability and willingness to pay for urban utility services hence causing a setback in the ability to extend these services to the people.

The existing sanitation situation in the settlements is alarming. Private toilets are limited to 16% of families, mainly land owners. 70% of families are tenants using shared latrines and about 14% are supposed to use public toilets. However, half of all poor areas have no single public toilet. There is an additional problem to be considered; during the day an additional of 1.5 Million people come from surrounding areas into the municipal area of Kampala, most of them are looking for income in the market of informal settlements. There are many bus stations, markets, schools and hospitals in settlements with limited sanitation infrastructure.

The most common form of excreta disposal in these settlements is the traditional pit latrine type that is non-emptiable. Less than 20% of latrines are emptied by service, 50% are abandoned without emptying and the faecal sludge of about 30% or more is discharged illegally, pits are opened during rainy seasons and the sludge is allowed to flow into storm

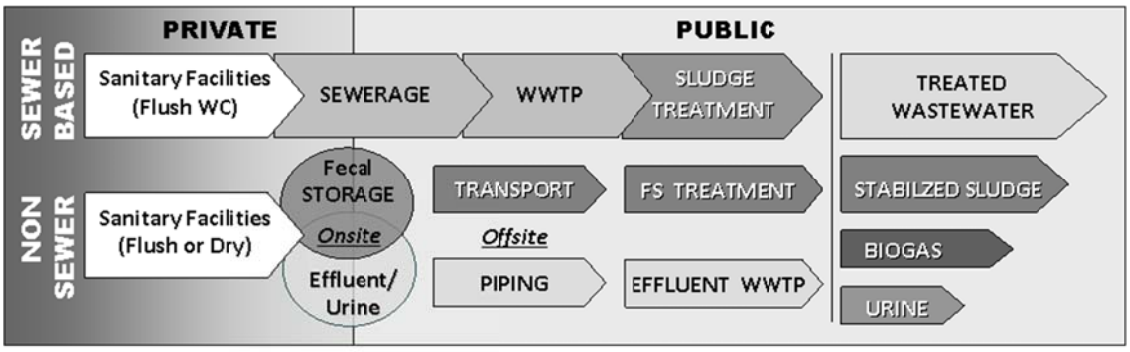
water drains which contributes to serious environmental health problems and the degradation of the scarce water resources. Other problems stem from the fact that only 50% of latrines are in a state in which they can be used properly and 80% of the poor people are not satisfied with the sanitation solution.

Sanitation becomes more complex when it gets to informal settlements where sub-standard living conditions and other technical, economic, social or even institutional reasons limit the options for adequate sanitation services. Most of these areas are unplanned and are commonly found in the low lying areas, the wetlands which according to the NEMA statute, human habitation is not expected. The high water table in such areas has had an impact on type of sanitation facilities that can cope with these conditions. Recent demographic trends reveal a pattern of urban demographic growth within these settlements which most urban Authorities are ill equipped to cope with.

Despite the above challenges, several projects aimed at ensuring significantly enhanced access to water and sanitation services within these informal settlements have been implemented as earlier detailed. Under these previous programs, a rapid assessment within these settlements has been carried out. In part due to inadequate funds, the interventions that were subsequently implemented were done in a phased approach. Additionally, the major focus in these interventions has tended towards water than sanitation which forms a critical aspect in the non-sewered informal settlements.

Under this consultancy it is intended to upscale the good lessons learnt from the previous projects and prepare an elaborate and appropriate sanitation concept, as well as improve on the water supply aspects within the informal settlements in Kampala. This should address the challenges of water supply and sanitation using a holistic approach. This work will include considering sewerage and faecal sludge/ faecal material management in an integrated way, incorporating the aspects of faecal sludge management into urban planning right from household to neighbourhood, city and outside the city, considering appropriate technologies and service delivery mechanisms, sanitation and hygiene marketing, considering existing investments, local resources and capacities of different stakeholders as well as their opinions and financing solutions for the most realistic strategies among others.

The schematic below gives an overview of the framework from a technical point of view for a city-wide integrated sanitation management model with sewer based wastewater treatment and management of onsite storage faecal sludge and other sanitation products (dried or fresh faeces, urine or grey water etc.), which either can remain onsite or have to be transported to further treatment or/and disposal. Key players for this concept in Kampala are NWSC and KCCA.



Integral Sanitation approach for urban areas (KfW Sanitation Task Force)

3.2 Project Objectives

As one package of the greater KW-LV WATSAN project, the overall objective of "Improvement of Water Supply and Sanitation in Informal Settlements" is to increase the appropriate access to water supply for 400,000 additional people and to improved sanitation for 250,000 residents in informal settlements. The project is based on the experiences documented in Kampala Urban Poor II Assessment Report (2010), where 20 Parishes have been pre-selected. To roll out its implementation, this work package has been sub-divided into 2 sub-packages: 5a for a preparatory study and concept development) and 5b for design and implementation. The outputs of Package 5a shall form the basis on which Package 5b will be implemented. This consultancy shall be for works under package 5a

The objectives of the present study are as follows:

i) Review of documentation and recommendation of the improvement of water supply approach in informal settlements with reconsideration of an adapted hygiene promotion

ii) Development of an appropriate integrated sanitation concept for the entire urban area with key focus on faecal sludge management, within the institutional framework.

iii) Establishment of feasible toilet technologies for private, public, communal, institutional (especially schools) and development of adapted financing and operational models

iv) Elaboration of investment packages for private, public, communal and institutional toilets in coordination with KCCA for localization of sites

v) Establishment of investment packages for densification and extension of water supply networks in the 20 selected informal settlements

vi) Elaboration of investment packages for an overall implementation programme. The first package shall compose of works within the preselected 20 pressures. Investment packages shall be elaborated in such a way that high priority measures are prioritised. Faecal Sludge/Faecal Material Management shall be broken down into distinct stages implemented under a long term programme.

vii) Development of a project proposal for a municipal sanitation marketing and hygiene promotion program.

The key outputs of the study (package 5a) are:

- Review of Water supply aspects within Informal Settlements

- Sanitation concept and project identification feasibility study that shall serve as a decision tool for subsequent investment measures
- Development of project proposals for implementation under P5b

4 SCOPE OF CONSULTANCY SERVICES

4.1 General

The consultant shall collect and review available documentation on NWSC and KCCA (formerly KCC) projects with a view to assess project success, failures, technological advancements, comparison with similar international experiences etc. This exercise together with these ToRs shall form the basis for undertaking the major tasks listed below. The Consultant's activities shall comprise of the activities listed below but not necessarily be limited to what has been outlined. It is rather the Consultant's responsibility to critically verify the scope of services indicated and to adjust it, wherever this is deemed as necessary according to the professional judgment. It is understood that the Consultant performs all work as necessary to fulfil the objectives of the assignment.

4.2 Water Supply Aspects

The Consultant shall review the performance of the technologies with a view to proposing improvements. These will include measures to reduce costs of maintainability and operation of this equipment where possible. Where necessary the consultant shall review the possibility of using alternative technologies in future implementations.

DETERMINATION OF PROJECT MEASURES

No.	Ranking in Feasibility Study [1]	Parish	Division	Projected Population (2012) [2]	WS Connection Rate	Projected Population (2025) [3]	Domestic connections 2025 [4]	Population not supplied 2025	Number of Yard Taps necessary [5]	Number of PSP necessary [5]	Number of PWSP necessary [5]	Number of demontration latrines
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
1	18	Kiswa	Nakawa	6.500	9%	7.398	79	6.723	39	13	52	2
2	7	Katwe I	Makindye	13.300	10%	15.137	150	13.532	79	27	105	5
3		Wabigalo	Makindye	26.100	19%	29.704	335	24.176	142	49	191	10
4		Bwaise I	Kawempe	26.100	23%	29.704	982	22.278	130	45	175	10
5	6	Kanyanya	Kawempe	27.200	25%	30.956	1.619	21.627	126	43	169	10
6	17	Makerere II	Kawempe	17.100	26%	19.461	584	14.158	83	28	112	7
7	1	Kasubi	Rubaga	63.200	27%	71.927	2.242	51.511	304	104	408	24
8	14	Kawempe I (Mbogo Tula	Kawempe	52.700	30%	59.978	2.608	40.486	239	81	320	20
9	10	Nsambya Central	Makindye	43.800	30%	49.848	1.703	33.973	201	69	270	17
10		Banda	Nakawa	17.700	32%	20.144	696	13.362	79	27	107	7
11	12	Kibuli	Makindye	32.700	33%	37.216	368	25.883	156	53	209	13
12		Bwaise III	Kawempe	15.300	35%	17.413	358	11.524	69	24	93	6
13		Kawempe II	Kawempe	19.064	40%	21.697	1.421	11.900	71	24	95	7
14	13	Nakulabye	Rubaga	28.700	39%	32.663	1.086	19.945	120	41	161	11
15		Bwaise II	Kawempe	26.100	39%	29.704	1.086	17.836	108	37	144	10
16	8	Mbuya I	Nakawa	27.400	44%	31.184	1.206	17.451	106	36	143	11
17	17	Bukoto I	Nakawa	26.100	46%	29.704	1.611	15.362	93	32	125	10
18		Kazo	Kawempe	21.300	47%	24.241	1.187	12.546	77	26	103	8
19	11	Kamwokya II	Central	22.100	49%	25.152	647	13.255	83	28	111	8
20	14	Komamboga	Kawempe	8.300	49%	9.446	857	3.608	22	8	30	3
SOURCE: NWSC Data, Calculation of Consultant, UBOS												
		TOTAL preselected		520.764		592.678	20.824	391.136	2.328	795	3.123	200
											1.15 hectare per PWSP	2,963 person per demonstration latrine

1) Water Supply Feasibilty Study for Informal Settlements in Kampala, Ministry of Water, Lands and Environment, GKW, 2002
2) Source: UBOS - Uganda Population and Housing Census (2002) and Sub National Projections Report, Central division
3) Assumed population growth rater per year: 2,0%
4) Increase of house connection rate per year: 4,0%
5) Coverage rate of 100 %

PWSP: Public Water Supply Point
PSP: Public Stand Pipe

Preselected 20 Parishes documented in "Kampala Urban Poor Water Supply and Sanitation Project" Assessment Report Phase II – Final", October 2010

Information to be gathered will be on the following (but not be limited to):

i) Prevailing water supply technologies and practices (number of users, payment, ownership, coverage and hindrances, management including costs) in the area with a specific focus on the urban poor households/communities

ii) Primary data (NWSC projects) on the different customers in the Kampala area that are considered to be poor (principally consumption and billing data, including data from the prepaid metering system if any).

iii) Secondary data (i.e. reports) from the Uganda Bureau of Statistics (UBOS), the Department of Water Development (DWD), Kampala Capital City Authority (KCCA), NWSC and reports from the recent projects done in Kampala. This will include population and poverty data as well as financial, economic cost and sector performance data for the selected settlements from Annual Reports.

Work with NWSC GIS, Network and water Supply department to identify the location of the water mains and low income settlements. It should be done in a way that the GIS data from UBOS are taken with boundaries and population at a parish level and for each parish the current coverage determined.

iv) Identify the role of hygiene promotion programs, institutional responsibility and important stakeholders.

Additionally, the consultant will be required to review and advice on the current management model specifically addressing but not limited to the following;

- Accommodation of Urban Poor Unit within NWSC Management Structures
- Appropriate franchising arrangements/mechanism for the prepaid meters
- Payment methods/ technologies
- Operation, maintenance and monitoring

The consultant shall assess the access to NWSC drinking water supply in each of the informal settlements based on agreed criteria which shall include;

- Densification of standpipes and yard taps
- Proximity/availability of NWSC trunk/distribution mains
- Population growth/consumption trends within the settlements
- City planning and structure plans of KCCA, as well as master plans and network planning of NWSC

Based on the analysis, the consultant shall propose the design of an investment package for densification and extension of water supply network to address the 20 selected parishes. This package is to be considered as an update of the existing project proposal. The new investment package is affected by the necessity of an additional hygiene promotion and a higher demand for investment in sanitation services.

4.3 Sanitation services in Non Sewered Areas

The sanitation services for the non-sewered areas of Kampala need a new sustainable approach, which has to consider the role of NWSC, KCCA and other stakeholders. This

includes the development of an integrated overall urban sanitation concept including a Faecal Sludge Management Model and new technology approaches for feasible sanitation technological options for improved access to sanitation facilities (private, public, communal and institutional toilets). That means that the project part concerning sanitation will be more extensive than it was proposed in "Kampala Urban Poor Water Supply and Sanitation Project Assessment Report Phase II – Final" October 2010. It is expected to incorporate all results, in particular the experience with on-site technologies (Sulabh- and Urine Diversion Toilets) and the development of the local small-volume faecal sludge emptiers (UgaVac).

4.3.1 Assessment of the Initial Sanitation Situation

In order to develop a sustainable concept for non-sewered sanitation in Kampala, the Consultant shall review available studies, documents, existing information, secondary data and experiences in other relevant countries and towns, including all relevant project experiences in Uganda. The analysis will involve assessing the prevailing situation in non-sewered areas of Kampala. This will target but not be limited to the following;

i) Social situation/ Target group(s) and poverty relevance:

- Economic and social structure of the target group(s) (size of income, income sources of incomes, and employment situation, household expenditures).
- Determination of affordability and willingness-to-pay for sanitation services (including income and expenditure analysis)
- Overall sanitation situation in non-sewered areas based on available secondary data

ii) Technical and logistical conditions:

- Analysis of the volume and characteristics of present faecal sludge and other sanitation products (fresh or dried faeces, grey water, urine), transportation (including distance to treatment plant, transport capacity, role of Ugavac, treatment capacity, disposal)
- Assessment of existing toilet technology in the given social and environmental context (impact of non-treated faecal sludge, identification of contamination risk for soil and groundwater, reconsideration of springs and high groundwater level).
- Identification of existing faecal sludge reuse forms and mechanisms, as well as estimates of the demand for soil/treated sludge in the communities or outside.
- Identification of technical and local practices and solutions for public toilets in dense urban areas on the international market including facilities connected to sewers (or reception station for wastewater from public flush toilets into the sewer).
- Technical and financing conditions for different toilets types: private (landlord or private family), community, public and institutional (school) toilets including urine division toilets and mobile solutions, due to the cost - and area limitations.

iii) Institutional Aspects

- Assess and propose roles and mandates, capacity and performance of pertinent institutions (NWSC, KCCA, PEAU, NGOs, user associations, private companies, etc.), administrative set-up and responsibilities.
- Identification of institutional, technical and economic interfaces in a sanitation concept that integrates aspects including sewered, non sewered, faecal sludge management, environmental protection, water quality, public health etc.
- Analysis of regulatory framework for sanitation (and faecal sludge management) including background, laws, regulations, enforcement, interaction with other pertinent sectors etc.
- Stakeholder identification and mapping (priorities, interests, etc.), in particular the assessment of capability and willingness of NWSC, KCCA, PEAU as key in faecal sludge management, staffing profile and functions, consistency check, capacities, financial and economic capability (income/expenditure statements, cost structure, allocations from the central government and the municipality). – based on existing studies, reports and documents, as well as interviews with stakeholders.
- Analysis of the organisational set-up of NWSC for the implementation of the project.

iv) Financing of Sanitation

- The contribution of the following financing components shall be analysed for the financing of investments and operations for sanitation services: Environmental levy, user charges and tariffs subsidies, grants, etc.
- Determination of relevant current market prices and of current costs along the sanitation value chain according to different models.
- Payment flow chart of payments along the sanitation value chain, including comparison and determination of the feasibility of three models: (i) the current situation,
  (ii) collection of user fees and payment to the emptier at disposal through NWSC (clearance model), (iii) out sourcing of the collection and transport via KCCA.
- Potentials for private sector involvement. Identification of possible private sector participation concepts for the operation of the sewerage and wastewater treatment systems, as well as construction and operation of toilets

4.3.2 Elaboration of Sanitation Concept

1. The Consultant shall propose an overall concept for sanitation including faecal sludge management in non-sewer areas of Kampala, comprising application of the value chain, which includes all relevant technical, economical and institutional aspects and takes into account the advancement in technology with regard to onsite products (faecal sludge, dried or fresh faeces, urine, and grey water). The sanitation concept shall consider the interfaces to the sewerage system of collectors and treatment plants. The management

model for faecal sludge and faecal material will be considered as annex to the Kampala Sanitation Plan.

- o Payment flow chart of payment options along the sanitation value chain (e.g. collection of user fees and payment to the emptier at disposal through NWSC (clearance model), non-integrated option (different actors along the faecal sludge management chain) vs. integrated option (everything under the umbrella of NWSC)
- o Technology approach and operational model (adequate storage, transport and treatment of faecal material) of public, community, institutional and private toilets.
- o Technologies of faecal sludge and other faecal material collection and transport (for instance: incorporation of small-volume faecal sludge emptier - UgaVac, holding tanks, sewer reception points or transportable container for faeces), reconsideration of operation and maintenance (O&M).
- o Recommendation of faecal sludge and other faecal material treatment technologies; e.g. one central faecal sludge treatment plant (Lubigi) and/or further decentralized treatment plants for faecal sludge or other faecal material (as fresh or dried or mineralized faeces) and reconsideration of operation and maintenance (O&M).
- o Recommendation on control mechanism and institutional enforcement for realization of a sustainable concept of collection, transport, disposal and reuse of faecal sludge and faecal material.
- o Justification of the proposal, comprising the analysis of frame conditions, problems and their consequences, the identified project needs and proving that the proposed project is suitable for their solution and meets the envisaged target and goal of the project.
- o Calculation of Dynamic Prime Cost for each selected option broken down into unit operations along the sanitation value chain.

The consequences, advantages and disadvantages of different options (Toilet technologies and Faecal Sludge Management model) shall be outlined and justified, in environmental, technical, economic, financial, institutional and operational terms. On the basis of the assessment of option the consultant will elaborate a detailed proposal for a sanitation concept for Kampala, including:

4.3.3 Implementation Options

Based on the Concept developed, the consultant shall develop implementation options. This shall include, but not be limited to the following features:

1. Proposal of an implementation programme bundled in investment packages with an indicative timeline. Of immediate priority will be measures within the preselected 20 parishes. The consultant shall in addition submit an estimate of investment cost (showing foreign and local cost, physical and price contingencies)
2. Investment packages for public, communal toilets and institutional (school) toilets, technology options, estimation of investment costs and operational costs including financing, payment flows, technical and institutional implications, Mapping of places beginning in the 20 Parishes, depending on demand, design proposal and operational model (in coordination with KCCA):

- Technical options: Dry toilet (for instance Urine Diversion) with container solution or pour flush with connection to sewer or intermediate storage in holding tanks, possible incorporation of small-volume faecal sludge emptier (UgaVac)
- Operational options: commercially operated public toilets on public places licensed and controlled by KCCA or communal operated toilets only for families
- Mapping of places: influenced by technology, costs and O&M model (for instance sewer connection possible, holding tank necessary or dry toilet practicable)

3. Investment packages for private toilets which can be promoted among landlords (shared toilets) or families (private toilets), technology options, estimation of investment costs and operational costs including inclusive financing options for private toilets (for instance micro-credit, subsidies, etc.), focused on application beginning in the 20 Parishes with drinking water supply institutional implications.
4. As many investment package(s) as necessary for realization of an organized Faecal Sludge Management Model. The implementation of a Faecal Sludge Management system is a staged long term programme including several investment packages; the first package shall be adapted to the currently available funds

All packages have to consider an adapted hygiene promotion and Sanitation Marketing program (see § 4.4).

4.4 Hygiene promotion and Sanitation Marketing Program

The development of a municipal Hygiene Promotion and Sanitation Marketing Program in Kampala is considered fundamental for the sustainable improvement of drinking water supply and sanitation services in urban poor areas. The Consultant shall review the performance of previous hygiene programs with a view to proposing improvements. Information to be gathered will be on the following (but not be limited to):

i) Organizational chart of sanitation services and hygiene promotion in Kampala at different levels (e.g. municipality, divisions, communities, schools) and assessment of possible cooperation, co-financing and harmonisation of hygiene promotion strategies
ii) Summary and revision of the institutional set-up and mandates, as well as identification of possible implementing organisations, for instance specialised consulting companies in hygiene promotion, communication and sanitation marketing or NGOs
iii) Assessment of studies, investigations and programmes currently or recently carried out in Kampala and in other parts of Uganda applicable to Kampala including analysis of on-going or recent hygiene promotion programmes and communication materials at household level (key messages, promotion approach, impact evaluation, scope of activity, implementation).
iv) Wrap-up of experiences and lessons learnt as well as requirements for adapted strategies for hygiene promotion and sanitation marketing:
    - o Hygienic use of drinking water (public/yard stand posts and house connections), sensitisation about dangers of unprotected springs in settlements and

- o Hygiene promotion and sensitisation linked to sanitation marketing including strengthening willingness to pay for public toilets, raising awareness of regulations, encouraging tenants to use toilets

v) Identification of context specific key messages to be promoted and further information requirements to set up an effective hygiene promotion campaign (such as sanitation products and personal hygiene to be promoted through marketing).

vi) Identification of sanitation marketing partners, their role and support requirements inclusive potentials for private sector activities/involvement.

Based on the analysis, the consultant shall propose the design of a municipal program for social marketing for health promotion, related to

- Awareness about water borne diseases (use of water from PPM),
- Hygienic use of toilets,
- Willingness to pay for use of communal toilet
- Promotion for private toilets

The programme will be implemented according to the investment packages for water supply (§ 4.2) and sanitation (§ 4.3) by the defined implementing organisations and controlled by the responsible institutions.

5 ORGANISATION OF THE SERVICES

5.1 General Requirements

The consultant is expected to undertake the services described in these Terms of Reference in close cooperation with the Project Implementation Unit (PIU) in the NWSC headquarters and Kampala Water network operations and maintenance staff as well as the steering committee that will be developed from the different stakeholders, and consultative meetings with various stakeholders.

The consultant's tasks for execution of this work package have been outlined as detailed as possible. However, the consultant shall bear in mind that the list of tasks and activities can by no means be considered as a complete description of the consultant's duties. It is the consultant's responsibility to critically verify the scope of services indicated and to extend, reduce or amend it wherever deemed necessary in his own professional judgment. It is to be understood that the consultant shall perform all work as necessary to meet the objectives of the project.

More so, other consultants and advisors may provide services to NWSC in Kampala. It is the duty of the consultant to meet and coordinate his activities with the operations of other consultants relevant to the project. It is to be ensured that the proposed standards, systems and methods are consistent throughout the overall project to avoid duplication of efforts.

5.2 Working Schedule

The maximum duration of the consultancy services as from the date of commencement of services has been fixed to seven (7) months until submission of the final feasibility study. This schedule includes the periods for preparation of the workshop and comments concerning the draft version of the study report. The consultancy services as outlined in

Chapter 3 of the present ToR shall be scheduled tentatively in accordance with the time schedule stated below:

Following deadlines have to be respected:

- submission of the Inception Report 1,5 months from start of activities
- submission of the Draft Feasibility Study Report 5,0 months from start of activities
- workshop on study results 5 months from start of activities
- submission of the Final Feasibility Study Report 7,0 months from start of activities

It is the responsibility of the Consultant to establish his own detailed work programme, where he is free to reduce the above time estimates in accordance with his professional judgement and knowledge of the local conditions.

5.3 Reporting

All reporting shall be performed in accordance with the Consultant's schedule. Approval time for the draft report will be four (4) weeks after submission. The time for revision and completion of the draft Feasibility Study on the basis of the comments from NWSC, the relevant stakeholders and KfW has been also fixed to four (4) weeks. The reporting shall comprise the following reports:

a. Inception Report

In the Inception Report the Consultant shall present a description of revised/adapted methodology and revised schedule of activities, if required, as well as possible cost impacts. The inception report shall also summarize the consultant's initial findings, the first assessment of available data, the updated planning guidelines, proposed planning boundaries, design parameters and key assumptions as well as the selection method for the priority works to be implemented under package 5b.

b. Feasibility Study Report

The Feasibility Study Report shall comprise the preliminary technical, financial and institutional design for water supply and integrated urban sanitation in the preselected parishes including possible investment packages. The report has to be submitted latest two weeks before the planned 1-day workshop and shall be the basis for discussion and decision taking.

The final concept report shall entail agreed upon/appropriate sanitation concept (including faecal sludge management), improvement strategies for the water supply, proposed hygiene and sanitation marketing programme, the proposed infrastructure developments in the 20 pre-selected parishes as well as investment packages including a first stage investment package adjusted to the available, as specified in chapter 3.

All reports have to be prepared in English language and transmitted to NWSC (4 copies) and KfW (2 copies) with the exception of the final version of Feasibility Study Report. The final (approved) version of the Feasibility Study Report has to be submitted in English language to NWSC (5 copies) and KfW (2 copies).

All reports shall contain an executive summary and shall be prepared in DIN A4 format, plans and drawings may be prepared in DIN A3 format. In addition to these hardcopies, all

documents (reports and drawings) have to be provided in digital format (MS Word and pdf-format, MS Excel, drawings in pdf-format).

5.4 Stakeholder Mapping and Workshop

For ensuring organizational and stakeholder wide appreciation and ownership of the final study outputs and recommendations, the consultant shall be required to organize a 1-day-workshop for the presentation of key results of the feasibility study. The consultant is expected to meet the full cost of such workshop. The outputs of this workshop shall guide the direction of the final study report; comments on the workshop shall be considered during the completion of the final version of the Feasibility Study.

5.5 Coordination of the Assignment

NWSC will nominate a member of their staff as Programme Manager. The Programme Manager shall carry out all project management oversight activities, supervisory roles and review, sign-off and approval of consultant's reports. It will be the consultant's duty to maintain close contact with the programme manager on all aspects of work. As a matter of principle, all formal communications relating to the work will be directed to the attention of the programme manager. NWSC shall also nominate a project team lead by Principal Engineer that will be responsible for the day-to-day coordination and monitoring of the project activities. As such, the project team shall closely work with the consultant to ensure that all requirements of NWSC are fully met.

A steering committee will be formed consisting of various stakeholders, e.g. KCCA, to assist NWSC in supervising and guiding the consultancy services.

5.6 Contribution of NWSC

NWSC will provide free of charge all existing information, data, reports and maps as far as available and will assist the Consultant in obtaining other relevant information and materials from national institutions and authorities as far as possible. However, it is the duty of the Consultant to check availability, quality and suitability of this information. The information, data, reports etc. as mentioned above will be available for the Consultant's unlimited use during execution of the proposed services. All these documents used by the Consultant must be returned to NWSC upon completion of the assignment. Due provision shall be made in the proposal in case he has to procure maps, aerial photographs, meteorological, hydrological and geological data, etc. necessary to carry out the services at his own cost.

NWSC will facilitate all staff permits, authorisations and licenses required for performance of the Consultant's services in Uganda. NWSC will assist the Consultant in customs clearance of all equipment, materials and personal effects to be imported (and re-exported upon completion of his assignment) for the purpose of the execution of the study.

The Consultant has to arrange at his own cost for transport and the necessary office equipment including communication facilities. Adequately furnished offices will be made available during study activities by NWSC assisted by KCCA.

5.7 Staffing

The consultant is invited to elaborate in his technical offer the envisaged logistical setup and deployment of appropriate skills for the execution of the assignment. The consultant is reminded that this assignment consists mainly of concept development, review of existing institutional aspects in regards to water supply and sanitation, data collection and analysis, review and proposal of marketing strategies etc. and therefore the staff proposed to handle these aspects should be highly qualified and experienced. The consultant will be expected to present his staffing schedule in a manner that clearly illustrates the role and time input of each of the staff members involved in the assignment. To enhance the technical skills and experience of local firms, it is highly recommended that the consultant works in association with local consultancy firms. The consultant's team is expected to provide the following areas of expertise:

- Team leader an international expert with wide experience in carrying out feasibility studies in water supply and sanitation.
- Expert in Institutional development issues preferably in water and sanitation
- Technical Expert with wide experience in development of water supply projects to informal settlements, large scale non-sewered sanitation and sewerage projects including experience with assessing of these projects and design
- Environmental Expert with wide experience in Sanitation projects
- Financial/Economic Expert with wide experience in undertaking studies/analysis on Water supply and Sanitation projects in urban poor areas preferably in comparable Developing countries in Africa
- Social marketing expert with wide experience in hygiene and sanitation in Africa
- Field coordinator with wide experience in data collection and analysis.

The team leader must be knowledgeable and well versed in contract management in addition to being a specialist in any of the fields outlined above. The team leader shall be permanently on site during project activities. International expert is defined as expert with working experience mainly outside his home region. This has to be understood as a tentative list of requested expertise. It is possible that one expert covers more than one field of expertise. The Consultant shall feel free to add extra and/or multi-skilled staff as he deems necessary and appropriate to accomplish the tasks based on his professional judgement.

To familiarize him/herself with the services to be provided under this consultancy, a visit to the project area before presentation of the proposal is strongly recommended. However, it should be understood, that any cost incurred in this regard shall not be a reimbursable expense to the consultant.

5.7.1 Key personnel

The following key personnel shall be required as a minimum to undertake this assignment within the stipulated timeframe. The consultancy input shall not exceed a total of 81 man-months. The consultant is free to propose appropriate number of man-months inputs and additional staff man-power requirements necessary to efficiently deliver the expected project outputs within the stipulated time frame.

a) The Team Leader an international expert with wide experience in carrying out feasibility studies in water supply and sanitation in informal settlements/urban poor areas. The team

leader shall have at least a Master's Degree in Management or a related field and at least 15yrs experience with management of water and sanitation projects in informal settlements, urban pro poor strategies in utilities and local governments.

b) Institutional Expert shall have at least a Master's Degree in Management or a related field and at least 15yrs experience in institutional development issues preferably in water and sanitation.

c) The Technical Expert shall have a Master's Degree in Civil/ Environmental/ Sanitation Engineering or an equivalent and a minimum of 15 years overall experience and 8 – 10 years specialist experience in planning and implementation of water supply and sanitation projects in informal settlements. Experience in African countries will be an added advantage.

d) The Environmental Expert shall have a Master's Degree in Civil/Environmental Engineering/Environmental Management or equivalent and a minimum of 10 years overall experience.

e) The Financial & Economic Expert shall have a Master's Degree in Finance/Economics or equivalent and a minimum of 10 years' experience most of which should be in development sanitation projects in developing countries as well as water supply projects to informal settlements.

f) The Social Marketing Expert shall have a Master's Degree in a related field and at least 10yrs experience working on community projects in developing countries preferably East Africa.

g) The Field Coordinator shall have a Bachelors' Degree in Civil/Environmental Engineering or an equivalent and 5 years' specialist experience in carrying out field data collection and analysis in informal settlements.

Table 5-1: Staffing and man-month input requirements

Position	Indicative Man-month inputs
Team Leader	**5.0**
Institutional expert	**4.0**
Technical expert	**5.0**
Financial/Economic Expert sanitation & water supply	**4.0**
Social Marketing Expert	**5.0**
Environmental Expert	**3.0**
Field Coordinator	**3.0**

5.8 Back-up Service and Quality Control

The home office of the Consultant shall maintain continuous support to the team in Kampala. Before submitting any report, the home office is obliged to carefully screen the respective document to ensure the required quality. The Feasibility Study shall be the basis for project implementation; hence, the Consultant should keep in mind that the final report should enable KfW to follow the requirements of the German sector document; "General Principles

for Planning and Implementing of Development-Policy Cooperation Projects in the Drinking Water Supply and Sanitation Sector" and the KfW guidelines for appraisal. The correspondent cost shall be included in the Financial Proposal.

Bibliography

For purposes of carrying out the services, the successful consultant will find additional references in the following documentation available:

2010/10 **Assessment Report for Kampala Urban Poor project Phase II,** Fitchner Water & Transportation

2010/10 **Kampala Water- LVWATSAN – Economic Analyses Final Report**, European Investment Bank

2010/10 **Project Document of Kampala Water – LV-WATSAN Project**, French Development Agency (AFD), European Investment Bank (EIB) & German Development Bank (KfW)

2010/08 **Project proposal for Kampala Water – Lake Victoria WATSAN Project,** A presentation to Water and Sanitation Sector Working Group.

2010/07 **Update of the 2003 Feasibility Study for Kampala Water Supply, Volume I: Executive Summary, Volume II: Final Feasibility Report & Volume III: Annexes**, NWSC, Government of Uganda, Ministry of water and environment, National Water and Sewerage Corporation, Pöyry Environment GmbH in association with Alliance Consultants Ltd.

2009 **Fourth Performance Contract (PC4) for the Period 1st July 2009- 30Th June 2012 between The Government of the Republic of Uganda (GoU) and National Water and Sewerage Corporation (NWSC).**

2009 **2009-2012 Corporate Plan National Water & Sewerage Corporation,** "Maximizing the cash operating margin: Water is life, sanitation is health".

2008/07 **Kampala Sanitation Programme (KSP)/ Uganda - Feasibility study, Volume 1 "Main Report",** Government of Uganda, Ministry of Water, Lands and Environment, National Water and Sewerage Corporation, co-financed by KfW and African Development Bank, presented by Fichtner W&T and M&E

2003/04 **Feasibility Study for Kampala Water Supply**

2004/11 **Sanitation Strategy & Master Plan for Kampala City (KSMP), Volume 1, Executive Summery,**
Government of Uganda, Ministry of Water, Lands and Environment, National Water and Sewerage Corporation with Beller Consult, Mott MacDonald and M&E Associates

2004/09 **Sanitation Strategy & Master Plan for Kampala City (KSMP), Volume 2**

2004/09 **Sanitation Strategy & Master Plan for Kampala City (KSMP), Volume 3 Appendices**

A Detailed findings of Focus Group Discussions by Zone

B The Household Survey Questionnaire

C Sewerage – supporting data and analyses

D On-site sanitation

G Cost Estimates

2004/09 **Sanitation Strategy & Master Plan for Kampala City (KSMP), Volume 4**
Community Consulting Report with Appendix A, B and C

2006 **2006-2009 Corporate Plan National Water & Sewerage Corporation;**
"The next three years"