

TERMS OF REFERENCE OF ENGINEER

WATER AND SEWERAGE DEPARTMENT

MINISTRY OF HOUSING, TRANSPORT AND ENVIRONMENT, REPUBLIC OF MALDIVES

1. Background:

Maldives consist of small, low-lying, flat, coral islands spread over more than 90,000 sq. km. The average height to which these islands rise above mean sea level is less than 1.9m. In most of the islands, the island is surrounded by a shallow lagoon, which in turn is surrounded by a coral reef. The coral reef protects the island from the onslaught of the ocean waves. Each and every island has a groundwater aquifer. It floats over the more dense salt water which lies underneath. The volume and quality of the groundwater vary from island to island, depending on the size of the island, abstraction, net rainfall recharge, type and thickness of vegetation, soil compaction and other hydro-geological and human factors. They also lie very close to the surface making it highly susceptible to pollution and contamination. The aquifer is the principal source of potable water for the island community. The wide and uneven distribution of population poses many challenges to the provision of basic services such as access to water and sanitation.

Lack of social infrastructure has become a major concern in most of the islands. In most islands, the population depends on rain water for drinking and cooking. They also depend heavily on the groundwater for non potable purposes. The dependency on ground water increases in the dry period which lasts for 3 months. The prevailing systems of sewerage disposal in most islands are onsite sanitation systems using septic tanks and soak-pits. These systems are causing various environmental health problems due to unsafe disposal of sewerage and waste water.

The Indian Ocean tsunami of December 2004 has worsened the situation in most of the affected islands due to salt water intrusion and contamination of ground water from the poorly constructed sewage disposal systems. The destruction of sanitation systems on the islands have resulted in the deterioration of the freshwater aquifer. Destroyed or damaged household septic tanks and soak pits are the principle sources of contamination of these aquifers. The government has initiated works under tsunami recovery and reconstruction program to improve the situation in islands after receiving assistance from various donor agencies. The recovery and reconstruction work is still ongoing on some of the affected islands.

2. Need for an engineering consultant :

The Ministry of Housing Transport and Environment (MHTE) in the Government of Maldives, is implementing water and sewerage projects in the islands. However in view of its limited technical staff and lack of experienced hands to cope with such projects, the ministry is looking for a project engineer of international repute to provide consultancy services.

3. Major duties and responsibilities:

The incumbent shall be a technical team leader assisting the ministry, Ministry of Housing Transport and Environment (MHTE) in providing technical inputs during the period of assignment as outlined below.

- a) Visit project sites and inspect the civil works of the water supply and sewerage projects and give site specific suggestions where necessary
- b) Assist the ministry (MHTE) in developing and reviewing proposals, concept and designs pertaining to water and sewerage projects and provide necessary comments and suggestions.
- c) Assist in the tendering process, evaluation of bid documents and preparation of evaluation reports
- d) Prepare detailed drawings, site plans, section drawings, specifications, engineering details, bill of quantities and other relevant documents for bidding of the civil works, whenever required.
- e) Preparation of Contract documents for International / National tendering process.
- f) Assist the staff during field surveys and site visits and provide guidance to the staff in carrying out the works effectively.
- g) Organize orientation cum training workshops for the staff on all aspects of the project related work. Facilitate technical meetings related to projects on hand.
- h) Contribute to the development of innovative approaches in provision of sustainable and equitable municipal sewerage services in the selected islands.
- i) Undertake capacity building programmes to enhance the skills and competencies of MHTE staff and empowering local communities to operate and maintain the systems in sustainable manner.
- j) Review the operation and maintenance manuals submitted by the contractors; and provide guidance where necessary in establishing operation and maintenance procedures for water supply and sewerage systems in consultation with MHTE and the island communities.
- k) Undertake other technical tasks as required by the MHTE from time to time

4. Qualifications:

The applicant should possess following educational background and experience

- ✓ A Bachelor or higher degree in civil or environmental engineering with experience in the field of water supply and sewerage system design.
- ✓ Minimum ten years field experience of implementing water supply and sewerage projects
- ✓ Previous experience in working with International Agencies will be an advantage
- ✓ Working experience in municipal projects will be an advantage
- ✓ Should possess sound knowledge of computer aided design software/ applications
- ✓ Should have excellent command over English with proven communication, presentation and negotiation skills
- ✓ Should be capable of providing leadership, motivation and training to the staff and stakeholders
- ✓ Preference will be given to a person having experience of working in Maldives

5. Other related information:

- ✓ Contract period: Six Months. if work is satisfactory and funds available
- ✓ Duty station: Male, Maldives with frequent visits to the islands
- ✓ Type of appointment: Full time
- ✓ Whom to report: Director General of Water and Sewerage Department, in the MHTE.