

**TERMS OF REFERENCE FOR PROJECT COMPONENT B**  
***Improving Environmental Performance of Industries Discharging to Kgn. Harbor***

**Name of TC project:** Institutional Strengthening to Support Environmental Management of Kingston Harbor

**IADB project number:** TC-02-01-04-8-JA

**Executing agency:** National Environment and Planning Agency, an agency of the Ministry of Land and Environment

**Duration of this TOR:** April 2004 – February 2005

**A. Background:**

- 1.1 Kingston Harbor is located on the southeastern coast of Jamaica and encompasses about 26 sq. km of navigable water with depths of up to 18 m. The Harbor has developed into a leading regional transshipment center for both the Caribbean and Central America.
- 1.2 The impact of pollution on Kingston Harbor has increased rapidly since the late sixties. Studies show increasing levels of bacterial contamination, decreasing levels of dissolved oxygen, declining species diversity, high nitrate concentrations, an increase in the frequency of algae blooms, decreases in shrimp and fish populations, elevated metal concentrations in fish, and increasing pesticide levels in fish. Indications are that unless urgent mitigating action is taken, the continuing rapid decline of the quality of the Kingston Harbor and the overall cost of rehabilitation will reach levels that are financially infeasible or will take many decades to reverse.
- 1.3 Comprehensive studies of Kingston Harbor revealed that the quality of its water has been deteriorating as the result of four principal sources of contamination: (1) untreated sewage, (2) industrial discharges (directly to the waterway as well as leaching and runoff from local solid waste landfills receiving industrial waste), and (3) dumping of untreated ship wastes, and (4) agricultural runoff. The issue of sewage treatment is being addressed through the Bank's Water and Sanitation Project (JA-0114) that will result in construction of new wastewater treatment facilities. This Technical Cooperation Project will address two of the three remaining sources, industrial discharges and release of ship waste into the Harbor. Problems stemming from agricultural runoff lie beyond the scope of this project.<sup>1</sup>
- 1.4 The contamination of the Kingston Harbor is a longstanding problem requiring urgent attention. For many decades, Jamaican Authorities have made efforts to deal with the environmental problems of the Kingston Harbor. These efforts have had very limited success in abating environmental pollution of the Harbor, in part due to a lack of clarity

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<sup>1</sup> A series of reports were completed in the early 1990's by SENTAR Consultants Ltd (now Stantec Consulting Intl. Ltd.) as part of the Kingston Harbor Environmental Project, funded jointly by the World Bank and CIDA.

regarding responsibility, as well as accountability for regulatory actions, and duplication of efforts due to poor or non-existent coordination among agencies.

- 1.5 The GOJ has indicated the need to structure and build up the institutional capacity for the environmental management of the Kingston Harbor, with the purpose of coordinating the diverse number of actors and activities that impact upon the current state of the Harbor and defining an overall investment plan for its clean up. An adequate institutional setting for the Kingston Harbor is highly complementary to the Kingston Water and Sanitation Project, under study by the Bank.
- 1.6 This TOR pertains to one of four components comprising the Kingston Harbor Environmental Management Technical Cooperation Grant (TC-02-01-04-8-JA), and consists of bolstering NEPA's capacity to provide technical assistance to industries discharging to Kingston Harbor. This component complements aspects of another of the four project components, Development of a Physical Plan for Kingston Harbor, in that it will link Water Quality Model results with specific intervention activities. There are four basic activities within this component. The total budget of the TC Grant is US\$620,000, of which US\$500,000 consists of an IADB grant and \$120,000 from local GOJ contributions. The National Environment and Planning Agency (NEPA) has been selected as the Executing Agency because of its overarching and cross-sectoral influence in matters pertaining to the environmental quality of Kingston Harbor.
- 1.7 The executing agency of the Technical Cooperation Program will be the National Environmental Planning Agency (NEPA). NEPA is a new Executive Agency that became operational on April 1, 2001, representing a merger between the former Natural Resources Conservation Authority and the Town Planning Department. The core business functions of NEPA are: 1) monitoring the natural resources and the state of Jamaican environment, and 2) the granting of environmental permits and licenses. The Policies Programmes & Projects Coordinating Division (PPPCD) within NEPA serves as the central authority within NEPA in project management and coordination, institutional strengthening, and liaison with bi/multilateral agencies. It has already appointed a Project Coordinator who would be responsible for administration of this project. NEPA has proposed that this Project Coordinator would remain and other staff requirement and duties relating to the TC be sourced from within other departments of NEPA.
- 1.8 The National Environmental and Planning Agency has been selected by the GOJ and the Bank because of its overarching and cross-sectoral influence in matters pertaining to the environmental quality of Kingston Harbor. With its recent reorganization and several progressive new initiatives, NEPA is poised to play a more direct and proactive role in the legislation and administration of the environmental management of Kingston Harbor. In June of 2001, NEPA introduced the basis for a new basis for moving industrial discharges towards compliance ("Towards a National Policy and Strategy on Environmental Management Systems", Green Paper No. 2/01), which will complement more aggressive "polluter-pays" enforcement activities. Finally, NEPA has an established history of working together with the large number of agencies involved in environmental matters.

- 1.9 The environmental pollution control and monitoring legislation that has direct impact on the Harbor includes 15 Acts, dates back as far as 1949 (the Irrigation Act), and involves at least 10 institutions and administrative agencies. Among the most important pieces of legislation are the following: Natural Resource Conservation Act, Public Health Act, Underground Water Control Act, Water Act, Harbor Act, Petroleum Act and Solid Waste Management Act. Among the Administering Agencies are the National Environment and Planning Agency (NEPA), the Environmental Control Division (ECD), the Underground Water Authority (UWA), the Port Authority and the Ministry of Public Utilities and Transport, and the Petroleum Corporation of Jamaica.
- 1.10 Reviews of the legislative and institutional setting reinforce the view that duplications of powers of intervention and legislation hinder environmental pollution monitoring and enforcement. Even though the NRCA Act provides the framework for addressing the pollution problems of Jamaica, no effective regulations have been implemented and the enforcement of any regulation appears to be very limited. In the NRCA Act alone, twelve sections provide for licenses, enforcement notices, permits or ministerial orders.
- 1.11 The Kingston Harbor Environmental Project, funded jointly by CIDA and the World Bank in the early 1990s<sup>2</sup>, resulted in a series of reports addressing the state of Kingston Harbor, threats to its environmental quality, and possible strategies for mitigation. The technical reports provide a high level of technical detail describing the sources and effects of contamination on Kingston Harbor and will be consulted in the execution of this project. In addition the project recommended that to avoid duplication of efforts it would be necessary to clarify accountability for regulatory actions in areas such as: a) standards setting; b) licenses and permits; c) regulations relating to the collection, treatment and disposal of waste; d) monitoring; and e) enforcement. In addition, the penalties for offences related to the improper disposal of waste are inadequate in most of the legislation to deter potential offenders.
- 1.12 This component will provide technical assistance directly to industries in the Kingston Harbor for improving environmental performance, and to the NEPA division supporting industry in manufacturing process improvements.
- 1.13 The USAID Environmental Audits for Sustainable Tourism (EAST) project has been active in Jamaica providing technical assistance to the manufacturing industries in implementing effective environmental management systems (EMS) since 1996. The specific objectives of EAST are to: (1) develop greater awareness and understanding of the benefits of environmental management systems and audits among hoteliers, restaurateurs, allied tourism businesses, as well as in the manufacturing industry; (2) train Jamaican consultants on EMS auditing techniques; (3) assist in selecting representative number of tourism and manufacturing establishments in carrying out environmental audits; and (4) help finance, on a cost-sharing basis, specific audit recommendations in the participating establishments to demonstrate the financial benefit of the systematic application of environmentally friendly practices and, thereby,

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<sup>2</sup> The project was carried out by SENTAR Consultants (now Stantec Consulting Intl. Ltd.).

encourage others in the tourism and manufacturing industries to do likewise. Since 1996, over a dozen industrial environmental management and pollution prevention audits have been conducted for industries in Jamaica through the EAST Project, many within the Kingston Harbor run-off area. The EAST Project is being implemented by PA Consulting under the direction of USAID/Jamaica and the Jamaica Hotel and Tourist Association and the Jamaica Manufacturing Association.

- 1.14 The Environmental Action Program (ENACT) is a ten-year, C\$12,000,000 project funded by CIDA, running until the end of March of 2004. The goal of ENACT is to promote sustainable development through supporting the sound management and use of Jamaica's natural resources. It has been working to develop the capacity of key strategic players at the government policy, private sector, community and general public levels to identify and solve their environmental problems in a sustainable way. ENACT has supported a variety of programs to strengthen the institutional capacity of NEPA and to improve environmental management in the private sector. The thrust of NEPA support has involved capacity development through formalizing a regulatory framework, establishing a compliance and enforcement framework, and technical assistance to the Pollution Prevention and Policies division within NEPA. Several components of this project focusing on the institutional strengthening of NEPA will directly complement the existing ENACT activities. Most prominent will be the introduction of a water quality model, development of compliance and enforcement mechanisms for Kingston Harbor polluters, and direct technical assistance to industry in the areas of pollution prevention and environmental management systems. ENACT has also been active in the area of environmental education, where it has developed educational tool kits used in communities and schools with the Ministry of Education, Youth and Culture. IADB Project activities will also directly complement these ENACT initiatives and consultants will work closely to ensure integration of Project activities with the ENACT work.

## **B. Purpose:**

The two primary objectives of the *overarching TC project* are:

- a) To facilitate the institutional arrangements best suited to coordinate the diverse stakeholders and activities that impact upon the current state of the Harbor, and
- b) To support pre-investment efforts to address major pollutant sources.

The purpose of *this component* is to support NEPA in the development of program strategy focused on industrial dischargers by leading the biggest polluters through stages of improved environmental management. In addition, a fund would also be developed, or existing funds leveraged, to help finance process improvements within Kingston industry. The development of a new revolving fund to help finance performance improvements in Kingston Harbor is expected to serve an existing need by creating a one-stop-shop financing vehicle that leverages available finance opportunities as well as creates new ones to provide financing for manufacturers

undertaking projects favorable to the environment of Kingston Harbor. The fund might be managed by NEPA or by some sort of public-private partnership.

### **C. Target Objective/Success Indicator:**

- 1) NEPA PCWM unit acquires capacity to implement program targeting Kingston Harbor polluters
- 2) Majority of Kingston industrial dischargers join NEPA performance improvement program
- 3) Improvements in environmental management achieved at two pilot industrial facilities.

### **D. Contracting of Consultants**

This component will be carried out by consultants or a consulting firm (hereafter known as Consultant) working closely with and under the direction of NEPA staff, either as an independent endeavor, or in conjunction with other of the five activities comprising the overarching TC. In particular, it is recommended that the Consultant(s) chosen for this component establish and maintain close contact with the Consultant(s) working on the development and application of the Water Quality Model called for in Component A, as there will be possibilities for both Consultants to benefit from sharing of data and experiences. As the executing agency, NEPA will lead the execution of this component, procuring consultants, as needed. NEPA will also develop a selection methodology that must then pass the IADB “no objection” review process. Selected consultants will be subject to approval by Bank staff.

### **E. Tasks/Scope of Work**

#### **Work Plan task B1** *Develop NEPA program strategy for industrial dischargers to the Harbor*

Consultant will develop practical, task oriented program strategy for NEPA focused on dischargers to Kingston Harbor. In addition, Consultant will support NEPA in identifying, cataloging, and prioritizing industrial polluters of Kingston Harbor into a simple GIS mapping system. This effort should be fully integrated with the Water Quality Model Activity outlined in the Master Plan for Kingston Harbor TOR.

Consultant qualifications: 10 years international experience in industrial environmental management. Familiarity with environmental enforcement strategies and industrial environmental management. Prior project experience working with industry in Jamaica. Graduate degree in environmental engineering, chemical engineering, or industrial engineering.

Person Days: 20

Deliverable Products: 1) Practical, task-oriented program strategy for enforcing environmental discharge limits from industrial polluters, 2) Simple GIS map showing location, type, and severity of all key industrial dischargers to Kingston Harbor.

**Work Plan task B2** *Conduct sample Cleaner Production/EMS audits of two industrial facilities*

As a part of project activities supporting industrial enforcement by NEPA, Consultant will select two facilities as models for improving industrial environmental performance through applying a combination of cleaner production measures and adopting an Environmental Management System (EMS). The audit will identify opportunities for cost savings, process efficiency improvements, and waste reduction. In addition, the audit will provide the basis for the selected firms to adopt an EMS over time. Consultant should seek to leverage prior industrial audit experience from the USAID-funded EAST project that has been active in providing industrial environmental support in Jamaica.

Consultant qualifications: Same as for B1 above.

Person Days: 20

Deliverable Product: Cleaner production/Environmental Management audits of two industrial facilities in the Kingston harbor area.

**Work Plan task B3** *Assist the most serious polluters to improve environmental management*

Based on the enforcement strategy developed under Task B1, Consultant will work with NEPA in encouraging compliance with regulations of industry discharging to Kingston Harbor. Specifically, Consultant will provide technical support in conducting site visits, developing seminar agendas, and implementing compliance incentive programs aimed at improving the environmental performance of the most egregious polluters.

Consultant qualifications: Same as for B1 above.

Person Days: 40

Deliverable Product: Products and progress reports reflecting implementation of programs outlined in the Enforcement Strategy of Task B1

**Work Plan task B4** *Develop and/or leverage existing revolving funds to help finance process improvements and environmental performance improvements of Kingston industries.*

Consultant will develop a new revolving fund or will work with NEPA in creating a one-stop-shop financing vehicle that leverages existing finance opportunities to provide favorable financing conditions for companies adopting pollution prevention measures. Consultant should work both with the multilateral lending institutions as well as local counterparts on the ground in Jamaica in the creation of the fund. In essence, the new fund will represent a one-stop-shop financing vehicle. Financial sustainability would need to be built into the fund through some sort of a fee collection system drawing from various sources deriving benefits from the Harbor, including discharging industries, ship traffic, docks, developers, etc. The Consultant charged with investigating the development of this fund should consider using a variety of incentives to leverage performance improvements in the part of industry in return for industry receiving favorable loan conditions. These might include stipulations such as submitting proof of an EMS adoption or detailed technical plans and feasibility studies describing levels of past and future commitments to improve environmental performance.

In addition, Consultant will conduct seminars and train local loan officers to evaluate projects with environmental components.

This Task will consist of four discrete steps:

- 1) Initial information gathering and needs assessment. Consultant should meet with industry, international and local industrial process advisors with extensive experience in Jamaican Industry, and local banks to obtain a full understanding of the financing needs and current barriers to projects having both environmentally and financially favorable aspects.
- 2) Consultant will develop a series of funding schemes that might best apply to the Jamaican context.
- 3) Consultant will meet with existing fund representatives and multilateral lending institutions to discuss the establishment of either the creation of a one-stop-shop fund (using existing resources) for manufacturers wishing to invest in optimization/pollution prevention, or to create a new fund that better needs the needs of industry in Jamaica. The fund should capitalize on the fact that process optimization has beneficial effects on profits, competitiveness and the environment for Jamaica. Benefits parallel several of the current national policy agendas, and should help win support for such a fund at this time
- 4) Consultant should provide technical support to NEPA and other participants or contributors to the fund in bringing the fund to the market. NEPA may wish to build in additional incentives for manufacturers in the Kingston area who invest in optimization of their processes resulting in reduction in pollution discharges. This aspect should be considered in the strategy document developed under Task B1.

Consultant qualifications: 10 years international experience in industrial plant upgrades, identification of financing options, and development of funding schemes with

environmental/pollution prevention project aspects. Prior experience in project development in Jamaica.

Person Days: 30

Deliverable Products: Recommendations and strategy document describing possible feasible funding schemes and structures for creating readily available financing for pollution prevention oriented projects adopted by Jamaican industry. Document should be usable as a marketing tool to the GOJ and multilateral lending community to support favorable interest loans to the Jamaican industrial sector for projects with positive environmental benefits.