



Ministry of Environment  
Republic of Maldives

# NATIONAL WATER AND SEWERAGE STRATEGIC PLAN 2020-2025



2020

**NATIONAL  
WATER AND  
SEWERAGE  
STRATEGIC PLAN  
2020-2025**

**WATER AND SANITATION DEPARTMENT  
MINISTRY OF ENVIRONMENT**

# CONTENTS

- ACRONYMS AND ABBREVIATIONS 4**
- FOREWORD 5**
- ACKNOWLEDGEMENTS 6**
- INTRODUCTION 7**
- VISION 7**
- MISSION 7**
- BACKGROUND 8**
- POLICY AND STRATEGIC FRAMEWORK 10**
- IMPLEMENTATION FRAMEWORK 24**
- MONITORING AND EVALUATION 24**
- REFERENCES 25**

# ACRONYMS AND ABBREVIATIONS

MoEn	Ministry of Environment
EPA	Environmental Protection Agency
SDG	Sustainable Development Goals
NWSP	National Water and Sewerage Policy
NGO	Non-Governmental Organization
CSO	Civil Society Organization
MNPHI	Ministry of National Planning Housing and Infrastructure
MLSA	Maldives Land and Survey Authority
AGO	Attorney General's Office
MOE	Ministry of Education
MOH	Ministry of Health
FCL	FENAKA Corporation Limited
MWSC	Male' Water and Sewerage Company
STELCO	State Electric Company
URA	Utility Regulatory Authority
MEA	Maldives Energy Authority
MOF	Ministry of Finance
MoFA	Ministry of Foreign Affairs
NDMA	National Disaster Management Authority
HPA	Health Protection Agency
MMS	Maldives Meteorological Services
PCB	Privatization Corporation Board
MOED	Ministry of Economic Development
MOHE	Ministry of Higher Education
MoHUD	Ministry of Housing and Urban Development
TVETA	Technical, Vocational Education and Training Authority
MNU	Maldives National University
NDC	National Data Centre
CTO	Chief Technology Officer
MMRI	Maldives Marine Research Institute
MQA	Maldives Qualification Authority
MoFMRA	Ministry of Fisheries, Marine Resources and Agriculture
MoT	Ministry of Tourism
MoIF	Ministry of Islamic Affairs
NGO	Non-governmental Organization
CBO	Community Based Organizations
RUC	Regional Urban Centers
MoYSCE	Ministry of Youth, Sports and Community Engagement
MoGFSS	Ministry of Gender, Family and Social Services
WASH	Water, Sanitation and Hygiene

# 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 inhabited islands irrespective of the size of the island and population is recognized by the Government as a high priority. This National Water and Sewerage Strategic Plan (NWSSP 2020-2025) provides the strategic framework for the development of the water and sanitation sector.

Adequate and improved water and sewerage services are vital for a better future; a future where every person has adequate, safe, affordable water to lead a healthy and productive life; a future in which sustainable water resources are available for social and economic development without harming the environment; a future where every person has access to improved sewerage service. On the other hand, flooding due to natural events such as heavy rain and inundations causes heavy impacts to livelihood and are likely to become more frequent in the future with changing climate conditions. This Strategic Plan also addresses flooding, drainage issues and managing their societal, environmental and financial impacts. NWSSP 2020-2025 will also contribute to improve hygiene, health and wellbeing of the population through improved water and sewerage services leading to positive economic growth and development to meet the aspirations of the people of Maldives.

The NWSSP 2020-2025 is aligned with the National Strategic Action Plan (NSAP 2019-2023) of the Government developed in 2019, and Sustainable Development Goal (SDG) 6 to affirm Maldives commitments regarding the right to safe drinking water and sanitation for our citizens.

The Government is firm in its commitment to developing the water and sanitation sector in the coming years. As such the water and the sewerage sector has seen a significant improvement in recent years. By the end of 2019, the population with access to piped water and sewerage reached 68% and 79% respectively (MoEn, 2020). The Government's target is to continue this momentum and provide access to safe water supply and adequate sewerage services in all inhabited islands by end of 2023.

I would like to extend my heartfelt appreciation to all who contributed in formulating this National Water and Sewerage Strategic Plan (NWSSP 2020-2025) under the Water and Sewerage Act (Act No.8/2020). I am confident that with support from all relevant stakeholders, we will be able to achieve the goals and objectives identified for the sector for the betterment of the livelihoods of the present and future generations.

A handwritten signature in blue ink, appearing to read 'Hussain Rasheed Hassan'.

Hussain Rasheed Hassan, PhD  
Minister of Environment

# ACKNOWLEDGEMENTS

The water and sewerage strategies and targets included in this plan are essentially from the National Strategic Action Plan (NSAP 2019-2023) that has been endorsed by the Government in 2019. The NSAP 2019-2023 unveiled on 3rd October 2019, was formulated through a wide range of stakeholder consultation, which includes development priorities, targets and a time table for delivery of manifesto pledges. The guiding principles in formulating water and sewerage sector strategies included in the NSAP 2019-2023 are among the strategies outlined in the National Water and Sewerage Policy published in 2017.

The Ministry of Environment would like to acknowledge and express its deep appreciation to all stakeholders who participated in and contributed to the preparation of NSAP 2019-2023 and NWSSP 2020-2025.

The staff at the Water and Sewerage Department of the Ministry of Environment were instrumental in the NWSSP 2020-2025 development process. The Ministry would like to make a special mention of their contributions and express gratitude to all staff involved.

The authors of this NWSSP 2020-2025 would like to thank Dr Hussain Rasheed Hassan, Minister of Environment for his support and invaluable guidance in formulating the NWSSP 2020-2025.

# INTRODUCTION

The National Water and Sewerage Strategic Plan (NWSSP 2020-2025) is a legal requirement under the Clause 14 (a) of Water and Sewerage Act (Act No. 8/2020). The water and sewerage strategies and targets included in this NWSSP 2020-2025 are from the National Strategic Action Plan (NSAP 2019-2023) endorsed by the Government in 2019. The government's five-year NSAP 2019-2023 was unveiled on 3rd October 2019 with development priorities, targets and time table for delivery of the pledges in the election manifesto. The guiding principles in formulating water and sewerage sector strategies included in the NSAP 2019-2023 are from the strategies outlined in the National Water and Sewerage Policy published in 2017.



## MISSION

- Provide efficient, effective and reliable water supply and sewerage services.
- Promote conservation and management of the water resources.
- Develop sector capacity for sustainable management of resources and services.



## VISION

Ensure equitable access to safe water and improved sewerage services for all.

# BACKGROUND

The Maldives consists of 1192 small, low-lying, flat, coral islands spread over more than 90,000 sq. km. stretch of the Indian Ocean. The scattered and uneven distribution of population poses many challenges to the provision of basic services such as water and sewerage. Population congestion in the capital island Male', coupled with distribution of a population of 402,071 (census 2014) across 188 islands, is recognized as one of the biggest development challenges facing the country. In many islands, populations are concentrated in small land masses resulting in high population densities. The country has an average elevation of 1.5 meters above sea- level. The Maldives is one of the most vulnerable countries to climate change and one of the immediate impacts is concerning its freshwater resources.

Due to the small size and low-lying nature of the islands, surface freshwater is generally lacking, except for a few swampy areas with fresh or brackish water in some islands. Naturally available water resources in the Maldives are rainwater and groundwater. While the Maldivian islands receive a considerable rainfall ranging from 1700 to 2300 mm annually, the country experiences a dry period from December to April. Shallow groundwater aquifers are formed in thin lenses over the salt water, just one or two meters below the land surface. The porous sandy soil in the islands make the thin freshwater lens highly vulnerable to elevation of salinity level due to saltwater intrusion. Contamination from inappropriate waste disposal and sub-standard sanitation practices makes the groundwater unsuitable for human consumption in many of the islands. Climate-change driven sea-level rise compounded with increasing storm-surge, swell activities and reduction of stormwater infiltration due to increase of built-up areas deteriorates groundwater quality. Increasing water supply needs of the nation are largely met through

desalinated seawater, which is either directly supplied to the households and communal tap-bays or bottled and distributed.

In addition to excess storm water, swell and tidal waves also cause flooding in the islands of the Maldives, causing extensive damages to critical infrastructure, properties and household goods. It also results in saltwater intrusion into groundwater aquifers, coastal erosion and impacts livelihoods (Second National Communication of Maldives, MEE, 2016). The Government aspires to bring a localized, sustainable solution to minimize impacts from flood damage in the islands.

As custodians of the welfare of families and managers of household economies, women generally bear the brunt of the deficits in water supply, sewerage and flood management systems. In many households in the outer islands, it is women who are responsible for fetching water from centralized tap-bays and other remote sources. Therefore, improving the water supply and sewerage access directly contributes to the welfare of women.

The Government believes that there is a need to improve women's role and increase their involvement in the technical operations and management of the water and sewerage sector. As such, it is crucial to increase the female workforce in the utilities and provide opportunities for women to engage in the operations and management of water and sewerage systems. Also, women could play a significant role in disseminating public awareness information among their peers in outer island communities.

Further to empowering women in the sector, human resource and capacity building is another priority area for the Government. At present, the available technical human resource is insufficient for achieving the desired sector goals and objectives.

## **WATER AND SEWERAGE OVERVIEW IN THE MALDIVES**

Traditionally drinking water was abstracted from 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 and contamination from poor sanitation practices, making it unsuitable for potable use.

Harvesting of rainwater for drinking began in the 1970s and became more widespread largely as a response to a cholera outbreak in the early 1980s. This indicates that proper sanitation facilities are crucial for improving hygiene. Many communities in the outer islands of the Maldives heavily rely on rooftop harvested rainwater for potable needs. After the 2004 tsunami, government-provided each household with a 2500 litre rainwater storage tank. Community rainwater collection and storage systems also exist, which play an important role in water security during the dry period. A nationwide survey carried out in 2000 reported that 7% of island communities used groundwater for drinking (Beswick, 2000). This indicates that over 93% of the population were depending on rainwater for drinking. Enhancing water security across the country is regarded as the key element to ensure island self-sufficiency.

Male' Water and Sewerage Company was established in 1995 with a mandate of providing water supply and sewerage services in Male'. The first municipal water supply project in the country began in the capital Malé in 1996. However, in the outer islands, people continued relying on harvested rainwater and groundwater for domestic use. During the last few years, the Government initiated development of piped water supply with metered house connections in the islands. Due to increasing climate variability and change, and with limited storage capacity in islands, the harvested rainwater

tanks have been running out during the dry season with increasing frequency. This resulted in an increased reliance on expensive, emergency water supply from desalination facilities. Between 2017 and 2020, 59 islands on average, were supplied drinking water by sea transport during the dry season with an average annual volume of about 2518 cubic meters at an annual average cost of MRF6.9 million.

Traditional practices of defecation in the Maldives had consisted of using bush/beach (called Athiri-mathi) or shallow burial of faeces in a designated area in the backyard of the houses. In the 1970s and 1980s, diarrhoea and cholera epidemic outbreaks triggered the need for the development of improved safe sanitation facilities. Human excreta disposal systems including waterless ash latrines, sealed pit toilets, and public toilet blocks were attempted, but these proved to be unsuccessful due to the contamination of groundwater and soil, posing risks to public health. Currently, the community accepts piped sewerage systems with household connections.

Among the inhabited islands, the capital Male' City, with a population of 153,904 has a piped sewerage system that has been operational since 1988. Construction of sewerage schemes in the outer islands began in 1992 with small-bore (simplified) sewerage systems.

The sector has undergone significant changes as new and improved sewerage systems such as conventional gravity sewer system and vacuum sewer systems are being established in the islands, funded increasingly with support through external assistance to the Government as well as from the national budget.

# POLICY AND STRATEGIC FRAMEWORK

Access to safe water is a fundamental human right as advocated globally at several fronts including in the context of Sustainable Development Goals (SDG6). The constitution of the Maldives enshrines access to safe water and sewerage as a basic right for all citizens. The Government is committed to providing access to safe water supply and improved sewerage facilities for all inhabited islands across the Maldives.

The National Strategic Action Plan 2019 -2023 (NSAP 2019-2023) and Clause 14(a) of the Water and Sewerage Act (8/2020) provides the enabling environment for the formulation of this five-year National Water and Sewerage Strategic Plan (NWSSP 2020-2025). This plan reflects the water and sewerage vision of the Maldives and is expected to be instrumental in facilitating dialogue between government authorities, private enterprises, civil society, external support agencies and financing institutions. In this manner, this plan is expected to enhance synergies in terms of efficiency and investment in the water and sewerage sector. The NWSSP 2020-2025 supports effective resource management and appropriate control in achieving the goals of the NSAP 2019-2023.

The NWSSP 2020-2025 is envisaged to have a five-year timeframe with a mid-term review during the third year. The implementation will be monitored and reviewed by the Water and Sanitation Department of Ministry of Environment.

This NWSSP 2020-2025 is aligned to the NSAP 2019-2023, which was compiled through a wider stakeholder consultation process represented by line ministries, private sector, independent institutions, state-owned enterprises, civil society organizations, academia, island/atoll councils, etc.



# POLICY GOALS AND TARGETS

These policy goals are for ensuring equitable access to clean drinking water and improved sewerage facilities in all inhabited islands, through financially and environmentally sustainable technologies. It also supports strengthening the legal framework, building capacity in the sector and promoting awareness and research.



## POLICY ONE

### Ensure access to safe water supply and adequate sewerage services

Target 1.1: By 2020, Water and Sewerage Act is ratified

Target 1.2: By 2020, Utility Regulatory Authority (URA) for integrated utility services is functional

Target 1.3: By 2021, Water and Sanitation coordination committee is functional

Target 1.4: By 2023, all water and sewerage utility providers have an operating license



## POLICY TWO

### Adopt cost-effective and environment-friendly, water and sewerage infrastructure

Target 2.1: By 2020, a standard mechanism to foster private sector investment in the water and sanitation sector will be in effect

Target 2.2: By 2023, all inhabited islands, will have access to safe water supply and sewerage facilities

Target 2.3: By 2023, 30% of energy consumption for water and sewerage facilities across the Maldives will be met with renewable energy



## POLICY THREE

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

Target 3.1: By 2023, at least 60% of technical staff in utility service providers are licensed (/ By 2023, all technical staff operating and maintaining the water and sewerage facilities will have at least certificate level 3 qualification and will be licensed)

Target 3.2: By 2023, at least 40 engineers will be trained in water and sanitation related field

Target 3.3: By 2023, at least 30% of all employees working in water and sewerage facilities in each island shall be women

Target 3.4: By 2022, collaborative partnership arrangements will be made with at least 3 local/international educational institutes for capacity building of water and sewerage sector programmes and services

Target 3.5: By 2024, two (2) staff at each island or city council will be trained for overall utility operational services, governance and best practices



## **POLICY FOUR**

### **Strengthen advocacy and awareness programs on water resources, water supply and sewerage**

Target 4.1: By 2022, public perceptions on safe water and sanitation practices improved by 33% compared to 2018 levels

Target 4.2: By 2023, at least 40% of households phased out single-use bottled water use

Target 4.3: By 2023, WASH awareness programs targeting to island functionaries, front line workers, CBOs and NGOs that are active in all island communities are carried out



## **POLICY FIVE**

### **Protect and conserve natural water resources**

Target 5.1: By 2023, water resource conservation and management plans are implemented in all inhabited islands.



## **POLICY SIX**

### **Build flood resilient island communities**

Target 6.1: By 2021, identify and map flood prone islands

Target 6.2: By 2022, develop and enforce design criteria's and guidelines for flood mitigation

# STRATEGIC ACTION PLAN

## Policy 1: Ensure access to safe water supply and adequate sewerage services

Target 1.1: By 2020, Water and Sewerage Act is ratified

Target 1.2: By 2020, Utility Regulatory Authority (URA) for integrated utility services is functional

Target 1.3: By 2021, Water and Sanitation coordination committee is functional

Target 1.4: By 2023, all water and sewerage utility providers have an operating license

Strategies	Action	2020	2021	2022	2023	2024	2025	Lead Implementing Agency	Other Implementing Agencies
Strategy 1.1: Improve policy, legal and regulatory framework to ensure the provision of safe water supply and sewerage services to all inhabited, commercial/industrial and tourist resort islands	Action 1.1a: Formulate and enact the Water and Sewerage Law	x						MoEn	MNPHI, MoE, MoH, FCL, MWSC, STELCO, EPA, URA, MEA, MoF, MoFA, AGO, People's Majlis
	Action 1.1b: Develop and enforce water and sewerage regulations, policies, standards, specifications and guidelines required under Water and Sewerage Act	x	x					MoEn	MNPHI, MoHUD, FCL, MWSC, STELCO, EPA, Water and Sewerage Regulator, MEA, MoF, MoFA, AGO
	Action 1.1c: Develop and enforce national drinking water quality standards	x	x	x	x			MoEn	MoH, HPA, MFDA, EPA, URA
	Action 1.1d: Develop and enforce national standards for sewage and wastewater disposal	x	x	x	x			MoEn	MoH, HPA, MFDA, EPA, MNPHI, FCL, MWSC, STELCO, URA
	Action 1.1e: Develop and enforce a regulation to factor ground water recharge mechanisms in land use and infrastructure and development related planning	x	x	x	x			MoEn	EPA, Local Councils, MNPHI, NDMA, MMS

Strategies	Action	2020	2021	2022	2023	2024	2025	Lead Implementing Agency	Other Implementing Agencies
	Action 1.1f: Establish a Water and Sanitation coordination committee		x					MoEn	MNPFI, URA, MoF, HPA, MNU, MoE, LGA, NGO, WHO, UNDP, UNICEF,
	Action 1.1g: Establish Utility Regulatory Authority (URA) for integrated utility services	x						PO	MoEn, STELCO, FCL, MWSC, MoE, PO
Strategy 1.2: Provide Water and Sewerage services through an integrated utility service provision model and decentralize the utilities to ensure cost-effectiveness	Action 1.2a: Conduct annual regulatory, financial and technical audit of utility operations and report to regulatory authority.	x	x	x	x	x	x	MoEn	MEA, MoEn, PCB, AGO
	Action 1.2b: Develop and enforce a tariff model for water and sewerage services	x	x					MoEn	FCL, MWSC, STELCO
	Action 1.2c: Develop operator licensing mechanism for island operation & maintenance of water and sewer systems at utilities	x	x	x	x			MoEn	FCL, MWSC, STELCO, MoED, MoF, MNPFI, MoHE, TVETA
Strategy 1.3: Improve research and evidence on water and sewerage sector to support policy making	Action 1.3a: Integrate and update data on the water and sewerage, and publish the data through a web-based public platform	x	x	x	x			MoEn	MNPFI, MoHE, MoH, FCL, MWSC, STELCO, EPA, URA, MEA, NDC, CTO
	Action 1.3b: Develop and Implement an E-Library for dissemination of publications and studies done on water and sewerage in Maldives in collaboration with NDC	x	x	x	x			MoEn	MNPFI, URA, EPA, MoF, Local Councils, NDC, MNU

Strategies	Action	2020	2021	2022	2023	2024	2025	Lead Implementing Agency	Other Implementing Agencies
Strategy 1.4: Strengthen operation, maintenance and management of water supply and sewerage systems through compliance monitoring and safety planning	Action 1.4a: Develop and implement water and sanitation safety plans for all inhabited islands	x	x	x	x			MoEn	MNPHI, MoF, FCL, MWSC, STELCO, Local Councils
	Action 1.4b: Develop and implement national water resource management plan for water supply and sewerage services	x	x	x	x			PO	FCL, MWSC, STELCO, MoF, Local Councils, MNPHI
	Action 1.4c: Develop operational and service quality standards for water supply and sewerage services	x	x					MoEn	FCL, MWSC, STELCO, MoF, Local Councils, EPA, MEA, URA
	Action 1.4d: Develop and implement island level water supply and sewerage system operation, maintenance and monitoring mechanism	x	x					MoEn	FCL, MWSC, STELCO, EPA, MNPHI, MoF, Local Councils, LGA, URA
	Action 1.4e: Establish and operate regional water quality testing laboratories in RUCs in line with National Spatial Plan	x	x	x	x			MoEn	MNPHI, MoF, URA
	Action 1.4f: Develop and implement National Water Security Plan	x	x	x	x	x	x	MoEn	MNPHI, MoF, Utilities, MMRI, Local Councils
	Action 1.4g: Deliver safe drinking water to vulnerable islands during emergencies.	x	x	x	x			MoEn	MNPHI, MoF, Utilities, MMRI, Local Councils

## Policy 2: Adopt cost-effective and environment-friendly, water and sewerage infrastructure

Target 2.1: By 2020, a standard mechanism to foster private sector investment in the water and sanitation sector will be in effect

Target 2.2: By 2023, all inhabited islands, will have access to safe water supply and sewerage facilities

Target 2.3: By 2023, 30% of energy consumption for water and sewerage facilities across the Maldives will be met with renewable energy

Strategies	Action	2020	2021	2022	2023	2024	2025	Lead Implementing Agency	Other Implementing Agencies
Strategy 2.1: Ensure climate resilient and cost-effective water supply and sewerage systems	Action 2.1a: Design and implement water supply and sewerage infrastructure in all inhabited islands	x	x	x	x			MoEn	MoEn, MoF, Local Councils, EPA, MEA, FCL, MWSC, STELCO, URA
	Action 2.1b: Scale up renewable energy and hybrid systems to operate existing water and sewerage facilities	x	x	x	x			MoEn	Local Councils, EPA, MEA, FCL, MWSC, STELCO, URA
	Action 2.1c: Review and revise existing water supply and sewerage system design specifications based on research	x						MoEn	FCL, MWSC, STELCO, EPA, MNPFI, MEA, Universities, Colleges, NGO, Consultancy firms and URA
	Action 2.1d: Scale up renewable energy application in rainwater harvesting and groundwater aquifer recharge in all water supply systems	x	x	x	x			MoEn	MNPFI, FCL, MWSC, STELCO, EPA, URA
	Action 2.1e: Evaluate existing sewerage treatment plants and introduce environmentally friendly sewerage treatment options of low operational, maintenance and management cost	x	x					MoEn	FCL, MWSC, STELCO, Local Councils, EPA, MNPFI, MoF, URA

Strategies	Action	2020	2021	2022	2023	2024	2025	Lead Implementing Agency	Other Implementing Agencies
	Action 2.1f: Develop a framework for managing sludge at sewage treatment facilities	X	X					MoEn	FCL, MWSC, STELCO, EPA, MNPHI, Local Councils
	Action 2.1g: Develop and introduce incentive mechanism to adopt climate resilient and environment friendly technologies to water and sewerage sector	X	X	X	X			MoEn	MoF, MoED, MNPHI, URA
	Action 2.1h: Ensure water and sewerage systems established in commercial/ industrial islands and tourist resorts are in compliance with Water and Sewerage Act (8/2020)	X	X	X	X	X	X	URA	MoEn, MoF, Local Councils, FCL, MoED, MoFM-RA, MoT MWSC, STELCO
Strategy 2.2: Promote and commercialize low cost water production and efficiency in water use	Action 2.2a: Develop and introduce a private sector investment framework for development of water and sewerage facilities	X	X	X	X			MoEn	MoF, MoED, MNPHI, URA
	Action 2.2b: Develop mechanisms to verify and provide an efficiency rating schemes for water saving devices and appliances	X	X	X	X			MoEn	EPA, MEA, FCL, MWSC, STELCO, PCB, MoF, MoED, Business associations, URA

### Policy 3: Build sector capacity in water resources, water supply and sewerage services

Target 3.1: By 2023, all technical staff operating and maintaining the water and sewerage facilities will have at least certificate level 3 qualification and will be licensed

Target 3.2: By 2023, at least 40 engineers will be trained in water and sanitation related field

Target 3.3: By 2023, at least 30% of all employees working in water and sewerage facilities in each island shall be women

Target 3.4: By 2022, collaborative partnership arrangements will be made with at least 3 local/international educational institutes for capacity building of water and sewerage sector programme and services

Target 3.5: By 2024, two (2) staff at each island or city council will be trained for overall utility operational services, governance and best practices

Strategies	Action	2020	2021	2022	2023	2024	2025	Lead Implementing Agency	Other Implementing Agencies
Strategy 3.1: Build human resource capacity required for water and sewerage system operations, maintenance and management [A19]	Action 3.1a: Undertake a capacity needs assessment of the water and sanitation sector	x	x					MoEn	MoHE, MNPHI, MoE, MoH, FCL, MWSC, STELCO, EPA, URA, MEA, MoF, MoFA
	Action 3.1b: Develop water and sewerage engineering courses at national level	x	x	x	x			MoEn	MoEn, MoE, MNU, Colleges
	Action 3.1c: Prioritize trainings required to meet the water and sanitation sector needs in national scholarships and student loan schemes	x	x	x	x			MoEn	MoE, MNU, Colleges, MoEn
	Action 3.1d: Introduce and enforce licensing scheme for technical staff working water and sewerage sector		x	x	x			MoEn	MQA, MNU, MOHE, TVETA, FCL, MWSC, STELCO

Strategies	Action	2020	2021	2022	2023	2024	2025	Lead Implementing Agency	Other Implementing Agencies
	Action 3.1e: Train and license all technical staff operating and maintaining the water and sewerage facilities to at least certificate level 3 qualification	x	x	x	x			MoEn	MoHE, MNPHI, FCL, MWSC, STELCO, EPA,
	Action 3.1f: Conduct trainings specific to councils through online learning management system for overall utility operational services, governance and best practices		x	x	x	x		MoEn	LGA, city councils, island councils, URA
Strategy 3.2: Foster international and multi-sectoral partnerships	Action 3.2a: Develop collaborative partnership arrangements with local/international educational institutes for capacity building of water and sewerage sector programmes and services	x	x	x				MoEn	MoFA, MoED, MoHE MNPHI, URA, PO
	Action 3.2a: Establish collaborative partnership with local NGOs, CBO's and institutions to support water and sewerage sector programmes and services	x	x	x				MoEn	MoFA, MoED, MoHE MNPHI, URA, PO, LGA, MoYSCE, NGO, CBO, island councils
Strategy 3.3: Increase Women's involvement in the development of Water and Sewerage sector	Action 3.3a: Implement Gender Action Plan for water and sewerage sector	x	x	x	x	x	x	MoEn	MoGFSS, LGA, island councils, FCL, MWSC, STELCO,
	Action 3.3b: Ensure that capacity development programmes designed/ conducted by utilities have gender focus	x	x	x	x	x	x	MoEn	MoGFSS, LGA, island councils, FCL, MWSC, STELCO,

## Policy 4: Strengthen advocacy and awareness programs on water resources, water supply and sewerage

Target 4.1: By 2022, public perceptions on safe water and sanitation practices improved by 33% compared to 2018 levels

Target 4.2: By 2023, at least 40% of households phased out single-use bottled water use

Target 4.3: By 2023, WASH awareness programs targeting to island functionaries, front line workers, CBOs and NGOs that are active in all island communities are carried out

Strategies	Action	2020	2021	2022	2023	2024	2025	Lead Implementing Agency	Other Implementing Agencies
Strategy 4.1: Promote awareness on water resources management, water supply, and sewerage service operations and maintenance	Action 4.1a: Roll out Fenfahi (national awareness) campaign	x	x	x	x	x	x	MoEn	Private Parties, UN Agencies, NGO's, FCL, MWSC, STELCO, Local Councils, EPA, MEA, MoF
	Action 4.1b: Leverage mainstream media for promoting safe water and sanitation practices	x	x	x	x	x	x	MoEn	Local Councils, MoF, MNPFI, Media Outlets
	Action 4.1c: Conduct a nationwide campaign on promoting piped water and phase out bottled water use in households		X	X	X	X	X	MoEn	FCL, MWSC,
	Action 4.1d: carryout WASH awareness programs targeting to island functionaries, front line workers, CBOs and NGOs that are active in all island communities		x	X	X	X	x	MoEn	MoGFSS, LGA, island councils, FCL, MWSC, STELCO,

## Policy 5: Protect and conserve natural water resources

Target 5.1: By 2023, water resource conservation and management plans are implemented in all inhabited islands.

Strategies	Action	2020	2021	2022	2023	2024	2025	Lead Implementing Agency	Other Implementing Agencies
Strategy 5.1: Reduce vulnerability of the island freshwater resources	Action 5.1a: Carry out a baseline assessment on water resources in all islands in Maldives	x	x	x	x			MoEn	LGA, Local Councils, MNPHI, EPA, FCL, MWSC, STELCO
	Action 5.1b: Develop and implement water resource conservation and management plan in all the islands	x	x	x	x			MoEn	EPA, MoH, MoT, MoFMRA, NDMA, MMS, Local Councils
	Action 5.1c: Incorporate and implement groundwater recharge mechanisms in land use plans of all inhabited islands	x	x	x	x	x	x	MoEn	MLSA, LGA, Councils, MNPHI,
Strategy 5.2: Improve fresh water quality testing and monitoring	Action 5.2a: Conduct national data collection and monitoring of the quality of fresh water resources	x	x	x	x			MoEn	EPA, Local Councils, MNPHI, NDMA, MMS
	Action 5.2b: Develop and standardize parameters for groundwater quality and quantity in all monitoring activities.	x	x	x	x			MoEn	EPA, Local Councils, MNPHI, NDMA, MMS, MoH
	Action 5.2c: Conduct climate modelling under different emission scenarios for natural water resources	x	x	x	x			MoEn	EPA, Local Councils, MNPHI, NDMA, MMS

## Policy 6: Build flood resilient island communities

Target 6.1: By 2021, identify and map flood prone islands

Target 6.2: By 2022, develop and enforce design criteria's and guidelines for flood mitigation

Strategies	Action	2020	2021	2022	2023	2024	2025	Lead Implementing Agency	Other Implementing Agencies
Strategy 6.1 Seek community protection from flooding incidents	Action 6.1a: Accurately map and identify flood prone areas in islands	x	x					MoEn	MNPHI, URA, MoIF, HPA, MNU, MoE, LGA, Watercare, WHO, UNDP, UNICEF,
	Action 6.1b: Develop design criteria and technical specifications for sustainable flood management systems in the islands		x	x				MoEn	LGA, Local Councils, MoNPI, EPA, FCL, MWSC, STELCO
	Action 6.1c: Incorporate flood mitigation and minimization measures in public infrastructure such as roads, reclamation projects, harbors, coastal protections, high rise buildings etc.		x	x	x	x	x	MoEn	LGA, Local Councils, MoNPI, EPA, FCL, MWSC, STELCO

# IMPLEMENTATION FRAMEWORK

## INSTITUTIONAL ARRANGEMENT

The Ministry of Environment is the leading institution to implement this NWSSP 2020-2025. Other relevant institutions will provide the required input to implement and achieve the targets set out on this strategic plan. It is the responsibility of the Ministry of Environment to coordinate with the relevant stakeholders to implement this strategic plan.

## FINANCIAL RESOURCE

Human resource capacity and financial resources will be required to execute the strategies outlined in this document. To achieve this, international funding agencies and international financial institutions can be encouraged to get involved in the process of implementing the outlined strategies. In addition, selected activities will be proposed for annual government budgetary allocations.

# MONITORING AND EVALUATION

The NWSSP 2020-2025 Monitoring and Evaluation Framework would be developed to systematically measure and track the program activities and results. The NWSSP 2020-2025 Monitoring and Evaluation Framework will be implemented by the Water and Sanitation Department of the Ministry of Environment. The NWSSP 2020-2025 five-year action plan will be reviewed in its third year and an evaluation will be carried out to measure progress, achievements and identify challenges and strategies to address them.

# REFERENCES

- National Strategic Action Plan (NSAP 2019 -2023), Presidents office, Government of Maldives
- NWSP (2017), National Water and Sewerage Policy, Ministry of Environment and Energy, Male', Maldives
- Water and Sewerage Act 8/2020, Government of Maldives
- Take Action for the Sustainable Development Goals – United Nations Sustainable Development. (n.d.). Retrieved from <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>
- MoEn (2020), Water and Sanitation Department, Ministry of Environment, Maldives
- SAP 2019 launching ceremony speech by HE President Ibrahim Mohamed Solih (2019, October 02). Retrieved October 04, 2020, from <https://presidency.gov.mv/Press/Article/22323>
- MEE, (2016). Second National Communication of Maldives to the United Nations Framework Convention on Climate Change: Ministry of Environment and Energy

## **PLEASE CITE THIS DOCUMENT AS:**

Ministry of Environment. (2020). National Water and Sewerage Strategic Plan (2020-2025). Male' City, Maldives: Ministry of Environment.

