



National Strategy

for Water Supply and Sanitation

Revised and Updated Edition 2021



Local Government Division
Ministry of Local Government, Rural Development & Co-operatives
Government of People's Republic of Bangladesh

National Strategy for Water Supply and Sanitation

Revised and Updated Edition 2021

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Minister

Ministry of Local Government, Rural Development and Co-operatives
Government of the People's Republic of Bangladesh

MESSAGE

Achievement of Sustainable Development Goals (SDGs) is a high priority of the present government. In line with this priority, the Policy Support Branch (PSB) of the Local Government Division under the Ministry of Local Government, Rural Development and Cooperatives has revised and updated the National Strategy for Water Supply and Sanitation 2014 to align it with the targets of SDG and other goals of the water supply, sanitation and hygiene (WASH) sector. This is a timely and commendable initiative of the Local Government Division.

The revised 'National Strategy for Water Supply and Sanitation 2021' tries to provide a comprehensive framework for the WASH sector in Bangladesh in order to address the new challenges after the MDG era. The goal of this national strategy is to ensure safe and sustainable water supply, sanitation and hygiene services for all, with safety nets for the hard-core poor and the marginalized, leading to better health and well-being. It consists of core principles and strategies to guide the way forward for ensuring the safe water supply, sanitation and hygiene services.

I am pleased that the revision and updating process of this document adopted a wide range of participation and considered the opinions all concerned with due importance. I convey my profound thanks to all those who contributed to its revision and upgradation, particularly the members of the working committee, sector professionals and National Forum for Water Supply and Sanitation.

I hope all including relevant ministries, local government institutions, development partners, NGOs, civil societies and media will work together with a concerted effort to implement this strategy for ensuring safely managed water supply and sanitation services for all, which will contribute in materializing the vision of the Honourable Prime Minister Sheikh Hasina of becoming a developed country by 2041.

Long live Bangladesh!

Md. Tazul Islam, MP



Senior Secretary

Local Government Division

Ministry of Local Government, Rural Development and Co-operatives

MESSAGE

Bangladesh is globally recognized as a role model for achieving enormous progress in our social and economic sectors. Especially, our achievement in the water and sanitation sector is appreciated worldwide. Despite the success in increasing water supply services and reducing open defecation to almost zero, we have many challenges in ensuring safely managed water supply and sanitation services for all. These include, safely managed water supply and sanitation for densely populated urban areas, extending services to people living in hard to reach (HtR) areas coupled with coastal and arsenic prone areas, mobilization of funding on time etc.

To ensure safe water supply and sanitation services and aligning with Sustainable Development Goals (SDGs) focusing the concept of 'leaving no one behind', the Local Government Division has taken initiative to revise and update the 'National Strategy for Water Supply and Sanitation 2014'.

I convey my sincere thanks and gratitude to Honorable Minister, Ministry of Local Government, Rural Development and Cooperatives Mr. Md. Tazul Islam, MP, for his overall guidance in revising and updating this important national WASH sector strategy. I am also extending my thanks to WaterAid Bangladesh, UNICEF and the members of the 'Working Committee' for their proactive role and continuous support in accomplishing this important task.

I expect that combined efforts from different ministries, stakeholders, government agencies, LGs, NGOs and development partners based on this revised 'National Strategy for Water Supply and Sanitation 2021' will help overcome the challenges of WASH sector. I firmly believe that this revised 'National Strategy for Water Supply and Sanitation 2021' will help our country achieve SDG 6 and reach developed status by 2041.

Helal Uddin Ahmed



Additional Secretary
Water Supply Wing
Local Government Division

FOREWORD

The 'National Strategy for Water Supply and Sanitation' has been updated and revised, aligning with SDG to address WASH sector present and future challenges. The original strategy was developed and published by the Local Government Division of the Ministry of Local Government Rural Development and Co-operatives in 2014. Despite huge success in the water supply and sanitation sector, ensuring safe water supply and sanitation for all the citizens of Bangladesh is still a big challenge for us. To face the challenges of the water supply and sanitation sector the initiative for revising this document is indeed a very important and timely step. I believe that this revised and updated strategy will play a pivotal role in achieving SDG-6.

Revising the national strategy was a gigantic task, where all the sectoral stakeholders including the policy makers were actively involved. I like to take the opportunity to express my sincere gratitude and profound regards to Mr. Md. Tazul Islam MP, Honorable Minister, Ministry of Local Government, Rural Development and Co-operatives for his overall guidance in revising and updating the strategy. I am also grateful to Mr. Helal Uddin Ahmed, Senior Secretary, Local Government Division, for his kind advice and cooperation in the revision and publication of this very important national document for the Water supply Sanitation and Hygiene (WASH) sector.

I am thankful to WaterAid Bangladesh for their dedicated and untiring effort in accomplishing this revision and updating. My heartfelt gratitude also goes to the Chief Engineer, DPHE and Members of the Working Committee for their contribution to this revision and updating. I must convey thanks to UNICEF for assisting in the printing and publication of this national strategy.

I hope this revised 'National Strategy for Water Supply and Sanitation 2021' will help the WASH sector actors in taking the right actions for achieving SDG-6 and ensuring safe water supply, sanitation and hygiene services for all in Bangladesh.

Muhammad Ibrahim

ACKNOWLEDGEMENT

Bangladesh has made remarkable progress in Water, Sanitation, and Hygiene (WASH) sector in the past years. The country has been exemplified around the world for its impressive performance in attaining UN-set Millennium Development Goals (MDGs). Subsequently to meet the Sustainable Development Goals (SDGs), the Local Government Division under the Ministry of Local Government, Rural Development and Co-operatives has revised and updated the National Strategy for Water Supply and Sanitation 2014.

This revised National Strategy for Water Supply and Sanitation 2021 was developed through a participatory process, in several stages, under the leadership of the Ministry of Local Government, Rural Development and Cooperatives.

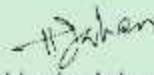
Since the initiation of the revision of the strategy document, a 18 members Working Committee was actively involved under the guidance of the Local Government Division. The Working Committee, which I was the Member Secretary and chaired by the Additional Secretary of Local Government Division (LGD), was set up to update this strategy document and responsible for coordination and revision with the participation of WASH sector stakeholders.

A National Workshop was held to collate vital inputs from the stakeholders, non-governmental organisations, development partners, academicians, experts, research institutions and all the other concerned officials of LGD. I express our wholehearted gratitude to all the participants for their valuable contributions for updating this 'National Strategy for Water Supply and Sanitation 2021'.

The National Strategy for Water Supply and Sanitation 2021 includes a comprehensive framework for the water supply, sanitation and hygiene (WASH) sector in Bangladesh in order to address the new and emerging challenges after the MDGs and to align with the SDGs. This revised strategic document provide directions to increase coverage and improve the quality of WASH interventions such as the expansion of safe and sustainable drinking water and sanitation facilities, addressing the problem of arsenic contamination, fecal sludge and solid waste management and so on.

The journey of the revised National Strategy for Water Supply and Sanitation 2021 could not have been completed without the support, guidance and leadership of Md. Tazul Islam, MP, Honourable Minister, Ministry of Local Government, Rural Development and Co-operatives. I express my heartfelt gratitude to him. Furthermore, I express my appreciation to Helal Uddin Ahmed, Senior Secretary, Local Government Division and all the other concerned officials of Local Government Division and Policy Support Branch.

I believe, along with the participation of concerned stakeholders in the water and sanitation sector, the implementation of the revised and updated 'National Strategy for Water Supply and Sanitation 2021' will support achieving the SDGs and address the challenges the country might face in coming years.


Hasin Jahan

Acronyms



3R	Reduce, Reuse and Recycle
BADC	Bangladesh Agricultural Development Corporation
BBS	Bangladesh Bureau of Statistics
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BWDB	Bangladesh Water Development Board
CBN	Cost of Basic Needs
CC	City Corporation
CLTS	Community-Led Total Sanitation
CSR	Corporate Social Responsibility
DoE	Department of Environment
DMAs	District Metering Areas
DPHE	Department of Public Health Engineering
DPP	Development Project Proposal
GLASS	Global Analysis and Assessment of Sanitation and Drinking-Water
HRD	Human Resources Development
HtR	Hard-to-Reach
ICDDR, B	International Council for Diarrheal Disease Research, Bangladesh
IEC	Information, Education and Communication
IWRM	Integrated Water Resources Management
JMP	Joint Monitoring Programme (UNICEF and WHO)
LCG	Local Consultative Group
LGD	Local Government Division
LGED	Local Government Engineering Department
LGI	Local Government Institutions
LGSP	Local Government Support Project
LIC	Low-Income Community
MDG	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
MoA	Ministry of Agriculture
MoEF&CC	Ministry of Environment, Forest and Climate Change
MolB	Ministry of Information & Broadcasting
MoLGRD&C	Ministry of Local Government, Rural Development and Co-operatives
MoH&FW	Ministry of Health and Family Welfare
MoP&ME	Ministry of Primary and Mass Education

Acronyms



MoE	Ministry of Education
MoW&CA	Ministry of Women and Children Affairs
MoWR	Ministry of Water Resources
NaMIS	National Management Information System
NAPA	National Adaptation Programme of Action
NFWSS	National Forum for Water Supply and Sanitation
NGO	Non-Governmental Organization
ORS	Oral Rehydration Saline
PSB	Policy Support Branch
PWSS	Pourashava Water Supply Section
R&D	Research and Development
SACOSAN	South Asian Conference on Sanitation
SDG	Sustainable Development Goals
SDP	Sector Development Plan
SOD	Standing Orders on Disaster
SWAp	Sector Wide Approach
TLCC	Town Level Coordination Committee
TPP	Technical Project Proposal
UNICEF	United Nations Children's Fund
µg/l	Microgram per liter
WARPO	Water Resources Planning Organization
WASA	Water Supply and Sewage Authority
WASH	Water Supply, Sanitation and Hygiene
WATSAN	Water and Sanitation
WHO	World Health Organization
WinS	WASH in Schools
WLCC	Ward Level Coordination Committee
WSF	Water Safety Framework
WSP	Water Safety Plan

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Working Definitions



Water Supply System: Production/abstraction, collection, treatment, storage, transmission and distribution of water for domestic and/or commercial uses. The system should be accessible and ensure quality, reliability and affordability of water.

Drinking Water Services: Drinking water services refers to the accessibility, availability and quality of the main source used by households for drinking, cooking, personal hygiene and other domestic uses.

Sanitation Services: Sanitation services refer to the management of excreta from the facilities used by individuals, through emptying and transport of excreta for treatment and eventual discharge or reuse.

Hygiene: Hygiene refers to the conditions and practices that help maintain health and prevent spread of disease including handwashing, menstrual hygiene management and food hygiene.

Sector: The Water Supply, Sanitation and Hygiene (WASH) Sector.

DRINKING WATER LADDER

The drinking water ladder is used by the Joint Monitoring Program to benchmark and compare service levels across countries – from unprotected surface water up to safely managed drinking water.

1. **Surface Water:** Drinking water directly from a river, dam, lake, pond, stream, canal, or irrigation channel.
2. **Unimproved Drinking Water:** Drinking water from an unprotected dug well or unprotected spring.
3. **Limited Drinking Water:** Drinking water from an improved source where collection time exceeds 30 minutes for a round-trip, including queuing.
4. **Basic Drinking Water:** Drinking water from an improved source provided collection time is not more than 30 minutes for a roundtrip including queuing.
5. **Safely Managed Drinking Water:** Drinking water from an improved water source, free from fecal and priority chemical contamination (as written in the JMP definitions), which is located on premises and available when needed.

Improved Drinking Water Sources: Improved drinking water sources include treated piped water, boreholes, or tube-wells, protected dug wells, protected springs, rainwater and packaged or delivered water.

Drinking Water Quality Standard: Bangladesh Standards for Drinking Water Quality.

Water Points: Non-piped standalone drinking water sources such as handpump tubewells, power-driven tubewells, pond sand filters, dug wells, rainwater harvesting units etc.; piped water supply outlets for individual households; and public stand posts for common use.

Water Supply Service Level: The desired minimum level of service is that each homestead/ cluster of households has a water connection/water point supplying the basic minimum quantity of water for domestic uses of 50 liters per person per day within 30 minutes for round trip including queuing.

Safe Water: Water that does not cause any significant risk to the health of the consumer over lifetime consumption.

SANITATION LADDER

The sanitation ladder is used by the Joint Monitoring Program to benchmark and compare service levels across countries – from open defecation up to safely managed sanitation. For the purposes of this strategy document, the ladder will also include the additional rung of 'shared latrine'.

1. **Open Defecation:** Disposal of human faeces in fields, forests, bushes, open bodies of water, beaches and other open spaces or with solid waste
2. **Unimproved Sanitation:** Use of pit latrines without a slab or platform, hanging latrines and bucket latrines
3. **Shared Latrine:** A latrine that is used by more than one household. It can be situated in urban, peri-urban or rural areas.
4. **Limited Sanitation:** Use of improved facilities shared between two or more households
5. **Basic Sanitation:** Use of improved facilities which are not shared with other households
6. **Safely Managed Sanitation:** Use of an improved sanitation facility, which is not shared with other households and where excreta are safely disposed in situ or transported and treated offsite.

However, in the context of Bangladesh, in addition to JMP approved above mentioned definition, shared improved latrines, where excreta are safely disposed in situ or transported and treated off-site, will also be counted as safely managed sanitation.

(Note: As shared toilet is unavoidable and reality in Bangladesh, based on research findings, the standard and indicators of shared toilet will be set by the Government. However, in the context of Bangladesh if a new definition is derived from empirical evidence, will be applicable.)

Improved Sanitation Facilities: Improved sanitation facilities are those designed to hygienically separate excreta from human contact, which include flush/pour flush to piped sewer system, septic tanks or pit latrines; ventilated improved pit latrines, composting toilets or pit latrines with slabs.

Community Latrine: A single or a number of safely managed latrines placed in a cluster for use by a section of community.

Sanitation Service Level: The basic minimum service level for sanitation is that every household has a separate safely managed latrine and has access to toilets in public places and institutions. Hygienically maintained community latrines/ shared latrines may be used in cases of communities with space constraints in slums/low-income communities and in hard-to-reach areas.

HANDWASHING LADDER

1. **No facility:** No hand washing facility.
2. **Limited:** Hand washing facility without soap or water.
3. **Basic:** Hand washing facility with soap and water.

Hygiene Service Level: The basic minimum service level for hygiene is hand washing facilities with soap and water are available at household levels and public settings.

Fecal Sludge: A mix of fecal solid and liquid waste contents of pits and vaults accumulating in on-site sanitation installations, such as pit latrines and septic tanks.

Fecal Sludge Management: A collective system/process that includes containment, collection and transportation, safe in-situ disposal/ off-site treatment and disposal and/or reuse of fecal sludge.

Integrated Water Resources Management: A process which promotes the coordinated development and management of water, land and related resources in order to maximize economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems and the environment.

Water-Stressed Areas: Areas that are declared so under the provision of Article 17 of the Water Act 2013 to protect water source or aquifer.

Vulnerable People: Groups of people or individuals who face constrained access to basic services including water supply and sanitation due to unfavorable socio-economic or physical characteristics. Examples of these groups include children, people living with disabilities, aged people, extreme poor, low income urban communities in slum areas, tea garden workers, indigenous communities and floating population.

Food Poverty Line: This is estimated using the cost of basic needs method and is equal to the cost of a basic food basket required to meet the nutritional requirement of 2,122 kilo calories per person per day.

Non-food Poverty Line: Cost of consuming non-food items by the member of household close to the food poverty line.

Poor: They are the members of households whose per capita expenditure on food and non-food items combined are equal to or less than the summation of food poverty line and non-food poverty line (also termed as upper poverty line).

Extreme Poor: They are the members of households whose total expenditures on food and non-food items combined are equal to or less than food poverty line (also termed as the lower poverty line).

Institutional WASH: WASH facilities in the institutional settings, including schools, health care facilities and workplaces.

Introduction

Chapter 1

1.1 Sector Context

Since its independence in 1971, Bangladesh has been striving to provide water supply, sanitation and hygiene services across the country. It has successfully achieved almost all Millennium Development Goal targets included under MDG 7. The country is now well on its way to implementing measures to achieve the Sustainable Development Goal targets, including those under Goal 6 Ensure availability and sustainable management of water and sanitation for all.

Bangladesh has made significant progress towards providing water and sanitation service to its citizens in the last two decades. According to the Joint Monitoring Program (JMP, 2019), 97% people of Bangladesh have access to basic water services and only 55% of the population are covered by safely managed water services. In water supply, the quality of drinking water is undermined by safety issues. At present, nearly 12% of households consume water from sources with arsenic concentration of above the national standard of 0.05mg/l (MICS, 2019).

In sanitation, 48% people use at least basic sanitation facilities. 23% use limited (shared) facilities and the remaining 29% use unimproved facilities. While less than 1% of the population defecates in the open, the fact that nearly one-third of the population uses unimproved latrines is a significant concern for public health and environmental pollution. While general awareness of hygiene is high, only 35% people have access to basic level of hygiene facilities while 54% use limited facilities (without water or soap) and 11% have no facilities at all (JMP, 2019).

This National Strategy for Water Supply and Sanitation 2021 provides a comprehensive framework for the Water supply, Sanitation and Hygiene (WASH) sector in Bangladesh in order to address the new challenges after achievements of MDGs and to align with the SDGs. This revised strategy is based on six guiding principles and three thematic blocks that will guide the way forward.

This strategy consists of three chapters including this introduction, which presents a background, rationale of the strategy and the methodology. The second chapter principally discusses the three major strategic blocs and 17 specific strategies in greater detail, while the third chapter describes institutional arrangements and the implementation plan.

1.2 Rationale for a Comprehensive National Strategy for Water Supply and Sanitation

Following the MDG era target of halving the proportion of the population without access to water and sanitation by 2015 (MDG target 7c), the SDG era has introduced even higher service standards in the form of Goal 6 – ensuring availability and sustainable management of water and sanitation for all – which encompasses universal and equitable access, leaving no one behind, and addressing aspects of accessibility, affordability and quality. Box 1 below captures in brief the salient features of WASH service ladders and SDG 6 targets (JMP 2019), while Annex 1 presents a range of global standard for sanitation and water technology category (MICS, 2019).

Achieving the targets under SDG 6 and reaching the scenarios depicted in the topmost layers in the ladders (Box 1) and ensuring the use of improved sanitation and water technologies (Annex 1) are critically important for better health and well-being of the citizens of Bangladesh. Therefore, ensuring universal access to water supply, sanitation and hygiene is a major challenge for Bangladesh, which requires a multi-pronged approach and strategies. Moreover, it needs to address several perennial challenges such as hard-to-reach areas and vulnerable people. Apart from these, Bangladesh must tackle other emerging issues such as reducing the negative impacts of climate change and meeting the increasing demands for services due to the rapid pace of urbanization, as well as strengthening sector governance through building the capacity of institutions to ensure equity, accountability and transparency. In this backdrop, framing a comprehensive national strategy for water supply and sanitation has become imperative to address the challenges described above and to attain the SDG targets.

Box 1: Salient features of WASH service ladders and SDG 6 targets

SDG 6: Ensure availability and sustainable management of water and sanitation for all	DRINKING WATER LADDER	SANITATION LADDER	HANDWASHING LADDER
Targets:	Safely managed: Drinking water from an improved water source which is located on premises, available when needed and free from fecal and priority contamination.	Safely managed: Use of an improved sanitation facility which is not shared with other households and where excreta are safely disposed in situ or transported and treated off-site.	Basic: Handwashing facility with soap and water in the household.
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.			
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.	Basic: Drinking water from an improved source provided collection time is not more than 30 minutes for a round-trip including queuing.	Basic Sanitation: Use of improved facilities which are not shared with other households.	Limited: Handwashing facility without soap and water.
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.	Limited: Drinking water from an improved source where collection time exceeds 30 minutes for a round-trip, including queuing.	Limited Sanitation: Use of improved facilities shared between two or more households.	
6.5 By 2030, implement integrated water resources management at all levels, including through trans boundary cooperation as appropriate.	Unimproved: Drinking water from an unprotected dug well or unprotected spring.	Unimproved Sanitation: Use of pit latrines without a slab or platform, hanging latrines and bucket latrines.	No facility: No hand washing facility.
6.6 By 2020, protect and restore water-related eco systems, including mountains, forests, wetlands, rivers, aquifers, and lakes.	Surface water: Drinking water directly from a river, dam, lake, pond, stream, canal or irrigation channel.	Open defecation: Disposal of human feces in fields, forest, bushes, open bodies of water, beaches or other open spaces or with solid waste.	
6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies.		Note: Improved facilities include: flush/pour flush to piped sewer system, septic tank or pit latrine; ventilated improved pit latrine, composting toilet or pit latrine with slab.	
6.b Support and strengthen the participation of local communities in improving water and sanitation management.	Note: Improved sources include: piped water, boreholes or tube-wells, protected dug wells, protected springs and packaged or delivered water.		

A review of the sector documents in the Sector Development Plan (SDP) for the Water Supply and Sanitation Sector in Bangladesh 2011-25 reveals that although most of the policies and strategies were prepared during the MDG era, they generally address the important issues in the sector. The review also revealed numerous gaps and overlaps amongst sector strategies. It was therefore proposed that all the existing strategies be streamlined into a single strategy, which will incorporate all outstanding and emerging sector issues. Against this background the Local Government Division (LGD), Ministry of Local Government, Rural Development and Cooperatives (MoLGRD&C), in consultation with all the concerned stakeholders, revised and updated the National Strategy for Water Supply and Sanitation, 2014.

1.3 Approach and Methodology

The Policy Support Branch (PSB) under the LGD guided the revision and updating the 'National Strategy for Water Supply and Sanitation, 2014'. A working group was formed consisting of members from Department of Public Health Engineering (DPHE), Water Supply and Sewage Authorities (WASAs), Non-Governmental Organizations (NGOs) and Development Partners to support the revision and updating this National Strategy. Consultations were held with wide range of stakeholders, including relevant Policymakers, DPHE, WASAs, Local Government Institutions (LGIs), NGOs, Development Partners, Academia, Researchers and sector professionals during various stages of this National Strategy development. The draft revised version of this National Strategy was reviewed by a group of peer reviewers and was widely shared in a National Workshop. Later, the final draft version of this revised and updated strategy was discussed and recommended for approval by the National Forum for Water Supply and Sanitation (NFWSS). Subsequently this strategy was approved by the Ministry of Local Government, Rural Development and Cooperatives.

The National Strategy for Water Supply and Sanitation

Chapter 2

2.1 Goal

Safe and sustainable water supply, sanitation and hygiene services for all, with safety nets for the hardcore poor and the marginalized, leading to better health and well-being.

2.2 Objective of the National Strategy

To provide a uniform strategic guideline to sector stakeholders, including the government, semi-government and local government institutions, private sector and NGOs, to achieve the sector goal.

2.3 Timeframe

The timeframe of this National Strategy for Water Supply and Sanitation, 2021 is from 2021 to 2030. The progress of its implementation will be reviewed annually.

2.4 Guiding Principles

The Strategy is based on the following guiding principles:

1. Regard water supply and sanitation as human rights, as well as public goods that have economic and social value;
2. Adopt an inclusive, demand-driven approach ensuring transparency and accountability at all stages of service delivery, with safety nets for the hardcore poor and the marginalized;
3. Mainstream gender, equity, rights and citizen participation in designing, planning, implementation and monitoring of WASH services;
4. Undertake a gradual approach to improve the quality and service levels considering adverse impacts of climate change and emerging challenges;
5. Create enabling environment for enhanced private sector participation; and
6. Promote WASH Sector stakeholder, inter-ministerial collaboration, information sharing and facilitate the use of harmonized approaches.

2.5 The Framework of the Strategy

In order to achieve the sector goal, and in accordance with the guiding principles, there will be three strategic thematic blocs having a number of sub-strategies under each of them, as figure 1 depicts below, based on which WASH sector interventions will be formulated. The thematic strategies are:

- **Strategic Theme 1:** Increase the coverage and improve the quality of WASH services
- **Strategic Theme 2:** Address the perennial and emerging challenges in the sector
- **Strategic Theme 3:** Strengthen sector governance, coordination, monitoring and reporting



Figure 1: A Framework of the National Strategy for the Water Supply and Sanitation 2021

2.6 Thematic Strategies and Specific Strategic Directions

This section introduces three thematic strategies and describes the various strategic directions under each of them (i.e. pathway that will lead to the achievement of the strategy).

The first theme is to 'increase the present coverage of WASH services and improve its quality' so that the people gain access to the safely managed water supply and sanitation facilities along with basic hygiene services as propounded by SDG.

The second theme aims at 'addressing perennial and emerging challenges' the WASH sector has been facing now such as rapid urbanization, frequent disasters and climate change. If these are not tackled properly, the achievements made through the first thematic bloc might turn out to be futile.

The third theme dealing with 'WASH sector governance, coordination, monitoring and reporting' is central to achieving the outcomes of the above mentioned two thematic blocs.

Under each thematic bloc, there are several specific strategies and action points. It is expected that accomplishment of all these strategies and action points will contribute to achieving the goal of ensuring safe and sustainable water supply, sanitation and hygiene services for all, keeping the spirit of leaving no one behind.

Strategic Theme 1: Increase the Coverage and Improve the Quality of WASH Services

This strategic theme consists of nine strategic directions to increase coverage and improve the quality of WASH interventions such as expansion of safe and sustainable drinking water and sanitation facilities, addressing the problem of arsenic contamination, fecal sludge and solid waste management, and so on.

Strategy 1: Expand access to safe and affordable drinking water and sanitation facilities

The provision of safe water is threatened by risks of contamination at source, in conveyance and at the point of consumption. The government prepared the Water Safety Framework (WSF), 2011 as a guideline to ensure the provision of safe drinking water. In the backdrop of the WSF, the following strategic directions highlight how to manage water safety risks.

1. Build new water supply and sanitation systems and increase sustainable water supply sources;
2. Look holistically at the provision of safe water from the water source to the point of consumption, including in-house handling, for piped and non-piped water supply systems;
3. Adopt a risk management based approach for safe drinking water, commonly known as Water Safety Plan (WSP) and facilitate integration with performance management and incentives to expand water safety planning in all water supply programs;
4. Establish a water quality monitoring system and protocol, delineating the roles and responsibilities of the consumers, service providers, local and central government institutions to equip, test and respond to contamination threats;
5. Prepare manuals, tools and guidelines on WSPs for all water supply systems in the light of the existing Water Safety Framework, 2011 in Bangladesh;
6. Increase operational monitoring by all water and sanitation service providers and raise awareness among users;
7. Provide institutional set-up for the Water Quality Monitoring and Surveillance Protocol to supervise and improve the management of WSPs including establishing relationship with Department of Environment (DoE) under the MoEF&CC, related NGOs and private sector. DPHE with support from LGD and National Forum for Water Supply and Sanitation will take the lead to make this happen;
8. Ensure external assessment of the WSPs in various municipalities by DPHE as the lead national agency, to strengthen operational monitoring by all water providers and facilitate incremental improvement of water supply through performance management contracts and incentives;
9. Consider Water Quality Monitoring and Surveillance as a core function of DPHE and strengthen its surveillance work with support from its revenue budget in rural and urban water supply systems, including WASAs, and inform the water suppliers about the surveillance outcomes;
10. Facilitate harmonized behavior change communication approaches for creating mass awareness on importance of safe and sustainable drinking water and sanitation services and their proper operation and maintenance;
11. Liaise with Ministry of Health and Family Welfare to integrate arsenicosis reporting in non-communicable disease unit data base of DGHS.

Strategy 2: Give priority to arsenic mitigation

In Bangladesh, 11.8% of households consume water from sources with arsenic concentration of above 0.05 mg/l, while water tested in homes shows 10.6% of households have drinking water that test above this level (MICS 2019). As per the study 'Situation Analysis of Arsenic Mitigation 2009' conducted by DPHE-JICA, 2009, approximately half of the population live in the severely affected areas, where more than 80 percent of the tube wells are contaminated with arsenic.

In terms of policy, the government has formulated the 'National Policy for Arsenic Mitigation, 2004' and the 'Implementation Plan for Arsenic Mitigation in Bangladesh, 2004' which has been revised in 2018. The Implementation Plan has four inspectoral plans for Arsenic Mitigation and attaches importance on nine facets including screening, testing, monitoring, reporting and accountability, institutional and technological aspects that are instrumental for addressing arsenic in Bangladesh. Keeping all these in perspective, as well as other issues that emerged after 2018, the strategic directions are given below:

1. Prepare exclusive Implementation Plan for water supply under the National Policy for Arsenic Mitigation 2004 and Implementation Plan of Arsenic Mitigation (IPAM) 2018 giving importance to arsenic testing, monitoring, arsenic-laden sludge disposal and research;
2. Carry out screening and monitoring of all potential contaminated tubewells with the objective to identify arsenic contaminated wells, arsenic patients and population at risk;
3. Ensure testing of all new groundwater supply sources for arsenic before commissioning by the individual or the agency installing the water sources;
4. Develop data repository on arsenic contamination, including the extent of geographical spread, and different management systems in use;
5. Develop a comprehensive communication strategy and carry out public awareness campaigns to warn people about the dangers of consuming arsenic contaminated water; to take remedial measures against arsenic poisoning and explore alternative arsenic-safe water supply options; and to dispel myths about arsenicosis being contagious to reduce social exclusion and discrimination against patients;
6. Establish and strengthen institutions to innovate alternative safe water devices, sludge management technologies and support local initiatives to promote testing, marking and switching of wells, where feasible, as the most cost-effective mitigation option;
7. Initiate the process of lowering the standard for arsenic in drinking water to 10 microgram per liter ($\mu\text{g/l}$) on a phased timescale, by 2022, given strong evidence of its impact on human health;
8. Give preference to arsenic mitigation technology using surface water sources when other types of arsenic mitigation technologies appear to be equally technically feasible, while also considering factors like chemical and microbial safety of the water, social acceptability, and cost;
9. Give priority to dedicated projects for arsenic mitigation in arsenic-affected areas and special attention for their smooth implementation;
10. Provide at least one arsenic-safe water source within 30 minutes walking distance of all households;
11. Promote piped water supply in arsenic-affected areas using surface water with treatment where feasible or groundwater of appropriate quality;
12. Promote the development of a local low-cost arsenic test kit for Bangladesh;
13. Coordinate arsenic mitigation related activities between various ministries and divisions (e.g. LGD, MoH&FW, MoA and MoWR) as well as between government agencies, NGOs and private sector at different levels, from national to union;
14. Undertake studies, researches and development and evaluations on arsenic and related issues;
15. Promote the use of harmonized approaches such as the Arsenic Safe Union concept which integrates screening, appropriate technology, vulnerability risk assessment and proper monitoring.

Strategy 3: Move to the safely managed rung of the sanitation ladder

Bangladesh has made remarkable achievements in reducing coverage of open defecation to less than 1%. The success of sanitation in Bangladesh during the last decade is largely credited to the Community-Led Total Sanitation (CLTS) movement supported by the government, local government institutions and NGOs. The National Sanitation Strategy prepared in 2005 was instrumental in facilitating installation of millions of latrines, mostly by households themselves. However, a large portion of these latrines are not categorized and considered as safely managed because of many families share facilities, raising issues around access and cleanliness. Ensuring appropriate sanitation in urban areas, especially in the low-income communities, is still a major issue. These shortcomings indicate that sanitation in Bangladesh still faces many challenges to attain safely managed status.

The scope of this strategy is related to only human excreta management using onsite sanitation technologies, other aspects of sanitation are addressed in other strategies¹. The following strategic directions suggests ways to consolidate and improve the present approach including marketing of sanitation products.

1. Carry out baseline survey in each Upazila, town and city on the status of sanitation in order to gather information on containment, treatment and disposal of feces, surface drainage, solid waste and waste water and prepare a local plan for attaining safely managed sanitation for all;
2. Give due consideration to local values and cultural practices in sanitation improvement programs as well as accept new, user friendly and sustainable technologies based on the result of studies and feasibility assessments;
3. Continue and expand the reach of the National Sanitation Campaign to bring more focus on safely managed issues;
4. Develop a wide range of sanitation technologies which can include treatment facilities and which are safely managed, gender separated and integrated with handwashing and menstrual hygiene management facilities appropriate in specific situations;
5. Develop entrepreneurship and business model for different components of hygienic and durable toilet (i.e., prefabricated plastic/fiberglass septic tank, mobile toilet, other community type facilities etc.);
6. Provide adequate public toilet facilities at places where people congregate, such as, bus stations, boat terminals, market, parks, etc.; and provide mobile toilets or other suitable facilities for public gatherings like public meetings and fairs;
7. Ensure basic management of sanitation services for all, especially for the marginalized people and low-income communities, along with the establishment of standard approaches of service monitoring and partnership;
8. Support LGIs to enforce restrictions on discharging of fecal waste in the open;
9. Strengthen sectoral collaboration and partnership for sanitation programs, where LGIs take a central role with support from NGOs and the private sector and technical assistance and guidance from DPHE;
10. Research the residence/travel times of bacterial contamination in different hydrogeological zones using different sanitation options to inform appropriate choice of technologies and inform a national groundwater protocol.

1. Fecal sludge management exclusively in strategy number 4, solid waste management exclusively in strategy number 5 and drainage and water borne sewerage systems are incorporated in strategy number 11

Strategy 4: Establish Fecal Sludge Management system

Most of the Bangladesh's population relies on onsite sanitation technologies like septic tanks and pit latrines. The fecal sludge from septic tanks and pit latrines in most cases are emptied and disposed in drains and open spaces. This improper management of fecal sludge is creating severe environmental pollution and poses a public health risk. The situation is especially critical in urban low-income communities where, due to space and resource constraints, many families often share a single latrine. Given this concerning situation, the government formulated the Institutional and Regulatory Framework for Fecal Sludge Management, 2017 (IRF-FSM 2017) for Mega City Dhaka, City Corporations, Pourashavas and Rural Areas and the National Action Plan (NAP) for Implementation these IRF-FSM are under development. The following strategic directions, broadly consistent with IRF-FSM 2017, are needed to establish a proper fecal sludge management system in the country.

1. Give priority to the management of fecal sludge from septic tanks and pit latrines in such a way that all sludge is contained, collected, transported, treated and reused safely in an environmental-friendly manner;
2. Develop innovative technologies appropriate to local conditions for collection, treatment and safe disposal of fecal sludge;
3. Allocate land at suitable locations (by LGIs) for fecal sludge treatment and disposal for all urban areas and Upazila headquarters;
4. Build fecal sludge management and regulation capacities of LGIs as well as executing and implementing agencies;
5. Conduct action research and demonstrate projects for recycling fecal sludge, such as composting for use as fertilizer and generation of biogas;
6. Encourage use of twin off-set pit latrines and other innovative and improved toilet by MoLGRD&C to enable proper in-situ composting of sludge and for its safe disposal or to manage for recycling and reuse;
7. Make arrangement including bylaws for regular emptying of septic tanks and pit latrines, if needed;
8. Provide technical and business support to private sector in sludge management, recycling and sale of compost or other products;
9. Consider for introducing risk management-based approach like Sanitation Safety Plan (SSP) in order to give FSM an institutional shape under a common regulatory framework;
10. Facilitate to form organizations for pit emptier and put emphasis on their awareness building, organizational capacity building, training as well as sludge transporters, treatment plant operators etc. for ensuring sustainable sanitation.

Strategy 5: Manage Solid Waste judiciously

With rapid urbanization, solid waste disposal has emerged as a major environmental concern. Waste management is very important for reducing Green House Gases especially methane to mitigate the adverse impact of climate change. Together with technical solutions, it is essential to promote awareness of the value of waste as a resource. Open land fill management need to be prioritised along with the plan for reducing the volume of waste. Keeping this in mind, National 3R (Reduce, Reuse and Recycling) Strategy for Waste Management, 2010 need to be revisited jointly by the LGD and the Department of Environment of the Ministry of Environment, Forest and Climate Change. The following strategic directions give the key features for managing solid waste:

1. Promote (by City Corporations, Pourashavas and other LGIs) segregation of waste at source;
2. Encourage establishment of a community-based and/or private entrepreneur based primary collection system and link it with the city corporation's or Pourashava's secondary collection, transportation and final disposal;
3. Consider special handling and treatment for hazardous waste, like medical waste and emerging waste streams like electronic waste;
4. Pursue organic waste recycling through composting, biogas and refuse-derived fuel;
5. Plan sanitary landfills for an urban area or a regional landfill for a group of urban areas, to meet long-term needs keeping provision of dedicated land for this in city corporations, Pourashavas and where required at Union levels;
6. Design sanitary landfills with provision of collection of methane gas for use as a fuel and thereby reduce the emission of greenhouse gas of high global warming potential;
7. Prevent keeping of waste materials on footpaths, roadside and other public places;
8. The concept of waste management through incineration in big cities and cluster approach for the adjacent towns will be promoted gradually. Also opportunity for creating waste to energy will be explored further.

Strategy 6: Improve hygiene promotion

Water supply and sanitation services need to be linked with hygiene practices especially for the improvement of overall public health situation, nutritional status and well-being of the people. Poor state of hygiene practice at home and in institutions needs to be improved. Recently published National Hygiene Survey, 2018 (BBS, WaterAid, Unicef, December 2020) also showed the importance on hygiene promotion linking with water supply and sanitation.

To address hygiene related issues, the government prepared the National Hygiene Promotion Strategy 2012. The following strategic directions focus on expanding and improving hygiene promotion interventions to achieve the above strategy:

1. Explore new approaches for hygiene promotion that are effective in translating people's knowledge into practice, for example, washing hands after cleaning baby's bottom;
2. Address specific behavioral domains (e.g. personal including menstrual hygiene, food hygiene, environmental hygiene) and build favorable infrastructure and facilities for such behavior;
3. Target mothers of under-five and school children, healthcare assistants, religious and community leaders;
4. Undertake collaborative initiatives with private sector for promoting hygiene related consumer products like soaps, sanitary napkins, water preservation tanks and handwashing devices including proper disposal systems for these;
5. Undertake national hygiene and sanitation campaign in partnership with media;
6. Work collectively with the MoH&FW for cooperation with their health workers, the Ministry of Primary and Mass Education, the Ministry of Secondary and Higher Education and the Ministry of Information & Broadcasting for hygiene and sanitation promotion in primary and secondary schools;
7. Encourage youth engagement in promoting the hygiene behavior campaigns and in observance of days/weeks dedicated for the purpose of promoting hygiene practice at individual, family, community and institutional levels;
8. Facilitate the development of a national behavior change communication strategy;
9. Facilitate the development of a menstrual hygiene management strategy and framework for action.

Strategy 7: Undertake specific approaches for hard-to-reach areas and vulnerable people

As SDG underpins the necessity of bringing all citizens under the service-nets, keeping provisions of leaving no one behind, it has become imperative to ensure basic amenities and different services to the Hard-to-Reach areas and vulnerable people. However, at present the coverage and service levels in the hard-to-reach areas are low compared to the rest of the country because of their spatial constraints like different geo-physical characteristics and frequent occurrence of natural calamities, or because of socioeconomic constraints such as poverty or social exclusion. As per National Water Supply and Sanitation Strategies for Hard-to-Reach Areas of Bangladesh, 2012, prepared by LGD, a total of 1,144 unions have been identified as hard-to-reach unions for water supply and sanitation in 257 Upazilas of 50 districts. About 21% of the total geographical areas of Bangladesh, home to about 28.6 million people, are found to be hard-to-reach. These areas need targeted and contextualized approaches to address local challenges. In line with this strategy as well as considering the needs of hard-to-reach areas and vulnerable people, the following strategic directions have taken into consideration:

1. Prepare separate development projects or separate components within development projects specifically for the hard-to-reach areas and for the vulnerable people;
2. Adopt different approaches considering the local infrastructure, cultural values and socio-economic status;
3. Consider area specific needs while envisioning and developing technologies, such as water-efficient sanitation technology and lightweight construction materials for hilly areas and saline water-resistant infrastructure for coastal areas;
4. Ensure vulnerable groups' voice and meaningful participation issues in community level planning;
5. Establish public water supply and toilet facilities at strategic locations for the use of vulnerable people;
6. Make the provision of facilities for differently abled people mandatory for public water supplies and toilets;
7. Coordinate and pursue a multi-sector development approach with other sectors like water resources, agriculture and fisheries, road transport and social affairs;
8. Undertake a learning approach to identify 'what works', with particular attention to operation and maintenance and accordingly prepare guidelines and design specific tools and approaches for the different hard-to-reach areas and vulnerable people;
9. Incorporate climate change and disaster management strategies in development plan of all HtR areas of Bangladesh.

Strategy 8: Mainstream gender approaches

In socio cultural context of Bangladesh, women are generally responsible for water and sanitation in families, as well as ensuring hygiene as the main caregiver in the family. Their involvement is thus essential to the proper design, implementation and sustainability of any WASH intervention. Following are the strategic directions to strengthen and mainstream gender:

1. Involve both women and men in planning, implementing and operation and maintenance of WASH services;
2. Ensure that project interventions contribute to the economic empowerment of women and give importance to equal participation of women and men;
3. Increase women representation in community-based organizations and other committees involved in the sector;
4. Consider and promote technological options suitable for women of various socio-economic groups and their special needs such as menstrual hygiene management;
5. Adopt a gender-sensitive approach in the promotional campaign providing adequate opportunities for women to play a key role in the process and avoiding inclusion of any issues that are culturally insensitive to women;
6. Coordinate with related ministries, especially with the Ministry of Women and Children Affairs for mainstreaming gender;
7. Facilitate women-led community-based WASH project implementation.

Strategy 9: Facilitate private sector participation

The benefits of private sector participation in the water supply and sanitation sector include mobilization of private resources to meet the growing investment needs, reduction of cost of services through competition, increased efficiency and innovation in technology and management. Bangladesh has a vibrant private sector in water supply and sanitation in rural areas, however, their role is limited in urban areas. The following strategic directions would stimulate further participation of the private sector:

1. Prepare a guideline for private sector participation in WASH sector including measures that integrate the full participation of women for creating an enabling environment and capacity development;
2. Continue encouraging and supporting the private sector to play a major role in both rural and urban WASH sector;
3. Follow a transition path to the higher levels of private sector involvement by first improving the performances of the water and sanitation utilities and preparing the sector through simple types of involvement such as performance-based service contracts and management contracts;
4. Incorporate social considerations and needs of the poor in private sector contracts;
5. Continue piloting innovative private sector participation models in urban and rural areas with the objective to scale up appropriate models;
6. Develop rules and regulations for service quality and environmental protection of related works (e.g. well drilling, plumbing, fecal sludge management and water quality testing) within the framework of the Water Act 2013 and Water Rules 2018, the proposed Water and Sanitation Services Act or other related acts and regulations there under to be developed by the LGD and/or DPHE as the case may be;
7. Encourage and make provisions for private sector involvement in promotional activities;
8. Encourage latrine manufacturers to package some related services (bundling) like carrying and installing latrines in their households, upgrading of existing latrines and after sales services;
9. Organize and support knowledge generation and sharing around the role of the private sector in WASH e.g. utility or household-based treatment technology (e.g. RO desalination unit etc.);
10. Promote loan/micro finance facilities for WASH towards increasing the private sector participation;
11. Develop a surveillance monitoring plan to support quality assurance and quality control of private sector interventions;
12. Arrange sharing workshops every year with private sector organizations working in the WASH sector to allow for exchange with the government on progress and changes;
13. Facilitate capacity building and certification process for local drillers of water sources.

Strategic Theme 2: Address the Perennial and Emerging Challenges in the Sector

The water supply and sanitation sector of Bangladesh faces emerging challenges like rapid urbanization, increasing water pollution due to industrialization and climate change. The strategies under this theme would prepare the sector to tackle the emerging issues that challenge the achievements and progress of the sector.

Strategy 10: Adopt integrated water resource management

In the context of competitive use of water by various sectors, like agriculture and industry, there is need for Integrated Water Resources Management (IWRM) to ensure drinking water supply security in terms of its viability and quality. In Water Act 2013 and Water Rules 2018, the highest priority has been attached to drinking water and domestic water supply to ensure security of drinking water in case of multiple uses of ground water and surface water resources. The following strategic directions are therefore proposed to strengthen IWRM in the context of Bangladesh:

1. Harmonize the Water Act 2013 and Water Rules 2018 with the existing WASA Act 1996, various LGI Acts 2009 and other related Acts, Rules and Regulations (ECA Rules, Biological Diversity Act, Hazardous Waste and Ship Breaking Rules, Medical Waste Management Rules, draft E-waste Management Rules) to effectively address the issues concerning water resource protection and its proper management;
2. Foster a shift away from reliance on groundwater towards surface water for irrigation in groundwater-stressed areas, introducing water-efficient technologies in agriculture and climate stressed areas as well as stress-tolerant cultivars;
3. Consider the availability and quality of surface water for water supply interventions, along with factors such as seasonal variations, possible withdrawal of water in upstream and effects of climate change like increased salinity and reduced flow;
4. Investigate, assess and monitor the availability and use of groundwater in water-stressed areas and in the deep aquifer;
5. Limit the abstraction of groundwater to a sustainable level (keeping the balance intact) in water-stressed areas by keeping the abstraction within the safe yield range;
6. Consider artificial recharge of groundwater and other technical measures in the water-stressed areas;
7. Enhance inter sectoral collaboration with Ministry of Environment, particularly concerning water safety planning;
8. Facilitate the development of an evidence based national groundwater protocol for supporting zoning and land use.

Strategy 11: Address growing pace of urbanization

Globally, urbanization has been an effective engine of economic and socio-cultural development. Bangladesh has experienced phenomenal urban growth since its liberation, with heavy concentration in Dhaka and other large cities. The urban population in Bangladesh stands at 29.70%, which is projected to rise to 43.80% in 2051 (Population Projection of Bangladesh 2011-2061: Trends and Dynamics, BBS 2015). The present water supply and sanitation infrastructure is mostly inadequate even for meeting current demands and there are severe weaknesses in operation and maintenance. The unplanned and rapid urban growth is mounting heavy pressure on the already stressed urban infrastructure, including water supply and sanitation and is causing serious environmental degradation and also impacting the low-income communities. The key strategic directions are as follows:

1. Prepare master plans for water supply and sanitation services for all urban areas including slum settlements and undertake planned expansion and improvement programs to keep pace with projected urban growth;
2. Prevent contamination of surface and groundwater sources from indiscriminate discharge of sewage, industrial wastewater and solid waste;
3. Explore new water sources, particularly for large metropolitan cities, to reduce pressure on limited local groundwater sources;
4. Integrate storm water drainage systems in urban areas with overall watershed drainage system in coordination with the MoWR;
5. Establish sanitary sewerage and drainage system in all urban areas, starting with major cities;
6. Prevent discharge of untreated industrial wastewater into sanitary or storm sewer systems or rivers/water streams;
7. Use appropriate onsite sanitation technologies where sewerage system cannot be constructed within a short time;
8. Reclaim natural canals and improve the carrying capacities of canals where feasible; reopen box culverts with free surface flow and permeable bottoms while ensuring proper maintenance;
9. Rehabilitate and upgrade the existing water supply and sanitation systems with the objectives to improve service levels and reduce unaccounted-for water;
10. Improve the operations and maintenance of the existing water supply and sanitation systems through appropriate measures like practicing improved construction and operating procedures, enhancing staff capacities, benchmarking, establishing District Metering Areas and introducing system automation;
11. Improve financial management and give priority to rationalizing tariff, increase billing and collection efficiency and take initiative to increase the number of connections;
12. Practice demand management by firstly, installing water meters for all connections and secondly by promoting water conservation, including wastage reduction inside houses;
13. Recognize low income communities, socially excluded and physically challenged people as legitimate customers and adopt specific approaches for developing services for them;
14. Delink service provisions from land tenureship to allow service providers to extend their services to low income communities;
15. Develop customer care and public relationship by involving citizens' forums, such as the Town Level Coordination Committees, in planning and operation of the systems;
16. Develop a Grievance Redressal Mechanism to respond to the needs of beneficiaries and to address and resolves grievance/ complaints.

Strategy 12: Cope with disaster, adapt to climate change and safeguard environment

Bangladesh is vulnerable to frequent weather extremes such as floods, cyclones, torrential rains, droughts, river erosion and salinity intrusion. These climatic disasters have increased in frequency and intensity and affecting traditional lifestyle and livelihoods of climate vulnerable people. To address such recurring climatic events, the Government of Bangladesh adopted the Bangladesh Climate Change Strategy and Action Plan (BCCSAP), 2009², a key strategy built upon the National Adaptation Program of Action (2005 and 2009), reflecting national priorities in terms of adaptation and mitigation and demonstrating the country's commitment and understanding of climate change.

Following strategic directions aim to protect water supply and sanitation systems from the risks of natural and manmade disasters, climate change and environmental impacts:

1. Develop a common framework for screening of disaster, climate change and environmental impacts and mainstream adaptation of remedial measures in all development programs;
2. Establish a separate independent Social Development Cell within DPHE/LGD to address social and environmental safeguarding, gender, grievance redressal mechanisms, poverty, awareness creation, advocacy etc.;
3. Operationalize Disaster Management Bureau's Standing Orders on Disaster for water supply and sanitation sector agencies by issuing supplementary Standing Orders that would consist of, among others, roles and responsibilities, delegation of enhanced administrative and financial powers to enable emergency response during disaster;
4. Strengthen disaster preparedness by proper planning and maintaining stock of emergency water supply and sanitation units, chemicals and spare parts in strategic locations;
5. Simplify the administrative procedures during the warning and emergency periods by delegation of more authority to the local staff;
6. Relax the procurement rules to manage emergency and take early steps such as mobilizing staff, vehicles and supplies during the warning period;
7. Enhance community capacities and resilience through raising intensive awareness and imparting training on health impact and climate change;
8. Strengthen the WASH Cluster mechanism³ and develop a contingency plan of all the stakeholders for disaster management;
9. Build capacities of sector institutions, such as WASAs, DPHE and Local Government Engineering Department and NGOs and allocate funds for climate change adaptation and managing disaster risks;
10. Promote climate and disaster-resilient water supply and sanitation systems along with hygiene promotion mechanisms in disaster-prone and vulnerable areas used as an entry point to address the impacts from climate change and variability;

2. Bangladesh Climate Change Strategy and Action Plan, 2009, Ministry of Environment and Forests, Government of the People's Republic of Bangladesh, Dhaka, Bangladesh.

3. A network of NGOs having work plans for WASH related disaster management. WASH Cluster is chaired by UNICEF and co-chaired by DPHE; the WASH Cluster members prepare themselves to support the national and local disaster management initiatives in line with the SOD 2010.

11. Ensure that all future public buildings, like schools, are equipped with resilient water supply, sanitation and hygiene facilities so that local people can use as shelters during disasters;
12. Construct resilient water supply sources in extreme climate-vulnerable areas that can be used by people during disasters and emergencies;
13. Strengthen coordination between Bangladesh Meteorological Department and Climate Change Cell to ensure use of updated data in forecasting of climate variability and its impacts, such as sea level rise, saline water intrusion, depletion of groundwater level, flow reduction in rivers, etc.;
14. Identify appropriate adaptation approaches and design evidence-based projects; intensify efforts to obtain financing from climate change funds such as Green Climate Fund, UK climate fund, LDCF, etc.;
15. Pursue and coordinate water pollution control, especially in areas around large cities and in the proximity of water supply sources, with the MoEF&CC and other related ministries.

Strategy 13: Institutionalize research and development

There is pressing need for solutions for some persisting problems (e.g. arsenic and urban sanitation) in the sector as well as for several emerging ones (e.g. climate change and saline intrusion). Research activities in the sector are fragmented and limited to only a few organizations. In this context the following strategic direction are suggested:

1. Promote Research and Development and subsequent stages of demonstration, deployment and market development;
2. Create dedicated Division within DPHE and WASAs for R&D;
3. Increase the scope of research/action research on outstanding technical, social and management issues in the sector and streamline research management;
4. Incorporate R&D activities in technical assistance and development projects and provide adequate budget allocation;
5. Create a dedicated "R&D Fund" and create opportunities for interested researchers;
6. Build partnerships with international and national organizations, research institutes and academia to create a network of professionals and increase human resources and institutional capacities in research;
7. Identify scope of research in water supply and sanitation sector at national and local levels, both in urban and rural areas and prioritize the research needs;
8. Promote South-South cooperation to enhance applicability and contextualization of research.

Strategic Theme 3: Strengthening Sector Governance, Coordination, Monitoring and Reporting

The strategies under this theme would facilitate improved governance, coordination, monitoring and reporting related to WASH activities.

Strategy 14: Undertake integrated and accountable development approach

For the improvement of overall WASH situation it is important to ensure an integrated and accountable approach. The government of Bangladesh has already approved the much-anticipated Delta Plan, 2100, which focuses on six hotspots: coastal areas; Barind tract and drought-prone region; haor (back swamp) and flash flood prone areas; Chattogram Hill Tracts region; river region and estuaries and the urban region. Alongside, there are number of policy, strategy, circular and guidelines from different Ministries and Departments in place. All this need to be adopt and synchronize with provision of adequate financing and human resources. There is a need for undertaking an integrated approach to address WASH issues and challenges in a sustainable manner, shifting from presently practiced fragmented project-based approach to sector-wide integrated program approach. In keeping with this approach, the following strategic directions for realizing this strategy are proposed:

1. Integrate water supply, sanitation and hygiene in development projects and programs;
2. Ensure community participation in all stages of development projects, such as, in planning, implementation, operation and maintenance, monitoring and awareness raising;
3. Allocate government's development funds to LGIs considering their needs and performance in managing the water supply and sanitation systems;
4. Promote WASH in Schools and other educational institutions and include WASH topics in the school curriculum;
5. Prepare and adapt an integrated Information, Education and Communication guideline for WASH interventions which will include, among others, WSP, hygiene promotion, WinS and proper operation and maintenance of water and sanitation facilities;
6. Strengthen and operationalize the SDP thematic groups to facilitate gradual sector wide approach and initiate the use of harmonized approaches such as the Arsenic Safe Union concept and sub-sector SWAPs for WASAs and rural subsector;
7. Manage knowledge and information centrally and make it public (e.g. through webpage and display boards to ensure transparency in the planning and implementation process;
8. Promote intensive guidelines for integrated effort for WASH service during emergency or natural disaster period;
9. Promote Public Private Partnership to ensure an integrated approach;
10. Promote WASH in health care facilities in collaboration with the MoH&FW by facilitating technical guidance from the WASH sector.

Strategy 15: Recover cost of services while keeping a safety net for the poor

A key priority for this strategy is to promote the recovery of capital, operation and maintenance costs following the Cost Sharing Strategy, 2010. This strategy also aims to be an instrument to reduce inequalities and ensure services to all including vulnerable people and promote the rights, ownership, and dignity of users. Hence, there is a need to focus on keeping safety net provisions for the poor and marginalized aligned with the revised 'Pro-Poor Strategy for Water Supply and Sanitation, 2020'. The following are strategic directions in relation to this strategy:

1. Aim at full cost recovery in gradual manner, factoring in O&M requirements and costs of innovative technologies for hard-to-reach areas;
2. Recover the O&M costs of all piped water supply and sewerage systems in the shortest possible time (but not later than five years, by 2025);
3. Assign tariff on piped water supply and sewerage services and holding taxes on drainage and conservancy services as sources of fund for capital and O&M costs;
4. Give priority to the extreme poor, aged and vulnerable people for services and subsidy in cases of all water supply and sanitation facilities;
5. Establish progressive tariff for piped water supply and sewerage systems and include a lifeline tariff for poor for basic levels services as defined in SDG ladder;
6. Allow cross-subsidy between poor and non-poor users for capital cost sharing and for realizing operations and maintenance costs in case of shared use of water supply and sanitation facilities. The amount of cross-subsidy may be decided among the respective user groups;
7. Users to bear full operations and maintenance costs of all non-piped water supply systems and on-site sanitation systems as soon as those are handed over to the users;
8. Subsidize the capital cost in cases of vulnerable people, hard-to-reach areas, arsenic affected areas and in locations where the cost of technologies are high and unaffordable for most people;
9. Develop innovative financing mechanisms and encourage involvement of private sector for efficient operation and cost recovery;
10. Develop sustainable low-cost technology (low O&M and low initial cost) and service system through R&D;
11. Promote cost recovery system for slum and vulnerable people.

Strategy 16: Strengthen and reposition institutions and develop human and financial capacities

The following strategic directions are intended to strengthen the sector's institutional capacities with interventions at three levels: environmental, organizational and individual. The environmental level defines the enabling factors (e.g. laws, regulations, policies, strategies, guidelines and advocacy). The organizational level refers to factors that will influence an organization's performance (e.g. physical resources, capital, intellectual resources, management process, incentive and reward system, management and leadership). The individual level focuses on individual capacity building (e.g. knowledge and skills developed through education, practice and training) and it is also referred to as human resources development.

Environmental

1. Delegate more administrative and financial powers to LGIs, based on various Local Government Acts, such as for staff recruitment, water tariff fixation following the guidelines and demarcating, protecting and maintaining water bodies;
2. Strengthen the capacity of the National Forum for Water Supply and Sanitation and other institutions in development and application of WASH-related sector documents like legal instruments, strategies and guidelines;
3. Establish Water Supply and Sanitation Regulatory Commission and initiate enactment of the Bangladesh Water Services Act;

Organization and Individual

4. Specify (and update as necessary) the roles and responsibilities of DPHE, WASAs and various LGIs regarding of WASH services delivery, improvement including operation and maintenance;
5. Comply with and implement the provisions of relevant laws, regulations, policies, strategies etc., in place;
6. Implement the Policy Matrix for WASAs as contained in the Partnership Framework Agreement between the government and Development Partners;
7. Restructure DPHE to address the increased and additional roles and responsibilities with regards to more support to the urban subsector, climate change, environment and disaster management, R&D, groundwater monitoring, water quality monitoring and surveillance, private sector participation, hygiene promotion, planning and implementation, including social development issues like participation and empowerment of communities and vulnerable groups;
8. Strengthen DPHE's capacity to carry out its additional roles based on a comprehensive HRD plan, logistics, improved systems, procedures and guidelines;
9. Enhance the capacities of Water Supply Sections of City Corporations and Pourashavas through, among others: (a) staff recruitment and training (b) establishment of separate accounts for WSS (c) introduction of appropriate financial management system and (d) empowering WSS to enforce different rules and regulations;
10. Create a positive image by highlighting customer satisfaction in the provision of services, transparency and accountability in its operations;

11. Financial and human resource capacity building of Union Parishads to facilitate, coordinate and ensure the quality of all WASH services of the government agencies, NGOs and private sector including regulations, monitoring and record keeping;
12. Formulate village-level or urban mahalla-level committees, with support from NGOs where needed and establish linkages with the formal committees such as Ward Level Coordination Committees and Town Level Coordination Committee to ensure community voices are considered in planning processes;
13. Ensure that relevant agencies submit adequate budget proposal for implementing strategic directions and achieving the milestones to the Budget Management Committee of LGD for each Financial Year (FY) after the budget call and LGD approves it accordingly on priority basis.

Strategy 17: Enhance coordination, monitoring and reporting mechanism

Development and implementation of a robust coordination, monitoring and evaluation system is crucial to determine whether the sector is on track to achieve its goal. It will also infuse transparency in the system, track performance, create synergies between various ministries and institutions and enhance accountability within the sector. The PSB and other agencies have already initiated strengthening the coordination and sector monitoring mechanisms. The following strategic directions are aimed at continuing such initiatives and to make further enhancements:

1. Establish inter-ministerial coordination by creating a Secretaries' Committee on WASH with secretaries from related ministries/division like MoWR, MoH&FW, MoEF&CC, MoP&ME and MoE;
2. Continue with the National Forum for Water Supply and Sanitation along with its two committees (a) Policy and Monitoring Support Committee and (b) Technical Support Committee;
3. Streamline different committees at the local level, which have similar or overlapping functions. For example, the arsenic mitigation committees at the Ward, Union, Upazila and District levels and the Tubewell Site Selection Committee, WATSAN Committees at the union level should be merged with the respective WASH Standing Committee of Union Parishad;
4. Establish coordination and monitoring mechanisms at different levels to track sector performance, spanning from community levels to headquarters, having some common indicators aligned with JMP and SDP monitoring indicators; and set up reporting and feedback mechanisms;
5. Working through the SDP thematic groups under the policy and monitoring support committee and technical support committee, strengthen the national management information system for water supply and sanitation at DPHE and integrate the various monitoring systems building on harmonized indicators for the SDGs;
6. Promote regional cooperation, exchange of knowledge, technological innovation and initiatives like South Asia Conference on Sanitation;
7. Support the global monitoring systems such as JMP and Global Analysis and Assessment of Sanitation and Drinking Water and the national innovative initiatives like the open data monitoring platform and the smart phone-based information system;
8. Establish regular coordination and feedback mechanism with SDG cell of the Prime Minister's Office on WASH related policy, planning and intervention;
9. Ensure that all institutions working in the WASH sector generate reports on their water point installation and water consumption on quarterly basis.

Institutional Arrangement and Implementation Plan

Chapter 3

3.1 Institutional Arrangements

The National Forum for Water Supply and Sanitation having representatives from relevant ministries, agencies and the external support agencies and chaired by the Secretary, LGD, is responsible for coordination, monitoring and evaluation of the sector activities. The Forum is supported by two committees under it: a. Policy and Monitoring Support Committee chaired by the Additional Secretary (Water Supply), LGD, with the PSB acting as the secretariat; and b. Technical Support Committee chaired by Chief Engineer, DPHE. Following the provision of SDP the institutional arrangements will be made and existing 8 Thematic Groups will be strengthen further. The water and sanitation subgroup of the LCG, which is a platform for external support agencies, would coordinate with the two committees as and when required.

The LGD has provided PSB with the overall responsibility of facilitating preparation of policies and strategies and of coordinating and monitoring of sector activities including implementation of the SDP, which is closely related to this National Strategy. The LGD is the focal agency to facilitate the implementation of this National Strategy through coordination with the sector agencies. The PSB of the LGD will also engage with the sector stakeholders through the above mentioned two committees under the National Forum. The National Forum, may create new thematic group or allocate its responsibilities to the existing thematic groups to support the implementation of specific strategies. The PSB may provide technical and management support to those thematic groups and will use the Implementation Plan (mentioned below) and its milestones as a guideline to monitor the implementation.

The sector institutions, e.g., DPHE, WASAs and LGIs will implement their respective components related to this National Strategy. The LGIs will support their respective Standing Committee on WASH to implement this National Strategy in cooperation with the communities. The NGOs and the private sector would be encouraged to align their respective activities in accordance with this National Strategy.

3.2 Implementation Plan

The implementation plan of the National Strategy shown in Table 1, where lists the strategies, the lead organizations and partner organizations responsible for the implementation and milestones to be achieved within given timeframe.

Table 1: Implementation Plan of the National Strategy for Water Supply and Sanitation 2021

Strategies	Lead Agency	Partners/ Facilitators	Milestones
Strategic Theme 1: Increase Coverage and Promote Quality			
1. Expand access to safe and affordable drinking water and sanitation facilities	LGD	MoEF&CC, DoE & DPHE	- Liaison with MoEF&CC and suggest amendments to the Environmental Conservation Act 1995 and Rules 1997 for review drinking water quality standards and other sector issues, like more detailed surface water quality standards, revised point source discharge standards including effluent quality standards for sewage and industrial waste water treatment plants, protection of groundwater sources and its preservation by 2023.
	DPHE	LGIs & DoE	<ul style="list-style-type: none"> - Implementation of water quality monitoring protocol started by 2022; - Progress monitoring of WASH related targets using SDG indicators through stakeholder coordination and establishment of feedback mechanism for decision review by 2024; - Surface and groundwater sources such as surface water intake points, control points of treatment plants and distribution mains, non-piped water sources and production wells; pollution risk identified, and action taken by LGIs by 2024; - Strengthen the Water Quality Monitoring and Surveillance Circle of DPHE to supervise and improve the management of WSPs including coordination among DoE, NGOs, and private sectors by 2024; <p>Introduce WSP and water quality surveillance in 100 city corporation/ municipalities and in 50 village piped water supply by 2024;</p>

Strategies	Lead Agency	Partners/ Facilitators	Milestones
	DPHE	LGIs	<ul style="list-style-type: none"> - Comprehensive operational tools for WSP prepared by 2024 and water users get educated with point of contamination and control measures by 2024; - Assessment of the WSPs in the municipalities, city corporations, WASAs and other service providing agencies by 2024; - Measures taken to establish a mechanism of liaison with Ministry of Health to Integrate arsenicosis reporting in non-communicable disease unit database of DGHS by 2024; - Harmonized behavior change communication established for creating mass awareness on importance of safe and sustainable drinking water and sanitation services and its proper operation and maintenance by 2024.
	DPHE, WASAs	LGD	<ul style="list-style-type: none"> - Institutional set up for Water Quality Monitoring and Surveillance System functional by 2024.
2. Give priority to arsenic mitigation	DPHE	LGD	<ul style="list-style-type: none"> - Prioritized actions addressing arsenic issue and establishing follow up mechanism of Implementation Plan for Arsenic Mitigation for safe water supply by 2024.
	DPHE	NGOs	<ul style="list-style-type: none"> - Update database of the ongoing arsenic screening of highly affected unions following the action plan of SDG Affairs Cell of Prime Minister's Office by 2024.
	DPHE	LGD and LGIs	<ul style="list-style-type: none"> - Protocol for the construction, water quality testing and maintenance of hand pump or production wells by public agencies, NGOs and private sector and incremental resource mobilization prepared by 2024; - Proposal regulating the installation of hand pump tube-wells in areas identified as arsenic affected by DPHE with support from the LGIs submitted to LGD by 2024; - Development Project Proposal covering all possible arsenic contaminated areas submitted to the LGD by 2022; - Expansion of surface water-based piped water supply to reduce the dependence on ground water-based source development by 2024;

Strategies	Lead Agency	Partners/ Facilitators	Milestones
			<ul style="list-style-type: none"> - Development of data repository on arsenic by 2024, with regular updating mechanisms in place; - Institutions strengthened for developing innovating alternative safe water devices and sludge management technologies by 2024; - Promotion of DPHE-UNICEF Arsenic safe union protocol/concept by 2022; - Development of groundwater protocol by 2022.
	DPHE	MoH&FW, MoEF&CC & Research Institutes	<ul style="list-style-type: none"> - Research related to setting the arsenic standard to 10 µg/l initiated by 2022; - Concept note on the implications reducing the arsenic standard submitted to LGD and other institutions by 2022; - Area specific arsenic mitigation technology has been updated and scaled up by 2022. - Awareness campaign conduction on arsenic risk in a regular basis.
3. Move to the safely managed rung of the sanitation ladder	LGD	DPHE	<ul style="list-style-type: none"> - Circular having provisions for earmarking funds for achieving SDGs related to sanitation at LGIs by 2022.
	DPHE	PSB-LGD	<ul style="list-style-type: none"> - Proposal for sanitation baseline survey for local level planning to achieve 100% sanitation submitted to LGD by 2022.
	DPHE	PSB-LGD & LGIs	<ul style="list-style-type: none"> - LGI based sanitation improvement program, including sanitation marketing, in partnership with NGOs and Development Partners submitted to the Planning Commission through LGD by 2023; - Development and implementation of the following interventions by 2025: <ul style="list-style-type: none"> ▪ Installation of 4.5 million improved sanitary latrines in the rural and 1.2 million in the urban areas; ▪ Social mobilization for awareness building; ▪ Installation of public toilets and other sanitation facilities in public place as well as public transport hubs;

Strategies	Lead Agency	Partners/ Facilitators	Milestones
			<ul style="list-style-type: none"> - A range of safely managed sanitation technologies with treatment facilities and having provisions for handwashing services ensuring the needs of both male and female developed by 2023.
4. Establish Fecal Sludge Management system	PSB-LGD	DPHE, WASA, LGIs, ITN-BUET & NGOs	<ul style="list-style-type: none"> - Guidelines for Fecal Sludge Management and FSM Action Plan prepared by 2022.
	DPHE	WASAs & LGIs	<ul style="list-style-type: none"> - Actions for capacity building of the stakeholders related to Fecal Sludge Management by 2022; - Initiating a pilot project of double pit latrines enabling in-situ composting, recycling and re-use by 2022; - Introduction of sanitation safety plans as a risk management approach by 2022.
	PSB-LGD	WASAs & LGIs	<ul style="list-style-type: none"> - By-laws or regulations for sludge management including periodic emptying of septic tanks and pit latrines prepared by LGIs by 2022.
	WASAs, LGIs	LGD, DPHE, LGED	<ul style="list-style-type: none"> - Sewerage system update by 2021-2025 and 2025-2030.
5. Manage Solid Waste Judiciously	PSB-LGD	DoE, DPHE, LGED & Urban LGIs	<ul style="list-style-type: none"> - Position paper on improved solid waste management practices incorporating 3R (reduce, reuse and recycle) elements in the LGIs and related projects and programs of the sector prepared by 2022.
	LGD	DoE, DPHE, LGED & Urban LGIs	<ul style="list-style-type: none"> - Coordination mechanism between DPHE, LGED and LGIs for urban sanitation including solid waste management functioning by 2022; - Development implementation and continuation of social mobilization campaign.
	DPHE, LGIs	DoE, LGED	<ul style="list-style-type: none"> - Inventory and mapping regarding solid waste scenario will be developed and implementation commenced by 2022; - Development of current pollution scenario including the usage of solid waste by 2023;

Strategies	Lead Agency	Partners/ Facilitators	Milestones
			<ul style="list-style-type: none"> - Improved solid waste management based on the principles of 3R incorporated in the relevant sector projects by 2022; - Establishment of integrated waste treatment facility at least in 50% Pourashavas by 2025.
	DPHE, Urban LGIs	MOH&FW, LGD, DoE & LGED	<ul style="list-style-type: none"> - Initiation of waste management through incineration in big cities and cluster approach for the adjacent towns will be promoted gradually by 2024; - Explore opportunity for creating waste to energy by 2022.
6. Improve hygiene promotion	DPHE, LGIs	MoH&FW, MoE, MoPME, LGD, WASAs, NGOs	<ul style="list-style-type: none"> - An integrated Information, Education and Communication Guideline for WASH promotion including WSP, hygiene promotion and proper operations and maintenance of water supply and sanitation facilities prepared by 2022; - Social mobilization for awareness building by 2022; - Installation of gender and disable friendly public toilets and other sanitation facilities in public places as well as public transport hubs by 2025; - Installation of necessary handwashing facilities in 50% of educational institutions by 2025 and ensure operation and maintenance. - Installation of MHM facilities in 50% of the educational institutions, different workplaces and LICs by 2025; - IEC Guidelines mainstreamed by 2023.
	DPHE, WASAs, LGIs	MoH&FW, LGD	<ul style="list-style-type: none"> - Explore new approaches for hygiene promotion especially for Menstrual Hygiene Management, with a particular focus on behavior changes communication by 2025; - Promotion of water safety plan with special focus on management from collection to safe storage developed and implemented by 2025; - Coordination mechanism with MoH&FW and other related ministries for hygiene promotion established by 2022; - National campaign for hygiene and sanitation promotion in partnership with media launched by 2022.

Strategies	Lead Agency	Partners/ Facilitators	Milestones
7. Undertake specific approaches for hard-to-reach areas and vulnerable people	PSB-LGD	DPHE, WASAs, LGIs	- Guidelines and tools, including technical, social and financial aspects, for the hard-to-reach areas and vulnerable people by 2024.
	DPHE, WASAs	LGD, LGIs	- Special projects/interventions for all hard-to-reach areas and vulnerable people by 2023; - Proper intervention plan of water supply in above mentioned areas will be developed and implemented by 2025; - Use of 20% of surface water source through excavation of surface water bodies and re-excavation of ponds and canals by 2025; - Desalination plants and rainwater harvesting with underground/over ground reservoir, with operation and maintenance mechanisms, installed in coastal areas by 2025.
	PSB-LGD	Relevant Ministries/ Department/ DPs	- Facilitate National Forum for Water Supply and Sanitation for holding regular meetings to discuss solutions for hard-to-reach areas and vulnerable people, initiated from 2022.
	DPHE	LGIs	- Awareness campaign system in climate-vulnerable areas will be developed and scaled up from 2022; - Climate-resilient and adaptation-focused technologies will be developed and scaled up by 2023.
8. Mainstream gender approaches	PSB-LGD	MoW&CA & DPHE	- Gender mainstreaming guidelines for planning, implementation and monitoring WASH interventions prepared by 2023; - Coordination mechanism with MoW&CA and other related ministries for gender promotion established by 2022.
	DPHE, LGED, WASAs, LGIs	MoW&CA, LGD	- Mainstreaming of gender including measures that integrate the full participation of women in existing & new projects by 2025.
9. Facilitate private sector participation	PSB-LGD	MoF, LGED, DPHE, WASAs, LGIs, Business organizations	- Guidelines for private sector participation in WASH prepared by 2023; - Encourage and facilitate private companies to contribute to the sector through their Corporate Social Responsibility programs from 2022 on ward.

Strategies	Lead Agency	Partners/ Facilitators	Milestones
	PSB-LGD	DPHE, LGIs, Private Sector, financial and business support institutions & NGOs	<ul style="list-style-type: none"> - Guidelines consisting of technical knowhow, business support and financial assistance for private businesses in the sector (e.g. rural piped water supply, well drilling, water quality testing, plumbing, latrine manufacturing and Fecal Sludge Management) prepared by 2023;
	LGD	LGED, DPHE, WASAs, NILG, Business organizations, Research institutes	<ul style="list-style-type: none"> - Capacity of human resources both in public (including LGIs) and private sectors developed, including in relation to planning, design, implementation, and O&M of water supply facilities by 2023; - Promotion of private initiatives and public-private partnership in terms of resource mobilization to fill the gap around 47% as indicated by Sector Development Plan by 2024; - Proposal for aligning rules and regulations for service quality and environmental protection, under the Water Act, 2013 and Water Rules, 2018; various Local Governments Acts of 2009 or other Acts, for facilitating private sector engagement submitted to the concerned ministries by 2024; - Seminars organized to identify the role of private sector in utility or household-based treatment technologies by 2023; - Establish quality assurance and quality control mechanism within each private organization by 2023; - Organizing workshops every year with private organizations working in water and sanitation sector to share progress and update private sector on Government plans and targets, initiated from 2022.

Strategies	Lead Agency	Partners/ Facilitators	Milestones
Strategic Theme 2: Address Perennial and Emerging Challenges			
10. Adopt integrated water resource management	LGD	MoEF&CC, MoWR, DPHE, WASAs, LGIs, other concerned Ministries and Agencies	- Liaison with MoWR, MoEF&CC to review and update existing rules, regulation, by-laws and circulars prepared under the framework of Water Act 2013 and Water Rules 2018, to enforce the provisions of the Act and to harmonize with the existing WASA Act 1996, various LGIs Acts 2009 and other relevant Acts, rules and regulations (Environmental Conservation Rules 1997, Biological Diversity Act 2017, Hazardous Waste Management, Handling and Trans-boundary Movement Rules 2008, Ship Breaking and Recycling Rules 2011, Medical Waste Management Rules 2008, E-Waste Management Rules) initiative from 2022.
	PSB-LGD	MoWR, DPHE, WASAs	- Guidelines for surface water use for water supply and for artificial recharge of groundwater prepared by 2024.
	LGD	MoEF&CC, MoWR, DPHE, WASAs & City Corporations	- Coordination mechanism for surface and groundwater use established between related agencies like DPHE, WASAs, City Corporations, Department of Environment, WARPO, Bangladesh Agricultural Development Corporation and Bangladesh Water Development Board by 2022.
11. Address growing pace of urbanization	DPHE, WASAs, Urban LGIs	LGD	<ul style="list-style-type: none"> - Undertake projects/programs for operational capacity building of urban areas, consisting of improved operations, maintenance, financial management, water conservation and customer care by 2023; - Master Plans for water supply, sanitation and drainage for urban areas including provision of land and facilities for solid waste management and Fecal Sludge Management prepared for the first phases of urban areas by 2023.

Strategies	Lead Agency	Partners/ Facilitators	Milestones
	DPHE, WASAs & Urban LGIs	LGD	<ul style="list-style-type: none"> - Separate approach and programs for low income communities adapted by all WASAs and urban LGIs by 2023; - Water meters introduced in all urban water supplies by 2024.
	DPHE, WASAs, LGIs	LGD	<ul style="list-style-type: none"> - Innovative or advanced systems like system automation, establishing District Metering Areas and urban dredging introduced by LGIs & WASAs by 2024.
	DPHE, LGED, LGIs	LGD	<ul style="list-style-type: none"> - Undertake promotional activities and initiate updating/revision of LGI bylaws involving DoE for issues like waste separation at source and management of solid waste, etc. by LGIs by 2024.
	LGIs	LGD	<ul style="list-style-type: none"> - Develop a grievance redressal system (GRS) to respond to the needs of beneficiaries and to address and resolves grievance/ complains in all CCs/Pourashavas/LGIs by 2023.
12. Cope with disaster, adapt to climate change and safeguard environment	LGD	DPHE, WASAs & LGIs	<ul style="list-style-type: none"> - Supplementary SOD for the sector that would consist of, among others, roles and responsibilities of various actors, delegation of enhanced administrative and financial powers issued by LGD by 2023; - Government Orders for establishing new units for disaster management, climate change and environment or allocation of these functions to existing agencies/institutions issued by 2023.
	DPHE, LGIs	MoEF&CC, LGD	<ul style="list-style-type: none"> - Projects on climate change prepared for studies, investigation and pilots, climate-resilient infrastructure, capacity building of sector institutions and communities and installation of monitoring systems submitted to climate change funds by 2023; - Climate and disaster-resilient water and sanitation systems along with hygiene promotion mechanisms in the disaster-prone and vulnerable areas used as an

Strategies	Lead Agency	Partners/ Facilitators	Milestones
			<p>entry point to address the impacts from climate change and variability by 2023;</p> <ul style="list-style-type: none"> - Installation of some resilient water supply sources in extreme climate vulnerable areas by 2023, which can be used by people during emergency.
	WASAs	MoEF&CC, MoWR, DPHE & LGIs	<ul style="list-style-type: none"> - Coordination mechanism established for protection of surface and groundwater sources in and around large cities by 2023.
	DPHE	LGD	<ul style="list-style-type: none"> - Establish a separate independent Social Development cell in DPHE to address social and environmental safeguarding, gender, grievance redressal system, poverty, awareness creation, advocacy etc. by 2024.
13. Institutionalize research and development	LGD	DPHE	<ul style="list-style-type: none"> - Dedicated fund for R&D created by 2024.
	DPHE, WASAs, LGIs	LGD	<ul style="list-style-type: none"> - Dedicated Divisions for R&D created in DPHE and WASAs by 2023; - Initiation and Implementation of action research and development activities related to safe technologies, safety in water supply chain, sanitation and hygiene; waste management; pollution control; disaster management and conservation of aquatic eco system by 2023 and its continuation beyond 2023.
	PSB-LGD	DPHE & Research institutes	<ul style="list-style-type: none"> - Partnership with international and national institutes, academic institutions and academia established by 2023; - Mechanism established for promoting South-South Co-operation to enhance applicability, contextualization and sustainability by 2022.

Strategies	Lead Agency	Partners/ Facilitators	Milestones
Strategic Theme 3: Strengthen Sector Governance, Coordination, Monitoring and Reporting			
14. Undertake integrated and accountable development approach	LGD	DPHE, LGED & LGIs	<ul style="list-style-type: none"> - Allocating government's development funds to LGIs based on indicators for assessing their needs as well as performance in managing water supply and sanitation systems by 2023; - Initiate integrated water resource management approach as directed by Delta Plan 2100 by developing management approaches and guidelines by 2023; - Guidelines developed for integrated effort for WASH service during emergency or natural disaster period by 2023.
	PSB-LGD	DPHE, WASAs & City Corporations	<ul style="list-style-type: none"> - SDP thematic groups operationalized and strengthened for facilitating gradual sector wide approach; and initiate the use of harmonized approaches such as the Arsenic Safe Union concept and sub-sector SWAPs for WASAs, City Corporations and Rural Areas by 2024.
	LGD	MoH&FW, DPHE, LGED, WASAs & LGIs	<ul style="list-style-type: none"> - Guideline on enhanced public disclosures of information on various steps in planning and implementation, like allocation of funds to various projects and its components, allocation of subsidy or water supply and sanitation facilities, through notice boards, websites and other suitable methods by 2024; - 'Vetting guideline' updated to include, among others, integration of WASH activities and WinS as well as improve the planning, implementation and monitoring process by 2023; - WASH services are promoted in healthcare facilities in collaboration with the MoH&FW facilitating technical guidance from the WASH sector by 2024.
15. Recover cost of services while keeping a safety net for the poor	WASAs	City Corporations	<ul style="list-style-type: none"> - Progressive tariff system for water supply introduced in WASAs by 2023.
	DPHE, WASAs & LGIs	LGD	<ul style="list-style-type: none"> - Proposal to rationalize the allocation of funds to various water supply and sanitation services from holding taxes and tariff submitted to LGD by 2023.

Strategies	Lead Agency	Partners/ Facilitators	Milestones
			<ul style="list-style-type: none"> - Innovative financing mechanism developed and implemented along with involvement of private sector for efficient operation and cost recovery by 2024; - Sustainable low-cost technology and service system developed through R&D by 2024; - Cost recovery system for slum and vulnerable people developed and promoted in line with Pro-Poor Strategy for Water Supply and Sanitation Sector in Bangladesh, 2020 by 2023; - Timeframe for recovery of capital costs and operation and maintenance costs of various piped water supplies submitted to LGD by 2023; - Operational Guideline for subsidy to vulnerable people, hard-to-reach areas or areas with high public health concerns submitted to LGD by 2022.
16. Strengthen and reposition institutions and develop human and financial capacities	PSB-LGD	DPHE, WASAs & City Corporations	<ul style="list-style-type: none"> - Clarify the roles and responsibilities of the two Committees and various Thematic Groups under the National Forum for Water Supply and Sanitation for proper implementation of different sections of this National Strategy and other sector documents by 2022.
	LGD	DPHE, WASAs & LGIs	<ul style="list-style-type: none"> - Circulars issued on regulations for staff recruitment, water tariff fixation, demarcating, protecting and maintaining water bodies under various LGI Acts by 2023; - Regular coordination and feedback mechanism established with SDG Cell of PMO on WASH related policy, planning and intervention by 2022; - Generation of reports on water point installation and water consumption on quarterly basis started by 2023; - Ensure that relevant agencies submit adequate budget proposal for implementing strategic directions and achieving the milestones to the Budget Management Committee of LGD for each Financial Year (FY) after the budget call and LGD approves it accordingly on priority basis, which should be started from FY 2022-2023.

Strategies	Lead Agency	Partners/ Facilitators	Milestones
	WASAs	LGD	- Review of the implementation of the Policy Matrix related to WASAs undertaken periodically (six monthly or annually) from 2022 and it would continue afterwards.
	DPHE	LGD	- Sanitation Secretariat of DPHE will be made effective by 2022; - Prepare plans to train DPHE staff on environmental auditing by 2022; - Concept note on restructuring DPHE and capacity building submitted to LGD by 2022.
	LGD	DPHE	- Restructured organogram of DPHE approved by the government by 2023.
	DPHE	LGIs	- Proposal/Project for Sector Capacity Building (5 years-Phase 1) submitted to the Planning Commission through LGD by 2022.
	WASAs, Urban LGIs	LGD, DPHE	- One-stop customer care unit for water supply established in all WASAs and urban LGIs by 2022.
17. Strengthen coordination, monitoring and reporting mechanism	DPHE, LGIs	LGD	- Proposal for resolving the overlapping functions of various committees with the WASH Standing Committees at different tiers of the LGIs by 2022.
	DPHE, WASAs & LGIs	LGD, BBS	- Strengthen the NaMIS by 2022; - Key monitoring indicators and methodology for data collection and reporting in line with SDP and SDG agreed upon by stakeholders by 2022; - Enrich the NaMIS database incorporating data of various stakeholders in a common format by 2022; - Prepare sector analysis report with enriched data and disseminate to sector stakeholders from 2023; - National survey of water supply and sanitation done by 2023; - Harmonization of monitoring indicators for the sector with the SDGs by 2022.

Annex 1: Global Standard for Sanitation and Water Technology Category

The following categories of sanitation technologies (Improved and Unimproved) has been extracted from MICS 2019 report

Improved sanitation facility	Unimproved sanitation facility
Flush/Pour flush (i. Piped sewer system, ii. Septic tank, iii. Pit latrine – single pit or twin pit)	Open drain
Ventilated improved pit latrine	Pit latrine without slab/ open pit
Pit latrine with slab	Hanging toilet/ latrine
Composting toilet	Open defecation (no facility, bush, field)

The following categories of water technologies (Improved and Unimproved) has been extracted from MICS 2109 report

Improved sanitation facility	Unimproved sanitation facility
Piped water (i. Into dwelling, ii. Into yard/plot, iii. To neighbour, iv. Public tap/ standpipe)	Unprotected well
Tube-well/bore-hole	Unprotected spring
Protected well	Surface water
Protected spring	
Rain-water collection	
Cart with small tank	
Water Kiosk	
Bottled water	
Sachet water	

Annex 2: List of contributors including members of the working committee formed by LGD for revision and updating of the National Water Supply and Sanitation Strategy. (Not according to seniority)

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