بسم الله الرحمن الرحيم

Ministry of Environment

TERMS OF REFERENCE
Disaster Risk Reduction (DRR) Specialist

A. BACKGROUND

1. The Maldives consists of over 1,190 islands, spanning approximately 900 kilometers along the Indian Ocean. Only 188 of these islands are inhabited, and the population is concentrated in a few of the larger islands. Malé, the capital, is home to 39% of the country's total population of roughly 341,200 people. Around 60% of the total population (216,000 people) live in the Greater Male capital region (which includes Male, Hulhumale, Hulhule, Villimale, Gulhi Falhu, Thilafushi islands) and 32 inhabited islands in atolls of Kaafu, Alifu Alifu, Alifu Dhaalu and Vaavu, which include Male, the capital city, 73 tourist resorts, 14 city hotels, 177 guest houses, along with institutions and industry. This area is defined as Zone 3 by the National Solid Waste Management Policy 2015.

2. Zone 3 suffers from severe environmental pollution and deteriorating urban livability from inadequate waste collection and haphazard disposal with open dumping and burning of garbage compromising public health and marine ecosystems. Smoke, odor, and flies from the dumpsite on Thilafushi Island are a daily nuisance and a health issue to Male's residents and tourists, with plumes of smoke visible from Male's airport and several surrounding resorts. The region lacks an organized and sustainable solid waste management system for the 774 tons per day (tpd) of mixed solid waste generated with expected growth up to 924 tpd by 2022 from rapid urbanization and expansion of tourism growth. Considering the Maldives' major economic activities (or industries), high-end tourism and fisheries for food and export, heavily depend on the country's pristine environment, pollution from improper waste management poses significant threats to the economy, livability in the capital region and livelihoods of poor people, especially in outer islands[1].

3. Improving solid waste management in the country and Greater Male region is a top priority of the Government of Maldives. The President's 2018 Manifesto explicitly aims to improve waste management in the Male area. The National Policy for Solid Waste outlines key principles to improve environmental quality, and the Waste Management Regulation sets a legal framework for the sector. ME launched the Saafu Raajje (Clean Maldives) initiative in 2015, a national public awareness campaign, and in November 2015, the Government has introduced an environmental tax legally recognized as green tax that to levy fees on exploiting environment by the tourism sector. This tax is credited into a special fund formed by the President in 2019 as Maldives Green Fund. This fund is being administered by the Ministry of Environment through a Fund Board. The fund is specifically being utilized to mitigating the environment. .

4. **The project** - The Government received support from the Asian Development Bank (ADB) to implement the "Greater Malé Environmental Improvement and Waste Management Project

[1] As part of its national strategy to achieve efficient public spending on economic and social services, the Government of the Maldives targeted 70% of its total population to reside in Greater Male. The plan seeks to create spatial agglomeration and generate economic opportunities for faster growth and poverty reduction. Tourism accounts for 30% of gross domestic product and is expected to expand, particularly in the project area. The near doubling of Male's population will significantly increase pressure on the already stressed solid waste services

("the project"). The project will establish a sustainable regional solid waste management system in Greater Male along with inhabited islands neighbouring atolls of Male'Atoll (Kaafu), North Ari Atoll (Alifu Alifu), South Ari Atoll (Alifu Dhaalu) and Felidhe Atoll (Vaavu) by (i) improving collection, transfer, disposal, treatment (using advanced waste-to-energy [WTE] technology), recycling, and dumpsite rehabilitation; (ii) strengthening institutional capacities for solid waste services delivery and environmental monitoring, and (iii) improving public awareness and behaviors in reduce-reuse-recycle (3R). The project will improve climate change resilience and disaster risk management, create a cleaner environment, reduce greenhouse gas emissions, and contribute to reductions in the cost of electricity.

5. The project will support improved collection, transfer, dumpsite management and logistics, community-based island waste management systems, institutional capacity for services delivery, and public awareness building activities. A follow on project will develop a state-of-the-art regional waste management facility with a Waste to Energy plant, and rehabilitate the existing dumpsite. The executing agency is the Ministry of Finance (MOF) and implementing agency being the Ministry of Environment (ME) the project management unit (PMU) is established

6. **Assignment** - The Disaster Risk Reduction Specialist will support the PMU to incorporate and implement Disaster Risk Reduction and Climate Change Adaptation measures in the project. This is particularly imperative in order to achieve project outcomes and to ensure their sustainability.

ADDITIONAL INFORMATION

7. **Current status of Solid Waste Management** - Collected waste is transported on two barges to the industrial island of Thilafushi located 6 kilometers from Male.[2] The 30-year old, 10-hectare open dumpsite currently being managed by Waste Management Corporation Limited (WAMCO), a state owned enterprise, has no leachate control systems and due to uncontrolled growing amount of waste, fire has been deliberately set to reduce the 'volume. , resulting in plumes of smoke and severe air pollution hazards to on-site workers, residents in Male', Villimale and surrounding resorts generating frequent complaints. Inadequate On-site equipment and site logistics are hampered to efficiently manage the growing volumes of incoming waste. The scarcity of land on Thilafushi forced the government to reclaim 15 ha of additional land in the adjacent lagoon (1.5 meters depth) next to the dumpsite for the proposed regional waste management facility.[3]

8. **Climate Change and Disaster Risks** - As one of the lowest-lying countries in the world (1.5 meters above mean sea level), the Maldives is vulnerable to sea level rise, and intensifying weather hazards linked to climate change including precipitation and storm severity. [4] The islands on the eastern side of the Male'Atoll including Greater Male are more exposed to ocean-based disasters (tsunamis, storm surges, ocean flooding, strong winds) than the western side. The Indian Ocean tsunami in December 2004 deposited approximately 290,000 cubic meters of waste from open dumpsites, including municipal and hazardous wastes (asbestos, medical, oil).[5]

9. Specific protection measures built into the project design to protect systems from future climate change and disasters include: (i) strengthening seawalls at project locations, (ii) elevating mechanical and electrical equipment at proposed administrative buildings, (iii) flood proofing

[2] Thilafushi Island is an artificially reclaimed island created in the early 1990s from a combination of garbage and sand. It is zoned for industrial use.
[3] To be financed under Phase 2.
[4] The disaster risk classification for the country is moderate. UNDP. 2005. *Developing a Disaster Risk Profile for Maldives*. Volumes 1 and 2. Male, Maldives.
[5] UNEP. 2005. *Indian Ocean Earthquake-Tsunami of 26 December 2004: UNDAC Rapid Environmental Assessment Republic of Maldives*. Switzerland.

transfer stations, (iv) designing facilities for Category 2 storms and related wind speeds, (v) including leachate collection systems at transfer stations, (vi) capacity building and awareness raising on disaster management activities for WAMCO and first responders (police, fire fighters) on Thilafushi, and (vii) preparing a solid waste management risk action plan outlining response, recovery and prevention tasks.

10. It is important to note that communities, in particular of the project beneficiaries, are in urgent need of better targeted risk awareness and sensitization as the entry points for comprehensive community based disaster preparedness and risk management measures. The linkages between Climate Risk Management and Disaster Risk Reduction are not sufficiently explored in Maldives, and yet they are very important in the context of waste management. It is evident that there's a need to strengthen capacity of disaster risk reduction and climate risk management through the operational and technical experience and solutions for advancing an integrated approach to risk management.

11. Hence, to help the Government address these challenges, the Ministry of Environment with assistance from ADB is recruiting a Disaster Risk Reduction Consultant who will work under the direct supervision of the Project Manager of the "Greater Male' Environmental Improvement and Waste Management Project".

B. SCOPE OF WORK

12. The Disaster Risk Reduction Specialist will support the PMU to incorporate and implemente Disaster Risk Reduction and Climate Change Adaptation measures in the project. This is particularly imperative in order to achieve project outcomes and to ensure their sustainability.

C. DETAILED TASKS AND/OR EXPECTED OUTPUT

13. The responsibilities of the assignment are but not limited to:

- Review current disaster risk management practices, systems and capabilities on Thilafushi Island, in Malé and in zone 3 in order to propose priority operational and capacity building interventions.
- Undertake a seasonal and probabilistic risk assessment of the project sites for contingency planning purposes, paying proportional attention to man-made and natural hazards as well as climate change.
- Develop an emergency and business continuity plan for WAMCO, first responders on Thilafushi (police, fire fighters) and surge providers in Malé. (NDMC and health professionals)
- Integrate gap-filling measures between current and best global emergency practice, including minimum standards (e.g. Sphere) and medical triage.
- Strengthen response readiness by initiating training events for WAMCO officials, first responders and surge providers to establish an early notification hotline, an incident command system, triage and emergency SOPs.
- Enhance emergency preparedness measures through simulation exercises.
- Train the host community and migrant workers on Thilafushi in community-based disaster risk management including participatory formulation of priority interventions.

- Target youth and women as local change agents and waste management leaders.
- Provide suggestions to the PMU on targeted investments to increase the safety of their residences and work spaces to be supported by the project.
- Support the development of a risk-informed and climate-smart waste management system by drafting a solid waste management risk management action plan with clear division of labour, timelines and preparedness, response, recovery and prevention tasks.
- Explore the application of innovative approaches, including drones and crowd sourcing/participatory mapping of unsustainable practices in the activities above.
- Advise Public Awareness and Community Capacity Building consultants on implementation of specific awareness raising activities on natural hazards, climate change impacts, and emergency preparedness and safety measures.

14. The Consultant will work closely with the Public Awareness and Community Capacity Building Consultants to prepare, deliver and implement community-based Disaster Risk Reduction and Climate Change Adaptation interventions to safeguard workers and residents from the impacts of future disasters.

11. The Consultant will be responsible to deliver the outputs under these TORs and ensure timely delivery of the services and coordination among stakeholders.

Table 1: Reporting Requirements

S. No.	Reports	Time Schedule
1.	Inception Report	Within a period of 14 days from the date of issuance of Notice to Proceed.
2.	Report on Priority Operational and Capacity Development Interventions	Within a period of 60 days from the date of issuance of Notice to Proceed.
3.	Emergency and Business Continuity Plan for WAMCO, first responders on Thilafushi, and surge providers in Malé.	Within a period of 90 days from the date of issuance of Notice to Proceed.
4.	Copies of all communication and capacity development tools prepared and minutes of each event organized during the preceding period of reporting; consumer roster updated/created, outcomes achieved during this period	Every month
5.	Assignment Completion Report	Within 30 days of completion of Consulting Services Assignment.
6.	Any other relevant information	As and when required by the Client.

C. MINIMUM QUALIFICATIONS

Education

- A Postgraduate degree in engineering, social sciences, disaster risk management, development studies or other field of studies related to disaster risk reduction;
- A Doctorate Degree in disaster risk management or certified training relevant to DRR theory/practice will be considered as an advantage.

Experience

- At least 10 years' experience in climate/disaster risk assessment, hazard assessment, and disaster risk management.
- Experience in mainstreaming disaster and climate change related risks issues will be considered as advantage
- Experiences of multi-hazard assessment, modelling and mapping, and developing tools and methods for disaster and climate risk & vulnerability assessment.
- Proven record of experience in capacity building, inter agency/department coordination, policy advocacy. In addition, the incumbent should be able to handle MS Office suite applications (Word, Excel, Outlook, and Power Point).

Language Requirements:

- Good oral and written command of English

D. DURATION OF THE ASSIGNMENT

- 3 Person Months (Intermittent, across 12-18 months)
- Based in Male', Maldives for 60% of the duration, and 40% from home