



Ministry of Environment

Male', Republic of Maldives.

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Date: 03rd December 2019

Support vulnerable communities in Maldives to manage climate change-induced water shortages

PROJECT COORDINATOR (PC)

TERMS OF REFERENCE

A. PURPOSE

The outer islands of the Maldives experiences drinking water shortages during the dry season. These shortages have had significant adverse human, environmental and social impacts on the outer island. The key problems pertaining to freshwater security relate to the increasingly variable rainfall patterns induced by climate change and sea-level rise induced salinity of groundwater. The Government faces constraints in responding to the challenge at hand without assistance, especially in the context of anticipated impacts of climate change.

In response to this climate challenge, Government of Maldives received funding through the Green Climate Fund for the project to “Support vulnerable communities in Maldives to manage climate change-induced water shortages” and is implemented by joint partnership between Ministry of Environment and UNDP from 2016 through to 2020 The project has the objective to deliver safe and secure freshwater to 105,000 people in the islands of Maldives in the face of climate change risks. This will be achieved by delivering the following results:

- Scaling up an integrated water supply system to provide safe water to vulnerable households;
- Introduction of decentralized and cost-effective dry season water supply systems;
- Groundwater quality improved to secure freshwater reserves for long term resilience.

The proposed adaptation solution is to scale up the use of an integrated water supply system that will bring three primary sources of water (rainwater, groundwater and desalinated water) into a least cost delivery system that is able to maintain service levels in the face of climate change related pressures. A paradigm shift will be achieved by addressing the main barriers to implementing integrated water supply systems (cost recovery; management capacity; and institutional mandates, coordination and policy direction).

The project is one of the first projects to be funded through the Green Climate Fund and is implemented by joint partnership between Ministry of Environment and UNDP from 2016 through to 2020.

The Government of Maldives through the Ministry of Environment is seeking a full time **Project Coordinator** for the implementation and management of the project.



Green Building, Handhuvaree Hingun,
Maafannu, Male', 20392, Republic of Maldives.

+ (960) 301 8300

+ (960) 301 8301

www.environment.gov.mv

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secretariat@environment.gov.mv

www.twitter.com/ENVgovMV

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B. BACKGROUND

The unique geographic attributes of the Maldives make its water resource situation both complex and diverse. With widely ranging populations numbers on the islands, even basic water and sanitation service must be tailored to local resources and population needs. Management of the limited water resources is complicated due to the small catchment areas for rainfall, limited rainwater and groundwater storage capacity, long dry seasons, and the susceptibility of groundwater aquifers to pollution and salinity intrusion.

The outer islands of the Maldives already experience drinking water shortages during the dry season. These shortages have had significant adverse human, environmental and social impacts on the outer island communities. The key problems pertaining to freshwater security relate to the increasingly variable rainfall patterns induced by climate change and sea-level rise induced salinity of groundwater. A sea level rise and decreasing rainfall amounts will considerably compound current water stress in the country. The Government faces constraints in responding to the challenge at hand without assistance, especially in the context of anticipated impacts of climate change.

As water security is closely bound to rainfall and sea level rise in Maldives, the adaptation scenario will demand: (i) the rainfall collection capacity to increase at least threefold; (ii) groundwater controlled extraction and replenishment to keep water table levels high in order to buffer away saltwater intrusion; and (iii) increased water production capacity through desalination (Reversed Osmosis – RO technology), as to secure sufficient back up resource during the extended dry periods for household supply and timely distribution.

In response to this challenge, the proposed **project objective** is to deliver safe and secure freshwater to 105,000 people in the 49 target islands of Maldives in the face of climate change risks. This will be achieved by delivering the following **results**:

- a. Scaling up integrated water supply system to provide safe water to vulnerable households (at least 32,000 people, including 15,000 women);
- b. Decentralized and cost-effective dry season water supply system introduced benefiting 73,000 people across 7 Northern Atolls;
- c. Groundwater quality improved to secure freshwater reserves for long term resilience on 49 islands;

The project will provide sufficient water to supply the potable water needs of island residents year round for a 35 year design period to 2050. Project finance will be used to establish an integrated water resources management system that integrates the three main sources of water (rainwater, groundwater and desalinated water) into a least cost delivery system and which is able to maintain service levels against a context of rainfall variability and sea level rise and also includes measures for **groundwater quality recovery** to secure freshwater reserves in the long term.

Ultimately, the project will achieve an uninterrupted water supply on the islands that currently experience a 90 day chronic water shortage during dry season and depend on transported water from Malé, which is an extensive, overlong and costly operation. As a result of the project, **29 priority islands** will have **increased rainwater collection capacities**, out of which, **4 bigger islands** will additionally have water production systems of **water desalination** (Reverse Osmosis – RO water production plants), that will secure sufficient water production capacity enabling a decentralized and timely water distribution across all northern outer atolls during the extended dry periods, when shortages may occur.



