



MINISTRY OF ENVIRONMENT AND ENERGY  
Republic of Maldives

# National Water and Sewerage Policy

SAFE WATER AND IMPROVED SEWERAGE  
SERVICES FOR SUSTAINABLE DEVELOPMENT



2017



# National Water and Sewerage Policy

SAFE WATER AND IMPROVED SEWERAGE  
SERVICES FOR SUSTAINABLE DEVELOPMENT



© **Ministry of Environment and Energy**

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

[www.environment.gov.mv](http://www.environment.gov.mv)

ISBN 978-99915-59-40-7

**Lead Authors**

Abdul Matheen Mohamed  
Shaheeda Adam Ibrahim  
Mohamed Musthafa

**Contributing Authors**

Ajwad Musthafa  
Afsal Hussain  
Mohamed Fazeeh  
Yazeed Ahmed  
Wilshana Moosa  
Hawwa Ageela  
Mohamed Rasheed  
Zameela Ahmed  
Aminath Sheron  
Mohamed Ibrahim Jaleel

**Contributing Agencies**

Fenaka Corporation Limited  
Male' Water and Sewerage Company Private Limited  
State Electric Company Limited  
Environmental Protection Agency  
Ministry of Fisheries and Agriculture  
Local Government Authority  
Ministry of Finance and Treasury  
Ministry of Health  
Health Protection Agency  
United Nations Development Programme  
United Nations Office for Project Services  
World Health Organization

### **Coordination**

Fathimath Shahuza  
Shazra Abduh Raheem  
Ishaq Ashraf  
Aishath Shiura  
Abdulla Waheed

### **Administrative Assistance**

Shagiya Abdul Rasheed  
Fathimath Leena  
Aminath Abdul Raheem  
Mariyam Dheena  
Shuaau Hameed  
Sobah Rasheed

### **Proofread By**

Midhath Abdul Rasheed  
Aishath Aileen Niyaz  
Adam Isham

### **Layout Design**

Munaz Mubarik  
Ahmed Saleem

### **Photo Acknowledgements**

Ministry of Environment and Energy  
Photo 13, Maldives Food and Drug Authority (MFDA)  
Photo 11, Martha Baraibar

### **Please cite this policy as;**

MEE (2017) *National Water and Sewerage Policy*,  
Ministry of Environment and Energy, Male', Maldives

# Table of contents

ACRONYMS AND ABBREVIATIONS	1
FOREWORD	2
ACKNOWLEDGEMENTS	4
EXECUTIVE SUMMARY	5
BACKGROUND	8
INTRODUCTION	12
PURPOSE AND OBJECTIVES	14
VISION	16
CHALLENGES AND BARRIERS	16
NWSP 2017 LINKED TO GOVERNMENT MANIFESTO AND SDG 6	18
POLICY GOALS, OBJECTIVES AND STRATEGIES	20
POLICY GOAL 1	22
POLICY GOAL 2	24
POLICY GOAL 3	26
POLICY GOAL 4	28
POLICY GOAL 5	30
POLICY GOAL 6	32
POLICY GOAL 7	34
POLICY GOAL 8	36
POLICY GOAL 9	38
POLICY OUTCOMES	40
RESOURCE AND FINANCIAL IMPLICATIONS	40
IMPLEMENTATION, MONITORING AND REVIEW OF NWSP	40
LINKAGES WITH OTHER NATIONAL POLICIES AND REGULATIONS	41
INSTITUTIONAL AND ORGANIZATIONAL RESPONSIBILITIES	42
REFERENCES	45

# Acronyms and abbreviations

<b>CSO</b>	Civil Society Organization
<b>CSR</b>	Corporate Social Responsibility
<b>EIA</b>	Environment Impact Assessment
<b>EPA</b>	Environmental Protection Agency
<b>HDPE</b>	High Density Polyethylene
<b>HPA</b>	Health Protection Agency
<b>MEE</b>	Ministry of Environment and Energy
<b>MWSA</b>	Maldives Water and Sanitation Authority
<b>MWSC</b>	Male' Water and Sewerage Company
<b>NDMC</b>	National Disaster Management Centre
<b>NGO</b>	Non-Governmental Organization
<b>NWSP</b>	National Water and Sewerage Policy
<b>SDGs</b>	Sustainable Development Goals
<b>UN</b>	United Nations
<b>WSP</b>	Water Safety Plan

# Foreword



The water and sewerage sector is of strategic importance and vital for the country's economic and social development. Provision of safe water supply and adequate sanitation for all is recognized by the Government as an urgent and immediate need. The National Water and Sewerage Policy (NWSP) provide a framework for the provision of water and sewerage services and proper management of water resources in the Maldives.

Adequate and improved water and sewerage services are vital for a better future; a future in which there is sufficient water for social and economic development; a future where every person has enough safe, affordable water to lead a healthy and productive life. This policy will contribute to providing water and sewerage services leading to positive economic growth and development to meet the aspirations of the people of Maldives. The NWSP is aligned with United Nations development agenda for Sustainable Development, Sustainable Development Goal 6 (SDG) to affirm Maldives commitments regarding the right to safe drinking water and sanitation. The policy determines national planning targets in line with SDG 6.

The NWSP is set on a holistic approach to encourage and maximize participation of the stakeholders in the journey to accomplish the goals identified. Wide ranging stakeholder consultations were held to facilitate this process.

The Government is steadfast and committed in developing the water and sanitation sector and in the recent years major developments have been experienced in the sector. Over the past 3 years the population with access to adequate sewerage networks with house connections have increased from 37% (in 2013) to 48% (by the end of 2016). Achievements in the water sector demonstrate that the population with access to water supply with metered house connections have increased from 25% (in 2013), to 41% (by the end of 2016). The Government targets to continue this momentum and provide access to safe water supply and adequate sewerage services to 75% of the population by the end of 2018.

I would like to take this opportunity to commend His Excellency President Yameen Abdul Gayoom for his farsighted vision and steadfastness to develop and enhance the sector that led the Government to make remarkable progress over the past 3 years to provide water and sewerage services to the people of Maldives.

I would like to extend my heartfelt appreciation and thanks to all the stakeholders who contributed in formulating this policy. I am confident that with your support we will be able to achieve the goals and objectives for the betterment of present and future generation.

A handwritten signature in blue ink, appearing to read 'Thoriq Ibrahim', with a horizontal line underneath.

Thoriq Ibrahim  
Minister of Environment and Energy

# Acknowledgements

The National Water and Sewerage Policy (NWSP) was formulated through a wide-ranging consultative process involving all the major stakeholders in the water and sewerage sector. The Ministry of Environment and Energy would like to acknowledge and express deep appreciation to all stakeholders who participated and contributed in the preparation of this document.

The staff and project personnel at the Water and Sanitation Department of the Ministry of Environment and Energy were instrumental in the NWSP development process. As such, the Ministry would like to make a special mention of their contributions and express gratitude to all staff involved.

The authors of this NWSP would like to thank Honorable Thoriq Ibrahim, Minister of Environment and Energy for his support and invaluable guidance given in formulating the NWSP.

# Executive Summary

The NWSP articulates priorities for the sector. The primary focus of the sector is enhancing the livelihoods of all Maldivians by providing access to safe water and sewerage facilities. The NWSP presents a set of 9 goals and associating objectives and strategies that give precedence to ensuring access to safe water and sewerage services for all. In addition, it emphasizes developments to the sector through research, capacity building, and strengthening of the legal framework. The NWSP also encompasses strategies to enhance private sector involvement, increasing public awareness and water resources protection. Furthermore, developing appropriate infrastructure models to promote financial sustainability to provide water supply and sewerage services are also given prominence.

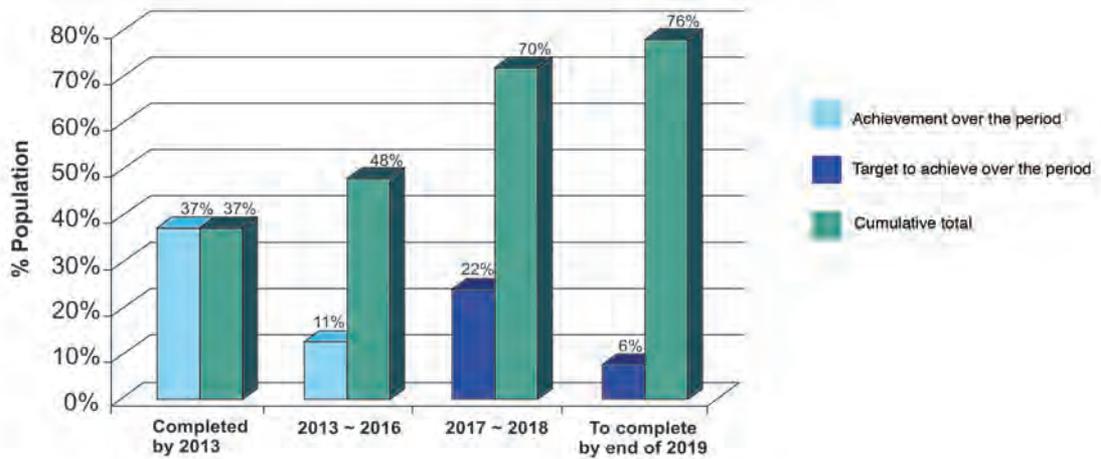
The NWSP define 9 specific goals;

- Ensure access to safe water supply and adequate sewerage services
- Adopting cost-effective, environment friendly and appropriate technologies
- Strengthening legal framework
- Encourage private sector investments
- Building institutional capacity
- Maintain financial and environmental sustainability
- Strengthen advocacy and awareness
- Promote research and development
- Protect and conserve water resources

The NWSP sets out the Government's plans for water and sewerage services in the future and the steps that will be taken to ensure provision of appropriate and sustainable water and sewerage services to all. Substantial developments in the sector in the recent years have contributed significantly to reach the targets set for the sector.

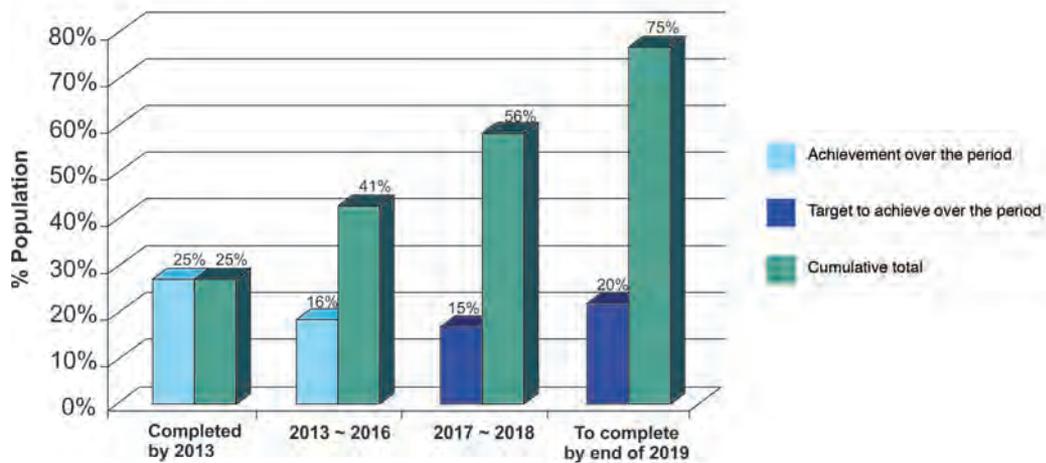
The NWSP will have a ten-year time frame and mid-term review will be conducted in the fifth year. The progress of implementation will be monitored and reviewed by the Water and Sanitation Department of Ministry of Environment and Energy along with an independent review process.

## Percentage of Population with access to sewerage systems - Achievements and Target



The nation has made great strides in providing improved sewerage facilities to its people in the last 3 years. By the end of 2016, 48% of the population had access to sewerage networks while the coverage in 2013 was 37%. With the completion of ongoing projects, the national target for providing access to 75% of the population will be achieved by 2019.

## Percentage of Population with access to safe water supply - Achievements and Target



Major progress has been made in providing access to piped water supply to the population of Maldives in the last 3 years. By the end of 2016, 41% of the population had access to water supply systems while the coverage in 2013 was 25%. With the completion of ongoing projects, the national target for providing access to 75% of the population will be achieved by 2019.

# Background

The Maldives consists of 26 natural atolls, comprising of 1,192 small, low-lying coral islands, stretching north to south over a total area of 90,000 sq.km. The population of Maldives is 407,660 (Census: 2014) dispersed over 188 administrative islands. These islands do not have surface freshwater. Freshwater resources in Maldives are scarce and the scarcity is both temporal and spatial. The main natural freshwater resources available in the country are groundwater aquifers that occur in the porous coral sands and rainfall.

## Water

Groundwater lenses in the islands lie at an average depth of 1-1.5m below the ground surface. They exist as thin fresh water lenses floating on top of the underlying saline water. Traditionally, drinking water was abstracted from these shallow aquifers using hand-dug open wells. However, in many inhabited islands of Maldives, fresh groundwater has been depleted as a result of salt-water intrusion due to over-extraction of groundwater. The shallow depth of the groundwater lenses of the islands makes this freshwater resource vulnerable and susceptible to contamination from land-based human activities. Hence, people are reluctant to use groundwater for drinking or cooking as the quality has deteriorated. Most of the people in the atolls rely on rooftop harvested rainwater for potable purposes. These rainwater harvesting systems are a combination of household and community collection and storage systems.

Rainwater harvesting is widely practiced in the atolls. In the pre-2004 tsunami period, only 35 percent of households had rainwater tanks. After the tsunami, each household in the Maldives was provided with a 2500L high-density polyethylene (HDPE) rainwater tank. National statistics reveal that 87% of the population in the islands uses rainwater as the main source of drinking water (MEE, 2016). Enhancing rainwater harvesting and storage capacity is regarded as a key element to ensure island self-sufficiency to achieve water security.

Climate change is causing adverse impacts and posing challenges on water security in the country. Warming temperatures, changes in precipitation patterns, and sea level rise have affected and will likely continue to affect water supply and quality. Each year several islands have reported shortage of drinking water and fresh water has been supplied to cater to this need. Desalinated water is the main source of water supplied to islands during water shortages. The demand for desalinated water is highest during the dry season, generally from January to April.

Desalinated water is transported on ships to islands that report water shortages during the dry period each year. Transporting desalinated water on ships to the dispersed islands has been a challenge over the years as an increasing number of islands face water shortage each year. In 2015, a total of 2,909 m<sup>3</sup> of desalinated water was transported on ships to 61 islands at a cost of MVR 1,349 per cubic meter of water. In an attempt to provide a



long term solution to this problem the Government has developed water supply schemes to increase public rainwater harvesting capacity in targeted islands. Under the same scheme, reverse osmosis plants with storage tanks will also be installed in targeted islands.

In Male' City (Male', Hulhumale' and Villimale') desalination has been adopted as the means to provide a safe water supply. The nation's first desalination plant for public use was installed in Male' in 1985 with the capacity to provide 200m<sup>3</sup> per day. In the recent years, the population of Male' City has increased rapidly and at present, approximately one third of the population reside in the city. The increase in population and lifestyle changes has led to profound changes on the demand for water supply. The net annual water production data from MWSC shows a steady increase in production from 2010 to 2015, with an increase of 67.63% over the period (MEE, 2016). At present, 41% of the total population has access to safe water supply with household connections.

## Sewerage

Traditionally, Maldivians used bush/ beach, locally called *Athirimathi*, for defecation or a designated area in the backyard of the house for shallow burial of feces. It is a zero cost method widely used across the country for human excreta disposal for decades. Other past practices included *Dhivehi Faakhaanaa*, a form of an over-sea latrine. There have been trials of other human excreta disposal systems including ash latrines, sealed pit toilets, and public toilet blocks in the early 1980s. These proved to be unsuccessful due to the contamination of groundwater and soil as a result of the disposal of untreated wastewater to the ground, posing a public health risk. In the 1970s and 1980s, diarrhea and cholera epidemics started in Laamu Atoll and spread across Maldives which was the trigger for the development of modern water based sewerage systems in Maldives.

Among the inhabited islands, the capital Male' City, with a population of 153,904 is developed with conventional waterborne sewerage system that has been operational since 1985. Sewerage scheme in the atolls began in 1992, with simplified sewerage systems known as small bore sewerage systems. These systems rely on collecting the effluent flowing from onsite household sewage collection tanks and piping this effluent to be disposed of untreated by near-shore marine outfalls.

The sector has undergone significant improvements as new, more environmentally friendly water supply and sewerage systems are being established in the islands with the increased support of external assistance to the government and from the national budget. By end of 2016, 48% of the total population had access to sewerage networks with house connections.



# Introduction

Access to safe water is a fundamental human right as advocated globally at several fronts. According to the constitution of the country, provision of safe water and sewerage is a basic right for all Maldivians. The Government is committed to providing access to safe water supply and improved sewerage facilities for all inhabited islands across the Maldives.

In an effort to accelerate the provision of water supply and sewerage services, the Government of Maldives has placed great emphasis towards increasing financial resources and much needed institutional reforms in the water supply and sanitation sector. Additional resources have also been received from international development and donor agencies to provide services required by the sector. As a result, significant improvements have been made in the sector as new, more environmentally friendly water supply and sewerage systems are being established.

The NWSP is based on a holistic and sustainable approach to the management of water resources, and the development and provision of water supply and sewerage services, while concurrently encouraging maximum participation of the stakeholders. The NWSP has been formulated through wide stakeholder consultations and engagement.

The NWSP proposes to adopt financially, technically and environmentally sustainable approaches to establish and deliver water and sewerage services. The Policy takes into account the importance of protection, conservation and efficient use of water resources. One of the key targets of the NWSP is to achieve Sustainable Development Goal 6: Ensure Access to Clean Water and Sanitation for All.

The NWSP reflects the water and sewerage vision of the Maldives. The Policy will be instrumental in facilitating dialogue between government authorities, private enterprises, civil society, external support agencies and financing institutions. In this manner, it will enhance synergies in terms of efficiency and investment in the water and sewerage sector.



# Purpose and objectives

Given the water and sewerage sectors' vulnerability to risks, it is crucial that appropriate synergies are promoted across all relevant sectors including government and non-governmental stakeholders. It is then essential to develop enforceable guidelines, targets, policies and strategies.

The NWSP provides a framework for coordinated action for the provision of adequate water and sewerage services in Maldives and the proper management of water resources. It proposes to adopt financially, technically and environmentally sustainable approaches that ensures protection, conservation and efficient management of water resources.

The primary objective of the NWSP would be to enhance the livelihoods of all Maldivians by developing tools for efficient management of the sector. The NWSP is based on 9 key policy goals, objectives and a set of strategies for each policy goal. These nine policy goals focus on and give priority to ensuring access to safe water and sewerage services for all, strengthening the legal framework, enhancing the management structure and developing the sector through research. The policy goals also strive to develop economically feasible infrastructure, increase private sector participation, create public awareness and promote water resources protection and conservation.

The NWSP document is aligned with Articles 22: protection of the environment and 23: economic and social rights of the Constitution of Maldives and is consistent with the global consensus embodied in Goal 6 of UN 2030 Agenda for Sustainable Development Goals (SDG).

The Policy aims to bring private sector and the general public together in managing, conserving, and protecting the valuable water resources in order to satisfy current as well as present needs and those of future generations.

The NWSP will provide a framework to develop tools for the sound management of water and sewerage sector to encourage enhanced informed decision making and guide overall development of the sector.

The Policy will guide a national strategic water and sewerage action plan that will ensure effective resource management and appropriate control in achieving the goals of the Policy.



# Vision

The water and sewerage vision of Maldives is to:

***“Develop, manage and ensure access to appropriate, sustainable, safe water supply and sewerage facilities for all”***

## Challenges and barriers

There are significant challenges and barriers that will need to be taken into account in implementing the NWSP, so as to successfully bring the Maldives’ water and sewerage sector to a point where all inhabited islands benefit. Key challenges and barriers are:

- The geographically dispersed nature of islands
- Lack of land resources
- Low population size in islands
- Low economies of scale
- Low lying nature of the islands and vulnerability to climate change
- Limited natural freshwater resources
- Lack of island based technical expertise to operate and maintain systems
- Low income of many island residents
- Weak institutional capacities
- Absence of water and sewerage law and regulations
- Cultural practices, norms and perceptions

It is also important to note that not all islands enjoy the same social, geographic and economic situations. Therefore, the selection of water supply and sewerage systems will need to be island specific, so that an adequate and affordable service is provided.



## NWSP 2017 Linked to Government manifesto and Sustainable Development Goal 6 targets

### NWSP GOAL

### Government Manifesto 2014 - 2018

### SDG 6

**Goal 1:**  
Ensure access to safe water supply and adequate sewerage services

Establish a scheme to provide access to adequate sewerage for all  
Develop safe and sustainable sewerage systems in the inhabited islands;  
Develop and establish safe and sustainable water supply systems in the inhabited islands;  
Enhance drinking water supply by increasing rainwater harvesting storage capacity;  
Identify strategic regional locations and develop regional hubs for emergency water supply;

6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all.  
6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

**Goal 2:**  
Adopting cost-effective, environment friendly and appropriate technologies

6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all.  
6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

**Goal 3:**  
Strengthening legal framework

6.6a. By 2030, expand international cooperation and capacity-building support to developing countries in water and sanitation-related activities and programs, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies

**Goal 4:**  
Encourage private sector investments

6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all.

**Goal 5:**  
Building institutional capacity

6.4 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

**Goal 6:**  
Maintain financial and environmental sustainability

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

**Goal 7:**  
Strengthen advocacy and awareness

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

**Goal 8:**  
Promote research and development

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.

6.6b Support and strengthen the participation of local communities in improving water and sanitation management

**Goal 9:**  
Protect and conserve water resources

Establish properly constructed sewerage systems to reduce groundwater pollution

6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

6.6b Support and strengthen the participation of local communities in improving water and sanitation management

# Policy goals, objectives and strategies

The following sets of goals are based on a comprehensive process of multi-stakeholder consultation and a review of reports and assessments. These goals will support increased coverage of sewerage facilities and water supply systems in Maldives through economically feasible and environmentally sustainable technologies. It also seeks to strengthen the legal framework, enhance capacity building, promote research and introduce financial models to develop the sector.







## **POLICY GOAL 1:**

Ensure access to safe water supply and adequate sewerage services for all

---

**Policy Objective:** Increase access to safe water supply and improved sewerage services

### **Strategies:**

- 1.1 Develop safe and sustainable water supply and improved sewerage systems on the inhabited islands
- 1.2 Enhance drinking water supply by increasing rainwater harvesting storage capacity
- 1.3 Adopt and implement water security and water safety plans – inclusive of climate change risks, pollution risks, salinization and over-exploitation risks and energy supply considerations
- 1.4 Establish an effective performance and compliance monitoring mechanism of utility companies
- 1.5 Identify strategic regional locations and develop regional hubs for emergency water supply
- 1.6 Strengthen water and sewerage service providers for sustainable operations, maintenance and management of water supply and sewerage system
- 1.7 Establish and improve regional water quality testing facilities to ensure timely water quality monitoring and reporting



### 3000L/H (UF) Water Purification System

PRODUCT WATER CONDUCTIVITY    REMOTE OPERATION    EXCESSIVE PRESSURE

POWER INDICATOR    RAW WATER PUMP INDICATOR    WASHING PUMP INDICATOR

OFF ON    MANUAL    SELECT    AUTO    OFF ON

POWER    RAW WATER PUMP    WASHING PUMP

Flux Of Waste Water    Pressure Before Pressure Filter    Flux Of Pure Water

Flow Meter    Gauge    Flow Meter



## **POLICY GOAL 2:**

Adopt cost-effective, environment-friendly, appropriate technologies in developing water supply and sewerage systems

---

**Policy Objective:** Explore, adopt and promote sustainable options in developing water supply and sewerage services

### **Strategies:**

- 2.1 Ensure climate resilient concepts are used when designing water and sewerage systems including integration of renewable energy, rainwater harvesting, groundwater recharging, and greywater use for non-potable water uses
- 2.2 Promote efficiency in water use by adopting appropriate technologies and equipment to ensure long-term sustainability and cost effectiveness
- 2.3 Develop and adopt key performance indicators to monitor and assess water supply and sewerage infrastructure and services
- 2.4 Establish a national development coordination mechanism to ensure sustainability and climate resiliency of shared water infrastructure such as water catchments, storm water and irrigation systems





## **POLICY GOAL 3:** Strengthen legal framework

---

**Policy Objective:** Develop legal instruments and improve governance in the water and sewerage services

### **Strategies:**

- 3.1 Develop and formulate water and sewerage act, regulations, standards, and guidelines to ensure compliance with provision of water supply and sewerage services and water resources management
- 3.2 Strengthen water supply and sewerage regulator and the regulatory process
- 3.3 Enforce water supply and sewerage services protocols and procedures



In the presence of:

State of Georgia, Department of Education  
Division of Assessment and Testing  
State of Georgia, Department of Education  
Division of Assessment and Testing



## **POLICY GOAL 4:**

Encourage private sector to invest and engage in water and sewerage services development

---

**Policy Objective:** Enhance development of water and sewerage services by creating an enabling environment for private sector participation

### **Strategies:**

- 4.1 Introduce incentives for procurement of goods and services for development of water and sewerage services
- 4.2 Encourage sector development through Cooperate Social Responsibility (CSR) models
- 4.3 Promote innovative financial mechanisms and models to develop water and sewerage systems





## **POLICY GOAL 5:**

# Build institutional capacity in water resources, water supply and sewerage services

---

**Policy Objective:** Develop and strengthen institutional capacity for planning, development, enforce regulations and delivery of water and sewerage services

### **Strategies:**

- 5.1 Facilitate technical training and educational opportunities related to the sector
- 5.2 Expand the tools and instruments used to monitor policy performance
- 5.3 Encourage local educational institutions to develop courses and programs focusing on water resources, water supply and sewerage management
- 5.4 Coordinate and collaborate with sectoral ministries, agencies and institutions on water resources and sewerage management through enhanced monitoring and regulatory enforcement.
- 5.5 Develop community capacity to support participatory monitoring of water and sewerage assets, management of water resources and water demand





## **POLICY GOAL 6:**

Maintain financial and environmental sustainability of water and sewerage services

---

**Policy Objective:** Ensure sustainable financial models are developed

### **Strategies:**

- 6.1 Formulate and implement a suitable tariff structure for water supply and sewerage for cost recovery and sustainability of these services
- 6.2 Packaging service provider license for combined utility services (water, sewerage and electricity) for each island
- 6.3 Strengthen operation, maintenance and management of the utility infrastructure
- 6.4 Encourage and incentivize public and utility companies for water conservation and water demand management through technology choice, minimizing water loss, water re-use and greywater recycling and wastewater reclamation approaches
- 6.5 Implement, financially, technically and environmentally sustainable water supply and sewerage systems





## **POLICY GOAL 7:**

Strengthen advocacy and awareness programs in water resources, water supply and sewerage

---

**Policy Objective:** Develop and conduct awareness programs to facilitate sustainable development and use of resources

### **Strategies:**

- 7.1 Promote, support, develop and implement awareness programs on water resources management, water supply and sewerage service operations and maintenance
- 7.2 Promote, support and develop mechanisms to disseminate information to the public on water resources, water supply and sewerage services





## **POLICY GOAL 8:**

Promote research and development for sustainable use of water resources, water supply and sewerage systems

---

**Policy Objective:** Improve provision of water supply and sewerage services through research and development

### **Strategies:**

- 8.1 Encourage local educational and relevant water sectoral institutions to provide opportunities for students to conduct research on water resources, water supply and sewerage
- 8.2 Explore means and opportunities for using non-potable water to enhance sustainability of water resources
- 8.3 Explore innovative means and ways for developing water supply facilities
- 8.4 Create financing opportunities for water and sewerage research that includes research on desalination, sewage treatment, wastewater reclamation and reuse, tariff setting etc
- 8.5 Facilitate research studies and publications related to water and sewerage





## **POLICY GOAL 9:**

# Protect and conserve water resources

---

**Policy Objective:** Adopt a holistic approach to water resources protection, conservation, management and pollution control

### **Strategies:**

- 9.1 Establish an effective research based monitoring program and information platform of inhabited islands' water resources
- 9.2 Develop and implement evidence based water resource management plans taking into consideration the sustainability and vulnerability of the island freshwater resources, wastewater reclamation, water reuse and minimize impact from pollution
- 9.3 Encourage water conservation, water reclamation and water reuse, water demand management and minimize the impact of pollution on water resources



# Policy outcome

The NWSP addresses priority concerns in the water and sewerage sector in Maldives. Planned outcomes from the implementation of this policy are strengthening national water governance and the local water industry, sustainable management of water supply and sewerage systems, improved protection of water resources with increased community participation and improved access to safe and efficient water supply and sewerage services across the country.

## Resource and financial implications

Additional funding and increased human resource capacity will be required for effective implementation and execution of various strategies outlined in this policy. Funding agencies and development banks can further be encouraged for raising additional funds to achieve the NWSP goals.

## Implementation, monitoring and review of NWSP

Implementation of the NWSP will take effect from the time the policy is endorsed by the Government of Maldives. A 5 year action plan will be developed with detailed activities and targets based on the NWSP. Implementation, monitoring and review will be carried out by the Ministry mandated for the development of water and sewerage sector.

# Linkages with other national policies and regulations

The following instruments, policies and regulations have a direct or indirect link to NWSP.

1. The Constitution of Maldives
2. Environment Protection and Preservation Act 4/93
3. Public Health Act 7/2012
4. Waste Management Regulation and Waste Management Policy
5. EIA Regulation 2012
6. Desalination Regulation 2002
7. Maldives Climate Change Policy Framework 2015
8. Dewatering Regulation
9. Design Criteria and Technical Specifications - Design and Construction of Sewerage System
10. Design Criteria and Technical Specifications - Design and Construction of Water Treatment and Supply System
11. Rainwater Harvesting Guideline
12. Drinking Water Guideline
13. National Waste Water Guideline
14. General Guidelines for domestic waste water

# Institutional and organizational responsibilities

The key institutional and organizational responsibilities related to implementing the NWSP are as follows:

## Ministry of Environment and Energy

- Formulate policies and legislations related to water supply and sewerage.
- Prepare tender and bid documents required for developing water supply and sewerage infrastructure.
- Facilitate contractors and consultants in getting necessary approvals for sewerage and water supply development.
- Prepare project proposals and budget estimates.
- Prepare sector budgets annually.
- Approval of appropriate concepts and technologies for water and sewerage projects.
- Strengthen capacity building of service providers.
- Implement public water supply and sewerage infrastructure projects.
- Approval of land required for water supply and sewerage facilities.

## Environmental Protection Agency (EPA)

- Formulate and enforce water supply and sewerage system design criteria and design specifications.
- Formulate and enforce national wastewater disposal guidelines, sea-water desalination plant regulation, borehole guidelines and dewatering regulation.
- Provide approvals for water supply and sewerage system designs and Environmental Impact Assessments.
- Enforce and implement water supply and sewerage tariffs, fees, fines and penalties.
- Enforce licensing and registration of water supply and sewerage systems.
- Carry out water quality tests on public water supplies for compliance monitoring.
- Regulate the utilities in the water and sewerage sector.

## Utility Companies

- Provide safe water supply and sewerage services to island communities in compliance with laws, regulations and standards set by Government of Maldives.
- Operate, monitor and maintain water supply and sewerage infrastructures in islands for sustainable delivery of its services.

## Ministry of Finance and Treasury

- Provide financial support to the sector to help in achieving sector development goals and targets.
- Facilitate programs to secure external financing for sector development and coordinate with external agencies.
- Facilitate resource mobilization.
- Facilitate and support in coordinating foreign aid.
- Project tendering and bid process.

## Health Protection Agency (HPA)

- Ensure safety of water source and its suitability for human consumption and free from micro-organisms.
- Develop Water Safety Plan (WSP) and guidelines.
- Monitoring and evaluation of WSP implementation.

## Island Councils

- Identification and approval of land for the provision of water supply and sewerage services in the islands.
- Provide required support to MEE, project contractors and consultants in carrying out activities in accordance with the schedules during implementation.
- Oversee that infrastructure and equipment are protected by vandalism etc.

## Ministry of Housing and Infrastructure

- Facilitate in providing land-use plans for islands.

## Ministry of Health

- Facilitate in promoting good sanitation practices.
- Carry out water quality testing for compliance.

## Maldives Energy Authority

- Facilitate in promoting renewable energy in water and sewerage infrastructure.
- Approval of electrical components in water supply and sewerage designs.
- Approval and registration of power generation systems of water and sewerage facilities.

## Ministry of Tourism

- Ensure compliance with desalination regulations.
- Ensure compliance with wastewater disposal guideline.
- Ensure compliance with dewatering regulation.

## Ministry of Fisheries and Agriculture

- Promote water conservation and efficient irrigation practices.
- Promote awareness on water resources protection from agro-chemical pollution.

## Non-Governmental Organizations (NGOs) and Civil Society Organizations (CSOs)

- Dissemination of information about the importance of water protection and conservation.
- Provide information on improved sewerage systems and its services.

## Supporting Agencies and Financing Institutes

- Provision of funds and technical support.

# References

National Bureau of Statistics (2014), *Population and Housing Census*, Ministry of Finance and Treasury, Male', Maldives

MEE (2016) *State of the Environment 2016*, Ministry of Environment and Energy, Male', Maldives

National Disaster Management Center (2016) *Emergency Water Supply Report*, Male', Maldives





# **National Water and Sewerage Policy**

© **Ministry of Environment and Energy**

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

ISBN 978-99915-59-40-7