

# IMPROVEMENT OF HEALTH SERVICES DELIVERY AT MULAGO HOSPITAL AND IN THE CITY OF KAMPALA

## ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN SUMMARY

**Project Number:** P-UG-IB0-006  
**Department:** OSHD  
**Country:** Uganda  
**Division:** OSHD.3

### Brief description of the project and key environmental and social components

The goal for health in Uganda is to reduce morbidity and mortality from the major causes of illness and to reduce the inequalities in the distribution of accessibility to health services in order to promote a healthy and productive life. The Government of Uganda (GOU) intends to achieve this by delivering the Uganda National Minimum Health Care Package (UNMHCP) which builds on earlier development commitments outlined in the Poverty Eradication Action Plan (PEAP) and in the Uganda Joint Assistance Strategy. The GOU's priorities with regard to the UNMHCP are reflected in the Health Sector Strategic and Investment Plan III (HSSIP III) for 2010/11-2014/2015, and in the National Development Plan II (NDP II 2009/10-2013/15). Both documents emphasise the need for social and human development as critical components of economic development and poverty reduction. In line with these strategic goals, the objective of the project is to improve access to quality and affordable health care services for the population of the Kampala metropolitan area.

Mulago National Referral Hospital (MRNH) is the largest referral hospital in Uganda, serving Kampala's 1.6 million people, as well as an additional estimated 1.5 million from neighbouring districts and beyond. The hospital was built in 1962. While the external structures of the hospital are deemed to be sound, the internal condition of the hospital buildings is extremely poor, it is inadequately equipped, oversubscribed and understaffed. Consequently, Mulago Hospital cannot efficiently provide the necessary health services to the people of Kampala and its catchment area.

This project comprises three components: **Component I: Capacity Development and Systems Strengthening** focuses on management and leadership capacity and in-service training needs, in order to address the human resource crisis currently affecting the health sector, and with the aim of improving clinical and management performance and productivity in a systematic and sustainable manner. To support this activity, ICT platforms will be provided relevant to human resources management, health services delivery information and financial management systems under the Ministry of Health and Mulago Hospital. In addition, Mulago Hospital will be strengthened to perform its national role as the country's leading Teaching Hospital by renovating and modernizing the teaching auditorium and conference rooms, and establishment of a state of the art Health Information Resource Centre (HIRC). **Component II: Revitalized Referral and Counter-referral Systems** will support the implementation of a revised referral system protocol linked to the national Health Management Information System (HMIS) for patient referrals and counter-referrals covering outpatient and inpatient services including maternity services. This component will also establish a centralised public-private ambulance service for patient referral. **Component III: Expanded and Improved Specialized Health Facilities in Kampala** involves the rehabilitation of the Lower Mulago area of the Mulago Hospital complex, which will necessitate extensive civil works, including the replacement of water, electrical, sewerage and mechanical systems. In order to ease the congestion experienced at Mulago and to provide improved coverage of health facilities the existing Kawempe and Kiruddu health centres IV will be upgraded to two new general hospitals. The two general hospitals will have a total of 170 beds each, of which 40% will be devoted to maternal and child health services, and the remainder for general and specialist services (medicine, surgery, and casualty). Provision will also be made for emergency and trauma services. In addition, this component will provide appropriate health care technology, medical equipment and devices to improve both the diagnosis and treatment capacities.

The project is classified as Category 2 according to the Bank's Environmental and Social Assessment Procedures. As Components I and II involve the development of information and management systems through the provision of technical assistance, the ESMP focuses on Component III which anticipates localized adverse environment impacts associated with civil works.

## Major environmental and social impacts

All three hospitals are located in urban areas within the City of Kampala. The land on which the rehabilitation/construction activities will take place lies within the existing land allocated to the MNRH and Kiruddu and Kawempe Health Centres. The natural environment around the sites has already been considerably altered by human settlement and other anthropogenic activities. Nor is it apparent that there are environmentally or culturally sensitive areas on or in the immediate vicinity of the project sites.

**Positive Impacts:** The rehabilitation of Lower Mulago Hospital and the construction of the two new general hospitals at Kiruddu and Kawempe will directly contribute to the GOU's UNMHCP overall goal of improving health services delivery in the City of Kampala. Improved access to adequate and efficient medical services is associated with long term economic benefits in terms of improved productivity, leading to poverty reduction. More immediate benefits would be the provision of employment during construction and operation for skilled as well as unskilled workers. During construction, local suppliers of construction materials and transporters will benefit from increased business. During and after construction, it is expected that within the immediate environs of the hospitals, vendors (including women) will sell fruit, flowers, food and other items, and this would enhance incomes of the local communities. The working environment for medical staff at the hospitals will improve. In addition, the capacity building component of the project will provide opportunities for skills development, particularly in professional fields (medical, nursing, and administration).

**Negative Impacts:** During site clearance, demolition of existing buildings and construction of hospital and training facilities, the main environmental impacts will be typical of most building sites, namely loss of topsoil and vegetation, the generation of dust, noise emissions and vibration, disposal of construction debris and general solid waste, disturbance to the public and hazards posed by construction works and traffic, sanitation and occupational health and safety concerns for construction workers. Access to the existing services provided at Lower Mulago will be disrupted. In addition, public services such as water supply and electricity may be disrupted.

The most serious environmental impacts that could potentially occur during the operation phase relate to sanitation, disposal of solid waste and air emissions. While Mulago is connected to the National Water and Sewerage Corporation sewage system, neither Kiruddu nor Kawempe are. Moreover, in addition to human waste, foulwater from all three facilities will contain blood, body fluids, and chemicals, and will therefore need pre-treatment before being discharged into the sewer or into septic tanks. Medical facilities generate a number of types of general and medical solid waste. General waste can be hazardous or non-hazardous, and includes such items as paper, cardboard, foodstuff, packaging, spent printer cartridges, tin cans, aerosol cans, plastic bottles, batteries, etc. Medical waste comprises pathological wastes (which may contain human tissues, organs and body parts); microbial or biological wastes for example from laboratory cultures, stocks or specimens of microorganisms, live or attenuated vaccines; sharps (needles, syringes, scalpels, blades, glass, etc); pharmaceutical waste, ie. discarded/expired drugs and contaminated items; infectious wastes consisting of items contaminated with blood and body fluids including cotton, gauzes, swabs and other dressings, soiled plaster casts, linens, beddings and other material; genotoxic waste such as waste containing cytostatic drugs (often used in cancer therapy); chemical waste from laboratory reagents, film developer, disinfectants and solvents; wastes with high content of heavy metals such as batteries, broken thermometers and blood-pressure gauges; pressurized containers such as gas cartridges and aerosol cans; radioactive waste eg. unused liquids from radiotherapy or laboratory research, contaminated glassware, urine and excreta from patients treated or tested with unsealed radionuclide, obsolete X-ray machines; and solid wastes from disposable items such

as tubes, catheters, intravenous sets, old instruments or equipment, etc. Ash from incinerators is another type of waste that will require proper disposal. Harmful air emissions may result from the incinerators, generators and from bacteria (*Legionella*) in water-cooled air conditioning systems which may be used for example in the operating theatres.

Other risks include those from fire and exposure of hospital workers to diseases such as HIV/AIDS, Hepatitis B and C, and dysentery. Chemical pollution could arise from spillage or leakage of laboratory chemicals, domestic disinfectants and oil and lubricants used for the generators. Potential impacts due to climate change include the risk of flooding (and soil erosion) resulting from excessively heavy rainfall.

### **Enhancement and mitigation program**

The impacts due to construction works can be avoided/minimized loss through stockpiling topsoil; avoiding unnecessary clearing of vegetation; providing appropriate Personal Protective Equipment (PPE) to the workforce; sensitizing the local communities about construction hazards and possible disruptions to traffic as well as utility services through signage and notices; and making arrangements for the workforce to access sanitation facilities. Diligence on the part of the Contractors and proper supervision during construction are critical in mitigating adverse impacts. The Contractors will comply with the relevant legislation stipulating occupational health and safety conditions, and employ a Safety Officer to ensure workers' safety on site.

Access and egress to the hospitals, especially during construction, will be guided by a transport management plan. Services provided at Lower Mulago will temporarily be relocated to other buildings in the hospital complex. At Kiruddu and Kawempe Hospitals, provision will be made so that the health centres can continue to operate while construction is ongoing.

The design for foulwater disposal will take into account both the increased load as well as pre-treatment requirements before discharge into the city's sewer for MNRH or into septic tanks for Kiruddu and Kawempe Hospitals.

Given the potentially hazardous nature of hospital waste, the storage and handling of solid waste will require the setting up of proper systems and the development of standard operating procedures. Mitigation measures proposed for hazardous and non-hazardous wastes include the development of a comprehensive Waste Management Plan to be prepared by the respective hospital managements in conjunction with the National Environment Management Authority (NEMA) and Kampala City Council (KCC). The Waste Management Plan will inventorize all wastes generated on each site, quantify it, and specify appropriate disposal routes. The facilities will also have incinerators which will be able to handle most of types of waste. Staff responsible for waste management at the three facilities will need to be trained in identifying each waste type in order to be able to store, handle and dispose of it. Much of the waste will go to the municipality landfill at Kiteezi. The project will also create employment for both skilled and unskilled labor during the construction and operational phases of the project. Significant environmental impacts related to handling and disposal of hazardous and non-hazardous waste that could potentially occur during the operation phase will be mitigated through the implementation of the National Health Care Waste Management Plan for 2009/2010 to 2011/2012 that was recently completed. The Ministry of Health through the National Medical Stores will be responsible for handling and disposal of radioactive waste in compliance with the HCWMP and national requirements.

Similarly the Pollution Prevention Plan will address any harmful air emissions which may result from the incinerators, generators and from bacteria (*Legionella*) in water-cooled air conditioning systems, and instruct on the proper operation of the incinerators and generators. These actions will also be included as part of the hospitals' routine preventative maintenance plans.

With regard to fire risks and chemical pollution, Emergency Response Plans will be prepared for each facility to deal with fire, spills and leaks. The designs also provide for the installation of firefighting equipment and emergency exits.

Provision of appropriate PPE to all hospital staff, training in handling contaminated equipment, recognizing symptoms of infection and immunization will help to protect medical staff against exposure to disease.

The risk of flooding and soil erosion due to excessively heavy rainfall will be addressed through the provision in the design of stormwater drains of adequate capacity, and for erosion through landscaping.

In summary, the various plans proposed to ensure mitigation is carried out, both during and after construction, are as follows:

- A *Community Safety Management Plan* which outlines specific actions for the Contractor and MNRH to ensure safety of the surrounding communities (including HIV/AIDS awareness);
- A *Transport Management Plan* which sets out specific actions for the Contractor and MNRH to minimize the disruption and other negative impacts associated with traffic;
- A *Pollution Prevention Plan* which sets out specific actions for the Contractor and MNRH to minimize pollution due to dust and exhaust emissions, noise and light nuisance and air pollution;
- A *Waste Management Plan* which outlines specific aspects for the Contractor to ensure that Best Practice waste management procedures are implemented. In order to manage the environmental aspects of medical waste management, the project will implement the National Health Care Waste Management Plan for 2011-2012 that was recently completed and disclosed.
- An *Emergency Response Plan* which sets out specific actions for the Contractor and MNRH to ensure that incidents are managed properly.

It is also recommended that an environmental management system (EMS) be set up for MNRH which would necessitate the development of internal management and monitoring plans, standard operating procedures, and formalise the need for environmental reporting and auditing.

### Monitoring program and complementary initiatives

The Environmental Impact Statements (EIS) for the three hospitals contain monitoring plans for all proposed mitigation measures and activities during construction and operation. Monitoring indicators have been identified for the various environmental and social impacts. For the most significant impacts these are:

- *Air pollution indicators:* complaints from local communities, increases in breathing/chest ailments
- *Noise pollution and vibration indicators:* increase in noise levels, complaints from neighbours
- *Indicators for generation of sewage:* frequency of emptying sewage tanks, cases of water borne diseases reported among workers
- *Indicators for generation of solid wastes:* incidents of haphazard littering, filling up and loading garbage, and the amount of demolition waste left unutilised (nails, glasses, broken bricks etc.)
- *Indicators of risks to occupational health and safety of workers:* incidence/ frequency of occupational injuries, recorded incidents, epidemics and other diseases like malaria and cholera
- *Indicators of risk of fire:* recorded incidents like electric wire sparking

As part of the monitoring programme, it is recommended that each hospital's management team ensures that:

- The incinerator is adequately managed and ash is disposed off in an environmentally acceptable manner;
- An efficient and functional water and sanitation system is in place (through monitoring effluent discharges)
- Proper management of medical and other waste (through monitoring waste management processes);
- High standards of hygiene are maintained at the facility, and the facility is regularly inspected by the Ministry of Health and/or District Department of Health, and NEMA authorities;
- The workforce is given the due protective gear and its usage is enforced;

- Regular inspection of areas with high fire accident risks as well as checking the performance of the installed fire warning/fighting system;
- Regular environmental audits must be carried out at the sites at least once every year and reports submitted to NEMA for review and approval.

### **Institutional arrangements and capacity building requirements**

Where appropriate, all mitigation measures must be included in the Bills of Quantities, so that the Contractor is obligated to implement the recommended measures. The tender documents must therefore be reviewed by the District Environmental Officers and the respective hospital management teams.

During construction, the respective project contractors will be responsible for implementing the proposed environmental and social mitigation measures. They will be directly accountable to the Project Supervisors in charge of construction activities of each hospital. Each contractor must prepare his own Environmental Management Plan and a schedule of works, which must indicate all proposed mitigation measures and how they will be implemented.

During operation, each hospital's management team will be responsible for ensuring that appropriate and adequate environmental and social management requirements are fulfilled. Therefore each hospital should appoint one person on its management to be responsible for environmental and social management and monitoring.

The Makindye and Kawempe Division Environment Officers will have the overall responsibility for environmental monitoring for the construction and operation of the Kiruddu and Kawempe Hospitals respectively, while the Kampala District Environment Officer will be responsible for overseeing the environmental monitoring of activities related to Mulago Hospital. These Environmental Officers will liaise with the respective contractors, project supervisors and hospital authorities/management, and lead agencies including NEMA, Ministry of Health, the Water Resources Department and the Department of Labour and Occupational Safety.

The respective managements of the hospitals must also ensure that inspection protocols are in place for the environment, hygiene and occupational health and safety concerns.

### **Public consultations and disclosure requirements**

During the preparation of the Environmental Impact Statements for Lower Mulago, Kiruddu and Kawempe Hospitals, consultations were undertaken with key informants, specifically Government and local institutions, as well as with members of the general public and neighbouring communities.

In accordance with the National Environment Act of 1994, and the Environmental Impact Assessment Regulations of 1998, separate Environmental Impact Statements for the three hospitals have been submitted to the National Environment Management Authority for review and approval. These documents are now deemed to be public documents.

### **Estimated costs**

A number of mitigation measures are, or should be, included in the BOQ/Engineer's Estimate and/or in the Conditions of Contract and Special Conditions. These include: air filters in ventilation systems; incinerators; pre-treatment facilities for wastewater and sewage before discharge to city sewer or septic; traffic management plans; waste collection/storage areas; stormwater drainage; PPE for construction workers; dust control by watering areas that are being worked on; dust screens on buildings under construction; stockpiling of topsoil, rehabilitation of worked areas, landscaping and replanting; contained fuel storage area and sound proofed generator shed; vehicle maintenance; removal/disposal of

construction debris; HIV/AIDS sensitization of construction workers; and the community sensitization plan.

Mitigation measures that should be part of normal routine operation costs of the hospitals include: PPE for hospital staff; development of preventative maintenance plans, emergency response plans (including spills and floods), pollution prevention plans and the development of standard operation procedures for operation and maintenance of all hospital equipment and grounds; internal environmental auditing and reporting; appointment of a person responsible for environmental management and monitoring.

The cost of some proposed mitigation measures are yet to be determined, for example, those for training of hospital personnel, particularly the person appointed in charge of environmental monitoring as well as all staff dealing with solid waste, on solid waste management covering storage, handling and disposal of hazardous and non-hazardous wastes. In addition costs for training hospital staff on exposure to pathogens, chemical spill response kits for each laboratory, noise monitoring equipment, and, if required, costs for consultancies to develop various plans and SOPs.

		Lumpsum amounts allowed (UA)
<b>A</b>	<b>Mitigation measures that should be included in the BOQ and/or Conditions of Contract/Special Conditions</b>	
	Air filters in ventilation systems- special consideration only- otherwise costed in mechanical works	10,000.00
	Incinerator- prime cost sum	50,000.00
	Pre-treatment facility for wastewater and sewage before discharge to city sewer or septic Traffic management plan	40,000.00
	Waste collection/storage area- special consideration only- otherwise costed in civil works	20,000.00
	Stormwater drainage- special consideration only- otherwise costed in civil works	10,000.00
	PPE for construction workers	3,000.00
	Dust control by watering areas that are being worked on- special consideration only- otherwise costed in civil works	5,000.00
	Dust screens on buildings under construction- special consideration only- otherwise costed in civil works	5,000.00
	Stockpiling of topsoil, rehabilitation of worked areas, landscaping and replanting- special consideration only- otherwise costed in civil works	10,000.00
	Contained fuel storage area and sound proofed generator shed- main cost considered under gerator	5,000.00
	Vehicle maintenance	10,000.00
	Clean up after construction (removal of construction debris)- special consideration only- otherwise costed in civil works	20,000.00
	HIV/AIDS sensitization of construction workers	3,000.00
	Community sensitization plan	3,000.00
	<b>SUB-TOTAL (prime cost sums to be detailed at special sub-consultancies)</b>	<b>194,000.00</b>
<b>B</b>	<b>Mitigation measures that should be part of normal routine operation costs of the hospitals</b>	
	PPE for hospital staff	5,000.00
	Development of preventative maintenance plan, emergency response plan (including spills and floods), and pollution prevention plan	5,000.00
	Development of SOPs	3,000.00
	Internal environmental auditing and reporting	3,000.00
	Appointing a person responsible for environmental management and monitoring - it is assumed that the hospitals will have a maintenance department staffed with a maintenance engineer and assistant(s).	10,000.00
	<b>SUB-TOTAL (prime cost sums to be detailed at special sub-consultancies)</b>	<b>26,000.00</b>
<b>C</b>	<b>Mitigation measures that need to be costed separately</b>	
	Training of hospital personnel, particularly person in charge of environmental monitoring and staff dealing with solid waste, on solid waste management covering storage, handling and disposal of hazardous and non-hazardous wastes	60,000.00
	Training of hospital staff on exposure to pathogens	20,000.00
	Chemical spill response kits for each laboratory	10,000.00
	Noise monitoring equipment	5,000.00
	In the event that the hospitals do not have the capacity to develop plans and SOPs, then a consultant will have to be hired to do this.	10,000.00
	<b>SUB-TOTAL (prime cost sums to be detailed at special sub-consultancies)</b>	<b>105,000.00</b>
	<b>TOTAL</b>	<b>325,000.00</b>

## Implementation schedule and reporting

Mitigation measures proposed in the Environmental Impact Statements will be implemented in accordance with the project implementation schedule. Progress and issues of concern will be reported on a monthly

basis to the Project Supervisor during construction, who will assimilate the reports each quarter for submission to the Bank. After construction, progress reports will be submitted to the hospital directors and the Bank and on a quarterly basis.

In compliance with the Environmental Impact Assessment Regulations of 1998, the three hospitals are required to submit environmental audit reports to NEMA. It has been recommended that the facilities do this on an annual basis (see above).

### **Recourse in Case of Harm Caused by Non-Compliance with the Bank Policies**

The Bank Group's Independent Review Mechanism (IRM) impartially responds to complaints by people and communities who suffer harm or whose rights or interests have been or are likely to be adversely affected by a Bank-financed project due to the Bank's non-compliance with its policies and procedures.

A complaint may relate to public or private sector projects. The IRM handles the complaint through problem-solving (mediation) and/or compliance review. The problem-solving aims at restoring effective dialogue between the requestors, the Bank Group and other interested parties to reach an agreeable solution to the problems suffered by the complainants. The compliance review, which is conducted by Panels of independent experts investigate whether the alleged harm is a result of non-compliance with the Bank Group's policies and procedures.

The complaint must be submitted by at least two individuals, an organization, association, a community or other group of individuals in the country or countries where the Bank Group financed project is located. Before submitting the complaint to the IRM, the requestors should try to resolve their problems with the project sponsor or the responsible Bank staff for the project. When submitting the complaint to the IRM, the requestors must describe the harm caused to them by the project or how their rights or interests have been, or are likely to be adversely affected, and to the extent possible provide which of the Bank Group's policies or procedures have not been complied with. The complaint should be in writing and can be submitted by any means at the disposal of the complainants.