Government of the Republic of the Union of Myanmar

National Strategy
for
Rural Water Supply, Sanitation and Hygiene (WASH)
WASH in Schools
and
WASH in Health Facilities
2016 - 2030

(Final Draft)

May 2016

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Foreword

The Republic of the Union of Myanmar has recently adopted a Framework for Economic and Social Reform (FESR) which serves as an umbrella policy for the development of sector-specific strategies and programmes. Amongst other things it prioritises rural development over urban and encourages private sector participation in both capital projects and service delivery.

In response to the opportunities presented above, the political change ongoing in Myanmar and the prospect of increased external support, during 2014-2015 UNICEF, the World Bank's Water and Sanitation Program (WSP) and the Japan International Cooperation Agency (JICA) facilitated a process of broad consultation with sector stakeholders at national and regional levels to solicit their views on the status of the WASH sector and to reach consensus on the most appropriate way forward.

The Strategy is based on the status of the WASH Sector described in the Myanmar Water, Sanitation and Hygiene Sector Situation Analysis (2014) and the 2014 Myanmar Population and Housing Census, but taking account of changes since then. The process of developing the Strategy has been based on wide consultation with potential users of it: Union Government Departments; State and Region Government Departments; Township Government and civil society leaders; Development Partners; national and international NGOs. The overarching principle for the Strategy is sustainability of services and changes such as hygiene behaviour. The Strategy provides a clear framework for achieving full coverage and access to WASH by 2030 and clear definitions of services in community WASH, WASH in schools and WASH in health facilities with clear roles and responsibilities of organisations in the sector at national, regional, township and community levels. The Strategy also recognises and proposes a comprehensive approach to capacity building of the people working in the Sector.

The Strategy will help to meet the needs of the rural populations for improved domestic water supply services, access to and use of improved sanitation with elimination of open defecation, and improved hygiene behaviour by the Year 2030, the target date for achievement of the Sustainable Development Goals. It also addresses water, sanitation and hygiene in schools up to high school level and health facilities up to township hospital level. We encourage everybody working in Water Supply, Sanitation and Hygiene (WASH) Sector to read and understand the Strategy and use this as a guide for their work to the benefit the majority of rural people living in Myanmar.

I wish to thank the Rural WASH, WASH in Schools and WASH in Health Facilities Strategy Development Task Force members and supporting agencies such as UNICEF and development partners for their dedicated support during the entire process, for developing this strategy, hosting various consultations, meetings and workshops and for providing leadership on behalf of Myanmar. I am deeply grateful to the Department of Rural Development, Department of Health, Department of Basic Education and all partner agencies who actively contributed in developing the Rural WASH, WASH in Schools and WASH in Health Facilities Strategy Development to contribute to improved socio-economic life of all the rural populace by 2030 through provision of equitable, effective, efficient and affordable services for water supply and sanitation and safe hygienic behaviour.

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Acknowledgements

This Strategy for Rural WASH, WASH in Schools and WASH in Health Facilitieswas prepared under the overall guidance and leadership of the Ministry of Agriculture, Livestock and Irrigation, especially H.E Dr Aung Thu, Minister of Agriculture, Livestock and Irrigation, and members of the Task Force drawn from the Ministry of Education, the Ministry of Health and other relevant Ministries and Government agencies. The development of the Strategy was supported by UNICEF, which provided the services of a team of specialist consultants: Jeremy Ockelford (consultant team leader), Terence Kadoe (consultant for water supply),and ThureinMaungMaung(consultant for sanitation and hygiene). Close guidance on the overall process was also provided by UNICEF – both the Myanmar Country and East Asia & Pacific Regional Office.

Special thanks are due to all the staff of the various government departments and development agencies who actively participated during the process. Without their genuine interest in gathering information and sharing available data this WASH Strategy and the associated Investment Plans would not have been possible. These staff included: various government officials from key Ministries includingMinistry of Agriculture, Livestock and Irrigation, Ministry of Health andMinistry of Education; WASH practitioners from UNICEF, Development Partners, and NGOs; and participants from Union, Regions, States and Townships in the various consultation workshops, and meetings. Their hard work, close involvement, valuable contributions,active engagement and comments provided a solid evidence base to make the Strategy relevant to the medium and long terms needs of the people of Myanmar. Hopefully this involvement in the process has created a sense of ownership by all the intended users of the Strategy.

Finally, appreciation is noted for UNICEF for their technical as well as financial support, and to UNICEF Myanmar for its generous support to the WASH Task Force.

Acronyms and abbreviations

AADMER	ASEAN Agreement on Disaster Management and Emergency Response
ASEAN	Association of South East Asian Nations
CCA	Climate Change Adaptation
CLTS	Community-led Total Sanitation
DAC	Development Assistance Committee
DBE	Department of Basic Education
DEWATS	Decentralised Waste Water Treatment System
DMER	Department of Myanmar Educational Research
DOH	Department of Health
DPH	Department of Public Health
DRD	Department of Rural Development
DRR	Disaster risk reduction
ECB	Emergency Capacity Building Project
FESR	Framework for Economic and Social Reform
GAD	General Administrative Department
GDP	Gross Domestic Product
GIZ	Gesellschaftfür Internationale Zusammenarbeit
GLAAS	Global Analysis and Assessment of Sanitation and Drinking-Water
GOM	Government of Myanmar
HFA	Hyogo Framework for Action
HMIS	Health Management Information System
HPES	Health Promotion and Education Section
IDP	Internally Displaced Person
IEC	Information education campaign
[I]NGO	[International] Non-Government Organisation
IP	Investment Plan
IRC	International Reference Centre for Water Supply & Sanitation
IWRM	Integrated Water Resource Management
JICA	Japan International Co-operation Agency
JMP	Joint Monitoring Programme (of World Health Organisation and UNICEF)
KAP	Knowledge Attitude and Practices
KG	Kindergarten
MALI	Ministry of Agriculture, Livestock and Irrigation
MAPDRR	Myanmar Action Plan on Disaster Risk Reduction
MICS	Multiple Indicator Cluster Survey
MIS	management information system
MOALI	Ministry of Agriculture, Livestock and Irrigation
MNPED	Ministry of National Planning and Economic Development
MOH	Ministry of Health and Spots
NCDP	National Comprehensive Development Plan
O&M	Operation and maintenance
ODF	Open defecation free
PTA	Parent-Teacher Association
R/SDC	Regional/State Development Committee
RRD	Relief and Rehabilitation Department
SaniFOAM	Sanitation Focus Opportunity Ability Motivation
SDG	Sustainable Development Goals
SWM	Solid Waste Management
TDC	Township Development Committee
TEO	Township Education Office
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development

VIP	Ventilated improved pit (latrine)
WEDC	Water Engineering and Development Centre (UK)
WTG	WASH Thematic Group
WASH	Water, Sanitation and Hygiene
WHO	World Health Organisation
WSD	Water and Sanitation Department
WSP	Water Safety Plan
WSP	Water & Sanitation Program (of the World Bank)
WSS	Water supply and sanitation

Table of imperial/metric conversions

	Imperial		Metric
Volume	0.22 gallons	1	4.546 litres
Length	3.281 feet	1	0.3048 metres
	1.094 yards	1	0.9144 metres
	0.621 miles	1	1.6093 kilometres

Summary

The purpose of this Strategy is to set out the way to meet the needs of the rural populations for improved domestic water supply services, access to and use of improved sanitation with elimination of open defecation, and improved hygiene behaviour by the Year 2030, the target date for achievement of the Sustainable Development Goals. It also addresses water, sanitation and hygiene in schools up to high school level and health facilities up to township hospital level. The Strategy is supported by Investment Plans covering a financing period 2015 to 2030 in order to ensure sufficient funding for development and operation of services in accordance with the Strategy.

All organisations working in or supporting the WASH Sector – Government, Development Partners, International NGOs, national and local NGOs, and private sector – shall work in accordance with the Strategy and its approach, principles, goal, strategic objectives, standards and guidelines. They should also conform to any rules, regulations and procedures which may, from time to time, be issued by the responsible Government Departments and Offices.

Departments in three Ministries have cooperated in the development of the Strategy and Investment Plans: Department of Rural Development, Department of Basic Education and Department of Public Health, with support and input from other relevant Departments The Departments worked together in a Task Force chaired by DRD.

The process of developing the Strategy has been based on wide consultation with potential users of it: Union Government Departments; State and Region Government Departments; Township Government and civil society leaders; Development Partners; national and international NGOs. The contributions from all these consultations has been invaluable in developing a Strategy relevant to all the needs.

Approach of the Strategy

One of the major changes in approach is a move from providing water supply and sanitation systems through time-bound projects for infrastructure, to **operation of WASH as services without time limit**. The emphasis is on operation, sustainability and recurrent cost financing of services that people want and can afford to pay for.

Situational analysis: summary

The most comprehensive and detailed data set for available for estimating access to improved water supply and improved sanitation is the National Census of 2014. Tables 1 and 2 show the access to water supply and sanitation in rural areas.

Table S1: Access to Water Supply in Rural Areas

Population	Households	Improved	Unimproved	% Improved
34,203,208	7,828,400	4,782,377	3,107,961	60.6

Table S2: Household Access to Sanitation in Rural Areas

Population	Households	Improved	Unimproved	No toilet	% Improved
34,203,208	7,828,400	5,269,079	1,074,220	1,485,101	67.3

There are a number key challenges are:

- The change in approach to service delivery and development of private sector for sanitation marketing.

- Ensuring sustainability by addressing a number of legal, institutional, financial, social, technical and environmental challenges.
- Improving coordination of sector stakeholders at and between all levels of service delivery and management.
- Clearly defining the roles and responsibilities in the WASH sector of Government Departments at all tiers of government.
- Organisational capacity at all levels needs to be assessed and developed.
- Development of the capacity of the small-scale private sector to meet the needs of developing and running services, in particular for sanitation and operating small water supply systems.
- To improve understanding of gender in WASH, in order to enable women, as the main users with responsibility for domestic water and for household sanitation, to become decision-makers on domestic water supply and sanitation and for men to accept their decisions.
- To understand and address the special needs of people with disabilities to access and use WASH services.
- Monitoring and management information systems for collecting, managing and using data are very weak.
- The development of services to reach the 2030 targets is seriously underfunded – generating capital funding from Government allocations, development partners and other sources will require focused advocacy.
- Adequate funding of the operational costs is essential to ensure sustained performance of the services. A particular challenge is affordability for service users in the context of high levels of poverty. The challenge is to develop and provide services and facilities that all sections of the community can pay for, so that they can be sustained.
- Despite the relatively high coverage of improved water supply and improved sanitation, there are high levels of water and sanitation related diseases and growth stunting of children under 5. Behaviour change programmes need to be improved to address this.
- Technical factors include the need to develop affordable options for sanitation for the poorer and poorest households; and sanitation options in difficult areas. There is no system for managing or controlling solid waste in rural areas.
- On environmental factors, management of water resources is weak, and there is very little control of major polluters of water, such as mining, industry and agriculture. Climate change is a growing threat to the sustainability water resources.

Scope

<table>
<tr><td colspan="2">Water supply, sanitation and hygiene behaviour change in rural areas: village tracts and urban wards in sub-townships (if there is no Township Development Committee)
– 14 States and Regions, and NPT</td></tr>
<tr><td>School WASH – rural and urban
– Pre-primary (including kindergartens)
– Primary
– Middle
– High</td><td>Health facilities
– Township hospitals
– Station hospital
– Rural Health Centres
– Sub-Health Centres</td></tr>
<tr><td>Emergency and humanitarian WASH
– Natural disasters
– Conflict related emergencies</td><td></td></tr>
</table>

Timeframe

The Strategy is for the period from 2016 to 2030.

The first three years, from January 2016 to December 2018 will be a transition period to move from the current approach to the approaches and ways of working defined in the Strategy. It is intended that the Institutional Arrangements should be completed by then. An implementation/action plan is to be developed for the institutional changes and other early actions required during the transitional period.

Targets

Table S3: Water Supply Targets (%)[1]

	2015[2]	2020	2025	2030
Rural community supply				
Access to potable water supplies and improved water for other domestic uses	61	70	85	100
School supply				
Improved water supply		40	65	100
Rural health centre				
Improved water supply		50	75	100

Table S4: Sanitation Targets (%)

	2015	2020	2025	2030
Rural Villages				
Open defecation free (declared ODF)	0.3	92	97	100
Solid waste management				?
Rural Households				
Access to safe sanitation (own or shared)	67.3[3]	80	90	100
Hand washing facilities	64	80	85	90
Schools				
Latrines adequate for boys and girls separately		40	65	100
Urinals for boys		40	65	100
Private space for girls for menstrual hygiene				
Hand washing facilities		40	65	100
Special facilities for children with disabilities		40	65	100
Appropriate Solid Waste Disposal				100
Rural health centre				
Latrines	50	70	85	100
Handwashing facilities	50	70	85	100
Waste water treatment systems				100
Clinical and hazardous waste disposal				100

Table S5: Hygiene Targets (%)

	2015	2020	2025	2030
Hygiene behaviours				
Use of improved toilet	67	80	90	100
Washing hands with soap at critical times*	40	55	70	80
Safe disposal of infants' faeces		60	70	100
Safe water handling in the home		55	70	80

[1]Blank cells in these table indicate there is no reliable data available

[2]From 2014 Census data

[3]From 2014 Census data

Principles

There are a number of detailed policy issues and principles that are established through this Strategy. These are summarised as follows:

Sustainability
Sustainability of improved water supply and sanitation facilities and hygiene behaviours is a key objective of service delivery. Once established, systems should provide a permanent service to the users.

Monitoring and management information
Accurate and reliable data is essential for local management of WASH development and service operation, as well as for overall monitoring of the Sector. For this an integrated data collection and management system from the lowest operational level up Union level needs to be created and maintained.

Disaster Risk Reduction and Climate Change
All services and infrastructure should be developed to be resilient to natural disasters, including risk assessment and reduction, and preparedness planning.

Water resource management
Planning, development and management of water resources need to be governed by a common integrated perspective considering local, regional, state and national contexts, having an environmentally sound basis, keeping in view the human, social and economic needs.

Cost sharing for water supply
Communities should contribute a part of the capital cost of community water supplies, 100% of the operation and maintenance costs and a part of the cost of the advisory maintenance support service run by Townships.

Sanitation financing
A consistent policy on financing and subsidies for sanitation is essential, and must be applied by all organisations working in sanitation. Direct subsidies for sanitation infrastructure should be phased out. Subsidies may be provided but only to enable the poorest households to obtain toilets through alternative mechanisms, so excluding direct hardware subsidies.

Integration of water supply, sanitation and hygiene promotion
Development of services should integrate the water supply, sanitation, including solid waste management, and hygiene promotion components together.

Operation and maintenance
User communities are responsible for operation and maintenance of the water supply service, through a representative Village Water Committee, supported by a township level O&M advisory support service. The VWC should have adequate representation of both women and men, ethnic minorities and other vulnerable groups.

Decentralization and deconcentration of service provision and management
The provision and management of water supply and sanitation services and hygiene promotion in rural areas should conform to the Government's policy of decentralization.

Accountability and transparency
All organisations have multiple accountabilities - downwards to electorates, beneficiaries, students and patients, partners and staff, and upwards to higher levels of Government, and donors

Mainstreaming gender
During development and provision of services, including management, monitoring and evaluation, all organisations should mainstream gender. They should make women's and

men's concerns an integral consideration in the design, implementation, monitoring, and evaluation of policies and service delivery.

Mainstreaming disability
During development and provision of services, including management, monitoring and evaluation, all organisations should mainstream disability. It means engaging women and men with disabilities to play a central role in discussions and decisions on planning services.

Equity and poverty
Equity has to do with fairness - whether all people, regardless of sex, ethnicity, disability, socio-economic or other status, have similar rights and opportunities, basic needs to maintain an acceptable quality of life. In the WASH context, equity requires a focus on marginalized groups, especially the poorest of the poor.

Strategic Goal, Strategic Objectives and Components

Strategic Goal	**To contribute to improved socio-economic life of all the rural populace by 2030 through provision of equitable, effective, efficient and affordable services for water supply and sanitation and safe hygienic behaviour**
Strategic objectives and components	
	Climate Change Adaptation and Disaster Risk Reduction 0.1: Disaster risk reduction and climate change adaptation
1. Water supply	All the rural populace will have access to effective, efficient and affordable services for improved water supply by 2030 1.1: Water resource management 1.2: Water supply design, planning and infrastructure 1.3: Water quality standards and water safety plans 1.4: Operation and maintenance
2. Sanitation	All the rural populace will live in open defection free communities; have physical and affordable access to sanitation that is safe, hygienic, secure, socially and culturally acceptable and that provides privacy and ensures dignity ; will use and maintain the sanitation facilities; and will dispose of the domestic solid waste through effective, efficient and affordable services and other arrangements for solid waste recycling and disposal by 2030 2.1: Increasing access to household sanitation and eliminating open defecation 2.2: Increased range of technical options 2.3: Operation and maintenance of sanitation facilities 2.4: Solid waste management
3. Hygiene behaviour change	All the rural populace will practice basic safe hygiene behaviour including use of improved toilets, washing hands with soap at critical times, safe disposal of infants' faeces and safe water storage and handling 3.1: Adoption of safe hygiene behaviour 3.2: Safe disposal of infants' faeces 3.3: Environmental sanitation
4. WASH in schools	All schools provide a healthy physical learning environment through the provision, operation and maintenance of safe water supplies, adequate toilet facilities and handwashing facilities, and solid waste disposal facilities for all students and staff, together with promotion of safe hygiene practices

	4.1: School WASH facilities 4.2: School hygiene behaviour change 4.3: Environmental sanitation in Schools
5. WASH in health facilities	All health facilities have adequate water supplies, toilets and handwashing facilities for patients, carers and staff, and clinical and hazardous waste disposal facilities, waste water drainage and treatment appropriate for the type of health facility, and maintain a clean environment. 5.1: Water supply in Health Facilities 5.2: Sanitation in Health Facilities 5.3: Clinical and hazardous waste disposal 5.4: Waste water drainage, treatment and disposal
6. WASH in emergencies and humanitarian action	Effective preparedness and response for the provision of water supply, sanitation and handwashing facilities, and hygiene promotion for people affected by natural disasters, conflict and other emergencies 6.1: Emergency preparedness for WASH 6.2: Humanitarian response 6.3: Early recovery
7. Institutional arrangements	By the end of 2018, the institutional arrangements for Government, private sector and NGOs at State, Region, District and Township levels and communities at Village Tract level, and the legal instruments and human resources will be in place and able to increase and to sustain services for water supply, sanitation and hygiene practices 7.1: Sector management and coordination 7.2: Human resources and capacity development 7.3: Monitoring and management information systems 7.4 Research, development and innovation
8. Financing	Funding for capital and recurrent expenditure will be available in order for WASH services to be provided and operated sustainably 8.1: Financing of capital costs 8.2: Financing of recurrent costs 8.3: Advocacy for funding

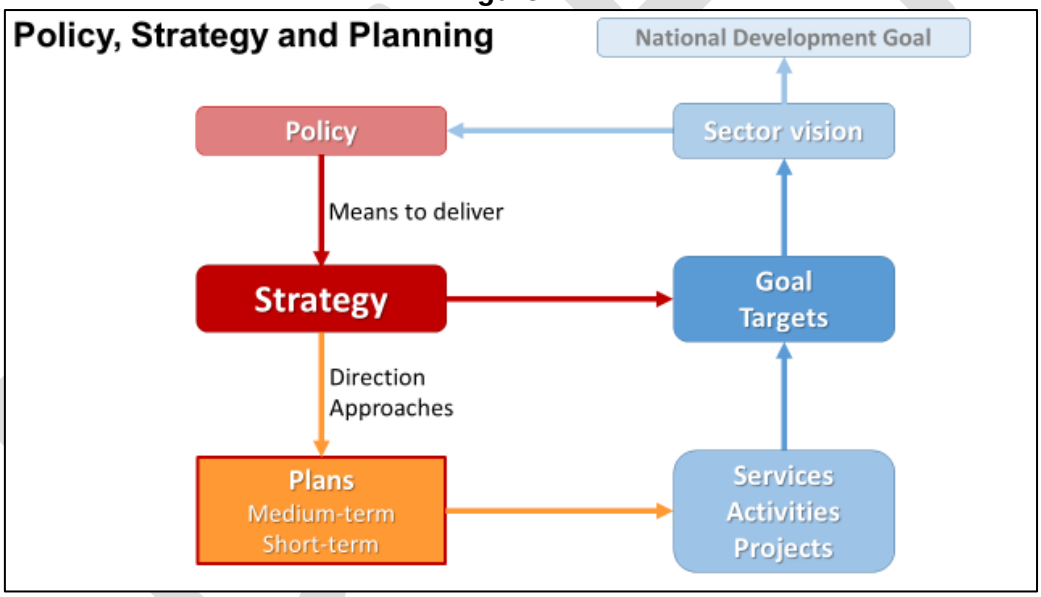
1. Introduction

The purpose of this Strategy is to set out the way to meet the needs of the rural populations for improved domestic water supply services, access to and use of improved sanitation with elimination of open defecation, and improved hygiene behaviour by the Year 2030, the target date for achievement of the Sustainable Development Goals. It also addresses water, sanitation and hygiene in schools up to high school level and health facilities up to township hospital level. The Strategy is supported by Investment Plans covering a financing period 2015 to 2030 in order to ensure sufficient funding for development and operation of services in accordance with the Strategy.

All organisations working in or supporting the WASH Sector – Government, Development Partners, International NGOs, national and local NGOs, and private sector – shall work in accordance with the Strategy and its approach, principles, goal, strategic objectives, standards and guidelines. They should also conform to any rules, regulations and procedures which may, from time to time, be issued by the responsible Government Departments and Offices.

Figure 3.1 shows where this Strategy fits between policy and planning.

Figure 1.1



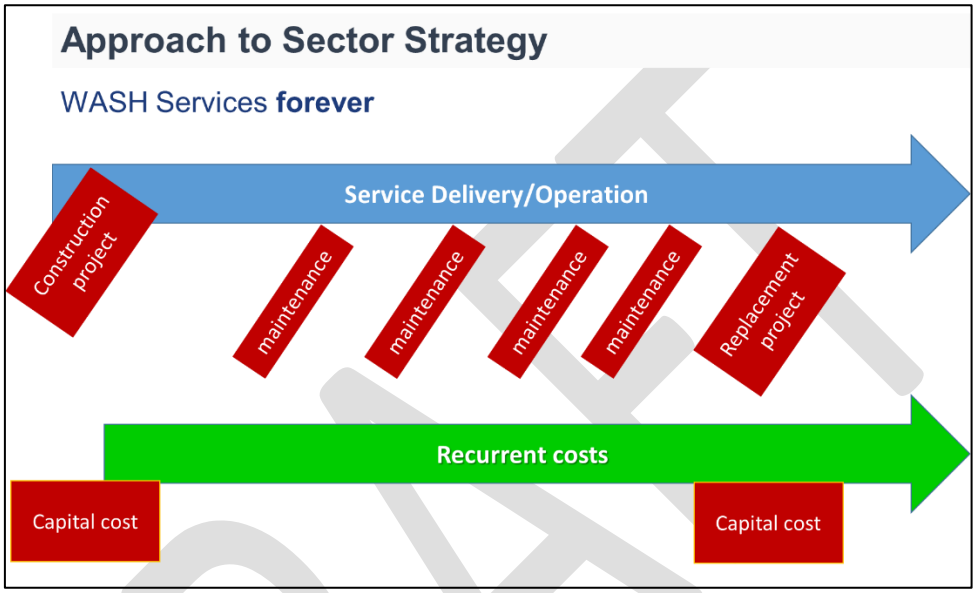
Departments in three Ministries have cooperated in the development of the Strategy and Investment Plans: Department of Rural Development, Department of Basic Education and Department of Public Health, with support and input from other relevant Departments The Departments worked together in a Task Force chaired by DRD.

The Strategy is based on the status of the WASH Sector described in the Myanmar Water, Sanitation and Hygiene Sector Situation Analysis (2014) and the 2014 Myanmar Population and Housing Census, but taking account of changes since then.The process of developing the Strategy has been based on wide consultation with potential users of it: Union Government Departments; State and Region Government Departments; Township Government and civil society leaders; Development Partners; national and international NGOs. The contributions from all these consultations has been invaluable in developing a Strategy relevant to all the needs, and hopefully it has created a sense of ownership by all

the intended users of it. Details of the process of developing the Strategy are shown in Appendix 7.

Approach of the Strategy
One of the major changes in approach that is defined in the Strategy is a move from providing water supply and sanitation systems through time-bound projects for infrastructure, to **operation of WASH as services without time limit**. The emphasis is on operation, sustainability and recurrent cost financing of services that people want and can afford to pay for, as illustrated in Figure 3.2.

Figure 1.2



1.1 Structure of the Strategy

The Strategy is divided into a number of Chapters:

Chapter 2 gives a Situational Analysis

- Existing coverage based on the 2014 Census
- The Government Organisation with responsibilities in WASH
- The main challenges in the Sector, identified from various sources including Consultation Workshops
- Relevant legislation and other strategies

Chapter 3 defines the Goal, strategic objectives and targets:

- the overall goal, including the relevant SDGs
- the strategic objectives for
  - water supply
  - sanitation
  - hygiene behaviour change
  - WASH in Schools
  - Wash in health facilities
  - WASH in emergencies, humanitarian action and climate change adaptation
  - institutional arrangements
  - financing

- interim and final targets to be achieved by 2030

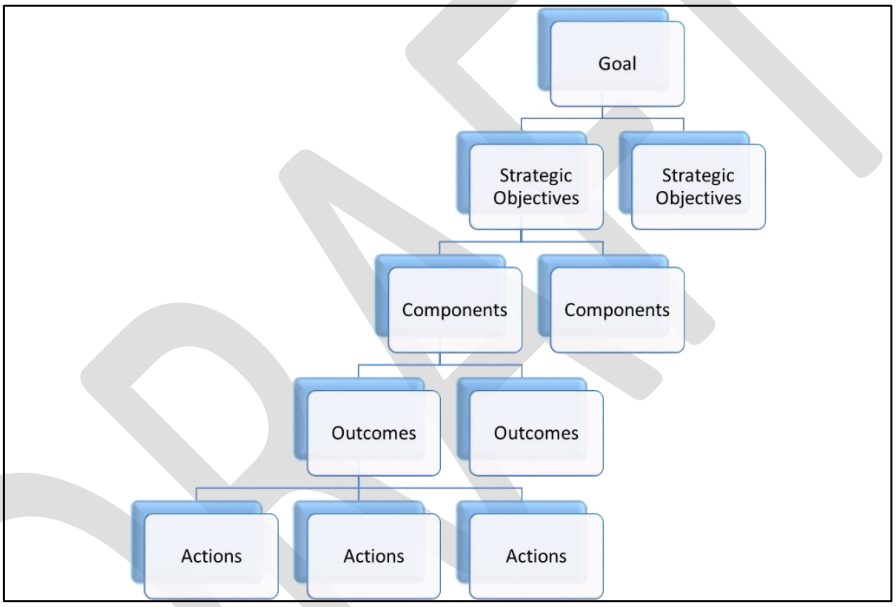
Chapter 4 gives the definition of services to be adopted through the Strategy
- Community water supply
- Household sanitation
- WASH in Schools
- WASH in Health Facilities

Chapter 5 defines the scope of the Strategy – the range of what it addresses and the geographic areas covered.

Chapter 6 sets a number of principles to guide the sector. These provide some of the detailed policy necessary for achieving the Overall Goal and Strategic Objectives.

Chapter 7 sets the Strategic Components necessary to achieve each Strategic Objective and the overall Goal. It is based on a logical framework format:

Figure 1.3



Chapter 8 gives the time-frame for implementation of the Strategy.

Appendices provide supporting information and guidance on the Strategy, including definitions of terminology, concept and approaches in WASH; institutional roles and responsibilities of the organisations and stakeholders.

Figure 1.4: Map of Myanmar by State, Region and District

Source: 2014 Census Report

2.Situation analysis

2.1 Coverage status

The most comprehensive and detailed data set for available for estimating access to improved water supply and improved sanitation is the National Census of 2014. Tables 8.1 and 8.2 shows the access to water supply and sanitation in rural areas[4]; access data for States and Regions is given in Appendix 3.

This data needs to be treated with some caution, however. For water supply, the responses are self-reported in answer to the census question at the time, so may not count existing water supply systems that were not working at the time. Similarly, the data collected on access to sanitation relies on enumerator's opinion of the type of toilet.

Table 2.1: Access to Water Supply in Rural Areas

Population	Households	Improved*	Unimproved	% Improved
34,203,208	7,828,400	4,782,377	3,107,961	60.6

Table 2.2: Household Access to Sanitation in Rural Areas

Population	Households	Improved*	Unimproved	No toilet	% Improved
34,203,208	7,828,400	5,269,079	1,074,220	1,485,101	67.3

Table 2.3: Government Organisations in WASH

Ministry	Department	Operational levels	Role
Livestock, Fisheries, & Rural Development	Department of Rural Development (DRD)	Union State/Region Township	Community water supply Coordination and Chair of Task Force for development of Strategy
Education	Department of Basic Education (DBE)	Union State/Region Township	WASH in schools
Education	Department of Teacher Education & Training		
Education	Education Research Bureau		Curriculum development (life skills)
Education	Human Resources and Educational Planning		
Health	Department of Public Health	Union State/Region Township	WASH in health facilities
Health	Environmental Sanitation Division		
Health	Department of Public Health: Health education Bureau	Union	Operational guidance and promotional materials for hygiene behaviour change
Ministry of Home Affairs	General Administration Department (GAD)	State/Region Township Village Tract	Coordination of development activities
Ministry of Social Welfare	Relief and Resettlement Department		Emergency preparedness and response
Ministry of Social Welfare Relief	Department of Social Welfare		Early childhood education

[4]This access compares to 55% for improved water supply and 92% for improved sanitation in urban areas.

Ministry of Religious Affairs			Monastic schools
National Water Resources Committee		National	Coordination and cooperation for water resource management

2.2 Main challenges

The main challenges facing the WASH Sector have been identified from a number of sources, including the Sector Situation Analysis Study and Report (see Appendix 3) carried out in 2014 as the first step in development of this Strategy; other relevant studies; the First National Consultation Workshop held in Nay Pyi Taw in October 2015; and the series of State and Region Consultation Workshops in December 2015.

Change in approach: service delivery
The approach to water supply and sanitation has generally been focused on the construction of infrastructure through time limited projects and programmes. The internationally accepted approach is now to consider water supply as a service over infinite timescale. For sanitation, instead of constructing household toilets, the approach is now to encourage small businesses to sell toilets and other sanitation products as a service to householders. Both these changes in approach require a change in thinking and culture by the departments concerned.

Sustainability
Water supplies and sanitation facilities, including those in schools and health facilities frequently fall into disrepair, disuse, and eventually fail completely, representing a substantial loss of investment over the years. Actual data on the functionality is quite limited, and the number of past projects is not available. Part of the service delivery approach is to ensure that water supplies and sanitation continue to perform in accordance with the service standards. A number of legal, institutional, financial, social, technical and environmental challenges need to be addressed to ensure sustainability. These challenges are summarised in the following:

Legislation and policy
There is no specific policy for rural WASH. The National Water Policy has one section on domestic water supply and sanitation, but only one paragraph of that addresses rural needs. Importantly, however, the National Water Policy does set the top priority for allocation of water resources for domestic use. The National Framework for Economic and Social Reform sets some general policy direction which is relevant for WASH.

There is currently a plan to develop a Water Law. It will be important to influence this so that it is relevant to rural domestic water supply and sanitation.

Coordination
This challenge is noted in studies and was frequently raised in the consultation workshops. Coordination needs to be improved between departments of government and between levels of government: Union, State and Region, District, and Township. There is also a need to improve coordination between Government and NGOs, which, from experience in other countries, have a demonstrably beneficial role to play in the Sector.

Roles and Responsibilities
There are a number of different agencies and Government Departments with responsibility for parts of the water sector. There is a general lack of clarity and some overlaps and gaps in the roles and responsibilities of the various government departments and levels, which

leads to confusion and duplication. For overall water resource management, coordination arrangements are under consideration.

Decentralisation
One of the Dublin Principles[5] is that management of water should be at the lowest appropriate level. This fits with the Government's policy on decentralisation. To be effective, however, roles and responsibilities need to be clearly defined, with capacity development as necessary to ensure competence in these roles, together with effective coordination. Fiscal decentralisation is also important for local decision-making.

Organisation capacity
This tends to be weak at all levels and organisations. It will also be a significant in the change in orientation to a service delivery approach, with the emphasis on operation, maintenance and regulation of services to ensure performance standards are sustained.

Private sector
The private sector plays a very limited role in the Sector at present. To meet the needs of developing and running services, in particular for sanitation and operating small water supply systems, the enabling environment needs to be improved: incentives need to be enhanced and constraints reduced.

Gender and social inclusion
The gender aspects of WASH have received little consideration up to now. As a result there is limited understanding of roles and needs of women and men, girls and boys in relation to water and sanitation. It is clear, however, that a key challenge is to enable women, as the main users with responsibility for domestic water and for household sanitation, to become decision-makers on domestic water supply and sanitation and for men to accept their decisions. Data is needed on the gendered division of labour for fetching and managing water (paid/unpaid; with/without transport); female-headed households access to WASH; gender-based violence and WASH (in particular in humanitarian settings);female-specific WASH needs such as menstrual hygiene management and safe birthing; and participation of women/men in Water Management Committees and reporting procedures; community sensitization on water and sanitation. All data needs to be disaggregated by age and sex.

Disability
From the 2014 Census data, 4.6% of the rural population have some form of disability. The Census categories for physical disability, however, are limited to "seeing" and "walking". Therefore the percentage of people with a physical disability that makes it difficult to use water supply and/or sanitation facilities that are not adapted to their needs is likely to be higher. Global figures indicate disability could be as high as 15% in low and middle income countries. The ageing population in Myanmar indicates disability is likely to increase.

Monitoring and management information systems
The systems for collecting, managing and using data are very weak. Particular issues with monitoring data are lack of information on functionality of water supplies and WASH in schools and health facilities; and lack of information on actual provision compared with coverage reported in surveys such as the Multiple Indicators Cluster Surveys (MICS) and the Demographic Health Surveys (which are used for Joint Monitoring Program (JMP) estimates of coverage), and the 2014 Census. All these surveys rely on what people report as their source of drinking water, so only services that are actually operating at the time are likely to be counted; a system that is broken at the time but could be repaired may not be counted.

[5] The Dublin Statement on Water and Sustainable Development, 1992, http://www.wmo.int/pages/prog/hwrp/documents/english/icwedece.html

Definitions of services
There are no clear definitions of what constitutes the standards of service for community water supply, WASH in schools and WASH in health facilities, apart from the National Drinking Water Quality Standards that were adopted in 2014. This lack of definition makes it difficult to determine coverage and manage performance of service delivery.WASH in Schools standards are under development and due to be finalised in 2016.

Capital funding
The development of services to reach the 2030 targets is seriously underfunded. Government allocations are low compared to the needs and there are few development partners supporting the sector to make up the gap[6]. The potential for user contributions for capital costs is now being realised, in particular to sanitation, so that the subsidies for sanitation are used more effectively for improving public health, with limited subsidies for the poorest households.

Recurrent cost funding
When considering WASH as service over indefinite time, adequate funding of the operational costs become essential to ensure sustained performance of the services. There is little information on the operational costs of services, and whether these are affordable for users and therefore sustainable. A particular challenge is affordability in the context of high levels of poverty. The challenge is to develop and provide services and facilities that all sections of the community can pay for, so that they can be sustained.

Hygiene behaviour
Despite the relatively high coverage of improved water supply and improved sanitation there are high levels of water and sanitation related diseases. Growth stunting of children under 5 is high – recent studies have clearly demonstrated a link to child diarrhoea as a result of poor sanitation and hygiene. KAP surveys show that although peoples' knowledge of safe hygiene behaviour is high, practice is poor[7]. The reasons for this need to be understood so that behaviour change programmes can be improved to address this problem.

Technical factors
For sanitation, there are few options available that may be affordable for the poorer and poorest households. There are also few options for sanitation in difficult areas, such as high groundwater and flood prone areas. Latrines are not resilient to natural disasters such as flooding.

There is no system for managing or controlling solid waste in rural areas. The result can be seen everywhere, with plastic and other wastes damaging the environment and resources necessary for livelihoods. The opportunity for treating waste as a valuable economic resource is not being realised.

Standard designs for different types of water supply are not available, resulting in poor quality design and construction. National Water Quality Standards have recently been adopted but the capacity to undertake monitoring on the scale required is very limited.

Environmental factors
Sanitation has focused on provision of latrines rather than looking at the sanitation system as a whole. There is no consideration of leaching and effluent from the toilet which pollutes

[6]JICA is providing infrastructure for water supply; USAID is funding infrastructure and some software costs; the World Bank's CDD project provides funding for water and sanitation with an emphasis on rehabilitation; UNICEF is providing supportfor the enabling environment; there are some NGOs with small-scale development programs.

[7]Knowledge, Attitude and Practice Study into Water, Sanitation and Hygiene in 24 Townships of Myanmar, MoH and UNICEF, 2011

the water resources and the environment. There is a lack of sludge collection and treatment services.

Management of water resources is weak, and there is very little control of major polluters of water, such as mining, industry and agriculture. Climate change is a growing threat to the sustainability water resources.

2.3 Relevant legislation and other strategies

The following is a list of legislation, policies, strategies and other official documents that are directly or indirectly relevant to the governance, management and regulation of the WASH Sector. The list may not be comprehensive.

Water

Myanmar National Water Framework Directive (in draft)

Myanmar Integrated Water Resources Management Strategic Study (2014)

National Drinking Water Quality Standards Myanmar (2014), Ministry of Health

Myanmar National Water Policy (2014)

Conservation of Water Resources and River Law (2006)

Burma Underground Water Act (1930)

Water Law (currently being drafted)

Sanitation and waste

Public Health Law (1972) (currently being revised)

Disease Control Law (1996)

Education

National Education Law (2014), Parliamentary Law No. 41

Child Law, (2003). Law no. 9/93

Amendment to National Education Law (2015)

Early Childhood Development Law (2014)

Private School Registration Law (2011)

Rules and Regulations for Private School Registration (2011)

Institutions

Constitution of the Republic of the Union of Myanmar (2008)

Framework for Economic and Social Reforms: Policy Priorities for 2012-15 towards the Long-Term Goals of the National Comprehensive Development Plan (2013), First Myanmar Development Cooperation Forum

Rural Development Strategic Framework (2014) Ministry of Livestock, Fisheries and Rural Development[8]

Small and Medium Enterprises Development Law (2015)

Law relating to Registration of Organizations (2014)

Social

[8]Now Ministry of Agriculture, Livestock and Irrigation

National Strategic Plan for the Advancement of Women 2013–2022, Ministry of Social Welfare, Relief and Resettlement

National Strategic Plan 2015-18 for Newborn and Child Health (2015)

Myanmar Policy for Early Childhood Care and Development (2014)

The 2014 Myanmar Population and Housing Census: The Union Report (2015), (and associated Union, State and Regions Reports and data tables)

The Law of the Rights of the Disabled People [2015]

Myanmar National Social Protection Strategic Plan (2014)

The United Nations Convention on the Rights of the Child (1990)

Environment

Environmental Conservation Law (2012)

Disaster Risk Reduction and Emergency

Myanmar Action Plan on Disaster Risk Reduction (MAPDRR) (2012)

Natural Disaster Management Law (2013)

Disaster Management Rules (2015)

Risk Assessment Roadmap, Myanmar (2015)

Myanmar National Framework on Community Disaster Resilience (in preparation)

Sendai Framework for Disaster Risk Reduction 2015-2030

Risk Assessment Roadmap (2015), (RRD, MSW)

DRR Working Group Strategic Framework 2013-2018

UNICEF/Global Water Partnership: WASH Climate Resilient Development: Strategic Framework

3.Scope and Timeframe

3.1 Scope

Water supply, sanitation and hygiene behaviour change in rural areas: village tracts and urban wards in sub-townships (if there is no Township Development Committee)

- 14 States and Regions, and NPT.

School WASH – rural and urban

- Pre-primary (including kindergartens)
- Primary
- Middle
- High

The approach, guidance and standards in the Strategy can also be applied in monastic schools and private schools by the authorities responsible for those types of school.

Health facilities

- Township hospitals
- Station hospital
- Rural Health Centres
- Sub-Health Centres

Emergency and humanitarian WASH

- Natural disasters
- Conflict related emergencies

3.2 Time frame

The Strategy is for the period from 2016 to 2030.

Transitions

The first three years, from January 2016 to December 2018 will be a transition period to move from the current approach to the approaches and ways of working defined in the Strategy. It is intended that the Institutional Arrangements should be completed by then. An implementation/action plan is to be developed for the institutional changes and other early actions required during the transitional period.

Review of strategy

It is recommended that this Strategy should be reviewed after 5 years (2020), to evaluate the effectiveness of the changes in institutional arrangements and to update progress on development and operation of services. By that time the Monitoring and Information Management System should be fully operational so the review can be based on good data on all aspects of the WASH Sector.

4.Goals, strategic objectives and targets

4.1 Goal

The Government has committed to achieving the Sustainable Development Goals (SDGs)[9]. The SDG and target indicators relevant to this Strategy is:

SDG Goal 6: Ensure availability and sustainable management of water and sanitation for all

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

Two key points in SDG 6, sustainability and equity, need to be incorporated into the goal and objectives of the Strategy. Thus, based on this and the Vision of the Rural Development Strategic Framework:

Strategic Goal	**To contribute to improved socio-economic life of all the rural populace by 2030 through provision of equitable, effective, efficient and affordable services for water supply and sanitation and safe hygienic behaviour**

Access to water and sanitation for all will also contribute to many of the other SDGs, as shown in Box 1.

Box 1: Relationship of the Goal to other SDGs

Goal 1:	End poverty in all its forms everywhere
Goal 2:	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Goal 3:	Ensure healthy lives and promote well-being for all at all ages
Goal 4:	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
Goal 5:	Achieve gender equality and empower all women and girls
Goal 8:	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Goal 9:	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
Goal 10:	Reduce inequality within and among countries
Goal 11:	Make cities and human settlements inclusive, safe, resilient and sustainable
Goal 12:	Ensure sustainable consumption and production patterns
Goal 13:	Take urgent action to combat climate change and its impacts
Goal 16:	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

[9] Statement by Myanmar at the United Nations Summit for the Adoption of the Post-2015 Development Agenda, 26 September 2015, https://sustainabledevelopment.un.org/content/documents/20638myanmar.pdf

In addition, achievement of SDG 6 relies on achievement of SDG 15:

> Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

4.2 Strategic Objectives

The Strategic Objectives are divided into two groups:

- the actual services for water supply, sanitation and hygiene promotion, covering the components and actions necessary for developing, managing and operating the services:
  - **Water supply**:
    All the rural populace have access to effective, efficient and affordable services for improved water supply by 2030
  - **Sanitation**:
    All the rural populace live in open defection free communities; have physical and affordable access to sanitation that is safe, hygienic, secure, socially and culturally acceptable and that provides privacy and ensures dignity; will use and maintain the sanitation facilities; and will dispose of the domestic solid waste through effective, efficient and affordable services and other arrangements for solid waste recycling and disposal by 2030
  - **Hygiene behaviour change**:
    All the rural populace practice basic safe hygiene behaviour including use of improved toilets, washing hands with soap at critical times, safe disposal of infants' faecesand safe water storage and handling.
  - **WASH in Schools**:
    All schools provide a healthy physical learning environment through the provision, operation and maintenance of safe water supplies, adequate toilet facilities andhandwashing facilities, and solid waste disposal facilities for all students and staff, together with promotion of safe hygiene practices
  - **WASH in Health Facilities**:
    All health facilities have adequate water supplies, toilets and handwashing facilities for patients, carers and staff, and clinical and hazardous waste disposal facilities, waste water drainage and treatment appropriate for the type of health facility, and maintain a clean environment.
  - **WASH in emergencies and humanitarian action**:
    Effective preparedness and response for the provision of water supply, sanitationand handwashing facilities, and hygiene promotion for people affected by natural disasters, conflict and other emergencies.
- the means to deliver and sustain these services:
  - **Institutional arrangements**
    By the end of 2018, the institutional arrangements for Government, private sector and NGOs at State, Region, District and Township levels and communities at Village Tract level, and the legal instruments and human resources in place and able to increase and to sustain services for water supply, sanitation and hygiene practices
  - **Finance**
    Funding for capital and recurrent expenditure available in order for WASH services to be provided and operated sustainably

4.3 Targets

All the targets defined here should be in compliance with the Service Standards in Chapter 5 and other official guidance and standards.

Table 4.1: Water Supply Targets (%)[10]

	2015[11]	2020	2025	2030
Rural community supply				
Access to potable water supplies and improved water for other domestic uses	61	70	85	100
School supply				
Improved water supply		40	65	100
Rural health centre				
Improved water supply		50	75	100

Table 4.2: Sanitation Targets (%)

	2015	2020	2025	2030
Rural Villages				
Open defecation free (declared ODF)	0.3[12]	92	97	100
Solid waste management				?
Rural Households				
Access to safe sanitation (own or shared)	67.3[13]	80	90	100
Hand washing facilities	64	80	85	90
Schools				
Latrines adequate for boys and girls separately		40	65	100
Urinals for boys		40	65	100
Private space for girls for menstrual hygiene				
Hand washing facilities		40	65	100
Special facilities for children with disabilities		40	65	100
Appropriate Solid Waste Disposal				100
Rural health centre				
Latrines	50	70	85	100
Handwashing facilities	50	70	85	100
Waste water treatment systems				100
Clinical and hazardous waste disposal				100

Table 4.3: Hygiene Targets (%)

	2015	2020	2025	2030
Hygiene behaviours				
Use of improved toilet	67	80	90	100
Washing hands with soap at critical times*	40	55	70	80
Safe disposal of infants' faeces		60	70	100
Safe water handling in the home		55	70	80

* before handling food or eating
after using a latrine
after handling infants' faeces
after working in the fields

[10]Blank cells in these table indicate there is no reliable data available
[11]From 2014 Census data
[12]200 villages declared ODF at December 2015
[13]From 2014 Census data

5.Definitions of Services

In the absence of a clear definition of WASH services in policy and legislation, it is necessary for the Strategy to provide definitions of the various components of service.

Table 5.1: Rural Water supply

Quantity and quality Potable water (in accordance with the National Drinking Water Quality Standards (2014))	At least 1 gallon (5 litres) / person / day[14]
Improved water for other domestic uses*	9 gallons (40 litres) / person / day
Distance to waterpoint	220 yards (200 metres) one way maximum
People per waterpoint:	
Public tapstand from piped system	50 people
Deep tubewell with motorised pump	500
Deep tubewell with hand pump	150
Shallow tubewell with suction hand pump	50
Protected dug well	250 (depending on yield)
Ponds (not considered safe)	500

* Water for domestic uses (other than drinking and cooking) should be available from improved water supply systems, including piped, boreholes, protected wells, or from a protected and safely managed pond. Water should be free from odour and colour, with turbidity less than 5 NTU[15].

Table 5.2: Rural Sanitation

Household	Access to improved latrine (own or shared)
Solid waste management:	Biodegradable composting Recycling Safe disposal of residual waste

Table 5.3: School services

School water supply Drinking water Cleaning and handwashing Toilet flushing	 0.22 gallons (1 litre) 1 gallon (5 l) 1 gallon (5 l)	 per student and per staff per day
School sanitation		
toilets separate for boys and girls		
Toilet cubicles	1	per 40 girls
Toilet cubicles Urinals	1 1	per 40 boys
Toilet cubicles	1	For female staff*, with accessibility for girls with disabilities
Toilet cubicles	1	For male staff*, with accessibility for boys with disabilities

[14]For comparison:
Thailand: 45 litres of water per capita per dayfor all domestic uses, of which at least 5 litres for drinking water.
Vietnam: clean water of national quality standards with at least 60litres/capita/day
[15]Nephelometric Turbidity Units. Figure to be agreed

hand washing facilities	1	per 40 pupils
Special room for girls for menstrual hygiene management	1	For middle and high schools

* staff toilets at primary level may be combined for male and female, depending on the number of staff.

School facilities should conform to the forthcoming General Requirements for WASH in Schools.

Table 5.4: Health facility services

Type of facility	Water supply	Sanitation
Township hospital		
In-patient and staff	7 gallons (30 litres) /bed/day	▪ one per 20 users for inpatient settings (separate for female and male; ▪ at least four toilets per outpatient setting – one for staff, – for patients: one for females, one for males and one for children)[16]. ▪ Facilities for handwashing with soap for patients and staff
Out-patient	4.4 gallons (20 litres) /patient/day	
Station Hospital		
In-patient and staff	7 gallons (30 litres) /bed/day	
Out-patient	4.4 gallons (20 litres) /patient/day	
Rural Health Centre	4.4 gallons (20 litres) /person*/day	
Sub-health Centre	4.4 gallons (20 litres) /person*/day	

* persons to include carers and staff

All health facilities to have:

- clinical and hazardous waste disposal facilities
- waste water drainage, treatment appropriate to the type of facility and quantity of waste water produced, and disposal
- Hygiene and cleaning protocols in place

[16]WHO, 2008, Essential environmental health standards in health care

6.Principles

The National Water Policy (2014) provides only limited guidance for the domestic water supply and sanitation in rural areas. There are a number of detailed policy issues and principles that are established through this Strategy. These are given in this Chapter.

6.1 Sustainability

Sustainability of improved water supply and sanitation facilities and hygiene behaviours is a key objective of service delivery. Once established, systems should provide a permanent service to the users (and to those who access them in the future). The benefits of the water supply, the sanitation facilities and hygiene promotion should continue to be realised over a prolonged period of time. Essential factors are:

- The water resources should not be over-exploited; domestic water provision must be planned as part of the wider integrated water resources management.
- Pollution of the water resource should be prevented, in particular from poor sanitation, including waste water. The threat to domestic water supplies from pollution by mining, industry and agriculture is a critical concern in several states and regions.
- Services should be designed to be resilient to climate change and natural disasters in accordance with disaster risk reduction approaches.
- Provision for effective operation and maintenance, so that WSS facilities are maintained in a condition that ensures a reliable service.
- Equal involvement of men and women is positively correlated with improved sustainability of water supplies. Women, men and children increasingly share roles in sanitation uptake and sustaininghygiene behaviour change.[17]
- An effective enabling environment, with appropriate legislation, information, strong institutions with clear responsibilities at the appropriate level, supportive attitudes, and political will.
- Appreciation of the economic, social and health benefits by users and providers.
- Choice of appropriate service level and appropriate technologies.
- Financial viability based on affordability, capacity and willingness to pay, and financial management skills.
- An effective monitoring and management information system for regulating performance so that timely actions can be taken to address decline in services.

6.2 Monitoring and management information

Accurate and reliable data is essential for local management of WASH development and service operation, as well as for overall monitoring of the Sector. For this an integrated data collection and management system from the lowest operational level up Union level needs to be created and maintained. This systems needs to include collecting, compiling, analysis and use of the results at all levels for decision-making appropriate to the particular level. The system requires sustained effort and funding to be maintain its value for management and monitoring. It is, therefore, critical to design the system to collect only the information that is useful and needed. Collecting data that is not relevant or used is a waste of resources.

6.3 Disaster Risk Reduction and Climate Change

All services and infrastructure should be developed to be resilient to natural disasters, including risk assessment and reduction, and preparedness planning, in accordance with Myanmar Action Plan on Disaster Risk Reduction (MAPDRR) (2012) and the recent globally agreed Sendai Framework for Disaster Risk Reduction (2015-2030). The Goal of the Sendai Framework sets the overall guidance for development of WASH services as well as showing the way that existing and new WASH can contribute to reduction of risk from disasters:

[17] WSP, 2010, Gender in Water and Sanitation, Mainstreaming Gender in Water and Sanitation

Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience.

6.4 Water resource management

Planning, development and management of water resources need to be governed by a common integrated perspective considering local, regional, state and national context, having an environmentally sound basis, keeping in view the human, social and economic needs[18]. Mapping and monitoring of surface and ground water resources is essential for proper management of the resources.

6.5 Community based management

Communities, and in particular, women,who have primary responsibility for domestic water, sanitation and hygiene, should fully participate in decision making for and managing the provision of water supply and sanitation services. This includes decisions over whether to operate the services themselves or to contract a private sector operator to run the services on their behalf. Key aspects in community management participation, responsibility, authority, control, and accountability. These are explained more in Appendix 4.4.

6.6 Cost sharing for water supply

Communities should contribute a part of the capital cost of community water supplies, 100% of the operation and maintenance costs and a part of the cost of the advisory maintenance support service run by Townships. The Township authorities should determine the exact contributions to the capital cost and the maintenance support service in accordance with local economic conditions. Schools and health facilities and other institutions should pay for connections to a piped water supply.

6.7 Sanitation financing

A consistent policy on financing and subsidies for sanitation is essential, and must be applied by all organisations working in sanitation. Direct subsidies for sanitation infrastructure should be phased out. The public finance in the sector will be used to stimulate demand and develop the enabling environment including the availability of sanitation products, so that households pay for their own toilets. Subsidies may be provided but only to enable the poorest households to obtain toilets through alternative mechanisms, so excluding direct hardware subsidies.

6.8 Integration of water supply, sanitation and hygiene promotion

Where communities and households do not have access to improved water supply and improved sanitation, then development of services should integrate the water supply, sanitation, including solid waste management, and hygiene promotion components together.There are, however, substantial differences between these services and, therefore, the approaches needed for developing and providing them. In places already provided with water supply, it may only be necessary to develop sanitation, solid waste management and hygiene promotion as stand-alone components.

6.9 Operation and maintenance

User communities are responsible for operation and maintenance of the water supply service, through a representative Village Water Committee, supported by a township level O&M advisory support service.The VWC should have adequate representation of both

[18] Myanmar National Water Policy (2014)

women and men, ethnic minorities and other vulnerable groups. Operation and maintenance of household latrines is the responsibility of the individual household. Operation and maintenance of institutional latrines is the responsibility of the institution.

6.10 Decentralization and deconcentration of service provision and management

The provision and management of water supply and sanitation services and hygiene promotion in rural areas should conform to the Government's policy of decentralization, as defined in the FESR and other directives that may be issued from time to time.

6.11 Accountability and transparency

Organisations (Union, state, regional and township Government, schools, health centres, development partners, INGOs, national NGOs, etc.) have multiple accountabilities - downwards to electorates, beneficiaries, students and patients, partners and staff, and upwards to higher levels of Government, and donors (see Appendix 4.3). When developing, running and monitoring services and designing projects, programmes or other activities in the sector, all organisations should consider how their work and its results will affect each of these, and their responsibilities for them, both short-term and long-term.

6.12 Mainstreaming gender

During development and provision of services, including management, monitoring and evaluation, all organisations should mainstream gender. They should make women's and men's concerns an integral consideration in the design, implementation, monitoring, and evaluation of policies and service delivery. This should cover all political, economic and social aspects so that women and men benefit equally with dignity and safety from gender based violence, and inequality is not perpetuated; women and girls have WASH-specific needs different to men and boys, such as menstrual hygiene management and safe birthing. Gender should also be mainstreamed at a strategic level, so women and men are equally engaged in good governance and participation in decision-making for services, with capacity building to enable them to fulfil these responsibilities.

6.13 Mainstreaming disability

Development and provision of water supply and sanitation services shall conform to the Law on the Rights of the Disabled People (2015). From the 2014 Census data, 4.8% of the rural population have some form of physical disability[19]. During development and provision of services, including management, monitoring and evaluation, all organisations should mainstream disability. This includes the process of assessing the implications for people with disabilities of any planned action, including legislation, policies or programs, in any area, at all levels. It also means engaging women and men with disabilities to play a central role in discussions and decisions of such planning. Thus, in all provision of water supply and sanitation services and hygiene promotion the needs of persons with disabilities throughout the stages of the project cycle should be considered.

6.14 Equity and poverty

The SDG Goal 10 is to "reduce inequality within and among countries". Targets 10.2 and 10.3 define the principle of equity for the development and provision of WASH services:

10.2: By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status

[19]See Chapter 2: Main challenges for more detail.

10.3: Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard

In the context of sustainability, the term equity has to do with fairness - whether all people, regardless of sex, ethnicity, disability, socio-economic or other status, have similar rights and opportunities, basic needs to maintain an acceptable quality of life. It means that all people throughout a community, whether a village, town, city, or country, have these same basic needs that must be taken into consideration. This concept is often referred to as intra-generational equity, meaning equity among the present population.[20]

Equity is not just relevant to all people alive today. Inter-generational equity is concerned with fairness between current and future generations. This means striking a reasonable balance between satisfying people's needs now and setting aside enough to provide for the needs of their children and grandchildren in the future.[21]

In the WASH context, equity requires a focus on marginalized groups, especially the poorest of the poor. There are clear links between poverty and water and sanitation. Further guidance on equity and poverty are given in Appendix A4.1.

[20]http://www.sustainable-environment.org.uk/Principles/Equity.php
[21]http://www.sustainable-environment.org.uk/Principles/Equity.php

7.Strategic objectives, components and actions

Climate Change Adaptation and Disaster Risk Reduction

One of the objectives of the Myanmar Action Plan on Disaster Risk Reduction is to provide a conducive environment for mainstreaming DRR into development plans, and programs at the Union, State, Region, District, Township, and Village Tract levels. Climate change adaptation and disaster risk reduction are, therefore, cross-cutting issues that should be addressed in all the Strategic Objectives of this Strategy.

Myanmar is at risk from nine natural hazards, of which seven are relevant in WASH[22]:

- Cyclone
- Storm surge
- Floods
- Landslide
- Earthquake
- Tsunami
- Drought

Apart from earthquakes, these risks are likely to increase with climate change, with the additional risk of a rise in sea level affecting coastal areas, which may cause saline intrusion affecting groundwater.

Important national and international strategies and plans for disaster risk reduction and climate change adaptation are listed in Chapter 2, and details relevant to WASH are provided in Appendix A4.2.

It is now widely accepted that disasters are not unavoidable interruptions to development, to be dealt with solely through rapid delivery of emergency relief, but are the result of unmanaged risks within the development process itself. They are created when a hazard, such as a flood or earthquake, occurs where people, assets and systems are exposed and vulnerable to its effects.[23]

The incorporation of disaster scenarios and aspects in planning of infrastructure and institutional elements of water supply and sanitation systems is an important step towards disaster risk mainstreaming. Maintenance of systems is another important point to increase sustainability and reduce the vulnerability in case of a disaster.[24]

Climate resilience requires a focus on[25]:

- A reduction in the likelihood that individuals feel the effects of climate change and related shocks
- Strengthening the reliability of WASH services
- Strengthening capacities of governments and communities to increase climate resilience over time.

Increasingly, development and humanitarian practitioners are discovering the need for, and advantages of, using an approach that integrates concepts and practices from both disaster risk reduction and climate change adaptation.[26]

[22]Myanmar Action Plan on Disaster Risk Reduction (2012)

[23]Marilise Turnbull, Charlotte L. Sterrett, Amy Hilleboe, 2013, *Toward Resilience: A Guide to Disaster Risk Reduction and Climate Change Adaptation*, Emergency Capacity Building Project (ECB), Practical Action Publishing Ltd.

[24]WSSCC Reference Note, 2009, *Disaster risk reduction & emergency response for WASH*

[25]*WSSCC Reference Note, 2009, Disaster risk reduction & emergency response for WASH*.

Component 0.1: Disaster risk reduction and climate change adaptation

The process of risk assessment is the first step in understanding of a particular hazard, vulnerabilities of the exposed population, society and their assets, and the likelihood and the consequences of the hazard, including the magnitude and distribution of potential damage and losses that may occur. Risk assessment requires end-to-end engagement of partners and stakeholders through a collaborative and inclusive approach that supports national priorities and local capacities, and at the same time complies with internationally accepted standards.[27]

Outcome 0.1.1:

The impact of natural hazards on populations are mitigated through integration of adaptation and risk reduction for WASH services that are responsive to gender-specific needs and capacities, while creating spaces for meaningful participation of women and men as rights holders.

Actions:

- Conduct risk assessment at state/region and township levels[28]:
  - Establish the disaster risk context
  - Establish data domains
  - Risk assessment
    - Risk identification
    - Risk analysis
    - Risk evaluation
- Review potential impact of long term trends from climate change
- Incorporate disaster resilient designs into national and local standards for WASH infrastructure, considering human, social, economic, physical political dimensions of resilience
- Review and include responsibilities for DRR and CCA in WASH in rural communities, schools and health facilities within the management and coordination mechanisms at the appropriate levels

[26]WSSCC Reference Note, 2009, *Disaster risk reduction & emergency response for WASH*.

[27]Risk Assessment Roadmap

[28]*Risk Assessment Roadmap*

7.1 Water supply

Strategic Objective	All the rural populace will have access to effective, efficient and affordable services for improved water supply by 2030

Approach to water supply
Where the water resource is limited, access will have to be limited to the minimum quantities of water as specified in Chapter 4. In places where the water resource can provide more than the minimum quantity required, an approach for Multiple Use Water Services (MUS) can be considered. MUS is a holistic, participatory approach to water that improves livelihoods and health, protects the environment, increases sustainability, and ultimately improves people's lives. By addressing people's multiple water needs, MUS maximizes impact over the long term. For more information, see Appendix 5.1.

Component 7.1.1: Water resource management

Water demands to be given priority in the following order and shall be based on economic, social and environmental values of the water determinants[29]:
(a) Drinking Water, domestic use, water for people
(b) Water for Urban and Rural Sanitation
(c) Water for Food security
(d) Water for other uses (industries, hydro-power, beautifications, firefighting, etc...)

There is a need to map and monitor the country'swater resources to know the total available quantity and quality of surface and groundwater resources (replenishable as well as non-replenishable) in the country. This process should be fully participatory involving local communities. The mapping should be periodically updated.[30]

Outcome 7.1.1.1:
Water resources are managed equitably and sustainably so that there is adequate availability and provision for domestic use.

Actions:

- Coordinate mapping, monitoring and allocation of water resources for domestic use in accordance with IWRM principles and the National Water Policy
- Collect, compile and enter on a computer database all historical records of groundwater drilling logs, groundwater studies and other reports
- Establish and maintain a computer and internet based ground water data recording and information sharing system that is accessible by organisations involved in water resources, including private sector
- Prepare hydrogeological maps of Myanmar
- Run information campaign for public understanding of water resource management, conservation and protection

Component 7.1.2: Water supply design, planning and infrastructure

- Provision of new water supply systems (to replace unimproved sources)
- Replacement of life-expired water supply systems

[29]Myanmar National Water Policy (2014)
[30]Myanmar National Water Policy (2014)

  - Upgrading of improved systems to a higher level of service, including conversion of existing point source systems to piped systems

There are two parts to development of water supply services. These are the same for new provision, replacement of life-expired systems and for conversion from point sources to piped systems:

- **Development, planning and design**, including; preparation of proposals; appraisal and prioritisation; submission for funding
- **Provision of infrastructure**, including community preparation and mobilisation; explanation of feasible technical options (including abstraction from the source, treatment (if required) and distribution; decision-making on preferred technical option; making agreements; formation of water user groups; training in community management and maintenance, distribution and sale of WASH products; and construction of infrastructure

The first step in planning for service development and delivery is to determine the existing coverage and the functionality of the service. The current data management does not provide a clear picture in this. The most up to date data on populations and reported coverage is the 2014 Census. This gives population data at village tract level, and township level data on people's access to water sources for drinking water and other domestic water, and type of sanitation used. It does not, however, provide information on systems that have fallen into disrepair. The census data reports what people say they use at present, not the existence of functioning or non-functioning water supply facilities.

Outcome 7.1.2.1:
Township, state and Region inventories of existing water supply services and their operational status.

Actions:

- Prepare guidance and a standard format for collection of information on existing systems (including location with GPS data, populations served, actual numbers of users, any communities or groups excluded from the service, costs of operation, revenue from users, etc.)
- Carry out the survey of existing systems and enter on a database
- Add data on new services (as and when they are developed)

This inventory should subsequently be developed to become part of the management information (monitoring) system (Component 7.3 in the Institutional Arrangements).

Outcome 7.1.2.2:
National technical and development process design standards for rural water supply.

Climate change is likely to increase the variability of water resources affecting human health and livelihoods. Therefore, special impetus should be given towards mitigation at micro-level by enhancing the capabilities of community to adopt climate resilient technological options.[31] This should be applied in the development of water supply standards.

Actions:

- Review existing and potential technology and technical standards for the various types of water supply technology (abstraction from the source, water treatment, distribution,

[31]Myanmar National Water Policy (2014)

metering, etc.) (with reference to JMP definitions[32]), in terms of appropriateness, durability, and affordability of capital and recurrent costs, taking into account climate change and resilience to natural disasters

- Review existing processes for involving and preparing communities in development, construction, operation and maintenance of water supply services and prepare guidelines
- Prepare new national technical design and construction standards, taking into account the need for some variation by states and regions and climate change
- Prepare procedures for determining whether to rehabilitate or replace existing non-functioning water supply systems

The development of standards and procedures should be done as a consultative process led by DRD at Union level and involving Region and State DRDs, NGOs and private sector. A benefit of this would be to contribute to building relationships between Nation, States and Regions.

Outcome 7.1.2.3:
Women and men, girls and boys living in villages and village tracts, and schools and health facilities have equitable access to water supply services

Actions:

- Prepare medium-term and short-term plans for the development of new water supply services, repair, rehabilitation or upgrading of existing water supply systems, including prioritisation
- Identify support offered by government and development partners, including NGOs
- Promote application process for new infrastructure provision for water supplies
- Prepare communities, including women,for planning, management of construction, operation and maintenance of water supply services
- Choice of technology by the community, and women in particular, based on a full understanding of the range of feasible options, including affordability of capital and operating costs, for the particular location.
- Provision of new infrastructure
- Quality control of new construction in accordance with the design standards
- Funding of capital cost of new infrastructure

Component 7.1.3: Water quality standards and water safety plans

Rural water supplies for communities should be available from improved sources, of which at least 1 gallon (4.5 litres) per person for drinking and cooking should conform to the Drinking Water Quality Standards[33].

In areas where it is not possible to provide communal supplies that meet the Drinking Water Quality Standards, household water treatment will be promoted. This should include developing the supply chains so that people can buy the filters in the local market at affordable prices, testing and approving filters, and training on safe water handling in the home.

[32]Joint Monitoring Program of WHO and UNICEF
[33]Ministry of Health, 2014, *National Drinking Water Quality Standards*

The testing protocol for un-piped water supplies in the Standards should be enhanced to provide regular retesting of the water point after commissioning, not just “once initially”. Testing facilities and/or mobile testing will need to be developed for this and for small piped water supplies serving communities of less than 5,000 population.

Outcome 7.1.3.1:
Routine testing of water supplies to ensure that the allocation for drinking use conforms to the Drinking Water Quality Standards

Actions:

- Develop an additional testing protocol for routine testing of water from un-piped sources of water used for drinking
- Develop water testing facilities in each State and Region (laboratories or mobile testing systems, as appropriate)
- Conduct routine water quality monitoring and recording
- In the case of negative results, take action to identify the cause of pollution, and eliminate the cause, repair or protect the source from pollution

Outcome 7.1.3.2:
Each Township and each village has an operational water safety plan

Actions:

- Prepare guidance on preparing, using and maintaining water safety plan (WSP) for use in the local context, based on the guidance published by WHO and other sources[34]
- Prepare, implement and regularly review individual Township and Village Water Safety Plans and village Water Safety Plans, taking action as necessary to protect water supplies.
- In the case of a risk identified in the WSP, take action to identify the cause of the risk, and eliminate the risk, repair the supply system or protect the source from risk

Outcome 7.1.3.3:
People use safe practices for handling and use of water for domestic and drinking purposes

Actions:

- Promote safe water handling through hygiene behaviour change
- Promote the use of household water treatment where appropriate, including establishing supply chains to make the filters available in local markets

Component 7.1.4: Operation and maintenance

Operation refers to the everyday running and use of a water supply facility and service. The proper operation of a water supply facility results in its optimum use and contributes to a reduction in breakdowns and maintenance needs. It involves several activities:

[34]World Health Organization, 2009, *Water Safety Plan Manual: Step-by-step risk management for drinking-water suppliers*
Frank Greaves and Claire Simmons, 2011, *Water Safety Plans for communities: Guidance for adoption of Water Safety Plans at community level*, Tearfund

- Major operations required to convey safe drinking water to the users, e.g. starting and stopping a motorised pump, the supply of fuel and the control of valves.
- The correct handling of facilities of facilities by users to ensure long component life, e.g. the handling of a rope and bucket at a well, hand pump use, and the use of taps at a stand-post.
- Keeping water supply facilities and surroundings clean.
- Collecting revenue, tariffs and user fees for the water supply and using these to pay for the operating costs such as fuel for pumps and maintenance repairs
- Management of these activities

Maintenance refers to the activities required to sustain the water supply in a proper working condition. Maintenance can be divided into:

- Preventive maintenance – regular inspection and servicing to preserve assets and minimise breakdowns.
- Corrective maintenance – minor repair and replacement of broken and worn out parts to sustain reliable facilities.
- Crisis maintenance – unplanned responses to emergency breakdowns and user complaints to restore a failed supply.

Water users are expected to form Village Water Committees to manage the upkeep of their new communal water facilities and collect money to pay for operation and maintenance. Experience in other countries shows that after a new water point is built, it works for a while, then poorly for another year or two, before it finally breaks down. Even if users manage to undertake minor repairs they struggle with major ones. The pre-construction community mobilization and training that is intended to address this challenge is not always carried out, or is of poor quality. In addition, there is an assumption that all communities and all schemes face the same set of basic challenges and require the same amount of training and preparation time.

What has become clear is that where a committee is established, it usually needs backup support from external agents such as a local authority or local NGO in order to remain motivated, and to retrain, or train new committee members and caretakers. Even good community management structures cannot keep infrastructure in working order if they have not been properly trained and are hampered by lack of access to spare parts or skilled technical services.[35] A maintenance support system run by the Township should be established to provide this support service.

The key role of women in the sustainable use and management of water supply systems and their interest in effective operations and maintenance needs to be acknowledged. Women should be included in all training opportunities (including technical training) and be active decision makers in Village Water Committees, and not automatically given bookkeeping tasks.

Outcome 7.1.4.1:
Rural populations have sustained access to water supply services

[35]Rural Water Supply Network, 2010, Perspectives No 4: *Myths of the Rural Water Supply Sector*, http://www.rural-water-supply.net/en/

Actions:

- Develop procedures for establishment of Village Water Committees (with adequate representation of women, and marginal groups such as the disabled and ethnic minorities)and training for the operation and maintenance of village water supply systems
- Implementation of procedures during the construction of new water supply systems and for existing water supply systems
- Develop guidance manual on management including financing, operation and maintenance of rural water supply systems for use by VWCs
- Management of operation and maintenance of water supply systems by VWCs, including financial management
- Township Operation and Maintenance support team provides ongoing advisory support to Village Water Committees
- Establishment of supply chains for Village Water Committees to obtain replacement parts and treatment chemicals for their water systems.
- Establish and run a system for regulation and performance management of rural water supply systems

7.2 Sanitation

Strategic Objective	**All the rural populace will live in open defection free communities;have physical and affordable access to sanitation that is safe, hygienic, secure, socially and culturally acceptable and that provides privacy and ensures dignity[36]; will use and maintain the sanitation facilities; and will dispose of the domestic solid waste through effective, efficient and affordable services and other arrangements for solid waste recycling and disposal by 2030**

Component 7.2.1:Increasing access to household sanitation and eliminating open defecation

According to the 2014 Census, the rural population of Myanmar has relatively high coverage with sanitation compared to other countries in the region. Open defecation, however, remains a significant challenge in many rural areas.There is a lack of resilience in the infrastructure for household latrines to hazards such as flooding. The availability of suitable, affordable technical designs for difficult areas such as flood prone areas, high groundwater areas, and vulnerable area such as river banks is a challenge.

International experience has shown that traditional approaches to improving sanitation, which are aimed at building facilities, have not resulted in significant and sustained sanitation coverage. More promising strategies are now focused on creating demand for improved sanitation by changing behaviours while strengthening the availability of supporting products and services[37].

Latrines are consumer products; their design and promotion should follow good marketing principles – including a range of options and designs attractive to consumers and therefore based on consumer preferences, affordability, and suitability for local environmental conditions.[38]

Household access to latrines alone is not sufficient for safe management of excreta. Human excreta can only be considered to be safely managed whenit is safely treated in situ or transported to a designated disposal/ treatment site before being re-used or returned to the environment. Sanitation should be considered as a system, in which the latrine is only one part.

To make the best use of the limited public funding available for sanitation to bring about the biggest change, approaches to sanitation will focus on the creation of conditions for people and households to want toilets and to be able to obtain these for themselves. This will include services to maintain these in the long term, such as emptying of latrine pits and desludging septic tanks.

Efforts in sanitation will address:

[36]Wording adapted from United Nations General Assembly Resolution 70/169 passed 17 December 2015
[37]WSSCC & WHO (2005), Sanitation and hygiene promotion: programming guidance, http://www.who.int/water_sanitation_health/hygiene/sanitpromotionguide/en/
[38]WSSCC (1995), Working Group on the Promotion of Sanitation

- **Hygiene behaviour change to eliminate open defecation** through approaches such as Community Led Total Sanitation (CLTS).
- **Sanitation marketing** of a range of toilet designs that are appropriate, resilient to natural disasters, and affordable, particularly for poorer people. This will include upgrading existing toilets.
- **Building the capacity of the private sector** and the enabling conditions (regulations, permits, access to finance) for small entrepreneurs to provide sanitation services in rural areas
- **Development of financing mechanisms**, such as microfinance, to enable poorer households to buy toilets
- **Further study** using frameworks such as SaniFOAM[39] to understand sanitation behaviours and develop effective approaches to sanitation

Outcome 7.2.1.1:
People live in open defecation free communities and households buy, construct and use hygienic toilets.

Actions:

- Adapt approaches such as CLTS, where appropriate, and identify other possible approaches to change hygiene behaviour for eliminating open defecation
- Apply approaches for motivating communities and households to change sanitation behaviour
- Conduct formative research in States and Regions for developing sanitation marketing for provision of new toilets and upgrading of existing toilets
- Develop the capacity of small scale private sector and markets to provide sanitation products and services available in townships, village tracts and communities
- Households construct and/or purchase their own toilets
- Develop microfinance products and loans and make these available for households to buy latrines themselves
- Develop subsidy arrangement to enable the poorest to buy latrines
- Apply verification and certification procedures in all villages which claim ODF status

Component 7.2.2: Increased range of technical options

In the past, only one type of toilet has been promoted: the “fly-proof latrine”. In order to allow people to choose a toilet that more closely meets their needs and aspirations, a range of affordable toilet designs will be developed and adapted from experience in other countries in the region. These should include technologies for latrines to be built in difficult environments (high water table, flood-prone areas, river banks, etc.) and designs that are resilient to natural hazards.

It will also be necessary to consider safe sanitation “systems”, not just the toilet. A latrine, whether a pit latrine or a septic tank, will affect the environment in which it is constructed and used. Designs and systems must be developed to safeguard the environment, in particular to prevent a risk to public health and pollution of water resources.

[39](Devine, 2009) *Introducing SaniFOAM: A Framework to Analyze Sanitation Behaviors to Design Effective Sanitation Programs,* published by WSP

In this respect, the adequacy and safety of existing latrines need to be reviewed in order to progressively improve the designs and the availability of these to householders so that they climb the sanitation ladder. Designs suitable for difficult areas also need to be addressed.

Outcome 7.2.2.2:
A range of affordable options for toilets are available for people to select from.

Actions:

- Identify a range of technical options for toilets from low cost to more expensive, and publish and disseminate the designs in a format suitable for use at community level
- Review research carried out in the SE Asia region into toilets for difficult environments, and adapt these to the different conditions in Myanmar

Component 7.2.3: Operation and maintenance of sanitation facilities

Individual households will be responsible for the maintenance, upkeep and replacement of their toilets.

Pit and septic tank emptying
There will be an increasing need to empty the latrine pits of dry and pour-flush latrines, and to remove the sludge from septic tanks, commonly known as septage services. Townships should work with private sector to develop septage services, with appropriate local legislation, regulation, financing and safe transport, treatment and disposal of the fecal sludge.[40]

Outcome 7.2.3.1:
Service providers are available and practice safe, affordable septage management in accordance with local official operating procedures.

Actions:

- Develop guidance on septage management for townships
- Develop local legislation and procedures, including financing by users, for septage management and pit emptying
- Develop facilities for treatment and disposal or reuse of septage sludge and pit latrine contents
- Develop the capacity of small businesses for the provision of safely managed septage services
- Operate and regulate pit and septic tank emptying services

Component 7.2.4: Solid waste management

Solid waste is part of the wider environmental sanitation necessary for ensuring public health. Indiscriminate disposal of solid waste can lead to problems of mosquito breeding (with associated risks of malaria and dengue fever), rodents, can block drainage and can have a detrimental impact on the environment and people's livelihoods such as fisheries. Removal and disposal of solid waste has not been addressed in rural areas, although it is

[40] Further information in Appendix A5.2

one of the Strategies defined in the Myanmar Water Policy: “To ensure efficient and proper disposal of solid and liquid wastes including human and animal excreta”.

The problem of solid waste appears to be growing, with the increased use of packaging for products sold in rural areas, and the increased use of plastic bags, bottles and other containers. Since developing a service for solid waste would be starting from nothing, the first steps would be research into the scale and needs, including waste types and volumes, and the potential markets for recyclable products, costs and returns.This would then be used to define the steps for developing services for dealing with bio-degradable waste, recyclable materials, and safe disposal of residual waste, or other ways of addressing the problem appropriate to the geographic area. Development of national and local legislation for governing the management of solid waste may be necessary.

The general principles of solid waste management are based on three Rs:

- Reduce: preventing and minimising the production of waste in the first place
- Reuse: considering it as a resource rather than waste
- Recycle: by segregating waste into biodegradable and non-biodegradable; composting the biodegradable waste for recycling as fertiliser for agriculture; further segregating the non-biodegradable waste into materials such as plastics, paper and metals that can be recycled.

There may be livelihood and economic opportunities in the practice of the 3 Rs, depending on the local potential for developing value chains for waste products. The residual waste after the 3 Rswould then need to be safely disposed, usually in land-fill.

Outcome 7.2.4.1:
Effective, efficient and environmentally safe services for solid waste management in rural areas.

Actions:

- Carry out research into the scale and needs, including waste characterisation studies; identification of economic benefits and recycling chains; costs of running a service; and ways of reducing waste
- Develop guidance and procedures for establishing a rural solid waste service
- Adapt appropriate technologies (from Myanmar and other countries) for composting and recycling wastes and develop guide on design options
- Promote reduction of waste and segregation of wastes at source (household)
- Promote income generating opportunities for cooperative and self-help groups in composting and recycling
- Develop the institutional arrangements, including local legislation, on procedures and financing for solid waste management
- Operate and regulate SWM services

7.3 Hygiene behaviour change

Strategic Objective	**All the rural populace will practice basic safe hygiene behaviour including use of improved toilets, washing handswith soap at critical times, safe disposal of infants' faeces and safe water storage and handling.**

Recent Knowledge, attitude and practice (KAP) surveys have shown that although knowledge of safe hygiene is high, actual practice of safe hygiene behaviour is low. Understanding the reason for this gap between knowledge and practice, and then using that understanding to improve approaches to hygiene promotion, is key to getting change in behaviour.

It is now generally accepted that the number of risk behaviours to address should be limited. Therefore the key risk behaviours that will be addressed through hygiene promotion:

- Open defecation
- Not washing handsat critical times and not using soap
- Drinking unsafe water
- Unsafe disposal of infants' faeces

A Communication for Development (C4D) approach has been adopted by the Environmental Health Bureau using the "Four Cleans" booklets (clean hands, clean food, clean water, clean latrines) as the guidance for hygiene promotion. NGOs use their own approaches and materials. EHB addresses menstrual hygiene management as part of reproductive health care, with funding from other sources.

Component 7.3.1: Adoption of safe hygiene behaviour

Outcome 7.3.1.1:
People understand and adopt safe hygienic behaviour in relation to sanitation and water supply and the four key risk behaviours.

Actions:

- Carry out formative research to understand hygiene behaviours, and motivations and attitudinal barriers to those behaviours among identified target groups
- Develop guidance in local languages covering approaches, methods, standard messages and tools that, by addressing the reasons for the gap, are effective in achieving behaviour change
- Develop and provide training to Township level hygiene promotion teams on the new approaches
- Carry out baseline and follow-up surveys of hygiene practices and report the results to State/Region DPH
- Conduct hygiene behaviour change campaigns, using the evidence-informed Communication for Development (C4D) approaches or other effective approaches, in communities and households
- Conduct regular refresher training for communities for hygiene behaviour change

Component 7.3.2: Safe disposal of infants' faeces

Safe disposal of children's faeces is as essential as that of adults' faeces.Although there is a common belief that children's faeces are not harmful, exposure to children's faeces could be

more risky than exposure to adults' faeces. The safest way to dispose of a child's faeces is tohelp the child use a toilet or latrine or, for very youngchildren, to put or rinse their faeces into a toilet orlatrine.[41]

Outcome 7.3.2.1:
Safe disposal of infants' faeces

Actions:

- Conduct research on knowledge and practice of infant faeces disposal
- Develop guidelines and actions to change disposal practices of infant faeces, such as behaviour change promotion through health centres, midwives, mother groups
- Ensure ODF verification includes infant faeces

Component 7.3.3: Environmental sanitation

Outcome 7.3.3.1:
People live in clean and hygienic household, community and wider environment.

Actions:

- Develop and conduct an environmental impact and behaviour change promotion campaign for reduction of solid waste, and segregation of solid waste into biodegradable waste and non-biodegradable waste for collection
- Develop and run a promotion campaign for safe reuse and/or disposal of domestic waste water

[41] WSP (2015), Management of Child Feces: Current Disposal Practices, Water and Sanitation Program: Research Brief, WSP and Unicef, http://www.wsp.org/sites/wsp.org/files/publications/WSP-CFD-Summary-Brief.pdf

7.4 WASH in schools

Strategic Objective	**All schools provide a healthy physical learning environment through the provision, operation and maintenance of safe water supplies, adequate toilet facilities and handwashing facilities, and solid waste disposal facilities for all students and staff, together with promotion of safe hygiene practices**[42]

Table 7.4.1: Academic Structure of Basic Education System

Level		Number of years	Age	Grade
Kindergarten		1	5+	0
Primary	Lower	3	6+ to 8+	1 to 3
	Higher	2	9+ to 10+	4 to 5
Middle		4	11+ to 14+	6 to 9
High		3	15+ to 17+	10 to 12

When a school lacks basic water supply and sanitation facilities and its students have poor hygiene habits, the incidence of major childhood illnesses such as diarrhoea and helminth infections among its students will be high. This, in turn, adversely affects school children's participation, lowering enrolment rates, increasing absenteeism, and contributing to poor classroom performance and early school dropout. It also decreases learning capacity as measured in educational performance, outcomes, and productivity. The lack of appropriate facilities may discourage children from attending school; girls who are menstruating, in particular, may not go to school because of the lack of privacy.[43] Safety and privacy is essential for all girls and boys using WASH facilities at school.

Schools also offer an opportunity to reach children, who at one point or another are in the care of the school, with a "model" for sanitation. Because the unsanitary conditions typical of many school toilets send the wrong message to students about the importance of sanitation and hygiene, schools can become ideal places to establish good hygiene (and other) behaviours as well as to provide strong environmental models that can serve as examples. Children who learn good hygiene practices in school can also become important health promoters at home.[44]

Children with disabilities – physical, sensory (blindness, deafness), intellectual, or mental health impairments – are recognised as one of the groups least likely to be enrolled in school. 5% or less complete primary school, leaving them more at risk of poverty. Disabled girls are particularly affected. Estimates for the additional cost of making a school latrine accessible range between 3 and 8% of the overall costs of the latrine. The most cost-effective way to improve access for children with disabilities is to incorporate accessibility into the design from the outset (inclusive design) rather than making expensive changes later. Inclusive design means a user-friendly, child-friendly design, which benefits all users, including adolescent girls, small children, and children who are sick. However well designed the latrine, other factors such as location, distance and approach path affect accessibility and need to be part of planning and design.[45]

[42]Adapted from: UNICEF and IRC, 1998. Towards Better Programming- A manual on school sanitation and hygiene. Guidelines Series, in WELL FACTSHEET: School Sanitation and Hygiene Education, Author: MariëlleSnel, May 2003

[43]Mooijman, A., Berg, C. v. d., Jensen, L. O., & Bundy, D. (2005). *Hygiene, Sanitation and Water in Schools: Introduction to the Web-based toolkit*. www.schoolsanitation.org: The World Bank, UNICEF, WSP

[44]*Mooijman, A., et al.* (2005)

[45]WEDC, 2011, Briefing Note 1,Inclusive design of school latrines –how much does it cost and who benefits?

The Government is currently piloting an approach to WASH in schools called “Thant Shin Star”, which is adapted from the global “Three Star Approach for WASH in Schools” developed by UNICEF and GIZ. The details and potential for adoption of this approach as a national programme are shown in Appendix 4.

Component 7.4.1: School WASH facilities

The standards for provision of water supply and sanitation facilities are given in Chapter 4 and the General Requirements for Water, Sanitation and Hygiene in Schoolsdue to be published in April 2016.

Outcome 7.4.1.1:
Schools have and maintain improved water supply and sanitation facilities.

Actions:

- Approve and adopt a national service standard which defines the following:
  - the number of school students and staff per latrine, defined separately for girls and boys and staff and girls and boys with disabilities
  - safe and private spaces for girls for menstrual hygiene management
  - the provision of water supplies, from the schools own source or from the community piped water supply with drinking water to conform to the National Drinking Water Quality Standards
  - for the reduction, reuse and recycling of solid waste and the safe disposal of residual waste produced in schools, including sanitary products used by girls and female teachers
- Review and improve design and construction standards (including the source of water, abstraction, treatment and delivery) for WASH facilitiesin the different levels of school, allowing for variation adapted to different geographic and cultural conditions
- Construct appropriate water supply,sanitation facilities in all schools
- Prepare and maintain an inventory of existing water and sanitation facilities, including functionality, in all schools (pre-primary to high schools, rural and urban) for management and monitoring purposes
- Operate and maintain the water supply, sanitation facilities, including payment of tariffs to the water supplier, and ensuring continual supply of soap, toilet paper and cleaning products
- Oversee the performance and management of individual school water supplies, sanitation and solid waste management

Component 7.4.2: School hygiene behaviour change

DMER is currently reviewing and revising the school curriculum in a staged process, with KG to be completed in 2016, Grade 1 in 2017, etc. Life skills as a subject is covered from primary level upwards, with health and hygiene introduced at upper secondary level. Life skills is not an examination subject. Aspects of hygiene are also included in natural science at primary level. At secondary level subjects relevant to WASH, including the water cycle, water use and the environment, are covered in science, geography and life skills.Basic hygiene behaviour should also be included in pre-primary education.

The effectiveness of this teaching and training in terms of improved hygiene behaviour needs to be assessed more systematically on an ongoing basis. Monitoring of the

performance of teachers, in particular for the non-examined life skills subject, needs to be strengthened.

The school environment also offers an opportunity for after-school activities such as school health clubs, child-to-child learning, youth groups, etc.

Outcome 7.4.2.1:
Students understand and practice safe hygiene behaviour, and are agents of change to promote this in their homes and communities.

Actions:

- Review,develop and provide life skills-based education (including menstrual hygiene and its management) as part of the core curriculum to accompany the infrastructure provision
- Strengthen the enabling environment to enable teachers to support girls to safely, effectively manage with dignity their menstruation at school, with menstrual hygiene education to girls in primary, middle and high schools, availability of sanitary products at school
- Review, develop and provide teachers with pre-service and in-service training on the hygiene part of life skills-based education, including practical training methodologies
- Monitor the performance of teachers in the teaching and training of life skills
- Research the effectiveness of the existing teaching materials and teacher's teaching and training performance in changing hygiene behaviour of students and all levels, and the wider impact of this on families;use the findings of the research to improve the teaching of the relevant subjects
- Research and develop appropriate after school activities to promote sanitation behaviour change

Component 7.4.3: Environmental sanitation in Schools

Outcome 7.4.3.1:
Staff and student understand the importance of maintaining a clean and safe environment in the school and the school environmental sanitation is sustained.

Actions:

- Develop appropriate systems and facilities for:
  - the reduction, reuse and recycling of solid waste and the safe disposal of residual waste produced in schools (including used menstrual hygiene products)
  - The treatment of waste water and effluent from septic tanks, hand washing and shower facilities and cooking facilities, with potential to re-use the waste water for kitchen gardening and toilet flushing
- Construct, operate and maintain appropriate solid waste management facilities and waste water treatment facilities in all schools
- Develop and run practical training modules for awareness raising of students and staff on the importance of environmental sanitation
- Prepare and implement a regime for regular cleaning of schoolswith clear roles and responsibilities and budget
- Oversee the performance and management of individual school water supplies, sanitation, solid waste management, waste water management and overall cleanliness of the school environment.

7.5 WASH in health facilities

Strategic Objective	**All health facilities have adequate water supplies, toiletsand handwashing facilities for patients, carers and staff, and clinical and hazardous waste disposal facilities, waste water drainage and treatment appropriate for the type of health facility, and maintain a clean environment.**

Component 7.5.1: Water supply in Health Facilities

Outcome 7.5.1.1:
Health facilities have improved water supply for patients, carers and staff.

Actions:

- Develop a national standard for the quantity of water per in-patient and out-patient, and health staff
- Develop a national standard for the design of water supply facilities, taking into account the special accessibility needs of a wide range of users such as children, pregnant women, sick patients, older people and patients with disabilities, with adaptation to different geographic and ethnic contexts and different technical options for water supply (own source or connection to community piped supplies)
- Prepare and maintain an inventory of water facilities, including functionality, in all health facilities
- Construct appropriate water supply facilities in all health facilities, taking water either from its own source or from community piped supplies
- Operate and maintain the water supply facilities, including payment of tariffs to the water supplier
- Oversee the performance and management of individual health facility water supplies

Component 7.5.2: Sanitation in Health Facilities

Outcome 7.5.2.1:
Health facilities have improved sanitation facilities for patients, carers and staff.

Actions:

- Develop and adopt a national service standards for the number of toilets per in-patient and out-patient, defined separately for males and females, and the number of toilets for health staff, and providing facilities adapted to the special needs of the disabled, the elderly, pregnant women, etc.
- Develop a national standard for the design of sanitation facilities, taking into account the special accessibility needs of a wide range of users such as pregnant women, sick patients, older people and patients with disabilities, with adaptation to different geographic and ethnic contexts
- Prepare and maintain an inventory of sanitation facilities, including functionality, in all health facilities
- Construct appropriate sanitation facilities in all health facilities
- Operate and maintain the sanitation facilities

- Prepare and implement a regime for regular cleaning of health facilities including infection prevention protocols
- Oversee the performance and management of sanitation and general cleanlinessin individual health facilities

Component 7.5.3: Clinical and hazardous waste disposal

"Waste generated by health care activities includes a broad range of materials, from used needles and syringes to soiled dressings, body parts, diagnostic samples, blood, chemicals, pharmaceuticals, medical devices and radioactive materials"[46].

"Poor management of health care waste potentially exposes health care workers, waste handlers, patients and the community at large to infection, toxic effects and injuries, and risks polluting the environment. It is essential that all medical waste materials are segregated at the point of generation, appropriately treated and disposed of safely"[47].

"While hazardous industrial and medical wastes are, by definition, not components of municipal solid waste, they are normally quite difficult to separate from municipal solid waste, particularly when their sources are small and scattered. Solid waste management systems should therefore include special measures for preventing hazardous materials from entering the waste stream and – to the extent that this cannot be ensured – alleviating the serious consequences that arise when they do."[48]

The health facility should be responsible for the hazardous waste it generates. Non-hazardous waste should be segregated and collected through the local solid waste management system (under Strategic Objective: Sanitation)

The following is adapted from WHO, 2014, Safe management of wastes from health-care activities[49].

Outcome 7.5.3.1:
Safe management and disposal of hazardous wastes generated by health care facilities.

Actions:

- Develop national guidelines for clinical and hazardous waste management in health care facilities covering:
  - Assignment of responsibilities and management structure
  - Assessment of waste generation
  - Development of a health facility waste-management plan
  - Implementation of the waste-management plan
- Develop standard designs for segregation of non-hazardous and hazardous wastes, and for treatment and safe disposal of the range of hazardous wastes
- Construct waste management facilities for hazardous wastes
- Operate and maintain the waste management systems

[46] http://www.who.int/topics/medical_waste/en/
[47] *http://www.who.int/topics/medical_waste/en/*.
[48] Peter Schübeler, 1996, *Conceptual Framework for Municipal Solid Waste Management in Low-Income Countries*, SKAT for UNDP/UNCHS/WORLD BANK-UMP
[49] http://www.healthcare-waste.org

- Oversee the performance and management of individual health facility waste management systems

Component 7.5.4: Waste water drainage, treatment and disposal

Wastewater is produced from washbasins, showers, sinks, etc. (grey water) and from flushing toilets (black water). Waste water should be removed in standard waste drainage systems to on-site disposal systems (or, where available, off-site sewers connected to sewage treatment works). All open wastewater drainage systems should be covered, to avoid the risks of disease vector breeding and contamination from direct exposure.[50]

Small quantities of infectious liquid wastes (e.g. blood or body fluids) may be poured into sinks or toilets. Most pathogens are inactivated by a combination of time, dilution and the presence of disinfectants in the wastewater. Toxic wastes (e.g. reagents from a laboratory) should be treated as health-care waste;they should not be poured into sinks or toilets that drain into the wastewater system.[51]

Outcome 7.5.4.1:
Safe management and disposal of liquid wastes generated by health care facilities.

Actions:

- Develop national guidelines for the development and operation of waste water systems in health care facilities covering:
  - Assignment of responsibilities and management structure
  - Assessment of waste water generation
  - Operation of the waste water management system
- Develop standard designs for waste water treatment systems, based on the DEWATS[52] approach or other suitable approaches, and disposal of treated effluent
- Construct waste water treatment facilities for each health facility (unless there is already a sewered connection to a treatment plant with the capacity to treat the liquid wastes from the health facility)
- Operate and maintain the waste water treatment systems
- Oversee the performance and management of individual health facility waste water management systems

[50]WHO, 2008, Essential environmental health standards in health care
[51]WHO, 2008, Essential environmental health standards in health care
[52]See, for example, http://www.borda-net.org/basic-needs-services/decentralized-wastewater-treatment.html

7.6 WASH in emergencies and humanitarian action

Strategic Objective	**Effective preparedness and response for the provision of water supply, sanitation and handwashing facilities, and hygiene promotion for people affected by natural disasters, conflict and other emergencies**

As well as natural hazards, there are humanitarian needs as a result of conflict for which preparedness and response are necessary.

The Disaster Management Law (2013), and the Disaster Management Rules (2015) set out the roles and responsibilities of government agencies in both natural and man-made disasters. The lead agency for Government is the Relief and Resettlement Department (RRD) within the Ministry of Social Welfare, Relief and Resettlement. More information on disaster management organisation and structure is given in Appendix A5.6.

There are three parts to humanitarian action:

- Emergency Preparedness
- Emergency response
- Early recovery

Component 7.6.1: Emergency preparedness for WASH

Outcome 7.6.1.1:
Policies, plans, standards, procedures and capacity are in place ready for humanitarian responses for WASH at national, state/region, district and township levels.

Actions:

- Coordinate all preparedness activities
- Conduct capacity assessments for effective and timely WASH response: personnel, systems, procedures, leadership and coordination arrangements, etc.
- Develop standard operating procedures for WASH in accordance with Disaster Management Law, including procedure for evaluating and measuring effectiveness of humanitarian response and ensure corrective action
- Provide training and capacity building to government and NGOs staff and field workers on systems and procedures for humanitarian response in WASH
- Develop contingency plans for different types and scales of potential disasters at Union, State/Region, District and Township levels
- Establish appropriate contingency stocks for emergency items for water supply, sanitation and hygiene kits (including menstrual hygiene products)
- Develop accountability mechanisms covering disaster-affected populations, government agencies at national, state/regional and township levels, other humanitarian actors
- Develop standards for WASH basic services to be achieved in the different stages of an emergency response
- Prepare standard modular designs for sanitation systems, including treatment of effluent from toilets and septic tanks and wastewater,for use in displacement camps and evacuation centres

- Establish effective and efficient finance mechanisms, including protocols for rapid cash transfers to partners and cash for work
- Develop national and local partnerships for potential humanitarian response in WASH, including private sector
- Prepare IEC materials and conduct information and communication campaigns at community level for emergency preparedness

Table 7.6.1: Humanitarian accountability: operational framework[53]

Who is accountable?	▪ Duty-bearers
To whom?	▪ Affected individuals or communities ▪ Other stakeholders
For what?	▪ To meet commitments as defined by standards and benchmarks
How?	▪ Monitoring: listening, reviewing, evaluating ▪ Responding ▪ Informing and reporting ▪ Identification of duty-holders ▪ Self-regulation and independent mechanisms
For which outcome?	▪ Changes in programmes and operations, awards, redress, sanctions

Component 7.6.2: Humanitarian response

Humanitarian assistance is generally accepted to mean the aid and action designed to save lives, alleviate suffering and maintain and protect human dignity during and in the aftermath of man-made crises and natural disasters, as well as to prevent and strengthen preparedness for the occurrence of such situations. It should be guided by the principles of[54]:

- humanity – saving human lives and alleviating suffering wherever it is found
- impartiality – acting solely on the basis of need, without discrimination between or within affected populations
- neutrality – acting without favouring any side in an armed conflict or other dispute where such action is carried out
- independence – the autonomy of humanitarian objectives from the political, economic, military or other objectives that any actor may hold with regard to areas where humanitarian action is being implemented.

The populations affected by the crisis require lifesaving support; their communities, institutions and livelihoods have often been physically destroyed and weakened. Recovery programming works to restore services, livelihood opportunities and governance capacity. This must start as soon as possible in the humanitarian or emergency phase. While most attention initially will be given to life saving interventions, the sooner the planning and work on recovery begins, the sooner the affected areas are stabilized and the shorter and more effective the recovery process is likely to be, as national and regional institutions progress with providing basic services and assuming governance functions such as security, local administration and justice.[55]

[53]HAP, 2001, Humanitarian Accountability: Key elements and operational framework

[54]Good Humanitarian Donorship, http://www.ghdinitiative.org/ghd/gns/principles-good-practice-of-ghd/principles-good-practice-ghd.html

[55]https://www.humanitarianresponse.info/en/clusters/early-recovery

Outcome 7.6.2.1:
WASH Government agencies, communities and local humanitarian actors respond to humanitarian situations in a timely and targeted manner, to meet national humanitarian standards, based upon humanitarian principles.

Actions:

- Manage and coordinate WASH emergency responses at and between Union, state/region and township levels
- Conduct rapid assessments of water supply, sanitation and hygiene needs and collection of secondary data
- Make rapid planning assumptions and set appropriate response objectives and indicators
- Establish and maintain reporting mechanisms for WASH actors to report on who is doing what, where (3Ws) for the emergency
- Provide WASH relief services and assistance to victims during and in the aftermath of disasters
- Manage logistics and use of supplies including tracking
- Implement the accountability framework
- Provide communication and public messaging on WASH and public health related risks and issues

Component 7.6.3: Early recovery

Outcome 7.6.3.1
WASH Government agencies, communities and humanitarian organisations restore and build back better the damaged WASH services and infrastructure

Early recovery occurs in parallel with humanitarian activities, but its objectives, mechanisms and expertise are different. It should be guided by development principles[56]. Early recovery aims to[57]:

- augment on-going humanitarian assistance operations;
- support spontaneous recovery initiatives by affected communities; and
- establish the foundations of longer-term recovery and the return to the development phase

Actions:

- Coordinate WASH early recovery and transition to development at and between Union, state/region and township levels and with humanitarian response agencies
- Conduct needs assessments for early recovery and transition to development early in the emergency response phase, and develop plans in coordination with the response planning and with Government finance and other donor funding
- Use disaster resilient concepts and technologies where possible in restoration of services and in design and construction of water supply and sanitation facilities
- Implement the transitional plans

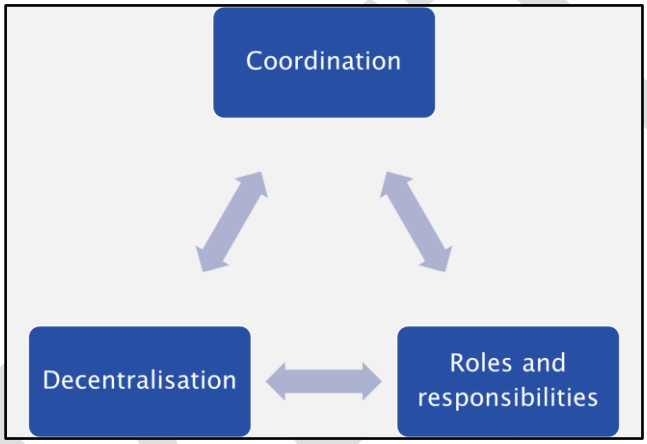
[56]UNOCHA, 2010, *OCHA on Message: Transition*,
https://docs.unocha.org/sites/dms/Documents/OOM_Transition_English.pdf
[57]https://www.humanitarianresponse.info/en/clusters/early-recovery

7.7 Institutional arrangements

Strategic Objective	**By the end of 2018, the institutional arrangements for Government, private sector and NGOs at State, Region, District and Townshiplevels and communities at Village Tract level, and the legal instruments and human resources will be in place and able to increase and to sustain services for water supply, sanitation and hygiene practices.**

One of the most common challenges identified in the consultation workshops and in the sector studies was coordination. Coordination, does not stand alone, however. It is in a triangular relationship with decentralisation and clear definition of roles and responsibilities, as shown in Figure 7.7.1.

Figure 7.7.1: Relationships for sector management and coordination



Component 7.7.1: Sector management and coordination

There is no single Government agency with overall responsibility for managing the rural WASH sector. In effect, WASH is divided into two parts, with water supply under the Department of Rural Development in Ministry of Agriculture, Livestock and Irrigation and sanitation and hygiene under the Department of Public Health under the Ministry of Health and Sports. These two primary Departments then have relationship with various other departments and ministries, in particular the Department of Basic Education, and, at Township level, the General Administration Department.

As the Rural Development Strategic Framework says, prospects for success in poverty reduction "will be better if the private sector, NGOs and government departments work together hand in hand, rather than State takes sole responsibility". It goes on to call for effective cooperation and coordination at three levels: Union, State/Region and Township.In this context, effective sector management is dependent on good coordination:

- horizontal coordination with other departments in the same tier of government;
- vertical coordination with other tiers of government;
- coordination with other organisations in the Sector – NGOs, bilateral and multi-lateral development partners.

There are no clear arrangements for inter-ministerial coordination at national level. At State and Region level, District and Township levels, the GAD under the Ministry of Home Affairs is officially mandated to coordinate development, including WASH.

Outcome 7.7.1.1:
The various stakeholders in the WASH Sector at different levels of government work together for development, operation and provision, oversight and regulationof services for WASH in rural areas.

Actions:

- Establish and maintain a coordination body at Union level involving relevant government departments, multilateral and bilateral development partners and national and international NGOs, with responsibility for guiding the management of the WASH Sector for effective and efficient service provision and regulation
- Establish and maintain similar coordination bodies under GADat State/Region level, district level and at township level
- Ensure a coordination mechanism between coordination bodies at each level.

Effective coordination is based on good leadership and a willingness to be coordinated, with trust between all the stakeholders.

Roles and responsibilities

Effective functioning and management of the WASH Sector depends on appropriate and clear allocation of the various roles and responsibilities. This is especially important given the push described in the Framework for Economic and Social Reform (FESR) for decentralisation and strengthening of local governance. According to the FESR, “GOM is planning to streamline managerial responsibilities between centralized ministries and local departments, clarifying roles and responsibilities between different levels of governance, and is developing appropriate legislative and regulatory frameworks to facilitate devolution and deconcentration of powers and functions of centralized institutions.

Outcome 7.7.1.2:
The roles of organisations at the various levels in the WASH Sector are clearly defined, taking into account the change in orientation of the Sector. The change is from provision of infrastructure to operation and performance management of service delivery, with some development of new services in the medium term.

Actions:

- Review and define the current and future roles required in the WASH Sector at all levels
- Prepare and pass the legislation necessary for defining and allocating the roles and responsibilities

The Tablesin Appendix 2 will be completed early in the Transition Period to form part of the Strategy.

Governance and transparency

Part of trust is generated through open and clear financing, accounting and access to information. In the FESR, the GOM has committed to the importance of “good governance, clean government”, and a “range of future actions [it] proposes to take across the core areas of public administrative reforms, information access and transparency, control of corruption,

rule of law and participation and consultation." It notes that "in many of these areas, implementation of specific actions will need to wait until strategies have been prepared or laws have passed"[58]. The Rural Development Strategic Framework also calls for transparency in implementing village development activities, and for public auditing[59]. This WASH Strategy is an opportunity to clearly set out the actions for the WASH Sector.

This should not, however, just apply to the various tiers of Government. The need for openness and transparency applies equally to development partners and NGOs. All organisations and people in the sector have multiple accountabilities to different stakeholders, in particular to service users, for their actions: socially, financially, technically and environmentally. (See Appendix 5)

Outcome 7.7.1.3:
Effective accountability mechanisms are in place in all organisations and are applied.

Actions:

- Develop and operate procedures to make authorities at Township level accountable to communities for provision of water supply, sanitation and hygiene promotion services, including the use of social audits of service provision and performance
- Develop guidelines for Township level government, service providers and support organisations on how to address multiple upward and downward accountabilities
- Develop and operate a system for DRD, DPH and DBE to seek, receive and address feedback (e.g. complaints) from communities, households and commune councils, including a comparative performance monitoring system between Townships

Guidelines and procedures

Guidelines and procedures are required to standardise the approaches and procedures for the promotion, development and operation of a number of aspects of water supply and sanitation services and hygiene promotion. Guidelines should set minimum standards, which if applied correctly, will improve the delivery of services. Guidelines will also set standards to improve accountability – communities will know from the guidelines what they should expect from service providers. There should be one overall WASH Manual for Rural WASH with chapters addressing the specific guidance and procedures required, with a separate volume for design standards. Some Chapters may need to be printed separately for use at village level. There should be separate Manuals for WASH in Schools and WASH in Health Facilities. The contents of the proposed manualsand standards are given in Appendix 6.

Outcome 7.7.1.4:
Effective development and delivery of services with set standards for accountability.

Actions:

- Reviewexisting guidelines and procedures and revise if necessary
- Produce new guidelines and procedures as required in other parts of this Strategy
- Publish and disseminate guidelines to government authorities, service providers, townships, user communities, development partners and NGOs

[58]Framework for Economic and Social Reform (FESR), Policy Priorities for 2012-15 towards the Long-Term Goals of the NationalComprehensive Development Plan, First Myanmar Development Cooperation Forum, 2013

[59]Ministry of Livestock, Fisheries and Rural Development, 2014, Rural Development Strategic Framework.

- Monitor the use and effectiveness of guidelines and revise if necessary

The development of standards and procedures should be done as a consultative process led by the relevantUnionDepartment (DRD, DBE, DPH) and involving Region and State Departments, NGOs and private sector. A benefit of this would be to contribute to building relationships between Union, States and Regions governments and other organisations.

Communication

Communication of information, sector needs and priorities, issues and technology is critical for advocacy, development and effective functioning and coordination for the WASH Sector. Communication needs to be addressed at a number of levels – Union to state/region to township to communities; between ministries and government decision-makers; and between development partners, NGOs and government.

Outcome 7.7.1.5:
Effective communication within and outside the WASH Sector.

Actions:

- Develop and implement a communication strategy to address issues including:
  - increasing the political profile of the sector through communication of its influence on political priority areas such as health and economic development and benefits
  - increasing the media profile of the sector
  - communicating the sector strategy both within and outside of the sector
  - establishment of inter-ministerial communication mechanisms
  - identification of key data and information needs
  - development of internal communications channels and mechanisms

Component 7.7.2:Human resources and capacity development

At present, the human resource capacity in the Sector is oriented to new provision of WASH, mainly on development of infrastructure. It will be necessary to reorientate this capacity towards running and overseeing provision of services, behaviour change and demand creation, as well as increasing planning, regulatory and monitoring capacity and systems at districts and townships.

Outcome 7.7.2.1:
The capacity to facilitate and sustain services at sub-national level supported by Union level is in place.

Actions:

- Based on the redefined roles and responsibilities in the Sector, determine the skills and staffing required at State/Region, District, and Township level
- Carry out a capacity needs assessment to determine the gap between the current numbers of staff, skills and experience and the required numbers and skills
- From the capacity needs assessment, prepare a comprehensive capacity development plan for the additional training that will be required for staff to fulfil the roles and the costs of implementing the plan

- Develop links with universities and other training organisations to develop appropriate course to produce graduates with the type of knowledge and skill needed in the WASH sector – technical, social, business, etc.
- Implement the capacity development plan

Private sector development

Part of the capacity for the provision of services will be through the private sector. The term "private sector" covers a wide range of different types of organisation and individuals: village and township based artisans and masons, village based mechanics, local markets and shops, local manufacturers, drilling companies, consultants (individuals and companies), and specialist companies.

Development of the capacity of the local small-scale private sector (artisans and masons, and small businesses) for provision of household toilets is critical for sanitation marketing. The private sector should also be encouraged to run small piped water supply systems, in particular for large villages and small towns, with appropriate regulation to ensure performance and inclusion of all potential users of the services. Other possibilities for small businesses are aspects of solid waste management and septage management. The development of an appropriate enabling environment for this will be essential. Components of this are: simple rules and regulations; operating licenses;access to finance and loans; taxation; and opportunity for development of business skills.

Outcome 7.7.2.2:
An efficient, effective and competent private sector for delivery of WASH services at township and village level.

Actions:

- Development of clear and simple procedures and rules in which the private sector can operate
- Transparent and accountable application of the procedures and rules by townships
- Affordable access to finance and loans for small businesses
- Availability of appropriate training in business skills, including management, finance and accounting, marketing, and customer services, and technical skills for provision of services and products:latrine construction, septage management, water supply construction and system management

Component 7.7.3:Monitoring and management information systems

Accurate and reliable data is essential for planning, management and monitoring of WASH services. The term "management information system" (MIS) may be more appropriate than monitoring as it implies that the information should be used for managing the delivery and performance of the services. "Monitoring" implies gathering data for reporting, rather than use of the data.

Sector monitoring is necessary to assess progress towards the targets set in this strategy.

Outcome 7.7.3.1:
A unified management information system is used for effective planning, management and monitoring of the WASH Sector.

Actions:

- Develop a database for recording and analysing information on provision and operation of WASH services
- Make the MIS system accessible to all sector stakeholders by putting it on the internet and through other communication means for stakeholders without internet access
- Ensure that all data is collected on service delivery, infrastructure and its functionality, institution, people served and not served (disaggregated for women, men, children, people with disabilities, and ethnic minorities)
- Compile at Union level the data collected through the MIS to determine progress towards the target set in the Strategy

Performance management

With the reorientation towards service delivery it will be necessary to ensure that the services continue to be delivered as designed and in accordance with the service standards. A number of criteria need to be monitored for this, linked to action to be taken if the service provider falls below the minimum standards of provision. Although each service provider should be ensuring and accounting for their own performance to the service users, the township is the appropriate level for this regulatory aspect of performance management.

Outcome 7.7.3.2:
Delivery of services is sustained in accordance with service performance standards.

Actions:

- Establish an office at Township level with authority and independence from the service providers to regulate the performance of service providers
- Establish performance criteria and indicators and a system for routine collection and analysis of this information
- Develop a system of incentives and penalties for maintenance of the performance standards
- Take appropriate action if the service provider starts to fail to achieve the required standards

Evaluation and learning

It is important for sector stakeholders (government at Union, state/region, township; development partners; and NGOs) to learn from each other's experience in developing and sustaining services.

Outcome 7.7.3.3:
A system for learning from the individual and collective experience of working on different aspects of the sector is shared nationally so that lessons, information and ideas can be used for improving service delivery.

Actions:

- Establish a system for collecting and disseminating evaluation and other forms of knowledge and learning
- Commission and publish sector wide evaluations and studies of specific aspects and approaches in the Sector

- Commission and publish research into aspect of the WASH Sector

Component 7.7.4 Research, development and innovation

Guidelines and minimum standards have to be developed for a number of procedures, technical designs and technology. There is a risk, however, that such standards may constrain the development of new or innovative technologies and ways of working. To avoid this, a process needs to be developed and adopted for innovation. It is essential that such things are carefully introduced and applied in rural areas through a system of rigorous piloting, testing and validation before being more generally applied.

Outcome 7.7.4.1:
Innovative technology, approaches and procedure introduced based on rigorous testing and peer review and approval.

Actions:

- Develop a systematic procedure for application, testing and approval and dissemination of new approaches and technology development
- Establish a senior committee for guiding and approving such work

7.8 Financing

Strategic Objective	Funding for capital and recurrent expenditure will be available in order for WASH services to be provided and operated sustainably.

Financing is essential for the sustainability of WASH services. But within this financing, the affordability of the service is equally important for sustainability. Unless all aspects of the services are affordable, to Union government, local government, community and households, so that people can and do pay for them, they will deteriorate and eventually fail. Thus it is necessary to consider the whole cost of the service, not just the capital cost. So, as well as the capital cost of construction and the associated up-front software costs of community engagement and hygiene promotion, the costs of operation, minor maintenance, major maintenance and eventual replacement costs should also be taken into account.

There are three component for financing:

- Financing of capital costs
- Financing of recurrent operational costs
- Advocacy to ensure that that is sufficient funding for both capital and recurrent costs.

Component 8.1: Financing of capital costs

Sources of funding include:

- Government, to central line ministries the annual National Budget Law.
- user contributions (cash, in-kind and through repayment to private sector funding)
- loans and grants from development partners (multi-laterals and bilaterals, global funds and NGOs)

Currently funding from development partners is quite limited – the main donors are USAID and JICA, with some funding from a World Bank project, and significant support from UNICEF. Most - if not all - funding for emergency WASH is provided by external donors and has accounted for a significant proportion of total WASH sector funding in recent years.

The DRD budget for water supply projects from 2012/13 to 2016/17 amounted to about US$24 million/year. The first computation of the Investment Plan indicates that the capital requirement for developing rural water supplyservices (including replacement costs) is about US$250 million. Community and household contributions to capital costs of water supply should be determined at Township level taking into account the socio-economic status of communities in the area – it may be as much as 10% of the cost (about $33 million).

The first computation of the Investment Plan indicates that the capital requirement for developing improved sanitation (including replacement costs) and hygiene promotion is about US$80 million, of which about US$21 million is for various forms of sanitation development of promotion; about US$45 million of this is for household latrines, most of which is expected to be paid by householders. The rest is for developing solid waste management and short term research needs for sanitation.

The Sector Investment Plan is being prepared to support the Strategy and will help to inform this Strategic Objective for Financing.

Water supply

Outcome 8.1.1:
The funding required for provision of new and rehabilitation of existing infrastructure and associated software for water supply and sanitation services is available.

Actions:

- Review the budgeting process so that estimates are based on accurate local costing information
- Review the proportion of contribution that should be made by communities in each state/region:
  - Develop a procedure and criteria for setting the rate of community contribution
  - set the local rates for contribution in accordance with the procedure
- Make multi-year and annual applications for funding for water supply development to Ministry of National Planning and Economic Development
- Seek funding and other forms of support from current and potential development partners for water supply

Sanitation

Experience internationally has shown that direct subsidies for sanitation infrastructure are not effective in promoting widespread construction of toilets and changes in sanitation behaviour to ensure their use. There are several problems with direct subsidies to the household, including: failure to change household use of toilets; making infrastructure too expensive; suppression of the natural market for sanitation; deterring other sources of funding (particularly household and commercial funding); and capture by the rich at the expense of reaching the poorest. Subsidised sanitation programs are expensive for the government to deliver at scale – the government cannot afford to subsidise everyone.

Public finance in the sector will be used to stimulate demand and develop the enabling environment, including stimulating the supply side through approaches such as sanitation marketing to improve the availability of sanitation products. This should unlock the potential contribution by households to pay for their own toilets. Subsidies and innovative financing may be provided only to the poorest households (e.g. vouchers to be exchanged for materials, rebates after latrine construction, conditional cash transfers), although community support to the poorest households is encouraged.

It will also be necessary to develop microfinance for sanitation, with suitable loan products for both the households to use for buying toilets, and for small business to develop their products and markets.

Outcome 8.1.2:
Public and donor finance raised and used to stimulate demand for toilets and to support the development of the supply side; households to pay for their own toilets.

Actions:

- Work with microfinance institutions to develop and market loan products for sanitation for households and small businesses
- Household pay for their own toilets (except the poorest)

- Investigate innovative and appropriate financing methods for sanitation for the poor and develop guidance
- Make subsidy arrangement for poorest to pay for their own toilets
- Make multi-year and annual applications for funding for sanitation development to Ministry of National Planning and Economic Development
- Seek funding and other forms of support from current and potential development partners for sanitation development

WASH in schools and health facilities

The capital cost of developing school WASH facilities should be provided through the DBE budget. Schools do receive some funding from local community contributions, which are often used for WASH facilities.The costs of developing WASH in health facilities should be provided through MoH budgets.

Outcome 8.1.3:
Funding available for construction of school WASH facilities and curriculum development and teacher training in hygiene promotion.

Actions:

- Advocate for an increase in Government funding for school WASH by demonstrating the economic and social benefits of investment in school water supply and sanitation
- Include provision of WASH facilities in school budgets for funding by Government
- Seek funding and other forms of support from current and potential development partners for sanitation promotion

Outcome 8.1.4:
Funding available for construction of health institution WASH facilities.

Actions:

- Advocate for an increase in Government funding for health facility WASH by demonstrating the importance for health outcomes as well as economic and social benefits of investment in health facility supply and sanitation
- Include provision of WASH facilities in health budgets for funding by Government
- Seek funding and other forms of support from current and potential development partners for sanitation promotion

Outcome 8.1.5:
Funding available for disaster preparedness planning and pre-positioned contingency stocks

Actions:

- Budget for and allocate funding for emergency preparedness planning and contingency stocks for WASH

Institutional development.

Capacity development can be considered as a capital cost as it is a one-off cost over the first two years of the Strategy. In-service and refresher training is a recurrent cost.

Outcome 8.1.6:
Funding for staffing reform and capacity building

Actions:

- Budget for and allocate funding for sector reform and capacity building

Component 8.2: Financing of recurrent costs

Water supply

Recurrent costs for water supply include

- Energy and fuel for pumped supplies
- Routine cleaning and maintenance
- Repairs after breakdown
- Meter reading and revenue collection
- Customer service (for bigger piped systems
- Management
- Depreciation of the infrastructure – to allow for eventual replacement (which may be considered as a capital cost)

Outcome 8.2.1:
Water supply services sustained through sufficient revenue from users of the services to pay all operating costs, including financing of the support functions.

Actions:

- Calculate actual operating costs of existing services and negotiate with representative user groups, including institutions such as schools and health facilities, how to set user payments and tariffs to cover these costs
- Estimate operating costs of proposed water supply services and discuss with representative user groups the user payments required, including technology options and their running costs
- Prepare and enact local legislation necessary to enforce user payments for services
- Establish and operate financial systems to manage the collection and disbursement of operational finance of water supply services

Sanitation

Outcome 8.2.2:
Households pay for the upkeep of their latrines, including repair, replacement and sludge and pit emptying.

Actions:

- Households pay for the operation and maintenance costs of their own latrines, including septage management and pit emptying as and when required

Outcome 8.2.3:
Solid waste management services are financially sustained

Actions:

- Estimate operating costs and income generation potential of proposed solid waste management services and discuss with representative user groups the user payments required, including technology options and their running costs
- Prepare and enact local legislation necessary to enforce user payments for services
- Establish and operate financial systems to manage the collection and disbursement of operational finance of solid waste services

School WASH

Outcome 8.2.4:
School WASH facilities are sustained

Actions:

- Include the cost of operating and maintain WASH facilities, including payment for water supply from piped water systems,septage management, cleaning services and supplies in the school budgets

Health facility WASH

Outcome 8.2.5:
Health facility WASH facilities are sustained

Actions:

- Include the cost of operating and maintain WASH facilities, including payment for water supply from piped water systems, in the health budgets

Institutional operation, management, oversight and regulation

Outcome 8.2.6:
The costs of administering the operation and maintenance of WASH services are fully met

Actions:

- Prepare annual budgets for staff, equipment and facilities costs of managing WASH services (each department at each level)
- Allocate funding to meet the budgets

Component 8.3: Advocacy for funding

As shown in the Investment Plan, there is a substantial gap between the capital needs and availability of funding from various sources. It will be necessarily to actively seek funding from various sources, primarily from government allocations, but also from existing and potential development partners. For both these sources, carefully planned advocacy will be needed.

The advocacy case can be built on two things. The economic benefits or costs; and the contribution that WASH makes to many of the other SDG Goals and causes of poverty. The

economic case can be based on a WHO Study in 2004, which showed that for the South-East Asia Region (including Myanmar) the Benefit-Cost Ratio for universal access to improved water and sanitation $7.88 return for every $1 invested[60]. A more recent study by WSP in some other ASEAN countries show that the annual economic **costs** of unimproved sanitation[61]:

- Indonesia = US$6,344 million (~US$29 per person)
- Philippines = US$1,412 million (~US$17 per person)
- Cambodia = US$448 million (~US$33 per person)

Outcome 8.3.1

Sufficient funding raised from government, donor and other sources to develop WASH services as planned

Actions:

- Develop advocacy arguments showing the economic benefits of WASH and the contributions to achievement of other SDGs.
- Seek funding and other forms of support from current and potential development partners for water supply development, sanitation promotion and marketing and for solid waste management
- Seek funding from current and potential development partners
- Develop relationships with microfinance organisation for financing households and small business for sanitation and water supply loans

[60]WHO, Evaluation of the Costs and Benefits of Water and Sanitation Improvements at the GlobalLevel, Guy Hutton & Lawrence Haller (2004)

[61]Water and Sanitation Program - East Asia and the Pacific (WSP-EAP) (2007), Economic Impacts of Sanitation in Southeast Asia: Summary

Appendices

Appendix 1: Definitions

English	
Term	**Definition/Description**
Access to water supply services	The availability of an improved water source within 250 meters of the user's dwelling. An "improved" water source is one that is more likely to provide "safe" water, such as a household connection, a borehole, etc.
Access to adequate sanitation	one of the improved sanitation options is available at the user's dwelling
Accountability	ensuring that officials in public, private and voluntary sector organisations are answerable for their actions and that there is correction when duties and commitments are not met
Approaches	Ways of putting roles and rules into practice.
Black water	Waste water from latrines containing fecal matter
Capacity building	Actions which gradually improve the abilities of the people and institutions to operate efficiently and effectively
Climate change adaptation	▪ In human systems, the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities. In natural systems, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate."[62] ▪ Adapting development to gradual changes in average temperature, sea-level and precipitation; and, ▪ Reducing and managing the risks associated with more frequent, severe and unpredictable extreme weather events
Community:	The specific group for whom the WASH sectoral activity is undertaken
Community Contribution	Community's share the cost of implementing a development activity. Community inputs can be calculated in terms of labour, local materials and cash, according to local resources and ability to pay.
Community cost-sharing:	Payment by the members of the consumer community towards capital costs and recurrent costs (administration, operation and maintenance costs, or any other cost related to the service provided).
Community participation	a process through which all members of a community or organization are involved in and have influence on decisions related to development activities that will affect them. Everyone in community regardless of gender or socio-economic status is encouraged to provide opinions, make decisions and assist in the implementation of an action
Decentralisation	GoM gives sub-national tiers of government the ownership of government functions, authorities and resources in order to respond to local needs. The local government must be accountable to local residents.
Deconcentration	A ministry or other government institution delegates functions and

[62]IPCC, 2012: Glossary of terms. In: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation, http://www.ipcc.ch/pdf/special-reports/srex/SREX-Annex_Glossary.pdf

	resources to their own lower units in order to implement on behalf of the ministry or government institution. The lower units must be accountable to the ministry or government institution in accordance with the requirements of the delegation.
Demand responsiveness	Activities or approaches that ensure consumers obtain goods or services that they want and are willing to pay for.
Desludging	Removing accumulated sludge from septic tanks, aqua-privies, etc.
Development	Change that makes improvements in a condition of well-being or situation.
Development partners	donors, development banks and multilateral development organisations
Disability	An 'evolving' concept: disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others.[63]
Disaster risk reduction	The concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.[64]
Drinking Water	water that meets water quality standards and is safe to drink with or without treatment
Effective use of services	The use and management of water and sanitation services in ways that maximise the expected health, economic, and productivity benefits.
Empowerment	the effort performed by an individual or group of individuals to build and strengthen a community's independence and self-reliance/confidence by stimulating the community's own initiative and creative potential.
Enabling Environment	Policies, financial instruments, formal organisations, community organisations and partnerships which together support and promote the effective and efficient delivery of services.
Equity	All people, regardless of sex, ethnicity, disability, socio-economic or other status, have similar rights and opportunities, basic needs to maintain an acceptable quality of life. It means that all people throughout a community, whether a village, town, city, or country, have these same basic needs that must be taken into consideration.
Environmental sanitation	The wider concept of controlling all the factors in the physical environment that may have harmful impacts on human health and well-being. It normally includes drainage of surface water and sullage, solid waste management, and vector control, in addition to the activities covered by sanitation.
Equal rights	Every person regardless of race, nationality, gender, ethnicity, social and economic status is entitled to the same rights and privileges by international law.
Equity of service	Government services are provided fairly and justly to all persons, without discrimination.

[63]The United Nations Convention on the Rights of Persons with Disabilities (CRPD)

[64]Marilise Turnbull, Charlotte L. Sterrett, Amy Hilleboe, 2013, Toward Resilience: A Guide to Disaster Risk Reduction and Climate Change Adaptation, Emergency Capacity Building Project (ECB), Practical Action Publishing Ltd

Evaluation	The systematic and objective assessment of an on-going or completed project, programme or policy, its design, implementation and results. The aim is to determine the relevance and fulfilment of objectives, development efficiency, effectiveness, impact and sustainability. An evaluation should provide information that is credible and useful, enabling the incorporation of lessons learned into the decision–making process of both recipients and donors.[65]
Fecal-oral	Transmitted by any route enabling fecal material to reach the mouth
Gender	The socially constructed roles, behaviours, activities and attributes that a society considers appropriate for men and women.
Gender equality	Women and men, and girls and boys, enjoy the same rights, resources, opportunities and protections. It also means that girls and women have "… agency to use those rights, capabilities, resources and opportunities to make strategic choices and decisions" about the course of their lives "without the fear of coercion and violence."[66]
Gender mainstreaming	Gender mainstreaming is the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all spheres so that women and men benefit equally.[67]
Goal	The overall purpose of a plan of actions.
Grey water	Water from kitchen, bath, laundry and other domestic activities which should not normally contain much urine or excreta
Groundwater	Water found below ground level in the soil
Groundwater table	The level at which the subsoil is saturated with water
Hardware	physical infrastructure such as a piped water supply system, borehole, well, handpump or latrine
Hazardous health-care waste[68]	
- Sharps waste	Used or unused sharps (e.g. hypodermic, intravenous or other needles; auto-disable syringes; syringes with attached needles; infusion sets; scalpels; pipettes; knives; blades; broken glass)
- Infectious waste	Waste suspected to contain pathogens and that poses a risk of disease transmission (e.g. waste contaminated with blood and other body fluids; laboratory cultures and microbiological stocks; waste including excreta and other materials that have been in contact with patients infected with highly infectious diseases in isolation wards)
- Pathological waste	Human tissues, organs or fluids; body parts; fetuses; unused blood products
- Pharmaceutical waste	Pharmaceuticals that are expired or no longer needed; items contaminated by or containing pharmaceuticals

[65] OECD-DAC definition

[66] UNICEF, 2011, *Promoting Gender Equality: An Equity-Focused Approach to Programming - Operational Guidance Overview*, with quote from: Task Force on Education and Gender Equality, *Taking Action: Achieving gender equality and empowering women*, UN Millennium Project, New York, January 2005

[67] Resource guide: Mainstreaming gender in water. United Nations Development Programme (UNDP), 2006

[68] Definitions from WHO, 2014, *Safe management of wastes from health-care activities*, http://www.healthcare-waste.org

- Chemical waste	Waste containing chemical substances (e.g. laboratory reagents; film developer; disinfectants that are expired or no longer needed; solvents; waste with high content of heavy metals, e.g. batteries; broken thermometers and blood-pressure gauges)
Hygiene	A set of behaviours associated with domestic water storage and use, and sanitation practices. Good hygiene is the practice of keeping oneself and one's living and working areas clean in order to help prevent illness and disease.
Hygienic environment	An environment that is clean and not likely to cause water and excreta related disease.
Hygienic latrine	A latrine or toilet the use of which effectively breaks the cycle of disease transmission through: confinement of faeces away from the environment; blocking the pathways for flies and other insect vectors; venting the gases generated in the pit through a properly position fly-proof vent pipe.
Hygiene promotion	A planned approach to preventing sanitation-related diseases through the adoption of safe hygiene practices
Improved sanitation	Flush or pour flush toilet connected to sewerage, a septic tank or a covered pit, a pit latrine with a slab or a Ventilated Improved Pit (VIP) latrine.
Improved water supply	water from a source that is more likely to provide "safe" water, such as a household connection, a borehole, etc.[69]
Informed choice	Women and, men, rich and poor in a community are given a variety of technology options and choose the most cost-effective, appropriate technology as per their own situation and ability to pay
Integrated Water Resource Management:	a process which promotes the co-ordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems[70]
Maintenance Maintenance can be divided into: - Preventive maintenance - Corrective maintenance - Crisis maintenance	The activities required to sustain a water supply in a proper working condition. - regular inspection and servicing to preserve assets and minimise breakdowns. - minor repair and replacement of broken and worn out parts to sustain reliable facilities. - unplanned responses to emergency breakdowns and user complaints to restore a failed supply.
Management information systems (Monitoring)	The checking, collection and analysis of information to improve performance and results. In essence it means comparing the actual situation with the expected (or planned) situation — and then taking action to bring reality and expectations together.
Microfinance	The delivery of financial services such as loans and deposits, to the poor and low-income households, and to micro-enterprises.
Monitoring	The checking, collection and analysis of information about current project development and service delivery to improve implementation, performance and results.
NGOs	non-governmental organisations, specifically non-profit making

[69] Current information is insufficient to establish a relationship between access to safe water and access to an improved source. The two terms should not be confused or used interchangeably

[70] GWP (2000). Integrated water resources management. (TAC background paper; no. 4). Stockholm, Sweden, Global Water Partnership

	organisations; including international NGOs (INGO) and national and local NGOs: Private organizations that do not gain profit and focus on humanitarian and development activities for the benefit of society.
Objective	The specific purpose or purposes of a plan of action. Objectives must be actions of change that are achievable and measurable.
Open Defecation Free (ODF)	No visible faeces in the environment or village, with every person using a safe means to dispose of their and their infants' faeces: no contamination of surface soil, faeces inaccessible to flies or animals; no handling of fresh faeces; and freedom from odour
Operation:	the everyday running and handling of a water supply, involving several activities: Major operations required to convey safe drinking water to the users, e.g. starting and stopping a motorised pump, the supply of fuel and the control of valves; The correct handling of facilities by users to ensure long component life, e.g. the handling of a rope and bucket at a well, handpump use, and the use of taps at a standpost.
Ownership of system or service	Control over decision-making and management of the system or services provided.
Pathogens	Disease causing organisms. The main organisms that pose a threat to health related to poor sanitation are pathogenic bacteria, viruses, parasitic protozoa and helminths that are excreted in large numbers from infected individuals
Pit latrine	latrine with a pit for collection and decomposition of excreta and from which liquid infiltrates into the surrounding soil
Pour-flush latrine	Latrine that depends for its operation on small quantities of water, poured from a container by hand, to flush away feces from the point of defecation (usually to a pit (as above))
Recurrent cost	A cost that needs to be paid periodically to ensure that a system or installation will continue to function satisfactorily.
Resilience	the ability of people and systems to anticipate, adapt to and recover from the negative effects of shocks and stresses (including natural disasters and climate change) in a manner that reduces vulnerability, protects livelihoods, accelerates and sustains recovery, and supports economic and social development, while preserving cultural integrity[71]
Roles and Responsibilities	The assignment of authority and specific tasks to individuals or groups involved in performing a task.
Roles	The principal responsibilities of the sector's key stakeholders.
Rules	A set of transparent guidelines, policies and laws that regulate actions leading to sector objectives, and guide stakeholders in the implementation of their respective sector roles.
Rural area	Areas classified by the Department of General Administration (GAD) as village tracts. Generally these are areas with low population density and a land use which is predominantly agricultural.[72]
Rural communities	Settlements located outside of gazetted municipal areas.
Safe drinking water source	A source that consistently provides water of a quality that meets Cambodian drinking water quality standards or other appropriate interim values.

[71] UNICEF and Global Water Partnership (2014), WASH Climate Resilient Development: Strategic Framework
[72]The 2014 Myanmar Population and Housing Census: The Union Report: Census Report Volume 2

Safe hygiene behaviour	This includes, use of adequate sanitation, including disposal of infants' faeces; handwashing with soap at critical times, safe handling of water in the household.
Sanitation	Management and disposal of human urine, excreta and domestic waste water.
- "adequate sanitation" (SDG goal)	Definition: Population using a basic sanitation facility (current JMP categories for improved sanitation) which is not shared with other households and where excreta is safely disposed in situ or treated off-site.[73]
- improved sanitation facility (for MDG monitoring)	One that hygienically separates human excreta from human contact.
- Basic sanitation	Facilities that effectively separate excreta from human contact, and ensure that excreta do not re-enter the immediate household environment. Each of the following sanitation facility types is considered as basic sanitation for monitoring progress toward the household sanitation targets, if the facility is shared among no more than 5 families or 30 persons, whichever is fewer, and if the users know each other:[74] – A pit latrine with a superstructure, and a platform or squatting slab constructed of durable material. A variety of latrine types can fall under this category, including composting latrines, pour-flush latrines, and ventilation improved pit latrines (VIPs). – A flush toilet connected to a septic tank or a sewer (small bore or conventional).
Septage	The combination of scum, sludge, and liquid that accumulates in septic tanks.
Sanitation marketing	The use of marketing techniques to promote the construction and use of sanitation facilities. Sanitation marketing considers the target population as customers. It borrows private sector experience to develop, place and promote an appropriate product: in this case the product is a toilet and excreta disposal system, be it sewerage connection, pit latrine or other mechanism. Critically the facilities must be readily available at an affordable price in the right place.
Septage	Fecal sludge removed from septic tanks (can also include the contents of pit latrines)
Septic Tank	An underground tank that treats wastewater by a combination of solids settling and anaerobic digestion. The effluents may be discharged into soak pits or small-bore sewers, and the solids have to be pumped out periodically.
Software	the set of activities relating to improving water supply and sanitation which do not comprise the construction and use of infrastructure: the enabling environment and its systems and procedures, hygiene and sanitation promotion (including CLTS

[73] Consolidated technical input from UN agencies on water and sanitation related indicators: List of proposed indicators and metadata for proposed indicators, Inter-agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs), July 2015, https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=2076&menu=35

[74] WASH POST-2015: proposed targets and indicators for drinking-water, sanitation and hygiene, Recommendations from international consultations: Comprehensive recommendations- updated April 2014, http://www.wssinfo.org/documents/?tx_displaycontroller[type]=post_2015

	and social marketing), training, community mobilisation and capacity building
Solid Waste Management	The discipline associated with the control of generation, storage, collection, transfer and transport, processing, and disposal of solid wastes in a manner that is in accord with the best principles of public health, economics, engineering, conservation, aesthetics, and other environmental considerations, and that is also responsive to public attitudes;[75]
Stakeholder	A party with a direct interest in a specific sector activity or intervention.
Subsidy	A form of financial assistance paid to an individual, a business or an economic sector in order to achieve certain policy objectives. For example, a subsidy can be used to support businesses that might otherwise fail, or to encourage activities that would otherwise not take place.
Sustainable services	Services that have all the financial and economic resources required for operation, maintenance and replacement and take into account the technical, social, institutional, and environmental aspects, so that they are continuously providing the accepted basic level of service.
Transparency	The act of performing duties in an honest and open manner, leaving no doubts in anyone's mind about the activity.
Turbidity	A measure of the cloudiness or opaqueness of the water and is measured in nephelometric turbidity units (ntu). The turbidity is influenced by the amount and nature of suspended organic and inorganic material in water.[76]
Urban area	Areas classified by the GAD as wards. Generally these areas have an increased density of building structures, population and better infrastructural development.
Vector	Insect or organism that carries disease from one animal or human to another (such as a mosquito, fly, or bilharzia-infected snail.)
Vision	A desired change, in the long-term, which shows wisdom and imagination.
Vulnerable groups	A general term for categorising people including the poor, the disabled, people affected by war and conflict, children and youth, the elderly, women and ethnic minorities. People may fall into more than one of these groupings. Vulnerability is relative, depending on exposure to risks (shocks and extent of poverty) and capacity to manage (resources, availability of safety nets).
Waste water	The spent or used water from homes, communities, farms and businesses that contains enough harmful material to damage the water's quality. Wastewater includes both domestic sewage and industrial waste from manufacturing sources
Water environment	The hydrological system within which a community functions; it may be much larger than the community itself, for example a river basin.
Water resource	A body of water that is available for use, such as a lake, river, or aquifer. It may also include rainwater.
Water source	The point at which water can be abstracted, such as a spring or well. The source can also be a river or lake, depending on the context.

[75] Philippines Ecological Solid Waste Management Act of 2000

[76]http://www.water-research.net/index.php/glossary

Water supply	Water used for domestic consumption – drinking, washing, bathing and home-based economic activities.
Water table	The level in the ground at which water is found when a hole is dug or drilled (same as Groundwater Table).
Water User fees	A local system of fees collected regularly within communities for maintenance, repair and extension of community water systems.

Appendix 2: Institutional roles and responsibilities

Rural Community water supply, sanitation, and hygiene

Note: please give the title and date of the mandate, directive, instruction or rule that gives the authority for the role or responsibility

Role or responsibility	Designated organisation					Mandate/ directive/ instruction/ rules and regulations
Level	Union	State/Region	District	Township	Village	
Sectorpolicyandstrategy						
▪ Policy formulation						
▪ Strategy preparation						
Planning						
▪ Rural water supply planning and investment						
▪ Sanitation planning and investment						
▪ Selection of communities for water supply						
▪ Selection of communities for sanitation						
▪ Humanitarian DRR and contingency planning						
Finance						
▪ Budgeting/estimating						
▪ Financial planning						
▪ Budget allocation						
▪ Disbursement						
▪ Monitoring expenditure						
Co-ordination						
▪ Intersectoral						
▪ Intrasectoral						
▪ WASH in humanitarian response						
Regulation						
▪ Policy						
▪ Finance						
▪ Local legislation (by-laws)						
▪ Design standards and types						
▪ Quality of work						
▪ Water allocation						

Role or responsibility	Designated organisation					Mandate/ directive/ instruction/ rules and regulations
Level	**Union**	**State/Region**	**District**	**Township**	**Village**	
▪ Conflict resolution						
▪ Water quality compliance						
▪ Water resource allocation and management						
Development of Services						
▪ Capital funding						
▪ Micro finance for small businesses and households						
▪ Community mobilisation/facilitation						
▪ Development of community capability						
▪ Behaviour change promotion						
▪ Sanitation promotion (incl. CLTS)						
▪ Sanitation marketing						
▪ Private sector development						
▪ Solid waste management						
▪ Technical design and assistance						
▪ Management of construction						
▪ Procurement						
▪ Quality control						
▪ Performance management						
Operation of services: Water supply						
▪ Operational management						
▪ Routine maintenance						
▪ Repair						
▪ Advisory support systems						
▪ Supply chains						
Operation of services: Sanitation						
▪ Operational management						
▪ Routine maintenance						
▪ Repair						
▪ Advisory support systems						
▪ Supply chains						
Operation of services: Solid waste management						

Role or responsibility	**Designated organisation**					Mandate/ directive/ instruction/ rules and regulations
Level	**Union**	**State/Region**	**District**	**Township**	**Village**	
▪ Operational management						
▪ Routine maintenance						
▪ Repair						
▪ Advisory support systems						
▪ Recycling chains						
Humanitarian response for WASH						
▪ Rapid assessments						
▪ Information management						
▪ Provision of relief services						
▪ Early recovery/transition to development						
Monitoring & evaluation						
▪ Data collection						
▪ Inventory of water supply systems (location type, quantity, quality)						
▪ Sector monitoring						
▪ Sector evaluation						
▪ Programme/project monitoring						
▪ Programme/project evaluation						
▪ Water quality surveillance						
Research & development						
▪ Commissioning						
▪ Undertaking						

Schools WASH

Note: please give the title and date of the mandate, directive, instruction or rule that gives the authority for the role or responsibility

Role or responsibility	**Designated organisation**				Mandate/ directive/ instruction/ rules and regulations
Level	**Union**	**State/Region**	**District**	**Township**	
Sectorpolicyandstrategy					
▪ Policy formulation					
▪ Strategy preparation					
Planning					
▪ School water supply planning and investment					
▪ School Sanitation planning and investment					
▪ Selection of schools for water supply					
▪ Selection of schools for sanitation					
▪ Contingency planning					
Finance					
▪ Budgeting/estimating					
▪ Financial planning					
▪ Budget allocation					
▪ Disbursement					
▪ Monitoring expenditure					
Co-ordination					
▪ Intersectoral					
▪ Intrasectoral					
Regulation					
▪ Policy					
▪ Finance					
▪ Local legislation (by-laws)					
▪ Design standards and types					
▪ Quality of work					
▪ Water quality compliance					
▪ Water resource allocation and management					
Development of Services					
▪ Capital funding					
▪ Behaviour change promotion/ life skills					

Role or responsibility	Designated organisation				Mandate/ directive/ instruction/ rules and regulations
Level	Union	State/Region	District	Township	
▪ Solid waste management					
▪ Technical design and assistance					
▪ Management of construction					
▪ Procurement					
▪ Quality control					
▪ Performance management					
Operation of services: Water supply					
▪ Operational management					
▪ Routine maintenance					
▪ Repair					
Operation of services: Sanitation					
▪ Operational management					
▪ Routine maintenance					
▪ Repair					
Operation of services: Solid waste management					
▪ Operational management					
▪ Routine maintenance					
▪ Repair					
Monitoring & evaluation					
▪ Data collection					
▪ Inventory of water supply systems and sanitation facilities (location type, quantity, quality)					
▪ Sector monitoring					
▪ Sector evaluation					
▪ Programme/project monitoring					
▪ Programme/project evaluation					
▪ Water quality surveillance					
Research & development					
▪ Commissioning					
▪ Undertaking					

WASH in Health Facilities

Note: please give the title and date of the mandate, directive, instruction or rule that gives the authority for the role or responsibility

Role or responsibility	Designated organisation				Mandate/ directive/ instruction/ rules and regulations
Level	Union	State/Region	District	Township	
Sectorpolicyandstrategy					
▪ Policy formulation					
▪ Strategy preparation					
Planning					
▪ Health facilities water supply planning and investment					
▪ Health facilities Sanitation planning and investment					
▪ Health facilities Hazardous waste management					
▪ Contingency planning					
Finance					
▪ Budgeting/estimating					
▪ Financial planning					
▪ Budget allocation					
▪ Disbursement					
▪ Monitoring expenditure					
Co-ordination					
▪ Intersectoral					
▪ Intrasectoral					
Regulation					
▪ Policy					
▪ Finance					
▪ Local legislation (by-laws)					
▪ Design standards and types					
▪ Quality of work					
▪ Water quality compliance					
▪ Water resource allocation and management					
Development of Services					
▪ Capital funding					
▪ Behaviour change promotion					
▪ Hazardous and clinical waste management					

Role or responsibility	**Designated organisation**				Mandate/ directive/ instruction/ rules and regulations
Level	**Union**	**State/Region**	**District**	**Township**	
▪ Technical design and assistance					
▪ Management of construction					
▪ Procurement					
▪ Quality control					
▪ Performance management					
Operation of services: Water supply					
▪ Operational management					
▪ Routine maintenance					
▪ Repair					
Operation of services: Sanitation					
▪ Operational management					
▪ Routine maintenance					
▪ Repair					
Operation of services: Hazardous and clinical waste management					
▪ Operational management					
▪ Routine maintenance					
▪ Repair					
Monitoring & evaluation					
▪ Data collection					
▪ Inventory of water supply systems, sanitation and hazardous waste facilities (location type, quantity, quality)					
▪ Sector monitoring					
▪ Sector evaluation					
▪ Programme/project monitoring					
▪ Programme/project evaluation					
▪ Water quality surveillance					
Research & development					
▪ Commissioning					
▪ Undertaking					

Appendix 3: Situtational Analysis – additional information

The data in Tables A3.1 and A3.2 is from the 2014 Census. This data needs to be treated with some caution, however. For water supply, the responses are self-reported in answer to the census question at the time, so may not count existing water supply systems that were not working at the time. Similarly, the data collected on access to sanitation relies on enumerator's opinion of the type of toilet.

Table A3.1: Access to Water Supply in Rural Areas

State/Region	Population	Households	Improved*	Unimproved	% Improved
Kachin	864,241	173,506	115,316	58,190	66.5
Kayah	204,497	42,606	20,243	22,363	47.5
Kayin	1,153,266	240,874	132,214	109,416	54.7
Chin	368,381	71,351	47,323	24,028	66.3
Sagaing	4,220,866	913,085	724,381	188,704	79.3
Tanintharyi	1,033,901	216,292	112,666	103,626	52.1
Bago	3,735,488	903,960	640,906	263,054	70.9
Magway	3,241,904	788,526	589,847	198,679	74.8
Mandalay	3,904,767	907,558	733,503	174,055	80.8
Mon	1,415,429	308,425	188,175	120,250	61.0
Rakhine	1,706,388	387,148	127,758	259,390	33.0
Yangon	2,133,384	513,888	219,765	294,123	42.8
Shan	4,218,058	889,651	364,345	525,306	41.0
Ayeyawady	5,234,055	1,288,021	600,938	687,083	46.7
Nay Pyi Taw	768,584	183509	141,417	42,092	77.1
Union	34,203,208	7,828,400	4,782,377	3,107,961	60.6

* Improved water supplies include piped water with household connections or tap-stands, tube wells with motorised or hand-pumps, and protected wells and springs.

Table A3.2: Household Access to Sanitation in Rural Areas

State/ Region	Population	Households	Improved*	Unimproved	No toilet	% Improved
Kachin	864,241	173,506	142,438	26,163	4,905	82.1
Kayah	204,497	42,606	36,855	2,033	3,718	86.5
Kayin	1,153,266	240,874	148,797	18,847	73,230	61.8
Chin	368,381	71,351	49,535	8,010	13,806	69.4
Sagaing	4,220,866	913,085	618,703	123,055	171,327	67.8
Tanintharyi	1,033,901	216,292	128,681	45,055	42,556	59.5
Bago	3,735,488	903,960	638,702	149,294	115,964	70.7
Magway	3,241,904	788,526	519,623	113,199	155,704	65.9
Mandalay	3,904,767	907,558	670,647	43,550	193,361	73.9
Mon	1,415,429	308,425	226,818	17,731	63,876	73.5
Rakhine	1,706,388	387,148	91,237	20,434	275,477	23.6
Yangon	2,133,384	513,888	422,246	51,246	40,396	82.2
Shan	4,218,058	889,651	488,048	273,821	127,782	54.9
Ayeyawady	5,234,055	1,288,021	932,737	170,978	184,306	72.4
Nay Pyi Taw	768,584	183509	154,012	10,804	18,693	83.9
Union	34,203,208	7,828,400	5,269,079	1,074,220	1,485,101	67.3

* Improved sanitation is flush toilets and water seal (improved pit) toilets

Appendix 3.1: Key findings from Situational Analysis Report

Subject	Issues and Challenges
Policy and Strategy	▪ Absence of sector policy and strategy – Targets unspecified or unclear (no target date for sanitation) – No framework for government and donor investment – Equity and inclusion marginalised in resource allocation ▪ Sector is unregulated – No quality standards for water supply or wastewater treatment – No performance requirements for service providers (public or private) ▪ Sector monitoring weak and limited in scope – Lack of reliable information on coverage, use, functionality, sustainability – Planning and decision making not informed by data – Focus on projects, not sector goals (no annual sector reviews)
Institutional Arrangements	▪ Two ministries share rural WASH ▪ Limited DOH-DRD co-ordination at national and sub-national level ▪ Limited knowledge of best practices (operational approaches, technology options)
Sector Finance	▪ Inadequate investment in non-emergency WASH ▪ WASH-related expenditure difficult to track (government and donors)
External Support	▪ No dedicated structure for government–development partner co-ordination in WASH ▪ No government WASH programmes providing a framework for donor support
Rural water supply	▪ Inadequate maintenance, though functionality status not known (not monitored) ▪ Ambitious DRD short term targets may be unrealistic (funding, personnel) ▪ Some hardware choices not durable, minimum standards not always followed
Rural sanitation and hygiene	▪ CLTS not evaluated (suitability for Myanmar not confirmed, no lessons learned) ▪ Household toilets unaffordable for many, especially in flood-prone areas and other challenging environments ▪ Inconsistent provision of hardware subsidies by government, donors, NGOs ▪ Lack of technology choice in projects (one model promoted) ▪ Hand washing with soap not prioritised in projects; high incidence of diarrhoea ▪ Sanitation promotion based on educational approach, not behaviour change
School WASH	▪ Complexities under-estimated (facility design, hygiene promotion) ▪ Insufficient information on current status, especially – secondary school facilities – functionality of facilities (not monitored by EMIS) ▪ Low investment by government and donors ▪ Inadequate water supply: obstacle to hygiene and burden on children collecting ▪ Pupil : toilet ratio remains high by international comparison ▪ Hand washing not prioritised ▪ Inadequate school maintenance budgets ▪ No WASH focal person in schools ▪ Teachers need more Life Skills training
Emergency WASH	▪ Facilities failing after 3 years (not durable) ▪ RRD co-ordinates but no implementing role ▪ Transition pathway needed from emergency WASH to development (community and institutional level) ▪ Financial planning difficult due to inadequate data on affected persons

Colin, Dutton and Rodriguez (2015),
Myanmar Water, Sanitation and Hygiene Sector Situational Analysis; Final Report

Appendix 4: Principles - Additional information

A4.1 Equity and poverty

The links between lack of and/or unimproved water and sanitation and other dimensions of poverty are clearly illustrated in the World Bank's Sourcebook for Poverty Reduction Strategies (Volume 2)[77]. This is illustrated in Table A4.1 from the Sourcebook.

Table A4.1: Linkages between poverty and water and sanitation

		Poverty dimensions	Key effects
Lack of water sanitation and hygiene	⇨	Health and nutrition	▪ Water- and sanitation- related illnesses ▪ Stunting and wasting from diarrhoea-caused malnutrition ▪ Reduced life expectancy
		Education	▪ Reduced school attendance by children (especially girls) due to ill health, lack of available sanitation, or water collection duties
		Gender and social inclusion	▪ Burdens borne disproportionately by women, limiting their entry into the cash economy
		Income/consumption	▪ High proportion of budget used on water ▪ Reduced income-earning potential because of poor health, time spent collecting water, or lack of opportunity for businesses requiring water inputs ▪ High consumption risk because of seasonal or other factors

(adapted from Bosch, Hommann, Rubio, Sadoff, & Travers, 2002)

A Study on South Asia for UNICEF and WaterAid provides helpful guidance on how to address equity[78]. Although focused on sanitation, the approach is also applicable to water supply. The following is an extract from the Study

Mere commitment to action will not serve the cause of the excluded, unless policies, investments and actions are based on the principle of equity which is essentially the principle of fairness. Equity involves recognising that people are different and require specific support and measures to overcome the specific impediments that stand in the way of their being able to access and use services sustainably, in this case safe sanitation and adopting hygiene practices.

Action needs to be based on the principle of equity, which requires clear identification of and effective response around specific barriers in the following three categories:

- Attitudinal barriers arise essentially from a lack of respect, which results in isolation, prejudice, stigma, misinformation and lack of self-confidence of those who are marginalised. Attitudinal barriers are responsible for much of the social exclusion experienced by people with disabilities or people living with HIV, as well as for the disproportionate burden placed on women and girls in the region – as de facto managers of water, toilets, household and community cleanliness in general, and the teachers of

[77]Bosch, C., Hommann, K., Rubio, G., Sadoff, C., & Travers, L. *Macroeconomic and Sectoral Approaches: Water and Sanitation*, in J. Klugman (Ed.) (2002), A Sourcebook for Poverty Reduction Strategies, Volume 2: Macroeconomic and Sectoral Approaches Washington D.C.: The World Bank.

[78] Ravi Narayanan, Henk van Norden (UNICEF), Louisa Gosling (WaterAid), Archana Patkar (WSSCC), 2011, *Equity and Inclusion in Sanitation and Hygiene in South Asia: A Regional Synthesis Paper*, UNICEF and WaterAidwww.inclusivewash.org.au/LiteratureRetrieve.aspx?ID=70368

their children, the next generation. These barriers are also responsible for taboos that prevent us from talking about and then ensuring that sanitation facilities address the practical dimensions of washing and disposal needs linked to menstruation for women and girls, imprisoning millions of adolescent girls and women every month and keeping them away from school, work and play.

- Environmental barriers impede physical accessibility to infrastructure and to communication; for example, toilet and squat pan designs which are difficult to use for the differently-abled, older people and pregnant women, pans and traps that are improperly sized and daunting for young children and the lack of suitable options for water logged areas, sandy soils or flood prone areas, or communication materials which cannot be deciphered by illiterate people, or those who are blind or deaf.
- Institutional barriers cover a host of issues, acts of omission, such as lack of specific policies for the excluded including finance, knowledge, skills and consultation mechanisms, and acts of commission such as administrative and financial corruption. Poor accountability mechanisms perpetuate weak governance, wherein government and civil society officials as well as elected representatives remain systematically blind to the deplorable conditions of the urban and rural poor, especially the most marginalised groups.

A4.2 Disaster Risk Reduction and Climate Change Adaptation

The Myanmar Action Plan on Disaster Risk Reduction (2012) (MAPDRR) Sets the goal for Disaster Risk Reduction:

> To make Myanmar Safer and more Resilient against Natural Hazards, thus Protecting Lives, Livelihood and Developmental Gains

The objectives of the MAPDRR are:

1. To build a more resilient and safer community through conceptualization, development and implementation of appropriate disaster risk reduction programs and culture of safety;
2. To provide a framework for implementing Myanmar's DRR commitments at the global and regional levels, under HFA (Hyogo Framework for Action) and AADMER (ASEAN Agreement on Disaster Management and Emergency Response);
3. To provide a mechanism where the disaster risk reduction initiatives of all Government Ministries and Departments, supported by UN organizations and other stakeholders, can be coordinated and monitored;
4. To provide a conducive environment for mainstreaming DRR into development plans, and programs at the Union, State, Division, Township, and Village Tract levels; and
5. To support mutually beneficial partnerships between the Myanmar Government and their development cooperation partners in DRR programs.

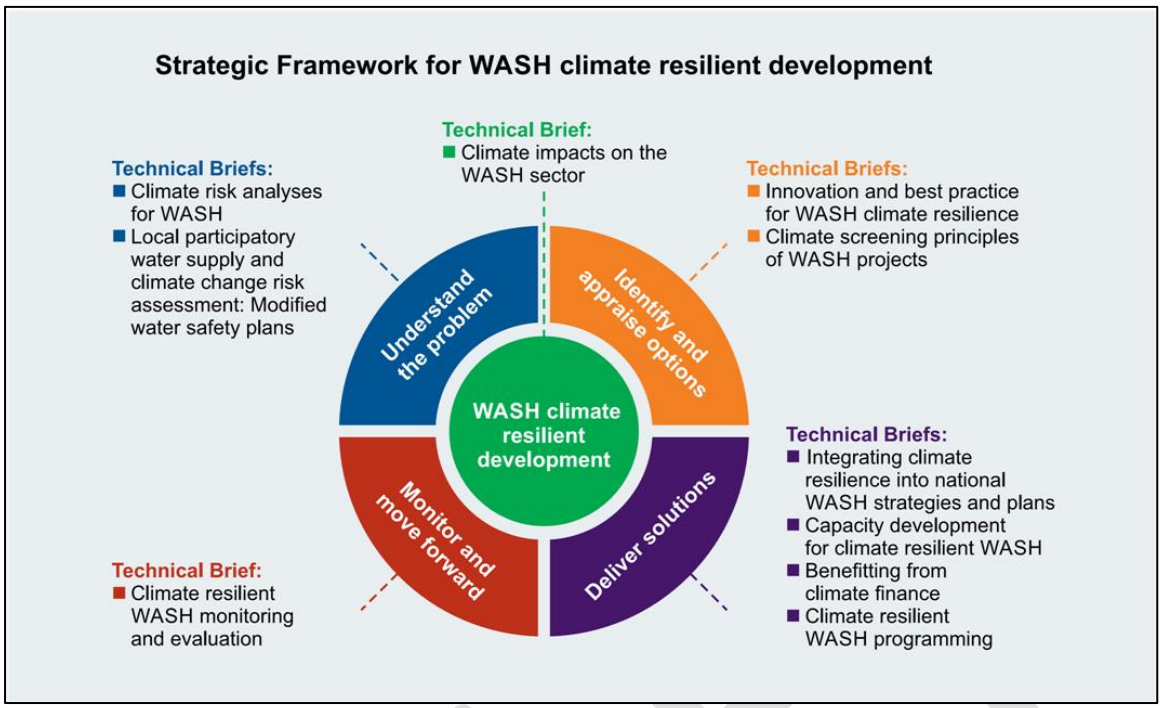
For the WASH sector, climate resilience requires a focus on[79]:

- A reduction in the likelihood that individuals feel the effects of climate change and related shocks. This can be achieved through programming that seeks to both understand the determinants of climate risk exposure to WASH services and act on them to minimise the exposure of individuals.
- Strengthening the reliability of WASH services. A starting point for the integration of climate resilience into WASH service delivery is the prioritisation and implementation of no/low regrets measures. These measures have a high chance of success against the full range of uncertainty in climate change and other future drivers. A number of no/low regrets measures will be those dealing with the existing level of climatic fluctuations, which many WASH systems are still not well protected against.
- Strengthening capacities of governments and communities to increase climate resilience over time. This can be achieved by helping governments design, deliver and sustain investments in WASH services that consider the additional risks posed by climate change. Also by strengthening multi-level WASH governance, strategies/plans and systems as well as building the adaptive capacity of communities to deal with climate-related shocks and stress.

UNICEF and Global Water Partnership developed the WASH Climate Resilient Development: Strategic Framework, which provides useful guidance on addressing climate change WASH. The scope of the Framework is shown in Figure A4.1.

[79]UNICEF and Global Water Partnership (2014), WASH Climate Resilient Development: Strategic Framework

Figure A4.1:



Risk is defined as a combination of the probability of a natural or anthropogenic hazard and its negative consequences, such as death, damage to property, loss of livelihood, disruption of economic activities, and damage to the natural environment[80]. Risk can also be defined to include the capacity to respond, as in the simple equation:

$$\text{Risk} = \frac{\text{Hazard + Vulnerability}}{\text{Capacity to respond}}$$

Resilience is also an important factor. It can be defined as "the ability of people of people and systems to anticipate, adapt to and recover from the negative effects of shocks and stresses (including natural disasters and climate change) in a manner that reduces vulnerability, protects livelihoods, accelerates and sustains recovery, and supports economic and social development, while preserving integrity.[81]

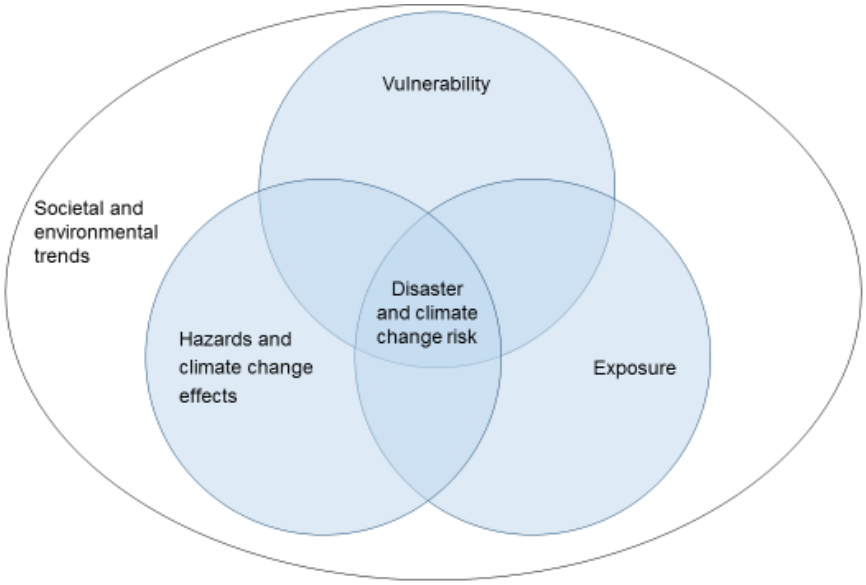
Disaster risk can be significantly reduced through strategies that seek to decrease vulnerability and exposure to hazards within wider efforts to address poverty and inequality. Humanitarian responses to disasters and other crises can be designed and implemented in ways that protect the affected people's right to life and other basic rights in the short and longer term. This approach is known as disaster risk reduction.[82]

There is significant convergence between the problems that disaster risk reduction and climate change adaptation seek to address. Populations already exposed to climate-related hazards and effects will be at greater risk due to a projected increase in the frequency and/or intensity of those hazards and effects as a result of global climate change.Disaster risk reduction and climate change adaptation also share a common conceptual understanding of

[80] Relief and Resettlement Department (2015), *Risk Assessment Roadmap, Myanmar*, Ministry of Social Welfare, Relief and Resettlement
[81]UNICEF and Global Water Partnership (2014), *WASH Climate Resilient Development: Strategic Framework*,
[82]*ibid*.

the components of risk and the processes of building resilience. The two approaches regard risk as the product of exposure and vulnerability, either to hazard(s) or effect(s) of climate change, or both. The greater the vulnerability, exposure and magnitude or likelihood of the hazard/climate change effect, the greater the risk.[83] This is shown diagrammatically in Figure 9.1.

Figure 9.1: Disaster and Climate Change Risk



M. Turnbull et al., ECB, 2013

Disaster Risk Reduction (DRR) is the reduction measures or actions which reduce the potential impacts from hazards such as earthquakes, floods and other events. Usually activities are grouped into three categories[84]:

▪ Disaster mitigation	Measures or actions which reduce the effects of hazard events through reducing the impact of the resultant disaster (e.g. designing buildings to earthquake resistant standards which can prevent loss of life and possibly destruction of the building).
▪ Disaster prevention	Measures or actions which reduce disasters from occurring by reducing the risks which lead to disasters (e.g. reforestation may prevent the risk of a landslide occurring).
▪ Disaster preparedness	Measures or actions which prepare communities and organisations for a disaster event, so that they have more capacity to cope with that event and hence reduce their vulnerability (e.g. develop an early warning system; the preparation of a safe area).

Adapted from S. House, (2007)

ECB defines 10 principles for an integrated approach to disaster risk reduction and climate change adaptation[85]:

1. Increase understanding of the hazard and climate change context

[83]WSSCC Reference Note, 2009, *Disaster risk reduction & emergency response for WASH*.

[84]Sarah House, 2007, *How to make wash projects sustainable and successfully disengage in vulnerable contexts*, ACF-France

[85]Marilise Turnbull, Charlotte L. Sterrett, Amy Hilleboe, 2013, *Toward Resilience: A Guide to Disaster Risk Reduction and Climate Change Adaptation*, Emergency Capacity Building Project (ECB), Practical Action Publishing Ltd.

2. Increase understanding of exposure, vulnerability and capacity
3. Recognize rights and responsibilities
4. Strengthen participation of, and action by, the population at risk
5. Promote systemic engagement and change
6. Foster synergy between multiple levels
7. Draw on and build diverse sources of knowledge
8. Instil flexibility and responsiveness
9. Address different timescales
10. Do no harm

The Sendai Framework sets four priorities for action, all of which are relevant for the development and operation of WASH services:

Priority 1: Understanding disaster risk.

Priority 2: Strengthening disaster risk governance to manage disaster risk.

Priority 3: Investing in disaster risk reduction for resilience.

Priority 4: Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction.

A4.3: Accountability

All organisations have a responsibility to be accountable. The questions are of accountability for what, and to whom. The answer to the former is certainly not just financial accountability – it also includes accountability for social, technical and environmental aspects and impacts of service provision. Accountability is a major subject in its own right, so only the special aspects of water supply and sanitation projects and their technology is considered. Thus, organisations have multiple accountabilities - downwards to partners, beneficiaries, staff and supporters, and upwards to donors, host governments, or electorates[86].

It is useful to distinguish between short-term *functional accountability* for resources, resource use and immediate impacts, and *strategic accountability* for impacts that an organisation's actions have on other organisations and the wider environment[87]. **Error! Reference source not found.**A7.1 shows how water supply and sanitation projects and programmes with their technologies fit into both categories, with the accountability upwards and downwards[88].

Table A7.1: Accountability in the RWSS Sector

Accountability	**Functional** (resources, resource use, immediate impacts)	**Strategic** (impacts on other organisations and wider environment)
Upwards (higher levels of government, development partners,)	▪ Population coverage ▪ Cost per capita ▪ Finance and budget ▪ Staffing ▪ Procedures ▪ Use of nationally manufactured materials and equipment ▪ Cost recovery	▪ Consistency with national policies ▪ Influence on national policies ▪ Co-ordination, collaboration ▪ Support structures and mechanisms ▪ Subsidies ▪ Cost sharing ▪ Gender ▪ Standardisation ▪ Development of new technologies ▪ Monitoring and Evaluation ▪ Professional
Downwards (beneficiaries, the electorate partners, staff, lower levels of government)	▪ Needs assessment ▪ Community in decision-making ▪ Choice of technology ▪ Local resources/materials ▪ Existing practices ▪ Gender ▪ Affordability ▪ Suitability for VLOM ▪ Availability of replacement parts ▪ Training	▪ Environmental impact ▪ Gender ▪ Health ▪ Monitoring and evaluation ▪ Professional

[86]adapted from Edwards M. and Hulme D., 1995, *NGO Performance and Accountability: Introduction and Overview*, in *Non-Governmental Organisations - Performance and Accountability*, ed. Edwards M. and Hulme D., Earthscan Publications Ltd., London.

[87]Avina J., 1993, *The evolutionary life cycle of non-governmental development organisations*, in *Public Administration and Development*, Vol.13, No.5 (December), quoted in Edwards and Hulme (1995).

[88] Adapted from Ockelford, J., 1996. *Technical and Management Issues*. In: SmoutI. (Editor), *Water and NGOs: Proceedings of an ODA Workshop*. LoughboroughUniversity, Loughborough, UK

A4.4: Community Based Management

Key aspects of community based management of services are:

- **Participation:** all members of the community (women and men) should have equal opportunity to participate in the development and management process, and there must be broad community support for the implementation of community management.
- **Responsibility:** the community takes the ownership and attendant obligations of the systems, including financial obligations.
- **Authority:** the community has the legitimate right to make decisions regarding the system on behalf of the users.
- **Control:** the community is able to carry out and determine the outcome of its decisions.
- **Accountability:** the community accepts the consequences of its decisions and understands that action rests with themselves.

The **demand responsive approach** is a foundation for community management. The community, represented by both women and men, initiates the process of developing services by requesting support from the relevant authority or service provider. The community then makes informed choices about service options, based on their willingness to pay for the service, and acceptance of responsibilities for subsequent operation and maintenance. Key points include:

- Informed choices by women and men in communities through participatory planning and community involvement in implementation to ensure ownership.
- Complete community management responsibility for operation and maintenance.
- Capital cost sharing and 100% of operation and maintenance costs by user community.
- Promoting more options for service delivery.

Appendix 5: Strategic Objectives - Additional information

This Appendix contains additional information and guidance on some of the components of the Strategic objectives, and links to other sources of information.

A5.1: Water supply

The Rural Water Supply Network (RWSN) is the global network of professionals and practitioners working to raise standards of knowledge and evidence, technical and professional competence, practice and policy in rural water supply and so fulfil the vision of sustainable rural water services for all. RWSN places a very strong emphasis on innovation, documentation, research and capacity building. It is primarily concerned about viable technologies and approaches that improve rural water supply. It achieves its objectives by catalysing innovation, providing evidence-based documentation, supporting research, sharing information, influencing policies and practices, supporting efforts to build capacity and facilitating networking.
http://www.rural-water-supply.net/en/

Multiple Use Water Supply

http://www.winrock.org/resources/solutionmus-guide

A5.2: Sanitation

CLTS
Additional information at: http://www.communityledtotalsanitation.org/

Sanitation marketing

Water & Sanitation Program (WSP): Introductory Guide to Sanitation Marketing, Jacqueline Devine and Craig Kullmann (2011), available at:
http://www.wsp.org/sites/wsp.org/files/publications/WSP-Introductory-Guide-Sanitation-Marketing.pdf

http://wsp.org/toolkit/toolkit-home

SanMark Community of Practice: A Peer Learning Exchange:
http://www.sanitationmarketing.com/

UNICEF: Sanitation Marketing Learning Series:
The ten Guidance Notes in the Series are available for download here: http://uni.cf/Xo2o2I

1. Situation Analysis – How do I know if SanMark will work in my country?
2. Consumer Behavior – How can we understand sanitation consumers in target markets?
3. Sanitation Supply Chains and Business Models – How can we improve market systems?
4. Private Sector development - How do we improve capacity of local sanitation businesses?
5. Getting the Product ‘Right’ – How do we design affordable, desirable latrines that businesses can profitably produce and sell?

6. Enabling Environment – What roles and functions are needed in the new market?
7. Demand Promotion and Marketing – How do we reach rural target markets in san mark?
8. Equity in Sanitation Marketing - How can we support the market to reach the poorest?
9. Monitoring and Evaluation – How do we measure sanitation marketing progress?
10. Sanitation Marketing and CATS – How do we link approaches?

Septage Management

Guidance on development of septage services can be found at:
https://www.rti.org/pubs/septage_management_guide_1.pdf

Solid waste management

UN-Habitat (2010), Collection of Municipal Solid Waste in Developing Countries gives a good overview of the subject, but would need to be adapted for rural solid waste management. Available at
http://mirror.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3072

India has been developing rural solid waste service for some time, and offers some useful guidance that could be adapted for Myanmar:

Handbook on scaling up solid and liquid waste management in rural areas (2012), Government of India and Water & Sanitation Program, available at:
http://documents.worldbank.org/curated/en/2016/01/25793414/handbook-scaling-up-solid-liquid-waste-management-rural-areas

Solid and Liquid Waste Management in Rural Areas: a Technical Note, (2008?), Government of India and UNICEF, available at:
http://www.mdws.gov.in/sites/default/files/SLWM_2.pdf

A5.4: Thant Shin Star Approach for WASH in Schools

The steps and potential phased targets for the Thant Shin Star Approach:

By	All schools to reach at least	
2020	One Star	Daily routines to promote healthy habits ▪ Daily supervised group hand washing with soap, normally before the school meal ▪ Daily supervised cleaning of toilets, and provision of soap and water (at least one functional toilet for girls and one for boys); no open defecation ▪ Daily supervised use of drinking-water bottles by all children
2025	Two Stars	Incremental improvements ▪ Hygiene education and facilities to promote hand washing with soap after toilet use ▪ Improved sanitation facilities, plus facilities and education for menstrual hygiene management ▪ Low-cost point-of-use water treatment introduced in schools
2030	Three Stars	Meeting national standards ▪ School facilities and systems upgraded to meet national standards

Source: UNICEF and GIZ, 2013, *The Three Star Approach for WASH in Schools*

A5.5: WASH in Health Facilities

The current Essential Health Services Access Project (2014–2019) being implemented with support of the World Bank includes the preparation of health care waste management guidelines as part of the component for System Strengthening, Capacity Building, and Project Management Support:

> "As part of the Environmental Management Plan preparation, the following main aspects have been considered: … (b) assessment of health care waste management planning in the country (e.g. assignment of responsibilities in waste management for health-care facilities; assessment of waste generation; existence/development/implementation of hospital waste management plan); presence of a health-care waste minimization, reuse and recycling approach; segregation, storage and transport of medical waste; treatment and disposal methods used in Myanmar for medical waste; … ."

Under the Essential Health Services Access Project, US$2 million is allocated for: Development of health care waste management policy and guidelines; Training on health care waste management; Equipping health facilities with health care waste management supplies, under the responsibility of DOH (Occupational and Environmental Health).

Water, sanitation and hygiene in health care facilities: Status in low- and middle-income countries and way forward. WHO and UNICEF, 2015
http://www.who.int/water_sanitation_health/publications/wash-health-care-facilities/en/

The WHO website also gives links to other source of information on WASH in Health Facilities and other health related aspects of WASH.

Information on Health Care Waste can be found at the WHO website. The specific page is:
http://www.who.int/topics/medical_waste/en/

Two important guides:

Safe management of wastes from health-care activities, WHO (2014)
http://www.who.int/water_sanitation_health/medicalwaste/wastemanag/en/

Management of solid health-care waste at primary health-care centres: A decision-making guide, WHO (2005)
http://www.who.int/water_sanitation_health/facilities/waste/hcwdmguide/en/

A5.6: WASH in Emergencies and humanitarian action

- The lead agency for Government is the Relief and Resettlement Department (RRD) within the Ministry of Social Welfare, Relief and Resettlement.
- The Natural Disaster Management Work Committee, chaired by the Union Minister for Social Welfare, Relief and Resettlement, is the 13-member body for Disaster Management.
- The 11-member National Disaster Management Working Committee chaired by the Deputy Minister for Social Welfare, Relief and Resettlement is constituted to supervise

the implementation of Disaster Management activities in accordance with guidelines of MDPA and also to coordinate the activities of MDPA.

- Fourteen Sub-Committees, have also been constituted for effective implementation of activities of MDPA.
- Region and State Disaster Preparedness Agencies constituted at Region and State level respectively, together with associated sub-committees. District, Township and Village Tract Disaster Preparedness Agencies have been constituted at district, township and village tract levels respectively.[89]

The Arrangements of the various Work Committees is shown in Figure A5.6.

Figure A5.6: Committee Structure for Disaster Management

Source:The Role of EOC on Disaster Risk Reduction in Myanmar, PowerPointPresentation by Director of RRD

Natural Disaster Management Committee chaired by the Vice-President has been comprised to carry out preparedness and safety measures for possible risks of natural disasters in the country and ensuring prompt and effective timely response to emergency. Under NDMC, there are four working committees:

- National Disaster Management Working Committee (chaired by Union Minister for Social Welfare)
- Search and Rescue Working Committee (chaired by Union Minister for Home Affairs),
- Recovery Coordination Working Committee (chaired by the Union Minister for Construction)
- International Working Committee (chaired by Union Minister for Foreign Affairs).

[89]Myanmar Action Plan on Disaster Risk Reduction (2012)

The representation of Departments involved in the WASH sector on these Committees and Sub-Committees is not specified, except in terms of “relevant responsible ministries, government departments and government agencies”. The Disaster Management Rules state that “the relevant ministries, the Government Departments, the Government Agencies and Region or State Governments shall issue their respective Standing Order on Disaster Management based on the Disaster Management Plan at the national level issued by the the National Committee, and the respective Disaster Management Plan at the local level.

Additional information and guidance on WASH in Emergencies

The Humanitarian Charter and the Sphere Standards
http://www.spherehandbook.org/en/the-humanitarian-charter/

The Code of Conduct for The International Red Cross and Red Crescent Movement and NGOs in Disaster Relief
http://www.ifrc.org/en/publications-and-reports/code-of-conduct/

Do No Harm Approach
http://www.conflictsensitivity.org/do-no-harm-local-capacities-for-peace-project/

Minimum commitments for the safety & dignity of affected people
http://washcluster.net/minimum-commitments-safety-dignity-affected-people/

Core Commitments for Children in Humanitarian Action, UNICEF, 2010
http://www.unicef.org/publications/files/CCC_042010.pdf

Impact Measurement and Accountability in Emergencies: The Good Enough Guide, Emergency Capacity Building Project (2007) published by Oxfam (also available in Burmese)
http://www.ecbproject.org/resources.aspx?q=good%20enough%20guide|tufa

The Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP) provides a forum on learning, accountability and performance issues for the humanitarian sector. It is a useful source of information and guidance.
http://www.alnap.org/

Appendix 6: Guidelines, procedures and standards

Manual for Rural WASH

Water Supply

- Guidance and a standard format for collection of information on existing water supply systems
- Guidelines for involving and preparing communities in development, construction, operation and maintenance of water supply services and prepare
- Procedure and criteria for setting the rate of community contribution
- Procedures for establishment of Village Water Committees
- Guidance manual on management including financing, operation and maintenance of rural water supply systems for use by VWCs
- Procedures for determining whether to rehabilitate or replace existing non-functioning water supply systems
- Additional testing protocol for routine testing of water from un-piped sources of water used for drinking
- Guidance on preparing, using and maintaining water safety plan (WSP) for use in the local context
- Procedures to make authorities at Township level accountable to communities for provision of water supply, sanitation and hygiene promotion services
- Guidelines for Township level government, service providers and support organisations on how to address multiple upward and downward accountabilities

New national technical design and construction standards,

Sanitation

Informed choice manual with designs for sanitation options for in a format suitable for use at community level

Guidance on septage management for townships

Guidance and procedures for establishing a rural solid waste service

Guidance in local languages covering approaches, methods, standard messages and tools that, by addressing the reasons for the gap, are effective in achieving behaviour change (including safe disposal practices of infant faeces)

School WASH

National service standard

Design and construction standards (including the source of water, abstraction, treatment and delivery) for WASH facilities in the different levels of school

WASH in Health Facilities

National service standards for WASH in health facilities

National standard for the design of water supply facilities and sanitation facilities

National guidelines for clinical and hazardous waste management in health care facilities

Standard designs for segregation of non-hazardous and hazardous wastes, and for treatment and safe disposal of the range of hazardous wastes

National guidelines for the development and operation of waste water systems in health care facilities

Standard designs for waste water treatment systemsand disposal of treated effluent

Emergencies

Standard operating procedures for WASH in accordance with Disaster Management Law, including procedure for evaluating and measuring effectiveness of humanitarian response

Standards for WASH basic services to be achieved in the different stages of an emergency response

Standard modular designs for sanitation systems

Institutional

Communication strategy for rural WASH

Procedures and rules for the private sector involvement in rural WASH

Procedures to make authorities at Township level accountable to communities for provision of water supply, sanitation and hygiene promotion services

Guidelines for Township level government, service providers and support organisations on how to address multiple upward and downward accountabilities

Finance

Procedure and criteria for setting the rate of community contribution

Research and guidance on innovative and appropriate financing methods for sanitation for the poor

Appendix 7: Process of Development of the Strategy

At a multi-stakeholder workshop in Nay Pyi Taw in May 2013, government and development partners agreed on the need to formulate a new sector strategy through a phased process.

The first phase carried out in 2014 (and reporting in June 2015) was a detailed situation analysis, looking at service coverage and gaps and the policy, institutional and financial framework within which services are provided.

It was decided that the Strategy should address rural water supply and sanitation (WASH), WASH in schools and wash for health facilities. Three Union Government Departments, the Department of Rural Development under the former Ministry of Livestock, Fisheries and Rural Development[90], the Department of Basic Education under the Ministry of Education and the Department of Public Health under the Ministry of Health established a Task Force to guide and oversee the process of developing the a Strategy. Members of the Task Force were drawn from these and other Department with an interest in the Strategy.

A team of one international and two local consultants was appointed in September 2015 to support the Government to develop the Strategy. A second international consultant was appointed for development of an Investment Plan for the Strategy. These consultants were supported by UNICEF.

A participatory process for developing the Strategy has been followed, with extensive consultation through workshops and meetings:

- a National Workshop in Nay Pyi Taw for Union Government Staff, and government representatives from each State and Region
- a workshop for development partners and NGOs in Yangon
- a series of consultation workshops for all the States and Regions with local government, representatives from township development committees and civil society in 13 places nationwide
- A national Review Workshop in Nay Pyi Taw with Union Government staff and government representatives from each State and Region.
- Review meetings with Development Partners and NGOs in Yangon
- Frequent meetings of the Task Force with representation from a wide range of Government Departments and other stakeholders

Nearly 1000 people have been involved in the consultative process.

[90] now Ministry of Agriculture, Livestock and Irrigation