Terms of Reference for Consulting Services to Develop A Health Care Waste Management System (HWMS) for Saint Lucia

1. Program Background

The Government of Saint Lucia (GoSL) with the assistance of the World Bank Group (WBG) is implementing the Health System Strengthening Project (HSSP) to further assist with the reform activities currently underway within athe health sector through its Department of Health and Wellness (DOHW). The development objective is to improve the accessibility, efficiency, and responsiveness of health service delivery.

The project will include improvements and refurbishments of up to thirty-three (33) selected primary health facilities including equipment inventory, procedures provided, and infrastructure, based on a survey to be conducted during implementation. Under the project, the national health care waste management plans will be updated for activities that include the minor refurbishments and the proper disposal of medical waste. The development of the health care waste management system (HWMS) will also include, but not limited to, capacity-building for health care workers through occupational health and safety training, including exposure to diseases, medical waste and the use of any equipment which may emit radiation. Accordingly, the Project Implementation Unit (PIU) under the DOHW is requesting the services of a qualified consultant (individual or firm) to research and develop a Health Care Waste Management System (HWMS) for the health sector in Saint Lucia.

2. Technical Background

According to the WHO[1], waste and by-products from the health sector cover a diverse range of materials, and includes the following:

- Infectious waste: waste contaminated with blood and other bodily fluids (e.g. from discarded diagnostic samples), cultures and stocks of infectious agents from laboratory work (e.g. waste from autopsies and infected animals from laboratories), or waste from patients with infections (e.g. swabs, bandages and disposable medical devices);
- Pathological waste: human tissues, organs or fluids, body parts and contaminated animal carcasses;
- Sharps waste: syringes, needles, disposable scalpels and blades, etc.;
- Chemical waste: for example, solvents and reagents used for laboratory preparations, disinfectants, sterilizing substances and heavy metals contained in medical devices (e.g. mercury in broken thermometers) and batteries;
- Pharmaceutical waste: expired, unused and contaminated drugs and vaccines;
- Cytotoxic waste: waste containing substances with genotoxic properties (i.e. highly hazardous substances that are, mutagenic, teratogenic or carcinogenic), such as cytotoxic drugs used in cancer treatment and their metabolites;

[1] http://www.who.int/mediacentre/factsheets/fs253/en/

- Radioactive waste: such as products contaminated by radionuclides including radioactive diagnostic material or radiotherapeutic materials; and
- Non-hazardous or general waste: waste that does not pose any particular biological, chemical, radioactive or physical hazard.

Health-care waste contains potentially harmful microorganisms that can infect hospital patients, health workers and the general public. Other potential hazards may include drug-resistant microorganisms which spread from health facilities into the environment. Adverse health outcomes associated with health care waste and by-products also include:

- sharps-inflicted injuries;
- toxic exposure to pharmaceutical products, in particular, antibiotics and cytotoxic drugs released into the surrounding environment, and to substances such as mercury or dioxins, during the handling or incineration of health care wastes;
- chemical burns arising in the context of disinfection, sterilization or waste treatment activities;
- air pollution arising as a result of the release of particulate matter during medical waste incineration;
- thermal injuries occurring in conjunction with open burning and the operation of medical waste incinerators; and
- radiation burns.

These concerns are applicable to the operation of the health care facilities in Saint Lucia. The Project may create an increase in use and scope of services, resulting in additional sources of medical waste needing proper treatment and disposal. This is also the case for work during emergency response or epidemics. The health and safety of health care workers could be affected by waste management practices as well as by hygiene conditions, isolation and storage procedures for bio hazardous substances or materials, radiologic or genotoxic waste. Such risks may also affect the nearby communities.

At the present time, there is no formalized plan for health care waste management in Saint Lucia, but practices are in place. Specialised 240-liter containers are provided by Saint Lucia Solid Waste Management Authority(SLSWMA) to biomedical waste generators including the major hospitals, polyclinics, and health centers.[2] Biomedical waste containers are collected from generators once weekly, in a specialised vehicle (with the capacity to hold 20 containers) operated by a private contractor with two specialized vehicles which are stainless steel lined and sealed, with equipment to properly secure bins. About 20 bins per week of medical waste are collected from hospitals, health centres and other biomedical waste generators around the island. This service is provided at no charge to government institutions, while private facilities pay. The waste is transported to an autoclave facility located at Deglos, where biomedical waste is stored in a 70-L refrigerated storage container and treated twice weekly with an autoclave. Since it entered into operation several years ago, the autoclave has failed once due to a faulty valve, and this was repaired within a week. In the event of autoclave failure, the refrigerated storage facility at the same site has more

[2] Environmental Impact Statement for Construction of a New Polyclinic at Bois Jolie, Dennery, Saint Lucia. Consultant's Report by Alison King-Joseph et al., December 2011.

than 3 weeks storage capacity at current generation rates. In the event of prolonged system failure, the SWMA could revert to deep burial of biomedical waste at the 2 waste disposal sites (Vieux Fort and Deglos) in Saint Lucia.

Currently, health care workers in Saint Lucia are required to follow guidelines for occupational safety and for best practice in medical waste management. Waste generators are required to properly segregate their waste, so that unnecessary treatment is avoided. It is reported that continuous training is required as staff become complacent and supervision is often inadequate.

3. Objective of the Consultancy

To improve the management of medical waste and minimize risk to health care workers and the public, during project implementation the national health care waste management plan will be further developed and formalized in the form of a Health Care Waste Management System (HWMS). This Terms of Reference lay out the scope, activities and deliverables for development of the HWMS, which will be consistent with WBG Environmental Health and Safety Guidelines for Health Care Facilities.[3] The HWMS will be adequate to the scale and type of activities and identified hazards for Saint Lucia, and will be implemented and operated by MOHW.

4. Scope of Work

The scope of work includes conducting a preliminary evaluation and verification of current health care waste management, identifying infrastructure and capacity needs, developing written protocols and procedures for health care waste management, and providing training and outreach.

Task 1 – Evaluate current health care waste management

The first task is to establish baseline information on the current status of health care waste management in Saint Lucia by means of an overview of the solid waste collection and disposal mechanisms used throughout Saint Lucia and the region - Data on the number and type of generators, volumes and types of wastes for various facilities, number and registration of transporters, status of landfill operations, functioning of bioclave, etc. will be generated by the consultant based on interviews and field visits. Any emissions to air, water or soil must be considered, as well as compliance with national laws, climate adaptation policies and best practice.

With regards to health care worker protection and community health and safety, the Consultant will assess current practice for occupational health and safety, including training, use of protective equipment, isolation and segregation of wastes, and other factors that could affect exposure to infections or diseases, exposure to wastes or hazardous materials, radiation, and fire safety.

Task 2 – Identify infrastructure and capacity needs

The Consultant will review the inventory to be prepared by the DOHW of the capacity, condition, and needs of the primary health care facilities in Saint Lucia. Combining this with the Task 1

[3] http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines

results, the Consultant will evaluate the adequacy of the existing physical infrastructure available in primary health care facilities and associated facilities in terms of location and size of areas where wastes are stored, temperature and condition of wastes, segregation and isolation of wastes. In addition, the Consultant will evaluate liquid waste disposal practices such as type of disposal system (septic tank, leach field, cesspool, sewer system, and package treatment plant), types of wastes expected, whether chlorination is needed, and level of treatment. The consultant will also evaluate level of training and capacity of health care workers, landfill workers, and waste transporters. Based on the evaluation, the Consultant will provide recommendations for physical and capacity improvements.

Task 3 – Develop Protocols and Procedures

The Consultant will prepare a formal set of protocols and procedures that will constitute the HWMS to be implemented by the DOHW. The HWMS will integrate the following:

- World Bank Group (WBG) Environmental Health and Safety (EHS) Guidelines for Health Care Facilities[3]
- The 2008 Waste Management (Biomedical Waste, Transportation, Treatment and Disposal) Regulations[4]
- WHO guidelines for management of solid health care waste at Primary Health Care Facilities[5]

The HWMS procedures must address waste minimization, reuse and recycling; waste segregation; on-site handling, collection, transport and storage; transport to external facilities; and, treatment and disposal. The HWMS shall be prepared in collaboration with DOHW and subject to their review and approval.

The roles, responsibilities and duties of DOHW and health care facility operators will be included, and an assessment made of capacity including any legislative gaps required to implement the HWMS, with corresponding recommendations for training and capacity building.

Task 4. Provide training and outreach

The Consultant will prepare a presentation on the results of Tasks 1-3 and deliver it to DOHW as part of a one-day workshop/seminar, which will include training and instruction on the HWMS. All training materials will be provided to DOHW for subsequent delivery to each of the 33 primary health care facilities in the country.

5. Reporting Requirements and Deliverables

The Consultant will report to the DOHW designated contact person. Shortly after the Consultant has mobilized his/her resources and after having met the staff of the DOHW and visited key project sites, the consultant will present a brief inception report and work plan to ensure that both parties

[4] http://sluswma.org/wp-content/uploads/2013/09/biomedical%20waste%20legislation.pdf
[5] http://www.who.int/water_sanitation_health/publications/manhcwm.pdf

(the Consultant and DOHW) are in agreement that the assignment will be carried out as planned and as stipulated in the contract. The inception report will incorporate a work plan for the development of the different activities and deliverables.

Each of Tasks 1-4 will also have a specific deliverable, as follows:

- Task 1 Report - Findings of the assessment of current situation and practices
- Task 2 Report – Conduct Gap Analysis with recommendations for improvements in infrastructure and capacity
- Task 3 Report – Health Care Waste Management System Plan with implementation plan
- Task 4 – Presentations and Training Materials and Training plan

Each of the deliverables shall be provided in Draft form, to which DOHW will revert comments within 2 weeks. The Final versions of each deliverable will then be provided taking into account and addressing the comments provided.

6. Logistics and Timing

The assignment is anticipated to last for a period of 14 weeks, or three to four months, as per the following tentative schedule:

Task	**Duration (weeks)**
Inception Report	2
1	4
2	2
3	4
4	2

The Consultant shall ensure that he/she is adequately supported and equipped in terms of personal technical equipment (transportation, laptop, software and field tools),

The DOHW will arrange and coordinate access, arrange requested interviews, provide reports and respond promptly to data requests to facilitate the assignment. The DOHW will provide comments to Draft deliverables within two weeks of receipt.

7. Qualifications

For the firm

The Firm must have at least five (5) years of experience in the field of environmental assessment, environmental management, or environmental supervision, with direct and relevant project experience in medical waste planning and/or management. Experience in the Region, and/in Saint Lucia, is a benefit. Excellent proficiency of the English language (spoken and written) is required.

For the consultant's Team

Team Leader: Post graduate qualifications in Environmental Health, Sanitary Engineering or Environmental Engineering or related fields with,
Demonstrated skills and 10 years of experience in the following areas:

- Environmental Health/Environmental Engineering
- Management
- Policy Development
- Strategic Planning

2. Biomedical Engineer: Post Graduate degree in Biomedical Engineer or Public Health with demonstrated skills and 10 years of experience in the following areas:

- Environmental Health/Environmental Engineering
- Project Management
- Policy Development
- Health facilities Planning

3. Public Health Expert: Medical doctor, Economist, Nurse or similar with a bachelor of sciences degree in medicine, nursing, economics or similar and a master's degree in public health and with demonstrated skills and 10 years of experience in the following areas:

- Healthcare Waste management
- Environmental Health.
- Project Management
- Policy Development
- Health facilities Management

Specific Professional Experience:

- Excellent Organizational and reporting skills, and past experience and abilities in dealing with government and donor institutions.
- Experience in administration and management of Public Health related issues
- Leadership and managerial abilities evidenced by team leader/project management experience in a minimum of one major project.
- Overall competence in working within a public sector setting.

Other skills and competences relating to:

- Communication (English written, verbal)
- Consultation facilitation.
- Computer Literacy