

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA



ONE WASH NATIONAL PROGRAM

A Multi-Sectoral SWAp

PHASE 2 Program Document

First Draft

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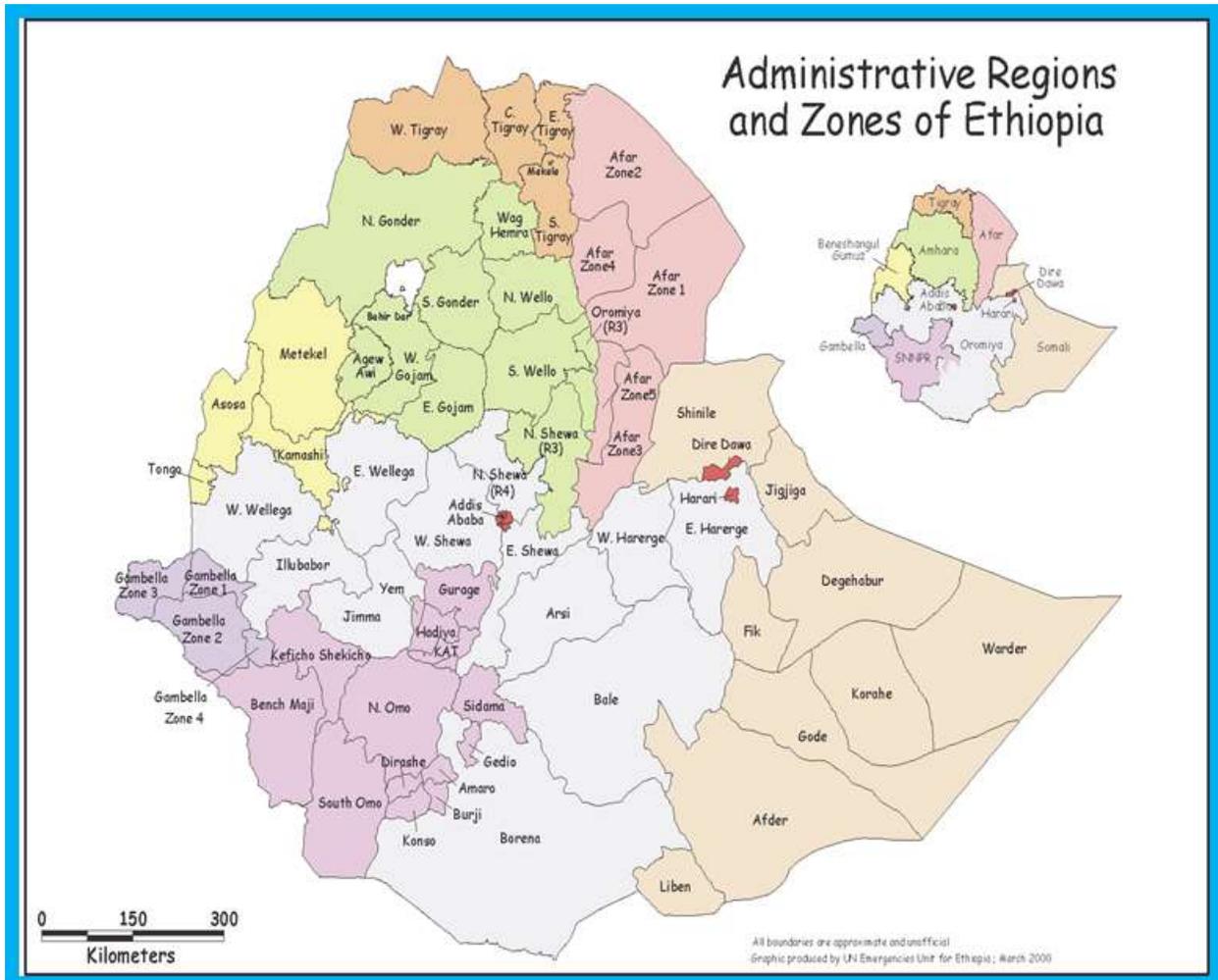


Table of Contents

Abbreviations and Acronyms	8
Glossary	10
1. Executive Summary	13
1.1 Introduction	13
1.2 Program Description	13
1.3 Guiding Principles.....	13
1.4 Program Pillars	13
1.5 Phasing	14
1.6 Unit Cost for component.....	15
1.7 Capacity Building and Advocacy.....	15
1.8 Sanitation and Hygiene behavior change	15
1.9 Appropriate Technology	15
1.10 Program Components	16
OWNP - Program Components.....	16
1.11 Targets and Costs	18
1.12 Roles and Responsibilities	18
2. Introduction and Background	20
2.1 Introduction	20
2.2 The Global Context	20
2.3 The National Context on WASH.....	22
2.4 Policy and Program Initiatives	23
2.5 The Evolution of WASH in Ethiopia.....	23
2.5.1 Introduction	23
2.5.2 Evolution of the One WASH National Program	24
3. Institutional Roles.....	26
3.1 Institutional Context	26
3.1.1 Introduction	26
3.1.2 Obligations of Signatory Ministries	26
3.1.3 Obligation and role of Civil Society Organizations	27
3.1.4 Obligation and Roles of the Program (NWCO)	28
3.1.5 Obligation and Role of Private Sector	28
3.1.6 Role of Banks and microfinance institutions (MFI)	29
3.1.7 Obligation and Roles of Community Organizations	29
3.2 Enhancing Ownership of WASH Services.....	29
4. Program Description.....	30
4.1 Introduction	30
4.2.1 Development Objective	30
4.2.2 Long Term Objective	30
4.2.3 Intermediate Term Objective	30
4.2.4 Short Term Objective	31
4.3 Guiding Principles	31

Draft- One WASH Program Document Phase II Updating- May 2010

4.4 Program Pillars.....	31
4.4.1 Enabling Environment/Good Governance	31
4.4.2 Maximizing availability and efficient use of human and financial resources to create demand for better WASH services	31
4.4.3 Capacity development for improved delivery of WASH services	32
4.5 Phasing.....	32
4.5.1 Introduction	32
4.5.2 Phase II	33
4.6 Risk Assessment.....	34
4.7 Safeguards	37
4.7.1 Description	37
4.7.2 Special Conditions	38
4.8 Enhancing Equity and inclusion in WASH	39
4.8.1 Why focus on MHM	39
5. Component Description	40
5.1 Rural Water Supply	40
5.1.1 Introduction	40
5.1.2 Implementation modalities	41
5.1.3 Pastoralist Rural Water	44
5.2 Rural Sanitation and Hygiene Promotion	44
5.2.1 Introduction	44
5.2.2 Implementation	45
5.2.3 Pastoralist Sanitation and Hygiene	47
5.2.5 Targeted Subsidy	48
5.2.6 Manuals, Guidelines and Information Materials	48
5.3 Urban Water Supply	49
5.3.1 Introduction	49
5.3.2 Implementation	50
5.3.3 Improving Efficiency in Construction and Operation of Water Supply Systems	52
5.3.4 Construction Supervision	52
5.3.5 Sustainability	53
5.3.6 Water Quality	54
5.3.6.1 Introduction	54
5.3.6.2 Implementation	55
5.3.6.3 Standards and Guidelines	55
5.4. Urban Sanitation and Hygiene.....	55
5.5 Institutional WASH.....	57
5.5.1 School WASH	57
5.5.2 WASH in Health Facilities	59
6. Readiness Criteria and Targeting	61
6.1 Introduction	61
6.2 Targeting and Equity.....	62
6.3 Program Implementation Process	64
7. Program Organization and Partnerships	65
7.1 Program Organization.....	65
7.2 Partnership and partnership arrangement.....	66
7.3 Minimum Staffing Package	68

8. Assessing Capacity	70
8.1 Introduction	70
8.2 Approach to Capacity Building.....	71
8.3 Guidelines and manuals.....	72
8.4 Systems and Institutions.....	72
8.5 Operation and Management (O&M)	73
8.6 Planning, procurement, financial management and monitoring	73
8.7 Strengthening private sector capacity.....	74
8.8 Gender Equity and Mainstreaming.....	74
9. One WASH National Program Phase II Strategy (and beyond)	74
9.1 Background	74
9.2 Current state of WaSH in Ethiopia.....	75
9.3 Strategy formulation.....	76
9.4 Organizational Direction.....	77
9.5 GTP II and Sustainable Development Goals (SDG)	77
9.8 OWNPFacilitation Modality	89
9.9 OWNPFacilitation Results Based Framework-2018-2020	89
9.10 OWNPFacilitation Stage 2 Structure.....	90
9.11 Guidelines	90
10. Existing and New Strategic Approach to WASH (2018 to 2030)	91
10.1 Short Term Recommendation	91
10.1.1 Enhancing the Enabling Environment	91
10.1.2 Strengthening Integration, Harmonization, Alignment and Partnership	94
10.1.3. Maximizing availability and efficient use of human and financial resources	95
10.1.4 Capacity development for improved delivery of WASH services at all levels	95
10.1.5 Water Utilities	96
10.1.6. Strengthening NWCO and RWCOs	96
10.1.6 Organize Zone Coordination Offices	97
10.1.7 Strengthen Advocacy for WASH	98
10.1.8 Behavior Change Communication (BCC)	99
10.1.9 Develop Efficient Program Communication Strategy	100
10.1.10 Strengthen Monitoring and Evaluation for WASH	101
10.1.11 Strategize for Sustainable H&S Development in Rural and Urban Areas	101
10.1.12 Strengthen Community Involvement/Participation and Empowerment	102
10.1.13 Ensure Water Safety	103
10.1.14Involve the Private Sectors in WASH	104
10.2 Long term recommendations	104
10.2.1 Knowledge Management	104
10.2.2 Strengthen Groundwater and Surface Water Development	105
10.2.3 WASH Sector Reform	106
10.2.4 Resilient and Sustainable WASH Programme in Arid and Semi-Arid Drought Prone Areas of Ethiopia	107
10.2.5 Enhance the use of Renewable Energy	108
11. Technical Assistance and Academia Support	110
11.1 Enhancing Technical Assistance.....	110
11.2 Enhancing the integration of WASH Training Centers of Excellence.....	110

11.2.1 Introduction	110
11.2.2 Ethiopian Water Technology Institute (EWTI)	111
11.2.3 TVETCs and HSCs	111
11.2.5 Health and technology Universities	113
12. Program Monitoring and Review	114
12.1 Introduction	114
12.2 Key Performance Indicators	114
12.2.1 Introduction	114
12.3 Reviews and Reporting Process	118
12.3.1 Review	118
12.3.2 Progress Meetings and Reporting	118
12.4 Reporting	118
12.4.1 Reporting from Kebele to federal level	118
12.4.2 Reporting at federal level	119
12.5 Mobile Technology for Transmission of Data and Information	121
13. Funding and Financial Management	122
13.1 Introduction	122
13.2 Principles	122
13.3 Assumptions	122
13.4 Funding Contributions	123
13.5 Mitigation measures for budget availability and utilization risks	124
13.6 Financial management	125
13.6.1 Introduction	125
13.6.2 Sources of Funding	125
13.6.3 Financial Management – Roles and Responsibility	126
13.6.4 Fund Flow and Channeling of Funds	128
13.6.5 Fund Allocation	130
13.6.6 Budgeting	131
13.6.7 Consolidated WASH Account at federal level	133
13.6.8 Bank Accounts	135
13.6.9 Financial Reporting	135
13.6.10 Fixed Assets	136
13.6.11 Preservation of Financial Documents	136
13.6.12 Internal Controls	136
13.6.13 Auditing	137
13.6.14 Taxation	138
13.6.15 Per diems	138
14. Procurement and Contract Management	139
14.1 Introduction	139
14.2 Procurement Methods	140
14.3 Program Procurement Requirements	141
14.4 Program Interventions	143
15. OWN Phase 2 Completion Program Costs and Budget	144
15.1 Introduction	144
15.2 Program Planning Process	144
15.2.1 Introduction	144

Draft- One WASH Program Document Phase II Updating- May 2010

15.2.2 Planning Parameters	145
15.2.3 Planning Criteria	145
15.2.4 Price Inflation	146
15.3 Access	146
15.3.1 Rural and Urban Water Supply	146
15.3.2 Water Supply Beneficiaries	147
15.3.3 Rural water supply analysis methodology	148
15.4. Physical and Financial Plan	151
15.5 Scenario -2 Physical Plan and Financial requirement for Rural Water Supply	154
15.5.1-New Rural Water Supply Facilities	154
15.5.2 Rural Water Supply Facilities to be rehabilitated	157
15.5.3-Financial Requirement for Water Supply	157
15.6 Institutional WASH	159
15.7 Urban Water Supply Physical and Financial Plan	163
15.8 Rural and Peri-urban Sanitation Physical Plan	171
15.9 Urban sanitation	172
List of Annexes.....	180
Annex 1 Scenario 1	181
Annex 2 Scenario-II.....	195
ANNEX IV Strategic Action Plan, Phase II, OWNP-2018-2020	232
ANNEX V WASH sector reform principles.....	246
ANNEX VI OWNP Result Framework-2018-2020.....	246

Abbreviations and Acronyms

AAWSA	Addis Ababa Water and Sewerage Authority	GLoWS	Guided Learning on Water and Sanitation
AFD	Action for Development	GPS	Global Positioning System
AfDB	African Development Bank	GTP	Growth and Transformation Plan
AMREF	African Medical and Research Foundation	Ha	Hectare
AWD	Acute Watery Diarrhea	HCS	Hararghe Catholic Secretariat
BADEA	Arab Development Bank	had	Health Development Army
BC	Behavior Change	HEP	Health Extension Program
BoFED	Bureau of Finance and Economic Development	HEW	Health Extension Worker
BOQ	Bill of Quantities	HH	Households
BoWR	Bureau of Water Resources	HMIS	Health Management Information System
CAP	Consolidated Annual WASH Plan	HOAREC	Horn of Africa Regional Environmental Center
CFT	Community Facilitation Team	HP	Hand pump
CLTSH	Community-Led Total Sanitation and Hygiene	HSC	Health Science College
CMP	Community Managed Project	HSDP	Health Sector Development Plan
CSA	Central Statistical Agency	IA	Implementing Agency
CSO	Civil Society Organization	ICB	International Competitive Bidding
CWA	Consolidated WASH Account	ICT	Information and Communication Technology
DAG	Development Assistance Group	IFMIS	Integrated Financial Management Information System
DFID	Department for International Development (UK)	IPP	Indigenous Peoples Plan
DRMFSS	Disaster Relief Management and Food Security Sector	IP	Implementing Party
EC	Ethiopian Calendar	IRC	International Reference Center
EMIS	Education Management Information System	IT	Information Technology
EPRU	Emergency Preparedness and Response Unit	JICA	Japan International Cooperation Agency
ESA	Ethiopian Standards Authority	JFA	Joint Financing Agreement
ESDP	Education Sector Development Program	JMP	Joint Monitoring Program
ETB	Ethiopian Birr	JTR	Joint Technical Review
EU	European Union	KPI	Key Performance Indicator
EWTI	Ethiopian Water Technology Institute (formerly EWTEC)	KWT	Kebele WASH Team
EWTF	Emergency WASH Task Force	Lcpd	Liters per capita per day
FLAWS	Forum for Learning and Sharing on Water Supply and Sanitation	M&E	Monitoring and Evaluation
FMR	Financial Monitoring Report	MDG	Millennium Development Goal
FRA	Fiduciary Risk Assessment	MIS	Management Information System
FY	Fiscal Year	MFI	Microfinance Institution
GDP	Gross Domestic Product	MOE	Ministry of Education
GIS	Geographic Information System	MOFEC	Ministry of Finance and Economic Cooperation
GOE	Government of Ethiopia	MOH	Ministry of Health
GLASS	Water global annual assessment of Sanitation and Drinking Water	MOWE	Ministry of Water and Energy
		MOU	Memorandum of Understanding
		MSF	Multi-Stakeholder Forum
		MWA	Millennium Water Alliance
		NBE	National Bank of Ethiopia
		NCB	National Competitive Bidding

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NGO	Non-government Organization	USD	United States Dollar
NWCO	National WASH Coordination Office	UWSSP	Urban Water Supply and Sanitation Project
NWI	National WASH Inventory	WASH	Water, Sanitation and Hygiene
NWTT	National WASH Technical Team	WASHCO	Water, Sanitation and Hygiene Committee
O&M	Operation and Maintenance	WASH	Water, Sanitation and Hygiene Management
OCHA	Office for Coordination of Humanitarian Assistance	MIS	Information System
ODF	Open Defecation Free	WHO	World Health Organization
OFAG	Office of Federal Auditor General	WIF	WASH Implementation Framework
OWNP	One WASH National Program	WoFEC	Woreda Finance and Economic Cooperation
PASDEP	Plan for Accelerated and Sustained Development to End Poverty	WPMU	WASH Program Management Unit
PCDP	Pastoralist Community Development Project	WRDF	Water Resources Development Fund
PDA	Personal Digital Assistant/Tablets	WSG	Woreda Support Group
PFM	Public Financial Management	WSP	Water and Sanitation Program (World Bank)
PMU	Program Management Unit	WSSP	Water Supply and Sanitation Project
PoA	Power of Attorney	WWT	Woreda WASH Team
PTA	Parent Teacher Association		
PV	Photovoltaic		
QA	Quality Assurance		
RiPPLE	Research-inspired Policy and Practice Learning in Ethiopia		
RFP	Request for Proposals		
RPF	Resettlement Policy Framework		
RWCO	Regional WASH Coordination Office		
RWPMU	Regional WASH Program Management Unit		
SAP	Strategic Action Plan (Sanitation)		
SLTSH	School-led Total Sanitation and Hygiene		
SNNPR	Southern Nations and Nationalities People's Republic		
SNV	Netherlands Development Organization		
SP	Service Provider		
SSAP	Self-Supply Accelerated Program		
SSWG	Self-Supply Working Group		
SWAp	Sector wide Approach		
TA	Technical Assistance		
ToFED	Town Finance Office		
TOR	Terms of Reference		
TSG	Town Support Group		
TVETC	Technical and Vocational Training College		
TWB	Town Water Board		
TWU	Town Water Utility		
UAP	Universal Access Plan		
UNESCO	United Nations Education, Science and Cultural Organization		
UNICEF	United Nations Children's Fund		

Glossary

Advocacy - activities undertaken to persuade and mobilize people/decision makers to take action.

Behavior change - in hygiene and sanitation, behavior change refers to practicing safe disposal of feces through the construction and consistent use of improved latrines by all family members, handwashing with soap (or substitute) and water at critical times, and safe transport, treatment, storage and handling of household drinking water.

Borehole depths - The term “shallow” in Ethiopia is used to refer to a borehole up to about 60m in depth; “medium” depth refers to 60-150m; “deep” boreholes are drilled up to about 450m or more.

CLTSH - Community-Led Total Sanitation and Hygiene is Ethiopia’s version of CLTS is a triggering tool to mobilize communities embark on construction of improved latrine and use, promotion of hand-washing practices with soap (or substitute) and water at critical times, and safe water handling and treatment at the household level, are also addressed along with the drive to achieve ODF status.

CMP – Community Managed Project - WASH projects managed by trained and recognized WASHCOs with support from service providers such as MFIs.

Gender – the socially constructed definition of men and women, to be differentiated from sex, which is the biological characteristics of males and females and does not only refer to females. Gender is determined by tasks, functions and roles attributed to males and females in society and in public and private life.

Hygiene - practices associated with ensuring good health and cleanliness. This includes safe human excreta disposal (ODF), hand washing with soap at critical times most notably after defecation or before contact with food and strict observation of the safe drinking water chain.

Ignition (also called triggering) - the process wherein an outside facilitator mobilizes communities to take action to change their hygiene and sanitation behavior.

Improved drinking water supply- Water supply system such as -well or bore hole or protected spring, protected dug well and rain water-collection, properly constructed, treated and piped into dwelling yard or plot, public tap, or standpipe, tube

Improved Sanitation Facility - A sanitation system that is safe, clean and cleanable, sealed to discourage exposure to the flies, other animals and the environment as well as promote dignity and privacy.

Joint Technical Review - a semi-annual review process that brings together the government and major WaSH Development Partners to review program implementation including progress and challenges. These reviews provide an excellent opportunity for “big picture” learning and strategic problem solving

Model Household - a household that fulfils at least 11 of the 16 HEP packages that include access to and use of latrine, preparation of waste water seepage pits, hand washing, water storage and treatment facilities.

Multi-Stakeholder Forum - an annual event that brings together stakeholders from government (including representatives from the four signatory Ministries), Development Partners, civil society organizations, and the private sector to review progress in the WASH sector and to agree on key strategic undertakings to be jointly pursued during the year ahead. The MSF is designed to improve communication between stakeholders, as well

as supporting the mutual objectives of coordination, harmonization and alignment among partners across the implementing sectors

Offsite Sanitation. A water-borne sanitation system linked to a sewer or septic tank/cesspool whereby the sludge deposit of human excreta is pumped or otherwise transferred to a treatment system at a different location.

Onsite Sanitation - A sanitation system whereby excreta are contained at the same location as the toilet; either in a pit, chamber, vault or septic tank.

Open defecation free (ODF) - an environment wherein no feces is openly exposed to the air. It describes a state in which all community members practice use of latrine at all times and a situation wherein no open defecation is practiced at all. ODF is a term used in CLTSH to describe the attainment of 100 percent latrine coverage and use by all families in a village, including small children.

Procurement “contract”: WASH program Consultancy, Goods and Works legally binding procurement arrangement entered into on behalf of the region, Woreda and or Zone. This can range from a very formal and structured contractual agreement document, to a hardcopy for electronic for service, contract and purchase order, to a binding verbal commitment, and so on.

Pre-ignition/triggering - A process comprises preparations made to mobilize villagers. Pre-ignition activities include a strategic selection of kebeles and villages, meeting local gatekeepers and fixing appropriate date, time & place for community ignition.

Resettlement Area – An area where people have been recently resettled as a result of actions by government agencies or private entities for agricultural, industrial or infrastructure development.

Sanitation Action Plan SAP –A plan to promote or activate sanitation program in rural and urban areas and in domestic and institutional settings.as well as hand washing and safe drinking water handling in the home. The urban aspects of the SAP address peri-urban areas, small towns and informal settlements where on-site solutions can be applied.

Social/ Sanitation marketing - an approach that focuses on improving formal and informal supply chains, products and services to expand the delivery of affordable basic sanitation, coupled with the application of commercial marketing techniques to stimulate demand to increase the number of households investing their own resources to build and maintain an improved sanitation facility.

Safe water: Safe water is that drinking water which is free from pathogenic organisms, toxic substances, an over dose of minerals and organic materials as well as that with pleasant taste, free of color, turbidity and odor.

Safe water chain - Protecting water at the source is the first critical step in a multiple-barrier approach including application of household water transport, point of use treatment and safe storage of drinking water until consumption.

Safe water management – The protection of water at source, operation and management of systems and management of drinking water at home (including the practices of household water treatment, safe storage and use).

Self-Supply - Improvement to water supplies developed largely or wholly through user investment by households or small groups of households”. Self-supply involves households taking the lead in their own development and investing in the construction, upgrading and maintenance of their own water sources, lifting devices and storage

facilities. A key characteristic of Self Supply is the ladder of incremental improvements in steps that are easily replicable and affordable to users, linked when necessary to microfinance and/or water from productive use.

Sub-city/Kebele Development Committee - The Sc/KDC is an institution that will be engaged in WASH activities in its respective Sub-city or Kebele. The composition is: Representative of Kebele administration, Health Extension Worker, School community members, representatives of youth and women associations

Total sanitation - A situation where no open defecation is practiced and in which the cycle of fecal contamination through vectors including flies, fingers, animals, feet, wind, flood and rain runoff has been broken.

Town/City WaSH Steering Committee (T/CWSC) - The Town/City cabinet serves as the WASH Steering Committee.

Town/City Water Board (T/CWB) - The T/CWB is established as per regional proclamations and functions as the board of management for town/city water supply and sewerage (liquid waste management) services. In most instances, the Utility Manager is a member of the Board and serves as Board Secretary.

Town/City WaSH Technical Team (T/CWTT) - The T/CWTT is established by the town/city administration or town/city WASH Steering Committee and consists of mainly representative from the town/city administration (municipality), the Water Board, Town's Finance and Economic Development, utility for WSS, health and education desk personnel. The Chairperson is designated by the establishing authority.

Water Supply and Sewerage Utilities (WSSU) - The WSSU is an existing institution that is responsible for the day-to-day operation and management of water supply and liquid waste management systems.

Unimproved water supply - use of unprotected dug well, unprotected spring, cart with small tank, or drum, tanker truck, surface water (river, Dam, Lake, pond, stream, canal, irrigation, and channel).

Unimproved sanitation facility - A fixed point traditional latrine system made from local materials with an unsustainable feature and that which does not satisfy the criteria for an improved sanitation facility.

Verification - a process of endorsing that a given Village/Kebele/Community is totally free of open defecation practices (ODF).

WaSH Strategic Plan - The WASH Strategic Plan sets out woreda strategies, targets and schedules for achieving WaSH coverage over a 5-year period.

WaSH Annual Planned Budget - The Annual WaSH Plan sets out the specific activities, outputs and expenditures for the year ahead. It incorporates the planned WaSH activities, investments and targets of all WaSH implementers – including other government programs, and the programs of NGOs that are active in the sector. The Woreda WASH Budget includes funds coming to, or allocated by, the Woreda Administration for WASH activities.

Water Quality Monitoring - systematic verification of water quality standards through laboratory/or spot analysis of samples taken at critical points of the water supply system.

Water Quality Surveillance - watching and protecting drinking water from potential source of contamination through sanitary survey and water quality analysis of samples taken at different points.

1. Executive Summary

1.1 Introduction

Before and after Phase I significant changes have taken place especially after the transition reached to a more integrated water, sanitation and hygiene program. The most important is the signing of MoU by sector ministries to work together for One WASH National Program, the design of a guiding document, an implementation framework and a Consolidated WASH Account together with prominent partners in WASH improvement. The necessary organizations at all levels, the necessary human, material and financial resources and systems have been gradually established.

The One WASH National Program (OWNP), hereafter referred to as the Program, operationalizes the Memorandum of Understanding (MoU) and the WASH Implementation Framework (WIF) signed by the Ministries of Water and Energy, Health, Education and Finance and Economic Development in November 2012 and March 2013, respectively. The Program is the Government of Ethiopia's (GoE) main instrument for achieving the goals set out in the Growth and Transformation Plan (GTP). In the GTP, targets for access to safe water supply are 98%, 100% for rural and urban areas, respectively.

The targets for sanitation and hygiene set out in the Universal Access Plan (UAP) are that all Ethiopians will have access to basic sanitation, while 77% of the population practice handwashing at critical times, safe water handling and water treatment at home, and that 80% of communities in the country achieve open defecation free (ODF) status.

1.2 Program Description

1.2.1 Development Objective

The Program's Development objective is to contribute to improving the health and well-being in rural and urban areas by increasing water supply and sanitation access and the adoption of good hygiene practices in an equitable and sustainable manner.

1.2.2 Intermediate Objective

The intermediate Objective of the Program is to achieve increased coverage of water supply and sanitation in rural and urban areas in Ethiopia in line with the GTP 2010-2015.

1.3 Guiding Principles

The WIF sets out four guiding principles that will govern the implementation of the Program:

- Integration of the water, health, education and finance sectors
- Alignment of partners' activities with those of the Government of Ethiopia
- Harmonization of partners' approaches and activities
- Partnership between implementing parties at all levels

1.4 Program Pillars

The Program's activities rest on three overarching domains or pillars:

1. Creating an enabling environment and good governance

2. Maximizing availability and efficient use of human and financial resources to create demand for better WASH services
3. Capacity development for improved delivery of WASH services at all levels

The Program will be implemented as a multispectral SWAp involving the water, education, health and finance and economic cooperation sectors as well as CSO and the private sector. During Phase II attempts will be made for more and increasing alignment by partners with Government systems for planning, budgeting, procurement, financial management, and monitoring and reporting.

The Program will address disparities in WASH coverage among and within regions and urban areas. Moreover, it will seek to improve aid effectiveness and promote institutional reforms, with particular focus on capacity development at all level but more so at woreda, kebele and community levels. WASH training will be increasingly professionalized and institutionalized through the establishment of capacity building units at regional level to support and train sector staffs at all levels.

The Program will be implemented in a cascading, stepped approach according to agreed prioritization criteria, which include present water supply and sanitation coverage, size and type of WASH activities, capacity needs and present resources, among others.

1.5 Phasing

The Program was planned to have two Phases: Phase I from July 2013 to June 2015 and Phase II from July 2015 to June 2020. Phase I is the result of the evolution of WASH in Ethiopia where programmatic approach has started to be implemented. During Phase I remarkable development have taken place with respect to the establishment of institutions at Federal, regional, woreda levels and systems for increasing harmonization and alignment among and between development partners and GoE. Although limited to only CWA supported areas working procedures are fully established and become operational at all levels. It is during phase I that consolidated WASH account (CWA) was established through contribution by government and development partners. Accordingly, and based on the planning process established fund was dispersed to all federal, regional and woredas administration to execute their plans. Physical plans, utilization of funds, preparation for phase II based on the learning from phase I was successfully carried out.

The Phase I duration is already finalized and the program reviewed. As planned the learning and recommendation from Phase I is used to design Phase II OWNP plan. Phasing have allowed to adjust the program based on new development such as government policies goals and strategies. During Phase II, the program will follow GTP II strategic directions which indicate higher service levels than Phase I. Phase II of the Program will also follow a mixed approach between what has been learned from Phase I which would take into consideration in completing work began in Phase I and reaching any unachieved targets

During Phase II partners including CSOs, will be cajoled to increasingly align or harmonize their targets, plans and activities, submit annual reports and participate in all OWNP established forums, joint reviews etc.. New WASH programs/projects or new initiatives will be expected to be aligned with the Program's principles, approaches and plans.

The guiding principle of Phase II just like that of Phase I will be, "some for all, not all for some", meaning that unserved areas, communities and households will receive sustainable and resilient WASH services supported by selecting perennial water sources and using resilient technology for pumping, storage and distribution of water with O&M system established

1.6 Unit Cost for component

Unit cost for phase II is calculated for each technology mix using information and practices and average unit rates collected from different international, bilateral and CSO organizations. Based on the average unit costs analysis which was determined for each region, the regional cost for each technology is also calculated (see Annex 1 for details) and table 32 for regional summary.

1.7 Capacity Building and Advocacy

During Phase II, capacity building activities will receive high priority starting from establishing a capacity building unit at federal and regional level so that. Institutionalization will support systematic development of capacity building initiatives in supporting regions, zones, towns, woredas, kebeles and communities to meet implementation “readiness” criteria and to establish effective procurement, contract management and supervision procedures and robust monitoring, information management and reporting systems.

Advocacy for the purpose of popularizing the OWNP and its principle, harnessing more partners to join the OWNP, expanding learning and knowledge and enhancing participation of all sectors at all levels for one common effort to promote behavior change activities.

Phase II will follow different policy priorities, targets, institutional roles and responsibilities and/or implementation modalities; newly developed sector strategies such as the National Hygiene and Environmental Health Strategy, Education Sector WASH Strategy, newly revised draft of the Water Resource Development policy and strategy, Integrated Urban Hygiene and Environmental Health strategy and other relevant and timely directives. Phase II will have a broadened Program scope to include such related activities as watershed and water resources management, productive uses of water, environmental protection, climate resilience, etc. as also stressed during the Phase I validation workshop.

1.8 Sanitation and Hygiene behavior change

Looking back at the development of sanitation and hygiene services, we found that the approaches which has been used was not fully integrated with multi-sectoral programs such as nutrition and did not empower communities themselves for a sustainable change. During phase II it is planned to establish a community centered approach where prominent residents of the community such as religious leaders, women groups, teachers and students will be fully engaged to spearhead the behavior change process, maintain changes and ultimately make their community Open Defecation Free. (see guideline 10)

1.9 Appropriate Technology

The type of technologies used for water supply especially in rural areas may have to be diversified and simplified with sustainability and resilience in focus. The focus only on wells/pumps and capping springs has limited the potentials of other technologies and the use of other water resources such as surface water from rivers/streams, from flood water and from the rain. Some of the water resources and technology that can be used to make water accessible even if they are not resilient are rain water harvesting especially for schools with ample roof area for harvesting; subsurface dams especially in the low lands where huge amount of flood water flow during the rainy season and self-supply. Solar energy has also proved to be useful in rural areas as it poses no or minor operation and maintenance work compared with hand pumps or diesel pumps.

1.10 Program Components

OWNP - Program Components

The Program will include the following components:

1. Component 1: Rural and Pastoral WASH
 - 1.1. Rural and Pastoral Water Supply
 - 1.2. Rural and Pastoral Sanitation
2. Component 2: Urban WASH
 - 2.1. Urban Water Supply
 - 2.2. Urban Sanitation
3. Component 3: Institutional WASH
 - 3.1. Health Facilities WASH
 - 3.2. School WASH
4. Component 4: Enabling Environment, Program Management and Capacity Building
5. Component 5: Sustainable and climate resilient WASH services
 - 5.1. Emergency preparedness, response and recovery WASH
 - 5.2. Sustainable and Climate Resilient WASH

Rural and Pastoral Water supply

Estimated cost for rural and pastoralist water supply is 2,096 billion USD of which 934 million USD is for CR-WASH. Activities by the water bureaus will include construction of new conventional water points and water supply schemes and rehabilitating existing schemes. Furthermore, household dug wells and community dug wells are expected to be constructed by households and communities through self-supply.

Rural and Pastoralist Sanitation

Estimated cost for rural and pastoralist hygiene and environmental sanitation is 286 million USD, of which 69 million USD is for CR-WASH.

Hygiene and environmental sanitation activities include motivating households and supporting institutions to improve access to improved and unimproved latrines. Health Extension Workers and community-level members of the Health Development Army will be instrumental in achieving sanitation and hygiene improvements at household level.

Implementation of the Pastoral WASH sub-component will require close coordination and collaboration with NGOs and emergency or CR-WASH activities to avoid duplication of effort and to make efficient use of available experience and resources.

Urban and Pastoralist Water Supply

Estimated cost for urban and pastoralist water supply is USD 1,013 billion, of which 219 million USD is for CR-WASH. Main activities include study and design, environmental and resettlement safeguards, immediate service improvements and expansion and augmentation of water supplies.

Urban and Pastoralist Sanitation

Estimated cost for Urban and Pastoralist Sanitation is USD 500 million, of which 160 million USD for CR-WASH. Sanitation and urban environmental improvements will include looking at sustainable, simple and affordable systems such as constructing public toilet with multiple functions (cloth washing, bathing services in addition to clean toilets) desludging equipment and facilities, management of wastewater, awareness creation and empowering communities to look at their communities hygiene and sanitation conditions..

Institutional WASH - Estimated cost for institutional WASH for new construction and rehabilitation is 558 million USD, of which 179 million USD is for CR.WASH. Activities include support to improving water supply and sanitation facilities and hygiene practices at health institutions, which will be the responsibility of the Ministry of Health (MoH) and regional and city health bureaus and woreda health office. The Ministry of Education (MoE) and regional and city education bureaus and woreda education offices will be responsible for planning and implementing WASH activities in schools. Regional/city water bureaus may provide technical assistance in the design, construction and supervision of water supplies in institutions. The indicated amount includes USD to be used for water quality monitoring. Doing so is expected to increase economy of scale and ease out administration arrangements.

6.

Enabling Environment, Program Management and Capacity Building

- Estimated cost is 1.59 billion USD including M&E, advocacy and strengthening private institution in WASH program, of which 491 million USD is for CR-WASH. This component includes support to improve skills and capacity of the Program's organizations and implementing parties at all levels to plan, manage and monitor Program activities through training, post-construction management support, equipment, tools, and support to monitoring and reporting. The Program will support a minimum staffing and resource package necessary to effectively implement the Program at all levels to be determined by a capacity assessment at federal, regional/city and town/woreda level.

Capacities of TVETCs and HSCs will be enhanced as one program of capacity building aimed to support training of trainers, curriculum development and purchasing training equipment for workshops and laboratories. Teaching institutions such as the Ethiopian Water Technology Institute (EWTI) and Universities will be involved to train WASH professionals.

Sustainable and climate resilient WASH services

Emergency WASH

Emergency is an unfortunate happening in a country or society manifested in different ways. The most common emergencies are flood, fire, draught, etc. In Ethiopia common emergencies are created during draught and flood. . "Droughts" in Ethiopia have become a more frequent than used to be in the past. This creates water shortages usually requiring water trucking which is estimated to be 35 times more costly, per year, than annualized capital and O&M costs of fixed water systems, often involving very deep boreholes. Details of what preparation needed is indicated under emergency component section 10.4.2.

Climate Resilient WASH:

This is a new component which has objectives focusing on health and well-being of draught affected rural and urban areas. Although the program is also designed to address draught affected areas in the past, it will have prominence and focus during phase II. In the process, attention will be given to look for more reliable water

source, use of modern and cost-effective techniques for assessing ground water potentials and expand service levels not only for humans but also consider animals.

Program Cost by Component

1.11 Targets and Costs

Achieving GTP II targets and universal coverage mean that an additional 20,410,759 million rural and 5, 648, 901 million urban population, as well as 16,026 primary schools, 1788 high schools and secondary schools, 1054 health centers and 7253 posts will gain access to safe drinking water and sanitation services. The estimate for institution is for full WASH package (sanitation, hygiene, water and menstrual Hygiene management (MHM)

1.12 Program Cost by Component

A total of 6.04 billion USD budget is required for GTP II. The distribution is as depicted in the following Graph

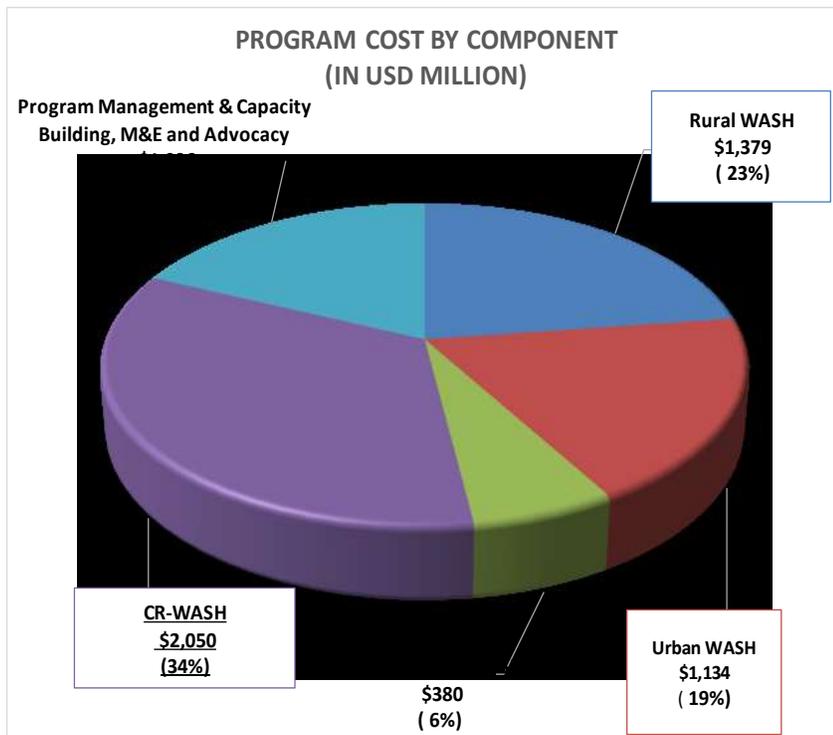


fig.1: Program cost by component

1.12 Roles and Responsibilities

The Program's organization and the roles and responsibilities are described in detail in the WASH Implementation Framework signed by the ministries of Water, Irrigation and Electricity, Health, Education and Finance and Economic Cooperation in April 2013.¹

The Program will be ideally implemented as a joint effort between Government, development partners, NGOs, training institutions, the private sector, community members and other stakeholders. The program is now well established at all levels in government based on the WIF and have a created a consolidated WASH account with

¹ WASH Implementation Framework (WIF), signed by the four ministries in April 2013.

contribution by partners and government. Other partners, including bilateral and multilateral aid organizations and NGOs, are expected to support the Program through other funding arrangements, as well as through provision of technical assistance, supplies and other means.

- A National WASH Coordination Office (NWCO) is responsible for coordinating the planning and implementation of the Program at federal, regional levels and harmonizing with bilateral, multilateral and CSO organizations, which will consist of preparing a consolidated annual WASH plan, budget and periodic reports. The NWCO will report to a National Steering Committee chaired by the Minister of the Ministry of Water Irrigation and Electricity (MoWIE) and supported by the National WASH Technical Team (NWTT). Implementation of the Program will be the responsibility of WASH Program Management Units (WPMUs) in the ministries of Water Irrigation and Electricity, Health, Education and Finance and Economic Cooperation.
- This arrangement extends down to the regions which has the same structure with that of the federal level.
- Strengthening the roles of the Zonal structure has become mandatory In order to systematize intervention programs, monitoring results, organizing capacity building programs, reviewing sector progress and coordinate learning to woredas and kebeles. Zonal structures will play an important intermediary role between the region and the towns and woredas for planning, monitoring, reporting, disseminating information and providing technical assistance. For best result zones will also have a Zonal WASH Coordination Office and Zonal WASH Management Team with similar functions as their regional counterparts.
- In woredas and towns, planning and implementation of the Program will be coordinated by a dedicated Woreda WASH Team (WWT) consisting of members from the water, health, education, finance offices, agriculture, women’s affairs and NGO representatives. The Woreda WASH Team will report to a WASH Steering Committee appointed by the Woreda Cabinet or Town Board. The WWT also supports the Kebele WASH Team (KWT) in the preparation of annual plans and render capacity building to HEWs and WHDA and others at that level
- At community level, WASH Committees (WASHCOs) consisting of elected community members will be formed to undertake planning, O&M and in some cases construction of small scale improved water supply and sanitation facilities. It is important that women are well-represented and are elected to serve as officers in WASHCOs.
- Other stakeholders such as CSO/NGOs and community members will be involved in planning, monitoring and contribution of labor and finance for effective implementation of the OWNPN in Ethiopia.

2. Introduction and Background

2.1 Introduction

This Program Document has been prepared with the support of the Government of Ethiopians intended to serve as a guide to implementing the OWNPN, hereafter referred to as the Program. This document is not in itself a detailed implementation manual for all aspects of the program but provides for technical assistance to adapt or prepare implementation strategy, guidelines and manuals as required in financial management, procurement, scaling up hygiene and sanitation behavior change and M&E, among others. In addition, provision is made for preparing detailed strategies and implementation plans based on GTP II targets and have considered gender equity, climate screening, social inclusion and communication, among others. A set of Annexes are also included to assist with implementation of the program.

2.2 The Global Context

Global milestones in the development of approaches that form the legacy of today's WASH policies and programs include the so-called Dublin Principles, followed by the UN MDG targets and now the SDG goals which were presented and ratified at the World Summit in Rio de Janeiro in 1992 at the UN General Assembly in 2000 and 2015 respectively. The premises for the international concern is that Safe water and basic sanitation are basic needs of people's daily life and they have become urgent requirements for protection and improvement of people's health and living conditions, as well as for national economic development. Water-related diseases are the most common causes of illness and death among the poor of developing countries.

In response to the above challenges, the UN General Assembly has recognized that the supply of safe and clean drinking water and basic sanitation facilities are not only human rights, but also essential to the full enjoyment of life."²

Although quite a remarkable change was recorded globally during MDG period, the effort was not fully successful; especially with sanitation. For this reason the global program for WASH services has to extend the effort up to 2030 and the program name is changed from Millennium Development Goals (MDG) to Sustainable Development Goals (SDG) with 17 goals and 169 targets.

Goal 6 aims to 'Ensure availability and sustainable management of water and sanitation for all' comprising six technical targets relating to:

- a) **Drinking water: (Target 6.1)**, "by 2030, achieve universal and equitable access to safe and affordable drinking water for all,"
- b) **sanitation and hygiene: (Target 6.2)**, By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

²Ibid, 2010

- c) **wastewater management (Target 6.3,)**by 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

The 2030 global agenda for water and sanitation services is not merely for the sector but also to support the achievement of other targets through WASH services.

Table 1: SDG Goals supported by WASH

No	Goals	SDG targets
1	Reducing poverty and achieving universal access to basic services (Targets 1.1 and 1.2); ending all forms of malnutrition	2.2
2	Ending preventable child deaths, combating neglected tropical diseases and waterborne diseases, and achieving universal health coverage	3.2,3.3,3.8,3.9
3	Providing safe and inclusive learning environments	4a
4	Ending violence against women and girls and reducing gender inequality	5.2,5.4
5	Ensuring adequate, safe and affordable housing for all	11.1
6	Reducing deaths caused by disasters. ³	11.5

During MDG, global monitoring has focused on access to drinking water, sanitation and hygiene at the household level. While household access remains the primary concern, the SDG program has recommended monitoring the institutional settings, including schools, health care facilities and workplaces. The SDG targets 6.1 and 6.2 referring to **‘universal access** and **‘for all’** further reinforce the importance of WASH in all settings, not only the household.

Government of Ethiopia has a plan to join the lower middle-income countries by 2025, which in essence has become a driving force for the water supply and sanitation sub sector.⁴

As stated in several studies, the supply of improved water hygiene and sanitation facilities (WASH) not only facilitates health and values (dignity, equity, compassion solidarity and respect) but also contributes in economic and financial savings such as in reducing absence from work, health care costs, protecting the environment and reducing time spent collecting and transporting water.

A study by WHO revealed that each USD 1 invested would yield an economic return of between USD 3 and USD 34. Households with improved water and sanitation services suffer less morbidity and mortality from water, sanitation and hygiene related diseases.

³United Nations General Assembly, ‘Resolution adopted by the General Assembly on 25 September 2015: 70/1. Transforming our world: The 2030 Agenda for Sustainable Development’, A/RES/70/1, 21 October 2015, <www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E>. 3 See <www.unwater.org/publications/publications-detail/en/c/429651>. 4 See <www.unwater.org/gemi/en>. 5 See <www.who.int/water_sanitation_health/monitoring/investments/glaas/en>

⁴MDG report (2010), MOH

2.3 The National Context on WASH

In Ethiopia, the coverage of water, sanitation and hygiene is very low compared with other African countries. According to the National WASH Inventory (NWI)⁵, in 2011 national access to water supply was 52.1% and to sanitation was 63%. This figure has changed for water supply as it has reached 67% by 2015 and met the MDG goals but sanitation did not. According to studies by EDHS 2016, the improved sanitation access for Ethiopia is very low. In both cases there is still a significant gap between the above targets and actual coverage in that millions of Ethiopians still lack improved water and basic sanitation facilities, and very few people regularly wash their hands with soap and water at critical times

Water supply, sanitation and hygiene are no longer addressed separately, but as an integrated package aimed at achieving agreed targets. Government is now committed to implementing a Sector Wide Approach (SWAp) through the One WASH National Program, which is also supported by a number of Development Partners and NGOs.

According to a recent report by the JMP⁶ Ethiopia is among the 45 countries in the world with sanitation coverage status below 50% and one of 27 countries in the world where more than a quarter of the population still practice open defecation. However, since 1990, the proportion of the population practicing open defecation has declined at a rate of around 3.5% annually. Introduction of the Community Led Total Sanitation and Hygiene (CLTSH) approach and the HEP effort in promoting community and household sanitation and hygiene has provided a strategy to reach more communities to end open defecation through self-built toilets and promoting hand washing and safe water handling.

GoE has set out its goals in the GTP, which identifies water and sanitation as priority areas for achieving sustainable growth and poverty reduction. In line with the GTP II, GoE has prepared a Universal Access Plan (UAP), with the following targets:

- Provide rural water supply access with GTP II minimum service level of 25 l/c/d within a distance of 1 km from the water delivery point for 85% of the rural population of which 20% are provided with RPS.
- Provide urban water supply access with GTP II minimum service level of 100 l/c/d for category 1 town/city, 80 l/c/d for category 2 town/city, 60 l/c/d for category 3 town/city, 50 l/c/d for category 4 towns/cities up to the premises and 40 l/c/d for category 5 towns/cities within a distance of 250 meters with piped system for 75% of the urban population. Carry out study and design of urban waste water management system for 36 category 1,2,3 towns/cities and build waste water management infrastructure for 36 towns /cities with a population of 200,000 and more.
- Decrease rural water supply schemes non-functionality rates to 7% and decrease NRW from 39 % to 20%

To facilitate achievement of the GTP and UAP targets, GoE has prepared a WASH Implementation Framework (WIF) to provide guidance for implementing the Program defining the roles and responsibilities of major stakeholders in the WASH sector.

⁵The National WASH Inventory is described in more detail in Section 3.5.

⁶Progress on Sanitation and Drinking Water-2013 update, JMP.

2.4 Policy and Program Initiatives

The Ministry of Water Irrigation and Electricity has introduced policies, legislation and strategies such as National Water Resource Management Policy (1998), Water Sector Strategy (2000), Water Sector

Development Program (2002), Water and Sanitation Access Plan (UAP) (2005), Memorandum of Understanding signed by three sector ministers (MoU, 2006) and a revised MoU, signed by four sector ministers in November 2012. MoWIE has also prepared guidelines for gender mainstreaming in the water and energy sectors (2012).

Health Sector Development Programs (HSDPI, II, III and IV) in line with the Plan for Accelerated and Sustained Development to End Poverty (PASDEP), and now the Growth and Transformation Plan of 2011-2015 (GTP I) and 2015-2020 (GTP II) has been introduced to address the water, hygiene and sanitation problems of the country. One of the main innovations of the HSDP has been the Health Extension Program (HEP) that aims to reach universal coverage of primary health care and improve the quality of health services in rural areas and partly in the urban areas.

Recently, the 5th Education Sector Development Plan was launched with the aim to reach universal access to WASH in Schools as per the GTP II standard. The Government is prepared to continue efforts to expand access to WASH in a bid to achieve universal primary education. Over the years, considerable progress has been made to expand the reach of WASH facilities by constructing schools to reduce the distance between schools and homes.⁷

In the last 10 years, GoE has accelerated its commitment to address the country's water, sanitation and hygiene issues. The first UAP in Amharic and English (2005), the second UAP (2011), the National Sanitation Action Plan-SAP in 2011, National WASH Inventory (2013) and the National Drinking Water Quality Monitoring Strategy (2010)⁸, the national Urban Hygiene and Environmental Health Strategy (2011), the National Hygiene and Environmental Health Strategy (2017) and the school WASH Strategy have been prepared and are operational to support the OWNPN action plans set at all levels in the country

2.5 The Evolution of WASH in Ethiopia

2.5.1 Introduction

The demand for water supply and the management of sanitation is directly influenced with the population growth, industrial development and settlement pattern.

As per the forecast made by CSA, the Ethiopian population is growing at an average rate of 2.6 percent per year implying that with this rate the population may exceed 130 million by 2030 (CSA, 2013) and 142 million by 2037, seven years after the SDG. The urban population is also growing at a rate of 4.8 percent and doubling time to be only fifteen years. New job opportunities in the services sector, construction, and industry believed to hasten the rural urban migration contributing to the increment on the number of small towns from 534 in 1994 to about 973 in 2011.⁹

⁷ School WASH Strategy, 2017

⁸As of July 2013, the National Drinking Water Quality Monitoring Strategy has not yet been approved by the ministries of Health and Water and Energy.

⁹ Background paper for water resource management policy review, Draft, 2017

2.5.2 Evolution of the One WASH National Program

Background

The Ethiopian government has been very keen to have a fundamental change in people's health and wellbeing for decades. This natural wish is manifested through its design of the national constitution, issuance of different policies developed by different ministries echoing their contribution toward improvement in water, sanitation, health, nutrition and control of communicable and non-communicable diseases.

The evolution of the One WASH Program in Ethiopia has followed three phases as follows:

1) WASH activities prior to 2004

Prior to 2004 WASH interventions were project-based, and there was no integration between water supply, sanitation and hygiene. Some times in between there was a low level integration with only water and sanitation. There were no enabling conditions to integrate the three sub sectors (water supply, hygiene and sanitation). Community and women's participation was low; Private sector participation and government implementation capacity was also very low during this period.

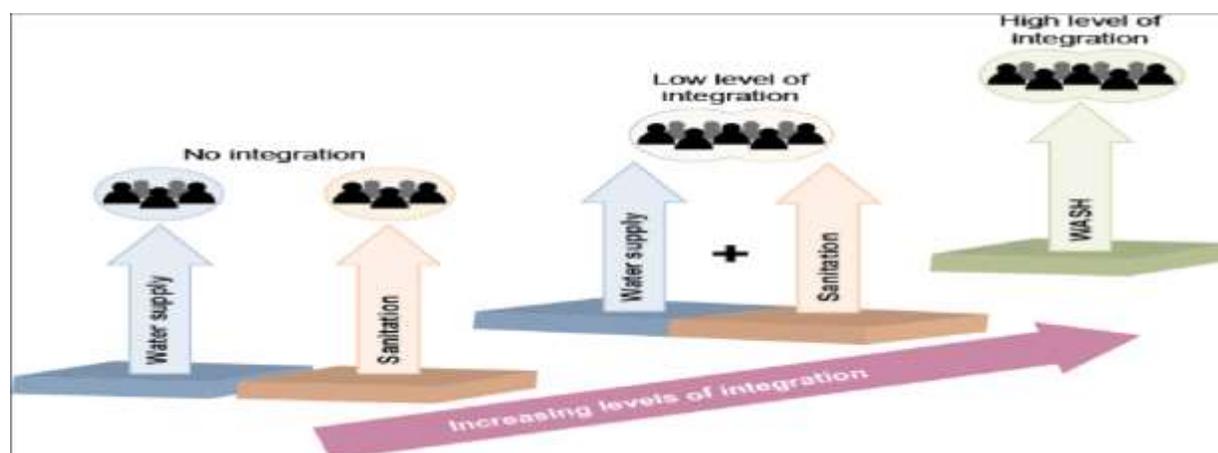


Fig. 2. Evolution of WASH in Ethiopia Source: Open University

2) From 2004 to present

Since 2004, WASH implementation became program-based and a number of woredas and towns were included in the program in line with the then decentralization process. The WASH program launched by the World Bank was strengthened when DFID and AfDB adopted the same approach. The program Implementation Manual (PIM) has been developed at the early stage of the program, following which a WASH institutional structure at federal, regional and woreda levels (in all intervention woredas) were established. The program adopted a demand-driven approach where communities participate from the planning to the O&M stage.

The Government's financing for WASH activities has considerably increased during this period. HEWs are assigned to work at kebele level throughout the country, and women's involvement and membership in WASHCOs has increased in some areas to 50%. In the private sector, the number of WASH professionals and service providers has increased at regional and woreda levels.

However, implementing WASH activities in Ethiopia face a number of challenges:

- Activities are not fully harmonized, as some NGOs and other organizations are implementing WASH projects as a free service without community or user contributions;
- Fulfilling individual donor's financial and procurement procedures are difficult and time consuming;

3) The One WASH National Program

To address the challenges faced by the WASH sector, the Government has initiated and supported the establishment of the Program. The program design which features one plan, one budget and one report has become functional since 2013. During phase I, therefore the four principles stated in the WIF: - establishing the organization, defining the roles and responsibilities of sectors and partners; creation of a consolidated WASH account; planning; budgeting, distribution of fund, procurement and reporting mechanisms are firmly established. During Phase II the program will follow the GTP II plans and targets and will also address some of the pertinent activities that were not addressed in Phase II. Some of the areas which needs further strengthening are capacity building, bringing all NGOs working in WASH to be more aligned with the NW program; enhancing joint participatory planning practices at all levels; etc.

- The program will seek horizontal coordination with stakeholders outside the MOU signatories to work together to support sustainable and resilient WASH services to all people in Ethiopia. These includes Ministry of Agriculture and Natural Resources; Ministry of Livestock and Fishery; Ministry of Environment, Forest and Climate Change; Ministry of Federal and Pastoralist Development Affairs; and National Disaster Risk Leadership Commission, the new institutional arrangement that requires broader engagement of stakeholders is indicated in the following figure: ¹⁰
- The WIF provides the framework and guidelines for implementing the Program, which is in turn based on the Growth and Transformation Plan (GTP) and updated resource requirements in the WASH Universal Access Plan (UAP), including the SAP. It is expected that donor funding will to an increasing extent be on-plan and on-budget and channeled through a Consolidated WASH Account (CWA) at federal level.
- The cornerstone of the Program is the Consolidated Annual WASH Plan (CAP), which includes a budget. Progress in achieving the plan goals will be reported in quarterly and annual progress and utilization reports at federal, regional, city, zone, woreda and town levels.

¹⁰ MoWIE (2017) Development of sustainable water supply, sanitation and hygiene program in draught prone areas of Ethiopia, final version ,

3. Institutional Roles

3.1 Institutional Context

3.1.1 Introduction

A unique feature of the WIF is that it has been agreed between four ministries whose roles and responsibilities are further defined in an Memorandum of Understanding (MoU) signed in November 2012, to support an integrated and resilient One WASH National Program that addresses the needs of rural, urban and pastoralist communities, schools and health posts in a more integrated manner and reduces the administrative fragmentation of WASH service delivery.

3.1.2 Obligations of Signatory Ministries

The specific roles and responsibilities of the four ministries in implementing the Program are described in the MOU where MoWIE, MoH, MoE and MoFEC have committed themselves to:

- Assign an appropriate representative to the National WaSH Technical Team (NWTT)
- Establish a WASH Program Management Unit (WPMU) and designate a WASH focal person to liaise between the WPMU and the National WASH Coordination Office (NWCO)
- Prepare and submit to the NWCO and to NWTT an annual WASH Plan of Actions
- Conduct joint review and monitoring of programs

3.1.2.1 Ministry of Water Irrigation and Electricity

The Ministry of Water Irrigation and Electricity (MoWIE) at federal level is responsible for water policy, coordination and monitoring. Implementation is decentralized to regional, woreda and in some cases community level. In general design and contracting of piped water supply schemes are managed at regional water bureau level, before handing over maintenance responsibility to woredas or towns¹¹. Implementation of schemes such as hand-dug wells or spring catchments is managed by the Woreda Water Offices or communities in Community Managed Projects (CMP).

¹¹ Top-down designed schemes with limited consultation that are then handed over to woredas or towns for O&M without proper preparation are an important issue affecting sustainability of water supply scheme.,

3.1.2.2 Ministry of Health

The Ministry of Health (MoH) has prepared a Health Sector Development Plan, HSDP IV, to achieve the health MDGs by 2015. The plan, implemented by regional health bureaus, aims to scale up delivery of primary health care services at district (woreda) level and through the health extension programme organized at the kebele level.

Over 38,000 health extension workers (HEWs) have been trained and deployed to health posts at kebele level in both rural and urban areas. HEWs work with communities and households through members of the Health Development Army (HDA) to promote behaviour change, including use of improved sanitation facilities, hygiene promotion and eradicating open defecation.

3.1.2.3 Ministry of Education

The Ministry of Education's (MoE) mission is to build an education and training system which assures quality and equity education that aims at producing competent and productive citizens. MoE seeks to improve the capacity and quality of education and training, design and assure standards of efficiency, expand well equipped higher and technical education to ensure productive, equitable, and participatory and quality education and training at all levels. In addition Ministry of Education has to design a focused hygiene and sanitation curriculum where a weekly hygiene promotion learning and activity is allocated to the program, establish or Strengthen environment or hygiene/health club, mini-media, promoting school vegetable gardening and establishing latrine and class room cleaning culture in the schools and allocate budget to supplement donor funding to support actions towards Menstrual Hygiene management (MHM) and for enhancing access of improved sanitation for male and female student and students with need (disabilities)

3.1.2.4 Ministry of Finance and Economic Cooperation

The Ministry of Finance and Economic Cooperation (MoFEC), besides implementing the National Development Program and determining and allocating budget to all public institutions, is responsible for implementing efficient ways of utilizing resources in both federal and regional governments.

MoFEC has recently undertaken a reform of the PFM system by implementing the Integrated Financial Management Information System (IFMIS) which will generate accurate, accessible and timely government-wide financial information and reports, support public bodies and regions in improving the quality of PFM.

MoFEC, as the most recent signatory of the MoU and WIF, will be responsible for the financial management of the Program using its experience in SWAp in other sectors. As the national coordinator of GTP implementation, MoFEC will play an important role in allocating and channeling resources and monitoring fund utilization (Ref. WIF for details)

3.1.3 Obligation and role of Civil Society Organizations

It is estimated that there are over 100 CSOs that work with WASH activities throughout the country. CSOs play an important role in delivering water and sanitation services, hygiene promotion, piloting new approaches, reaching remote areas and groups, and supporting learning and knowledge sharing. . CSOs play a number of important roles in Program implementation. CSOs participate in sector reviews and evaluations such as the semi-annual Joint Technical Review (JTR), an annual Multi-Stakeholder Forum (MSF),. WASH CSOs also implement WASH projects

and undertake studies, evaluations and other activities for international multilateral and bilateral organizations such as the European Union, UNICEF, DFID and others.

CSOs support implementation of the Program at all levels, from federal level to communities. This support will be included in consolidated WASH plans at all levels and reported in quarterly and annual consolidated progress and utilization reports. The roles of CSOs will vary, but their resources, activities and outputs will be included under the umbrella of the One WaSH National Program.

The valuable contribution of CSOs is recognized in the WASH Implementation Framework (WIF), where CSO projects are included as one of the four implementation modalities.

CSOs working with WASH activities are members of the Water and Sanitation Forum (WSF), which meets annually. The WSF has an executive body and a secretariat, which presently are World Vision and the Consortium of Christian Relief and Development Associations (CCRDA), respectively. The WSF currently has 56 members. WASH CSOs are also represented on a number of Task Forces in MoWIE, MoH and MoE, as well as membership in WASH-related working groups under the Development Assistance Group (DAG).

In the regions, WASH CSOs collaborate with sector bureaus by participating in technical working groups and forming WASH Forums to coordinate planning and implementation.

3.1.4 Obligation and Roles of the Program (NWCO)

The NWCO will stimulate WASH ministries at the federal level, regional and zonal bureaus, woredas and towns to carry out a resource mapping exercise to identify WASH CSOs working in their areas. This will be the responsibility of the WASH Coordination Offices at the various levels, and in the case of woredas and towns, the responsibility of the woreda or town WASH Teams. CSOs will be requested to provide information about the scope, location, type of interventions and number of facilities to be provided as well as the resources available for implementing WASH activities. This information will be maintained by the unit responsible for coordination at each level and updated at least quarterly.

The Program provides the framework for harmonizing Government and donor approaches to planning, procurement, implementation and financing and serves as the platform on which a closer partnership between planners, implementers, development partners and others to achieve common goals can be built.

3.1.5 Obligation and Role of Private Sector

The private sector plays a key role as implementors of Program activities, as most construction of water supplies is undertaken by private contractors and artisans.

The private sector also provides consulting services for studies and designs in construction supervision for urban waters supply schemes. Private suppliers, artisans and other service providers will have an increasingly important role to play in the Program in establishing and servicing supply chains for WASH products, spare parts and repair services and in supporting self supply activities. They could also be engaged in social/sanitation marketing in promoting improved sanitation, making available important latrine components at local level through the establishment of supply chains.

Since the capacity of the private sector to provide the required services is a serious constraint for the implementation of the Program, capacity building to increase the capacity of the private sector to provide works,

goods and services and in preparing manuals, guidelines, technology options is necessary to be carried out by the program. In addition, to encourage private sector to take up the WASH business and stay in the business, government should make the enabling environment such as contract management activities, reliable hydrogeological studies, incentives etc very attractive.

3.1.6 Role of Banks and microfinance institutions (MFI)

Banks and MFIs can also play a useful role in providing financial services to communities, particularly for CMP, self-supply activities and sanitation marketing. These services include financing through WASHCOs for procurement and construction, maintenance, rehabilitation/augmentation, replacement/ reinvestment, insurance, and credit to SMEs for providing WASH services and supplies. In some regions O&M insurance schemes have been started using MFIs, a development which should be closely followed for possible replication

3.1.7 Obligation and Roles of Community Organizations

At community level, the two main structures relevant in implementation of the Program are WASH Committees (WASHCOs) and in some cases associations of WASHCOs, who are expected to plan, manage, operate and maintain water points, and the Health Extension Workers (HEW) and Women Health Development Army (WHDA).

Community ownership and management of the improved WASH facilities is important for enhancing the impact and sustainability of the Program's interventions. Projects such as the WSSP, COWASH and those implemented by a number of NGOs have developed strategies and procedures for capacity development at community level, including training and designing guidelines and manuals which will be a useful resource for the Program.

Members of the Health Development Army (HDA) working with HEWs, will be important in promoting sanitation and hygiene practices among households in communities. HEWs and the HDA have been assigned 16 tasks, of which 7 are WASH-related.

It is planned in Phase II to organize a community centered hygiene and sanitation program (CCHSP) through organizing and providing focused training to permanent, respected and trusted community residents which include teachers, religious leaders, elders/clan leaders with a view that empowered communities will make a rapid and sustained changes in behaviors (see annex for detail) and make them responsible in WASH in their communities. (see guideline 10, annex 4)

3.2 Enhancing Ownership of WASH Services

One of the problems in WASH programs is lack of sustainability. Sustainability equates with ownership of WASH programs and services by all WASH actors at all level. Regional bureaus have not progressed to the desired level, as programs are still seen as belonging to a donor or sponsoring organization. Ownership has many dimensions Vs

1. All sector staff should see CWA as part of the whole package-OWNP. It may be necessary to train or orient new and old staff members about the evolution, current status and future aspiration of OWNP.
2. The sector actors at all level should understand that their employment and expertise is to make a change in their areas of employment or profession and are obliged to deliver to the best they can as long as they are working in that section.

3. Ownership can also be enhanced by involving Beneficiaries starting from conception to implementation of the project. They should also contribute in terms of cash, materials and labor for the project.
4. Project hand over and training to organized local leaders is another way of creating ownership.

4. Program Description

4.1 Introduction

This Program Document operationalizes the principles, organization and procedures contained in the MOU and WIF through a coherent set of activities aimed at achieving the GTP II targets for water supply and sanitation in Ethiopia.

To achieve this aim, the Program makes use of data from the first phase review report of 2017, updated planning models and data received from the regions and other sources to establish a baseline for access to water supply and sanitation in rural and urban areas in the country. The program will use new developments that took place with partner organization since 2013. There are new strategies designed to strengthen a coordinated activity in improving urban hygiene and environmental health conditions (IUHEH); hygiene and environmental health programs (NHEHS); School WASH strategy and the revised water resource management policy and strategy documents. The Program also uses information from a recent capacity assessment¹² to identify human and physical resources, population projections from CSA and updates of physical and financial models used and tested in the preparation of the WASH UAP. The Program budget includes sector allocations to water, health and education and addresses factors affecting the functioning of institutions and management, including identifying human, technical and financial resources requirements to meet GTP targets.

4.2 Program Objectives

4.2.1 Development Objective

The Program's Development objective is to contribute to improving the health and well-being of population in rural and urban areas by increasing sustainable and climate resilient water supply and sanitation access and the adoption of good hygiene practices in an equitable and sustainable manner.

4.2.2 Long Term Objective

By 2030, achieve universal, sustainable, climate resilient and equitable access to safe and affordable drinking water for all

4.2.3 Intermediate Term Objective

The Intermediate Objective of the Program is to achieve increased and sustained coverage of safely managed water supply and sanitation in rural and urban areas.

¹²Evaluation of WASH Capacity Building Interventions in Ethiopia, Final Report, June 2013.

4.2.4 Short Term Objective

The Short-Term Objective of the Program is to achieve increased and sustained coverage of water supply and sanitation in rural and urban areas with basic water supply service levels in Ethiopia in line with the GTPII targets (2015-2020)

4.3 Guiding Principles

The Program is guided by the Memorandum of Understanding (MoU) and WASH Implementation Framework (WIF), signed by the Federal Ministries of Water and Energy, Health, Education and Finance and Economic Cooperation in November 2012 and April 2013, respectively. The following four guiding principles of the Program as stated in these documents are:

1. Integration of water, health education and finance
2. Alignment of partners' planning and management systems and procedures with those of GOE
3. Harmonization of partners' approaches and activities
4. Partnership between implementing parties

4.4 Program Pillars

The Program's activities will be organized around three domains or pillars:

4.4.1 Enabling Environment/Good Governance

An Enabling Environment and Good Governance form the foundation and prerequisite for the Program's success. It includes legal instruments, policies, strategies and frameworks, institutional arrangements, program methodology, implementation capacity, availability of products and tools, finance, cost effective implementation and M&E, formal agreements, the commitment and integrity of personnel at all levels and access to information. This pillar also includes compliance with agreed norms and standards, establishing WASHCOs as legal entities and contractual relations between implementing parties.

Analysis of the enabling environment for sanitation and hygiene revealed that important policy such as a standalone policy for sanitation is still lacking; although sanitation options are already designed but private sectors are not on board to make sanitation a business; the monitoring indicators in the HMIS are very limited to reflect the real situations.

The water policy that has been issued about 20 years ago will need a review and updating so that it reflect the existing situations such as the OWNP principles, implementation modalities and capacities.

4.4.2 Maximizing availability and efficient use of human and financial resources to create demand for better WASH services

The emphasis is on efficient use of resources rather than only the availability of resources. During consultations with the regions and cities, human resources and capacity were mentioned more frequently than funding and other resources as constraints to effective implementation of WASH activities on the ground.

Technical and logistic resources and their efficient use are also important to enhance the performance and effectiveness of Program implementation.

Using the principle, “Everything counts, count everything.”, resources available from all sources, including CSO, CR-WASH and emergency WASH programs, WRDF and self-supply activities will be considered and included when determining resource availability, gaps and needs.

Creation of demand for better WASH facilities and services will be promoted through targeted information and communication activities, advocacy and motivation at all levels, offering appropriate and affordable technical solutions, services and products.

4.4.3 Capacity development for improved delivery of WASH services

Capacity gaps at all levels have been identified as one of the most pervasive threats to the successful implementation of the Program. Therefore, capacity development of IPs at all levels will receive priority attention by the Program. The Program will continue to support the development of human resources, organizations and systems and logistics and equipment.

The ultimate purpose of One WASH and an important indicator of its success is its ability to deliver better and Climate resilient WASH services to people in rural and urban areas in Ethiopia. Services include improved water supply, sanitation and hygiene promotion for communities, households and institutions, effective supply chains for WASH products and services, skills training and logistic support to Program managers and implementers.

Due to the substantial gap in coverage and resources, a mass mobilization strategy will be necessary to achieve the GTP WASH targets. In recognition of this, MoWIE has prepared a manual on mass mobilization to support implementation of the UAP¹³. To support community mobilization and empowerment approach, the Program will select respected, trusted, educated, community members such as religious leaders, teachers, HEWs, HDAs, and train them to facilitate and follow up changes in sanitation and hygiene and water safety activities at source and at household level. Training drilling and civil contractors, and mobilization of NGO resources and the private sector through promotion and scaling up of self-supply will also be part of the community mobilization approach.

4.5 Phasing

4.5.1 Introduction

The program was originally designed for three years (2013-2015) basically to establish the OWP based on the WIF with an anticipated extension to Phase II which will run from 2015 to 2020 operating under GTPII principles, targets and indicators.

Phase I program was designed for three years (2013-2015) with an anticipated extension to Phase II. Phase I has been instrumental in increasing harmonization and alignment among and between development partners and GoE, during which WASH organizations and procedures have been fully established and become operational at all levels.

¹³ Implementation Manual for Ignition of Mass Mobilization on the Universal Access Plan for Water and Sanitation Program, Ministry of Water and Energy, Addis Ababa, August 2008.

4.5.2 Phase II

The actual Phase II Program duration will be three years, (2018-2020) with possible extension up-to 2030. There can be changes in important GoE policies, strategies and plans after GTP II and UAP. MDG is already replaced by SDG.

Phase II of the Program will follow the Phase I approaches and attending to plans not materialized with no changes to the organization/institutional arrangement, implementation modalities but Phase II will fall on to GTP II period and will follow the indicators in GTP II.

In Phase II the program will focus on newly developed strategies, directives, and indicators in GTP II. Consideration will be given to broadening the Program's scope to include such related activities as watershed and water resources management, productive uses of water, environmental protection, climate resilience, WASH in emergency etc. as agreed during Phase I review with stakeholders.

In Phase II, Unit costs are calculated using averages from regions, international organizations, CSOs determining the unserved population in each region. The unit cost has also considered regional variations, accessibility, capacity, and other relevant parameters. *(see chapter 15 for details)*

a. Rural Water supply

An indicative plan for Phase II can be prepared using guidance from the national WASH Steering Committee, the national WASH Coordination Office and the regional annual plans. This plan will reach additional unserved population and consider population growth rate between 2018 and 2020 including improving existing service levels *(see tables and graphs in chapter 16 for details)*

b. Rural, peri-urban and institutional sanitation

In Phase II construction and capacity development activities will continue. Institutional water supply and sanitation and some communal and shared sanitation interventions in urban areas will be planned and cost calculated.

c. Urban Water supply

Urban water supply indicative plans for Phase II will consider increasing service levels from public taps to yard taps and yard taps to house connections by 2020. The 2017 regional WASH plans will be used as the basis for identifying requirements for Phase II.

d. Urban Sanitation

In Phase II towns with population less than and greater than or equal to 50,000 will be specifically targeted. Low-cost decentralized wastewater schemes can also be considered for regional capitals.

e. Appropriate technologies

Simple and appropriate especially for rural conditions will have focus in Phase II.

The type of technologies used for water supply especially in rural areas may have to be diversified and simplified with sustainable use in focus. The focus only on wells/pumps and capping springs has limited the potentials of other technologies and the use of other water resources such as surface water from rivers/streams, from flood water and from the rain.

Rain Water: Theoretically, about 800 ml of water can be collected from 1 square meter of surface area if it rains only 1 mm per year. Considering the surface area (harvester area) of schools and the amount of average rain fall in Ethiopia it can be said that all schools in Ethiopia should not be short of water throughout the year. However, harvester area cleanliness, storage and delivery need care

Sub-surface dam: Low land areas such as Afar and Somali and the lowland areas of Borena in Oromia have many large dry river beds that are perpetually carrying large amount of flood water from the highlands. These dry river beds can be converted into an underground reservoir provided that we construct a dam structure across a convenient location along the length of the dry river beds. The water stored which is cooler and clean as a result of the natural filtration can be exploited using pumps or gravity pipes. The water stored in such manner could also recharge the underground aquifer.

Solar Pump: Solar pump is also the latest technology being introduced in Ethiopia. With a minimum of 10 hours of sunshine in Ethiopia a solar pump installed in at least shallow wells can very easily replace the hand pump which is problematic for communities as it demands careful operation and periodic preventive or actual maintenance.

Ecological sanitation: The use of simple ecological sanitation system such as Arborloo which can safely manage human excreta and the filled-up pit used to plant fruit trees. The arborloo, is small in size (60x60x1.5 meters), cleanable and management is only adding ash or soil after defection to desiccate moisture and discourage fly breeding and avoiding smell.

4.6 Risk Assessment

The risk analysis and rating for the Program is shown below. Potential aspects of the Program that may pose a reputational risk for partners, GoE or others include national programs operating in resettlement areas. This places additional onus on ensuring that social safeguards are adequate for marginalized groups to ensure no reputational risk.

Major risks that may affect achievement of the Program's development objective and results are summarized in the following table, along with measures for minimizing or mitigating the identified risks.

Table 2 Preliminary Program Risk Assessment¹⁴

Description	Proposed Mitigation Measures	Rating
Targets may not be achieved due to time, availability of funding and capacity constraints, including those in the private sector.	Program interventions should target unserved areas, prioritize providing basic levels of service levels and strive to control unit and per capita costs. Enhancing focused capacity building training to private sectors and sector staff so that more can be done with limited amount of fund and time	S
Lack of understanding of/commitment to the Program's approach to targeting and prioritizing interventions, community involvement in technology selection based on costs and affordability.	<p>Translation and wide dissemination of key documents such as the WIF, MOU, NWI data and this Program Document, newly developed strategies, manuals, technology options followed by orientation workshops and training at all levels. Application of readiness criteria to ensure that conditions for successful implementation are in place before construction starts.</p> <p>Relevant staff will receive orientation on OWNPs targets, strategies and procedures. Compliance with procedures and applicable standards will be closely monitored.</p> <p>Conducting continuous capacity building training to old and new employees and stakeholders will ensure continuity of activities.</p>	S
High turnover of key staff in implement-ting organizations goals and plans causes delays and lack of continuity.	<p>Incentives and considering hardship areas for staff in adding allowances and training, creating career structure may slow down staff turnover.,</p> <p>Additional personnel will be trained in relevant skills at TVETCs, HSCs and universities. In-service training will be offered to relevant staff in planning, procurement and monitoring, including data management.</p> <p>Devise methods of hand over mechanism to new staff before releasing a resigned staff.</p>	S
Public and/or partners' procurement rules and procedures cause serious delays in implementation.	Close monitoring of procurement processes, pack-aging contracts to make works more attractive. Use of standard bidding and contract documents and cutting down unnecessary chains in the procurement process	M
Regional bureaus, woredas and towns face competing priorities, fail to assign adequate resources to implement Program activities and	Higher-level support will be sought from ministers, heads of regional government as well as politicians and local leaders. Monitoring by partners, including JTRs and MSFs, will also include this indicator.	M

¹⁴ This assessment does not include potential fiduciary risks, which are the subject of a separate Fiduciary Risk Assessment being undertaken by a group of Development Partners.

Draft- One WASH Program Document Phase II Updating- May 2010

Description	Proposed Mitigation Measures	Rating
do not collaborate with all relevant stakeholders and partners.	Quarterly review of the program at woreda level and biannual review of regional activities to discuss not only achievement but also financial management, challenges and new learning and innovative ideas.	
Environmental risks, including degradation and growing competition between water uses threatens water resources and the sustainability of water schemes.	Promote stronger linkages with watershed management and water conservation interventions to protect sources and catchments. Sensitize users to the importance of maintaining protected buffer zones around water sources.	M
Difficulty in tracking availability and utilization of GoE, donor and CSO funds may be a constraint to implementing the Joint Financing Agreement (JFA).	Quarterly financial reports showing budget availability, disbursements, expenditure and budget utilization will be prepared by MoFEC.	S
Lack of technology options for WASH only resorting to the rudimentary options	Designing appropriate technology options suitable for the purpose such as for water pumping. Having different options for sanitation suitable for rocky, loamy soil, or hydrogeological conditions and ensuring sustainability.	S
Not using properly designed community mobilization methods either for their involvement in community action or behavior change program	Community awareness creation through continuous engagement and using communication and IEC materials will enhanced and secure community participation.	S
Lack of program coordination, harmonization with like partners such as CSO,	Designing systematic methods and reaching out to Ministries with like objectives and CSOs working in WASH to work together for the same objectives.	S

Key: S= Significant, M=Moderate

Although a lot of improvement is being recorded in many of the vital program areas there are still a number of areas which need further improvement. These include the need for continuous improvement of the quality of contract management and supervision, improvement in timely financial reporting and ensuring that the amount of cash balances and advances are kept down to that needed for maintaining timely implementation.

Although the risk in the WASH sector has been assessed as low in Ethiopia, it is globally recognized that there are significant risks associated with large scale procurement and civil works, particularly in the context of substantial government staff turnovers. Mitigating measures to manage financial risk include:

- Assessment of barriers and operating environment of private sector contractors and enterprises
- Focus on capacity building of implementation partners in contract management and construction supervision
- Supervision supported by post-construction checks/sustainability checks

- Capacity strengthening in Public Financial Management at all levels
- Strengthening M&E systems and procedures at all levels
- Through PBS work with the Construction Sector Transparency Initiative (COST Ethiopia), increase transparency in tendering and procurement processes through a public disclosure program

Additional information on risks associated with the Program can be found in Annex 3.

4.7 Safeguards

4.7.1 Description

Environmental safeguard includes environmental assessment, natural habitats, cultural property, etc...and social safeguards include aspects such as involuntary resettlements. Social and Environmental Safeguard Section/Unit within the MoWIE are facilitating effective enforcement, capacity building and monitoring of adherence to the social and environmental policies and guidelines. There is also a need to have a unit responsible for environmental and social safeguards in regions.

Outline for a safeguard assessment

- Describe the types of subprojects that will be supported under the project and information on the location in which they will occur.
- Analyze the main likely adverse impacts of representative samples of sub projects with reference to the requirement of the safeguard policies and procedures
- Analyze the potential cumulative impact of all subprojects that will be funded under the project
- Propose possible changes/modifications in project design to help prevent adverse impacts
- Assess the existing institutional arrangements and organizational capacity to implement mitigation measures and monitor outcomes.¹⁵

Projects are will have different types of risks ranging from low risk to high risk. According to the World Bank guideline, high risk sub projects are those that require a site specific environmental assessment (EA) or detailed environmental management plan (EMP) as they may present potential adverse environmental and social risks. The table below provides the extent of risks for each sub activities in a project.

First step in environmental and social safeguard Assessment include the following important areas

- It is very important to have discussion with beneficiary communities to inform the public about the upcoming project and also to get pertinent information, ideas and concerns. In targeting stakeholders, it is best t first identify the stakeholders, set date, time and place and inform them about the project and get information about their views and opinions.
- Focus group who are selected from the community is also another way of in-depth discussion to get dissenting or consenting decisions
- Public meeting is also another method and an opportunity to get more people together and discuss all subprojects coming in their communities

¹⁵ Manual for safeguard compliance, World Bank, March 2004

Table 3: Extent of risks expected in WASH projects

Parameters	Extent of Risks		
	No risk	Low risk	High risk
Water Supply			
Water point rehabilitation			x
Tertiary distribution piping		X	
Hand dug wells		x	
Spring protection	x		
Earth dam rehabilitation			x
Community reservoirs			x
Retaining walls		x	
Water harvesting facility			x
Water treatment plant			x
Hand pumps and mechanized boreholes		x	
Gravity water schemes		x	
Sanitation and waste management			
Washing facilities		x	
Public toilets/pit latrines		x	
Sewage facilities and collection			x
Soakpit and septic tanks		x	
Composting sites		x	
Waste water system and treatment plants			x

Source: *Manual for safeguard compliance, World Bank, March 2004*

4.7.2 Special Conditions

The following conditions apply to the implementation of the Program:

Continuing with the development of the Program is contingent on the continuous and successful outcome of a Fiduciary Risk Assessment (FRA) undertaken by Development Partners who have expressed a continued interest in contributing to the Consolidated WASH Account.

A positive outcome of a GoE-partner appraisal is a condition for approval of the Program by GoE and for establishing the Consolidated WASH Account.

The Program area includes regions with very low water supply (quantity, quality) prospect and almost no established sanitation system and at most harsh weather and frequent el nino effect exposing people to shortage of water and livelihood which has to be included in a focused strategic plan to establish climate resilient WASH services.

Incentives mechanism may have to be designed to encourage contractors who will take assignment in harsh climate areas and questionable unsecured locations

4.8 Enhancing Equity and inclusion in WASH

The Program promotes and supports social inclusion as an important strategy to enhance equity and reduce disparities in access to WASH services. Social inclusion includes gender equity and mainstreaming, resettlement areas and areas with high concentrations of ethnic minorities and pastoralists and institutional WASH facilities that do not restrict access to handicapped and disabled persons.

Creating equity in WASH program is an important cross-cutting issue to be supported and promoted by the Program. Women already occupy important managerial roles in the health and education sectors, but less so in the water and finance sectors. A WASH gender audit undertaken by the Women's Affairs Directorate, MoWIE, provides useful knowledge and guidance as well as a baseline for assessing change during the Program.

The Program's support to EWTI will include promoting and supporting the reintroduction of the gender training modules prepared by MoWIE. Other gender-related aspects of the Program include but are not limited to planned support to women and youth-led supply chains, construction of latrines at schools for girl students and the use of gender disaggregated indicators to monitor Program results.

There are at least 34% or about 34 million people where most are in rural areas in Ethiopia who have no latrine of any kind. Ethiopia did not achieve the Millennium Development Goal (MDG) and now Ethiopia is expected to address the more stringent Sustainable Development Goal. Sanitation development have multiple challenges including poverty, weak support but only lip service, poor awareness and knowledge, lack of appropriate technology options for all type of geographical, and hydrogeological conditions etc. Above all this, there is the exclusion factor where different categories of people such as the poor, marginalized, chronically ill (HIV-AIDS) disables, those in hard to reach areas etc. It is therefore important that the approach for a universal access must be based on the principles of equity addressing three important barriers¹⁶ which are 1) attitudinal barriers (isolation, prejudice, stigma, etc); 2) environmental barriers (physical accessibility to infrastructure, toilet or squat hole design,) and 3) Institutional barriers (policies,)

WASH program should be conscious of designing and promoting appropriate technology to meet different needs of the WASH beneficiaries including provision of MHM and disability access; child friendly taps; urinals; conveniently located hand washing facilities; adequate light and ventilation in latrines. Inclusive access designed for life cycle disability including pregnancy, old age etc would make facilities accessible for all ¹⁷

4.8.1 Why focus on MHM

MHM directly affect a good proportion of adolescent girls in school or women visiting health facilities. MHM facilities are nonexistent in schools and health facilities/health posts and as a result tens of thousands of students are affected and continue to lack access to the facilities. When girls stay home from school during menstruation due to inadequate products, clean private facilities for at least five days a month it means that they are out of school for at least 50 learning days a year. This impacts their academic performance, future educational attainment, good paying job opportunity and economic opportunities.

¹⁶ Sanitation and hygiene in Africa, Analysis from the Africa San conference, Kigali, Rwanda, 2014; Piers Cross and Yolande Coombs editors.

¹⁷ Do

The hygiene and human right advocacy statement states “the ability to be clean and to address MHM in an appropriate way are matters of human dignity, and are included in the right to nondiscrimination, equality, bodily integrity, health, privacy ...etc.”¹⁸

5. Component Description

5.1 Rural Water Supply

5.1.1 Introduction

An estimated 80% of the population in Ethiopia live in rural areas with a high dependence on mixed and pastoral farming, often under harsh and variable climate. Many small towns provide market and rural support functions, as well as labor pools for agricultural activities.

Any new Implementation and Operational Modality needs to integrate with, or allow for, existing Woreda and WASHCO management and rural support structures.

In 2008 EFY: i) 47.3 million or 63% rural population have got access to improved water supplies; ii) average non-functionality has been reduced to 11%; iii) 61% have some form of latrine facility. The big achievements made in Rural WaSH service delivery over the past 20years indicate that 35 million people have gained access from improved water source and 40 million people have built and used basic sanitation¹⁹.

To address the low access to water supply in rural areas, the Water Resource Management Policy (1999), supports decentralized management and integrated and participatory approaches to providing improved water supply services. The need to include all stakeholders, NGOs, communities and the recovery of O&M costs is also recognized and supported by this Policy.

Water source development should be based on best available hydrological and hydrogeological information, interpreted by qualified professionals. Alternative water supply and energy sources should be studied at each project site to meet present and future water, fully taking into account the impact to/from other existing and proposed projects in the same surface and subsurface catchment zones.

The Program’s rural water supply activities include studies, construction of new point sources or small pipe schemes with distribution systems, including multi-village schemes where appropriate, rehabilitation of existing point sources and expanding small pipe schemes.

Point source rural water supply will remain under formal or informal WASHCOs with little or no outside assistance, except encouragement of the private sector by implementing agencies.

The sustainability of the majority of rural water supply schemes has proved to be low, due to unaffordability, lack of post construction support and reliance on management through part time WASHCO members. This situation

¹⁸ Global Public- Private partnership for hand washing (PPPHW) post 2015 advocacy tool kit, 2025

¹⁹WB (2017), WASH (Poverty Diagnostic Report) IN:Development of sustainable water supply, sanitation and hygiene in draught prone areas, a Suib program document, final version, 2017

calls for effective capacity development through training of WASHCOs and supply them with tools to do preventive maintenance of the systems so that whatever technology is used local people will be in a position to manage it.

However, sustainable and resilient water supply service demands higher technology than the common spot supply from wells and gravity springs which may demand the service of also higher level, technical and permanently employed staff than relying on WASHCOMs in the future.

5.1.2 Implementation modalities

The planning and implementation process for rural water supply will vary according to implementation modality, (RMP, WMP, CMP, NGO or self-supply) but in all cases it will be expected to conform with Program requirements and GoE policies regarding the Program organization, preparing annual WASH plans and budgets, reporting requirements, use of common monitoring indicators, cost-sharing policies, and technical standards, including water quality standards.

a. Regional Modality

Regions are generally responsible for WASH program in the region whether government budgeted, CWA supported or CSOs. Regions are organized and have more qualified staff in all bureaus of water, health and education to design, support and evaluate program. They also see to it that procurement is done on time; budget is utilized effectively and efficiently and reported timely.

Regions will support appraising program, conducting in depth study on ground water potentials, conducting capacity building to staff and private sectors, supervise and commission major projects, support strengthening monitoring, learning and knowledge exchange program etc. Higher level water construction such as deep wells are designed, contracted, supervised, inspected and commissioned by the regions or zones when delegated. However, there is a need to develop a guideline for regions so that others would also know who is responsible for what in water construction.

b. WMP Modality

The distinguishing feature of WMPs is that the woreda WASH Team (WWT) is responsible for administering funds allocated to a kebele or community) through a Grant Agreement for capital expenditures and software expenses on water supply and sanitation programs. Although the Kebele Administration and WASHCOs are involved in project planning, implementation, monitoring and commissioning the project supported by the WWC, the WWT is the Project Manager and is responsible for contracting, procurement, inspection, quality control and handover to the community. Construction is supervised by woreda staff.

WMP projects will be implemented according to procedures and guidelines established for Woreda Managed Projects, with modifications to comply with the Program organization, reporting requirements and monitoring indicators.

c. CMP Modality

The CMP is a rural WASH implementation modality where communities are supported to initiate, plan, implement and manage their priority water and sanitation projects using funds that are transferred to and managed by the community.

Funds for physical construction are transferred to the communities from woredas or through intermediaries selected by the communities, thus making communities responsible during the full project cycle, from planning,

implementation (including procurement of most materials and labor) and O&M. The WASHCO is directly responsible for contracting, procurement, quality control and financial accountability to the community, the Kebele and the Woreda Administration. There is no handing over of scheme to communities, since the community already owns the project.

One drawback of the CMP is the fact that the focuses on development of water supplies using low-cost technologies such as hand-dug wells and springs which are not providing in many cases resilient and sustainable services. When communities are dependent on these sources, sectors at the woreda level should support the communities get the best out of the sources and technology through capacity building in O&M, hygiene promotion for safe management of water at household level and periodically testing the water and advising consumers on point-of-use water treatment where necessary.

The Government focus now is developing a sustainable climate resilient source and using appropriate and economical and robust technology for water delivery

d. NGO (CSO) Modality

NGOs are important stakeholders in the Program as donors, implementers and knowledge disseminators. NGOs funding and management arrangements vary considerably. However, in concert with national WASH principles and practices, they foster community initiative, develop community leadership and require community investment in water point projects. In some cases, NGOs administer external resources on behalf of the community (as in WMPs). In other instances, they make external resources available to the community directly or through MFIs to support construction and management.

NGOs have flexibility and are able to increase community involvement, ownership and accountability. NGO-supported projects will follow procedures agreed between the NGO, its partners, GoE and the region or woreda where activities are located but, in any case, should comply with policies on cost-sharing, community contributions, reporting and monitoring indicators.

It is intended that NGOs are included in resource mapping at all levels and are requested to provide information for the preparation of consolidated Annual WASH plans and budgets. NGOs are also requested to provide periodic progress and utilization reports to WASH Coordinators at various levels.

However, this reporting aspect of OWNPN has not worked well so far. As proposed in **Section 11**, it is intended that the role of government staff be strengthened and incentivized to follow up on NGO activities.

Although NGOs could be a valued member for WASH in providing trained human resources, experience, much needed fund to increase service and the proximity to the people who need the service, they have not been adequately integrated into the OWNPN. In Phase II however, recommendations are made to make them part of the program in all areas of planning, implementation, monitoring and reporting.

d. Self-Supply

Self-supply through increasing access to improved water supply with maximum participation and contribution from beneficiaries, thereby frees scarce public resources that can be used for other purposes. There has been

steady development, expansion and popularity of the family wells and a Self-Supply approach in Ethiopia over previous decade's.²⁰

Self-supply or private wells are usually not adequately protected to supply clean and safe water to the households or neighbors. The problem is the site, water abstraction methods and lack of the necessary protection mechanisms such as raised apron, water tight casing etc.

There is a need to think to more safe and adequate water supply coverage with less emphasis to self-supply. The whole one WASH program objectives is to supply safe water and sanitation and hygiene to all people in a community using a robust and sustainable water systems. In Phase II the technology mix is more focusing on those which provide sustainable supply and resilient service.

e. Multi-village Water Supply Schemes

Multi-village water supply schemes will be supported under certain conditions provided that feasibility studies verify that the proposed sources are adequate and that the schemes can be socially, technically and financially sustainable. MVS has been the subject of important recent discussion within GOE supported by external consultancy²¹ where it has been decided to:

- a) "establish independent sector regulator including performance monitoring and benchmarking of service providers"²²
- b) "formally recognize and support rural public utility management for complex large multi- village schemes"
- c) "establish post-construction ... capacity ... capital maintenance ... cross subsidy ..."
- d) "professionalize" ... "standardize" ... "shift from community management to community participation", but "while other modes of implementation ... remain in place where appropriate and successful (CMP, self-supply, NGO, woreda)"
- e) "clarify roles and responsibilities for rural public utility service providers ... accountability to existing sector institutions"
- f) "delegate functions"
- g) Cluster the Rural MVS Scheme with the strong town water utility instead of establishing Rural public utility management where appropriate

Discussion includes how to cover O&M costs for rural systems since "sustainable water supply is beyond the ability to pay for users" and suggestions are made regarding government or donor subsidy and "improvement of economic situation of population".

As stated by many stakeholders WASHCOs are volunteer committees and, with growing demands for quality and quantity of water supply and sanitation, it may not be realistic to continue managing the scheme by WASHCOs. It is believed that there is a need to devise another alternative mechanism, such as external regulatory body, to solve the O&M problems. All this would appear to be generally in line with the suggested "WASH Sector Reform

²⁰Mammo, 2010; UNICEF, 2010.

²¹Rural Public Utility O&M Implementation Manual for Multi Village Water Supply Schemes

²² The Ministry of Finance is emphasizing the need for an independent regulator ... "particularly in urban settings but increasingly in rural settings as well ... (which) should include complex rural water supply scheme management"

Principles” listed in the table under **Sub-section 11.6**, including the longer-term concept of combining the management of MVWS schemes with clustered large and small schemes

5.1.3 Pastoralist Rural Water

Access to improved water supply and sanitation facilities in pastoralist areas of Afar, Somali, Benishangul Gumuz and Gambella and pastoralist areas in Oromiya and SNNPR are relatively low compared to other areas and the national average. Access levels for water and sanitation in pastoralist regions and woredas ranges from 39.5% to 61%, and from 6.5% to 21% respectively, while in the other parts of the country water and sanitation coverage ranges from 62% to 95% and 41% to 76%, respectively.

The most common sources of drinking water in pastoralist areas are rivers, lakes, unprotected wells, springs, hafirs, ponds, public and privately-owned taps. Due to the scarcity of water, poor sanitation and hygiene, some of the pastoralist regions has experienced Acute Watery Diarrhea (AWD) and other hygiene related diseases, commonly known as water washed diseases.

The major problems cited for poor sanitation development by HEWs, school officials, woreda health personnel and community members are lifestyle of the pastoralists which are mobile in search of animal fodder and water, shortage of resources, lack of commitment and awareness, weak inter sectoral collaboration, uncoordinated and ineffective sanitation promotion efforts and lack of affordable construction materials for latrines.

Water supply schemes in lowland pastoralist areas should be constructed close to pasture lands and along migration routes as hydrological and hydrogeological conditions permit. Involving clan leaders like Aba Ella (the “Father of Water Wells” in Borana) in siting and technology selection can enhance the impact and sustainability of water supplies in pastoral areas.

5.2 Rural Sanitation and Hygiene Promotion

5.2.1 Introduction

Since 2004 GoE, with development partners, have paid substantial attention to rural hygiene and sanitation by implementing the program through the Health Extension Program who are promoting sanitation and hygiene at grassroots level. Constructing and using pit latrines in rural Ethiopia has become more common after the deployment of more than 38,000 HEWs in over 15,095 health posts at kebele level (2 HEW/kebele).

Promotion of sanitation and hygiene in Ethiopia follows a government endorsed Community Led Total Sanitation and Hygiene (CLTSH) implementation guideline. Facilitation and community mobilization using this tool is usually carried out by woreda level trained professionals with very limited follow up and demonstration. By design CLTSH triggering will require prior planning and appointment for a convenient day with target communities, triggering to adults and children in a well-controlled setting and a do-able action plan. There should be a persistent follow up arrangement to ensure that communities are truly acting on their action plan designed on triggering day, give technical support when digging latrines or upgrading existing latrines.

However, although the annual rate of reduction of open defecation in the country is recognized as the fastest globally, the majority of toilets build are considered unimproved. In order to move up in the sanitation ladder and increase the percentage of households using safely managed sanitation infrastructures, there is need to include

other strategies such as sanitation marketing which support the supply chains and improve the quality of the facilities built by households.

Undeniably, the HEP has helped mobilizing households to build latrines and hand washing facilities in communities where CLTSH has been conducted. There is considerable change especially in latrine construction but there is still much work regarding latrine design and usage as many latrines are without superstructure or a squat hole cover, have non-washable floors, do not provide adequate privacy, allow fly breeding and impart offensive smell and overall there are about 38 million open defecators in Ethiopia.

Other key areas which are not fully addressed and require further attention in the second phase of the OWNPN are as:

- Personal hygiene integrated into sanitation interventions,
- Baby WASH, including the safe management of child faeces and a clean and safe environment for under 5 children
- Promoting the safe water chain including household water storage and safe use,
- Hygiene practices such as hand washing at critical times,
- Inclusion of MHM (Menstrual Hygiene Management) in schools (as part of the institutional WASH component) but also supported with interventions at community level
- Sanitation and Environmental health of the immediate housing environment including safe solid and liquid waste management as well as vector control measures

The fourth National Health Sector Development Program target in the GTP II period 82% improved sanitation facilities and the National Hygiene and Sanitation Strategic Action Plan (NHSSAP), on the other hand, has indicated to reach to 100%, 77% of household to practice hand washing with soap (or its equivalence) at critical times; 80% of kebeles to become open defecation-free (ODF) areas; and 77% of households get either water treatment or access to safe water.

5.2.2 Implementation

In order for the program to be effective a pragmatic program design and that which would strengthen the existing initiative must be used in communities throughout the country. The new initiative is to design a “**Community Centered**” planning and action program which would train and empower permanent residents in the community including, religious leaders, women, HEW, WHDAs, development agents, teachers, students, and other community leaders. Three major actors including: 1) community members 2) sector actors (HEW, WHDA, EHW, PHCU staff) and the 3) political and administrative institutions [Woreda and Kebele leaders, Woreda WASH Team members (Health, education, water, women and youth and agriculture)] must work together for one common end at the kebele level.

There were sector actors who had advocated to focus on household centered approach (Roland Schertenleib)²³. Households produce some types of waste but unless all waste producing institutions in a community such as institutions, industries, shops, markets etc... are not included the community will still be unclean and unhealthy. Without undermining efforts on individual households, sustainable sanitation and hygiene programs is ensured with mass action and mass responsibility which warrants empowering the whole community and enhance

²³ Swiss center for development cooperation in technology and management, june 2000

community action hence “community Centered Approach” is better than working only with individual households. An empowered, trained, and supported community will work together and practice the three key behaviors.(see graphics below)

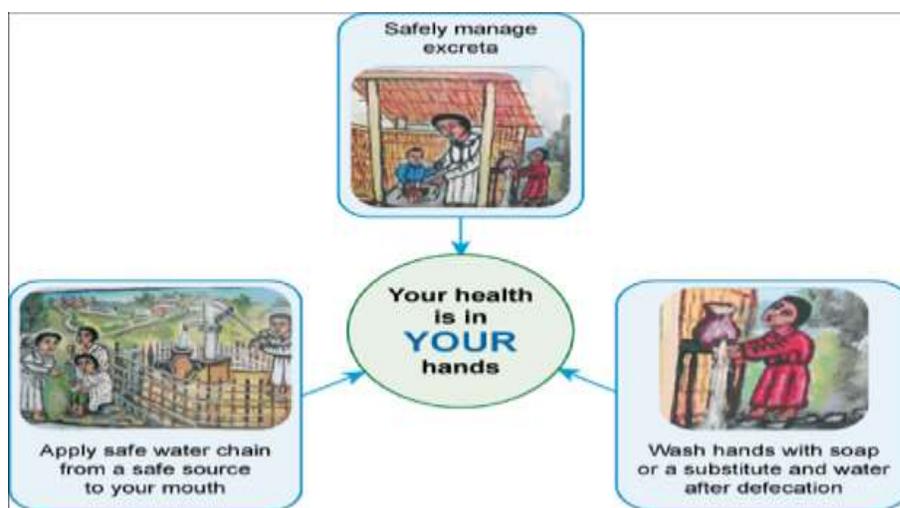


Fig: 3. The three hygiene Behaviors

In order for communities to be successful in achieving total and sustained behavior change they need support on three areas

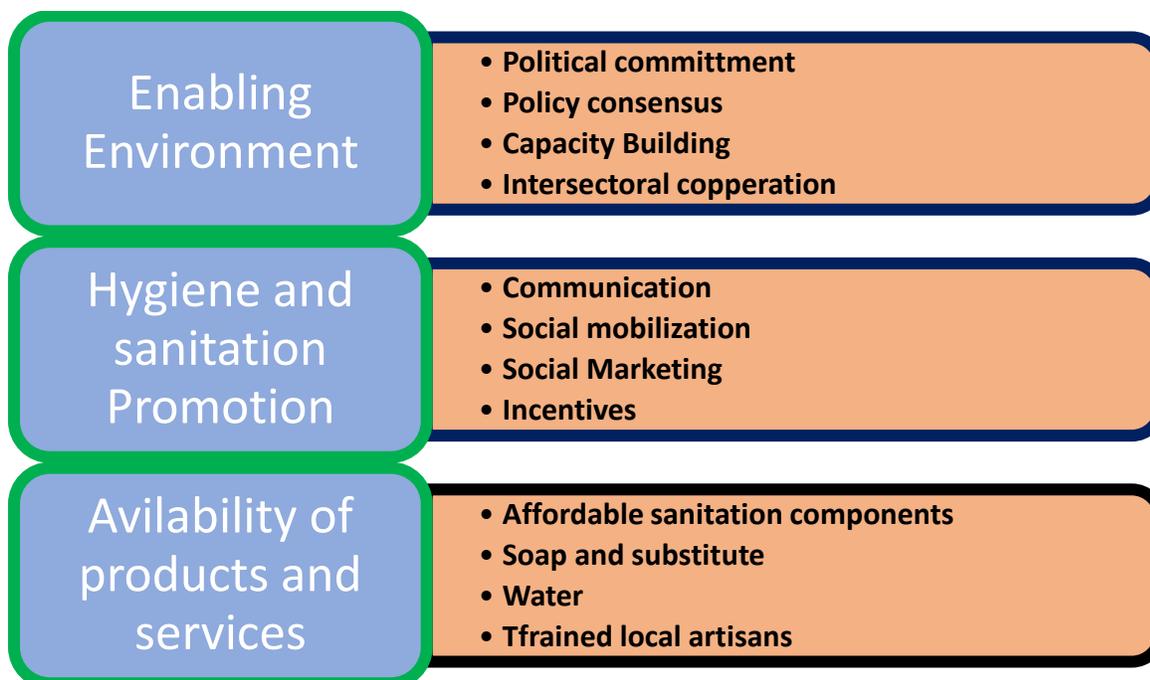


Fig 4. The three pillars for hygiene and sanitation

The community centered approach is not disregarding CLTSH approach or the Health Extension program. It is an approach that is complementing, supporting and enhancing efforts and follow up of any initiative undertaken to

make the change in WASH behave. Community centered approach is bringing the passive onlookers or the beneficiaries themselves to the center of action and make them more responsible to make their communities clean, healthy and dignified.

Lasting or sustained behavior change in sanitation and hygiene requires not only well tested tools like CLTSH, community centered approach but also multi sectorial support, approach, systematized advocacy such as :multi-level advocacy ;multilevel communication; strengthened household outreach; media support; increased availability and affordability of hygiene and sanitation products through private commercial and NGO sector initiatives; enhanced and systematized school hygiene and sanitation program; promotion and demonstration as means of rapid change in behaviors.

With this arrangement and all the enabling environment in place the sanitation and hygiene program in communities will be able to work to improve:

1. The unimproved and unsustainable latrine conditions will be transformed and newly constructed latrines will follow the principles and construction methods of an improved latrine system.
2. That all households will have a functional and improved latrine used by everyone in the family and all latrines will have a hand washing facility with soap or other substitute.
3. That all households especially with children wash infant babies and all children under five years of age.
4. All households consider child feces as harmful as adults and take proper action of disposing in latrines immediately after child defecates.
5. That the community will be open defecation free
6. With proper behavior change and practice in using clean latrine and hand washing facilities, communities could control the most prevalent and persistent tropical diseases such as trachoma, ascariases, hookworm, filariasis, schistosomiasis etc.

5.2.3 Pastoralist Sanitation and Hygiene

At present hundreds of settlements are being established in pastoralist areas. However, the seasonal movement is still practiced but women, the elderly and children are remaining behind in the village. This condition is allowing for establishing schools and strengthening HEP in the settled village.

Hygiene, sanitation and water safety promotion in such pastoralist village may have to follow a different methodology than the CLTSH approach which depends on creating disgust and fear. The pastoralist tradition is very serious on privacy during defecation. Male and female open defecation areas are located in two different opposing direction within a community making it difficult for the household to dig latrine near the house.

Hygiene, sanitation and water safety promotion should use simple and small do-able-actions first. Small do-able actions are practices that have less demand for resources such as for example practicing hand washing using ash, covering feces with soil, separating animals from human habitation, conducting sanitation campaign every week to clean up the settlement and using simple pictorial communication methods such as MIKIKIR card used in Amhara region. (Pictorial do-able action areas annex)

5.2.4 Sanitation Marketing

The Program will support the scaling-up of sanitation marketing as described in the National Sanitation Marketing Guideline of June 2013. It is important that sanitation marketing is conceptually and programmatically integrated

and closely coordinated with related WASH activities, such as training artisans and establishing supply chains so that both water supply and sanitation services and products are promoted as an integrated package.

Training for private sectors who would be taking sanitation as a business was developed by TVET. They have also developed Occupational Standard (OS) so that sanitation marketing will be included in the 800 existing OS of which some are of relevance to the different sections of the training manual designed which are now defined as 1) sanitation and hygiene, 2) latrine technology options, 3) business management and 4) marketing and promotion. Quality control and standard for sanitation is the responsibility of Ministry of Health while Federal Micro and Small Enterprise Development Agency (FEMSEDA) and TVET are responsible for the design and construction of the product.

In regard to sanitation facilities, a study made by WSP and SNV on sanitation supply chain study in Amhara Region published in February 2012 by WSP and SNV identified the following three business models:

- i. "Nisuhe lehulume" (clean for all) – for household latrines in rural areas. Affordable technologies such as slabs/plastic pans are developed or adapted and promoted with distribution and services.
- ii. "Nisuhe lesferu" (clean for local) – adapted/expanded latrines to local contexts. Low-cost technologies in design and slab production at local level are promoted. Masons and businesses are linked with health workers and supported by service providers.
- iii. Promotion, distribution and service modalities for existing products like San-plants and Turkish pans are supported to extend outreach to rural areas.

To this end an on-site household latrine technology option planning, design and construction manual is published and distributed for wider use. What need to be strengthened will be to establish sanitation marketing following the four “p” principles and supported by the Micro-Finance Institutions.

5.2.5 Targeted Subsidy

It is the policy of the government that sanitation being a private matter should be financed by each individual household. The objective of sanitation development is however to prevent disease, promote health, ensure sanitary living fulfilling the cardinal objectives of the Ethiopian Federal Constitution. However, the poor, the old, and the disabled who can't afford to have safe sanitation system will be obliged to defecate in the open. This practice therefore, makes the community in general vulnerable to health problems emanating from poor environmental sanitation practices.

This warrants the establishment of financing or subsidy option for the poorest and the old who can't afford to build basic sanitation system. Subsidies that are targeted to the poor, old and the disables through community selection process may be effective not only reaching the poor and the creation of equity but also the promotion of public health and environmental safety.

5.2.6 Manuals, Guidelines and Information Materials

To date there are many resources that can be used to carry successful WASH program. In addition to the strategies, there are also guidelines developed by sector ministries and partners. Of particular relevance are the following documents issued by the Ministry of Health: Implementation Guideline for CLTSH Programming, January 2012; CLTSH Facilitation Training Guide, Jan. 2011, and CLTSH Verification and Certification Protocol (2012), National

Monitoring and reporting system for the implementation of CLTSH, January 2012 and two important publications by WSP²⁴.

5.3 Urban Water Supply

5.3.1 Introduction

Ethiopia is one of the least urbanized countries in Africa, with over 80% of the population living in rural areas. However, Urbanization in Ethiopia is picking up commensurate with the overall development trend. The urban population of Ethiopia is growing at slightly more than 5% per year, which is more than twice the growth rate for the country as a whole. Some statistical reports indicate that Ethiopia has a total population growth rate of 2.5% a year, with urban centers growing at a rate of 5.1% (Haddis et al. The gains during the MDG period was: 2515 million people who have gained access to water from piped systems, protected hand-pumps and springs. In general, 10 million people have joined those with access to more convenient piped water in their home or compound

In 2008 EFY: i) 52.5% of urban population have water supplies meeting new GTPII standards; ii) 93% have some form of latrine facility. The big achievements made in Urban WaSH service delivery over the past 20 years indicate that over 10 million people have access to more convenient piped system in their home and compound and 8 million people have gained access to improved toilet facilities ²⁶ Analysis for Phase II program indicated the unserved urban population to be 5, 648, 901 (table 15).

The Program will be implemented in the following categories of towns:

Table 4: Categories of towns and service levels

Category	Description
1	Towns/cities with a population more than 1 million to provide the service 100 l/c/day up to the premises) and are managed by water board
2	Towns/cities (towns/cities with a population in the range of 100,000-1million to provide the service
3	Towns/cities (towns/cities population in the range of 50,000 -100,000), to provide the service 60 l/c/day up to the premises managed by WASHCOs
4	Towns/cities (towns/cities with a population in the range of 20,000-50,000 to provide the service 50 l/c/day up to the premises supplied with piped networks or multi-village water supply system managed and managed by professional utility managers
5	Towns/cities with a population less than 20,000 to provide the service with 40 l/c/day within a distance of 250m

²⁴Scaling Up Rural Sanitation and Hygiene in Four Regions in Ethiopia through Alignment with Health Extension Program, Consensus with the Whole System and Total Engagement with Communities, October 2012, and; WSP Learning Note: Scaling Up Rural Sanitation. Learning by Doing: Working at Scale in Ethiopia, July 2011.

²⁵ World Bank (2017), Maintaining the Momentum while Addressing Service Quality: A Diagnostic of Water, Sanitation, Hygiene, and Poverty in the Federal Democratic Republic of Ethiopia. Unpublished

²⁶WB (2017), WASH (Poverty Diagnostic Report) IN: Development of sustainable water supply, sanitation and hygiene in draught prone areas, a Suib program document, final version, 2017

5.3.2 Implementation

The Urban WASH component is implemented through two modalities. The capacity building, planning and service improvement are implemented through grant financing. Finance for water supply expansion will be provided on a soft loan basis. Accordingly, the process and institutional arrangements differ. At town level there are two WASH structures and processes; one for water supply and one for urban sanitation and hygiene. Both will be integrated in the Consolidated Annual WASH Plan which will be approved by the City Council or Town Board.

The following diagram shows the organization and process for implementation of urban water supply:

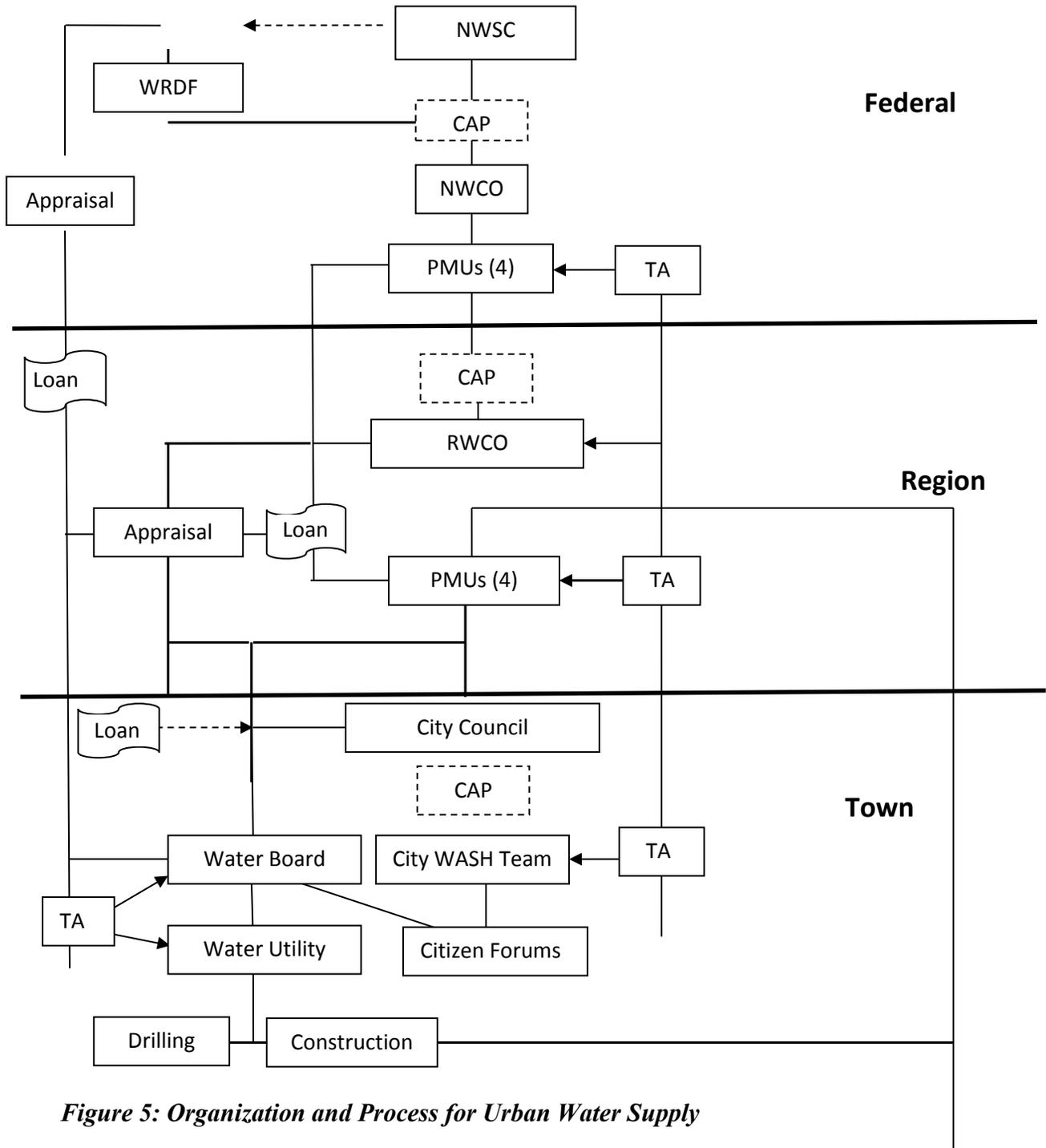


Figure 5: Organization and Process for Urban Water Supply

Key: RWCO - Regional WASH Coordination Office
 CAP - Consolidated Annual (WASH) Plan

5.3.3 Improving Efficiency in Construction and Operation of Water Supply Systems

Many urban water supply projects in Ethiopia encounter significant delays in planning and implementation due to lengthy identification and selection process, procurement procedures, poor performance of contractors, cost escalation and budget overruns, among other reasons.

To address these constraints, transaction times and costs can potentially be reduced or controlled by one or more of the following means:

1. Offering contracts in larger lots, for example for studies, borehole drilling, source development for more than one town with similar types of sources, civil works, electro-mechanical installations, wastewater treatment facilities, etc.
2. Turnkey contracts combining feasibility studies, detailed designs, business planning, construction supervision and post-construction support. Turnkey contracts combining civil works and electro-mechanical installation have already been awarded by the Water Resources Development Fund (WRDF). It is reported that the implementation period has been reduced from over two years to around one year.
3. Framework contracts with a consortium of firms/organizations to provide a suite of services to a group of towns over a longer time period also has a potential to significantly reduce transaction costs and time.
4. Service contracts between town utilities and private operators to operate completed water supply schemes can also be considered where town utilities have limited capacity to operate and maintain systems can also be considered. In such arrangements, supervision/regulation of the operator is very important.

5.3.4 Construction Supervision

Effective supervision of construction projects is essential to ensure the quality and functionality of works. However, construction supervision has typically not received sufficient attention in water supply projects, and the ultimate responsibility for supervision has been diffuse and unclear. As a result, deficient works in some schemes had to be redone by abandoning the earlier structures or required excessive maintenance without delivering the intended service. This resulted in increased project costs as well as negatively affecting the integrity, safety and functionality of the schemes.

In water supply projects, especially in rural areas and small towns, supervision has been carried out by the regional bureaus. Supervision of water supply works in medium and large town is usually outsourced to the private sector. Supervision is not typically done through daily on-site inspections, but rather through periodic site visits.

- The capacity for adequate supervision of construction projects needs strengthening. Inspections should assess the validity of design assumptions; identify variations between actual site conditions and designs, to adjust designs according to changed parameters if required. Supervision should help to ensure that construction is carried out according to plans, design and specifications and certify that work is progressing according to schedule, and that quality and costs are monitored.
- Appropriate supervision skills are essential if projects are to be completed on time, within budget and meet quality standards. The Program will promote measures to address existing shortcomings in construction supervision practices through supporting preparation of standardized supervision/inspection reports and guidelines.

- Supervisors must have adequate knowledge in water supply/civil designs and construction methods, materials, manpower requirements as well as time scheduling and costing. At woreda, zonal and town levels, construction supervision and contract management will be strengthened through the provision of professional training to supervisors and provision of technical assistance to prepare manual and guidelines for supervision of medium and large water supply schemes. Training will be provided by qualified trainers from a recognized training institute and should also include the private sector; TSGs and WSGs and supervision of drilling as well as civil works, electro-mechanical instillation, pipes, pumps and other materials, manpower and input and cost control.

5.3.5 Sustainability

Regarding sustainability of rural and urban water supply management systems, a more enabling environment is needed as detailed below

- Clustering of urban and rural piped systems for economy and scale and sharing resources and for facilitation of future utilities regulatory bodies. This may be on voluntary basis in short to medium term and formal basis in medium to long term dependent on government strategy yet to be agreed (the principle of clustering is described IUSHS&SAP and is widely used informally in Ethiopia for sharing limited resources)



Fig.6 Clustering potential in WASH

- Develop/update the business plans of individual or clustered utilities and develop use of performance agreements that incentivization plans to retain and motivate skilled and highly trained personnel.
- All urban systems should be electricity grid connected. Diesel generators should be installed, but only for back-up of critical system components, such as source pumping to elevated tanks. For small towns, alternative cheaper energy sources should be considered to supplement grid supply, so as to improve affordability²⁷.

²⁷ Learning from national and regional research into alternative renewable energy technologies

- Tariffs set at “ability to pay” levels following project socio-economic, financial and technical analyses (See Guidelines **Annex 2**), and not set through regional or Woreda directives. Tariffs may also be influenced by willingness to pay so that the formation and involvement of Water User Groups in tariff setting is also necessary. Where tariffs do not match the costs of the desired service level, then either the service levels have to be decreased (but not below 30 l/c/d) and/or subsidies have to be found.
- Water available when needed, that is, 16-hour supply for house connections, water points should be open based on demand with short waiting time (street rotas can be introduced if necessary)
- ESIA (environmental and social impact assessment) carried out at project feasibility stage to as to understand what impact the project may have in 5 or 15 years’ time and to mitigate negative impacts.
- It is essential that urban water supplies are matched by faecal sludge management (FSM) services, solid waste management and surface water drainage. Without these components the health impact of new or improved water supply may in fact be negative. Hence urban water funding should be conditional on sanitation to mitigate health and environmental impact. (See guidelines of sustainability planning, **Annex 2**, and also the experience in the 8 towns under One WASH+).
- Reduce wastage by consumers in the home, at water points, during transport, etc. Less wastage will reduce standing water
- Quick response to mechanical breakdown and quick response to leaks (so as to reduce NRW and overall costs).
- Install computerized information system for asset and data management and bill collection systems, appropriate to the size of the utility, taking advantage of sharing (point 1 above)
- Consumers are willing to pay for a good service, which will depend upon many of the points above. “Willingness to pay”, unlike “ability to pay”, cannot be determined from data as a particular figure; however, experience from elsewhere is that low income customers are willing to pay a higher percentage of household income for water than middle and high-income customers. This is partly due to the significant improvement with previous reliance on poor quality water provided through vendors at high cost or long distances to collect water and time and risk involved for young family members.

5.3.6 Water Quality

5.3.6.1 Introduction

The Ministry of Health has prepared a National Drinking Water Quality Monitoring and Surveillance Strategy (2011). The two main sectors responsible for drinking water quality, MoH and MoWIE and their regional bureaus, have operated primarily within their own sectoral priorities and mandates. After the signing the MoU and WIF, the roles of the two sectors have been further clarified and the importance of coordination is affirmed. The Ministry of Health is responsible for periodic monitoring of water quality after water supply schemes are commissioned through their regional bureaus and woreda offices. MoWIE will test water quality of proposed surface water and groundwater sources before construction and commissioning of the schemes and will be responsible for identifying and implementing mitigation measures in areas with naturally occurring water chemistry issues such as high fluoride, iron, arsenic and salinity. Urban water utilities level 1-3 are expected to establish a laboratory and carry out water quality monitoring on daily bases. Utilities level 4-5 and rural water supply schemes are also expected to be checked on regular bases.

Priority has to be given for water safety plan by each project during study and design stage of water supply to assist the water quality monitoring which will be performed by the Utility and OR WASHCo and other concerned sector office.

5.3.6.2 Implementation

The Program provides an opportunity to move the above Strategy forward by first obtaining approval of the ministries of health and water and energy and thereafter supporting implementation of the Strategy, primarily through strengthening water quality monitoring and surveillance, particularly in urban water supplies and in acute hot spots²⁸, data collection and database design and management, publication and dissemination of information, communication and performance assessments.

There is a need for technical and logistic support to strengthen already functioning public health laboratories at least for cluster of towns and woredas. Due to the limitation of transportation taking sample from a site to the laboratories may be a daunting task as a bacteriological sample has to reach a laboratory within 6 hours. Such problems can be solved through the use of portable water testing kits especially for rural areas.

The establishment water surveillance program using kits is being promoted by government and through support from UNICEF and other partners. Training, designing a protocol or guideline and a system of work and reporting may be necessary to establish water quality surveillance as one important WASH program for Ethiopia.

5.3.6.3 Standards and Guidelines

The applicable standard for drinking water quality in Ethiopia is the Ethiopian Drinking Water Quality Standard: ES2601:2001 (second edition), which includes reference values for bacteriological, chemical and physical water quality parameters.

It is estimated that by 2020, the volume of wastewater generated from Addis Ababa alone, much of which enters the Awash and Akaki Rivers, will exceed 200,000 m³/day or 73 M m³/year, of which an estimated 10% is industrial wastewater²⁹. At present there are no national standards for industrial and domestic wastewater. Developing such guidelines and associated directives and regulation as a collaborative effort between the Environmental Protection Authority (EPA) and MoWE is an urgent priority.

5.4. Urban Sanitation and Hygiene

Urban sanitation has been re-emphasized many times since the start of the OOWNP as being a key development objective (GTP II, IUSHS&SAP, WB WS&S new project proposal (PAD), etc.). Urban sanitation problem sources are from sewerage, septic tanks/ cesspits, pit latrines, domestic solid wastes and industrial, institutional and commercial liquid and solid wastes³⁰. Mitigation factors among other things include capacity building, institutional reform, hygiene education and promotion and regulatory actions.

²⁸Hot spots include areas where the risk of contamination of drinking water and related disease transmission are high.

²⁹Urban sanitation and wastewater treatment in Addis Ababa, Ethiopia, D. Van Rooijen and G. Tadesse, Addis Ababa, 2009.

³⁰SDG6.3: By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

Since the responsibility lies with many stakeholders in government, community, and private stakeholders which are outside the direct influence or control of the four key ministries which are current signatories to the WIF³¹. It is therefore necessary to establish holistic coordination mechanism with the relevant stakeholders.

Inclusion of sanitation should be ensured at local level: With some exceptions, all urban WASH projects proposed for funding should include sanitation as a pre-condition for finance. In addition, “sustainability master plans and feasibility studies” must clearly demonstrate how the operational and financing costs of the chosen levels of technology can and will be funded; through direct charges/tariffs, cross subsidy to sanitation from water sales, municipal rates, central government grants, etc.

When considering GTPII targets for sewerage (6 cities where at least 100 l/c/d would be required to flush sewers to off-site treatment) then this would increase urban water investment very much more³². However, the IUSHS&SAP recommends decentralized wastewater treatment and this appears to be the direction taken under the new WB³³ Ethiopia Second WS&S project PAD March 2017 proposals; except for Addis Ababa where sewerage will be expanded. DEWWATs allow for minimal pour flush using waste water so can be used with current urban water supply availability (less than 30 l/c/d³⁴).

It is difficult to consider “urban sanitation” without also including SWM, since human health and environmental degradation may be significantly impacted, besides the associated aesthetic and public and international perceptions. Domestic SWM as well as industrial liquid and solid are not included in the OOWNP short-term measures (GTP2, **Section 15**) but the necessary involvement of the Ministry of Urban Development and Construction and the Ministry of Environment has been highlighted in GTPII³⁵ and other stakeholders³⁶. For guidance on urban sanitation refer to **Annex 6**.

Some of the principles or critical steps for urban water and MVWS schemes(See **Sub-sections 5.1 and 6.4**)are also applicable to urban sanitation:

It is common for septic “holding” tanks in urban areas to (illegally) be made leaky, even where soil soak away capacity is limited or where there is insufficient land for safe liquid effluent treatment. This is understood to avoid the high cost and/or unavailability of vacuum trucks. Planning for new schemes should involve ground vulnerability maps to determine which areas are suitable for septic tank and soak away and which areas should stay as dry toilets (VIP latrines) until off-site sewerage (or alternative DEWWATs) is available.

For a full description of urban sanitation implementation and O&M, refer to the IUSHS&SAP as well as relevant parts of **Annexes 5 and 6**.

³¹ GTPII Goal 4.5: Strengthen WaSH integration to meet the objectives of OOWNP and establish coordination with MoUDC and its affiliates at all levels in urban WaSH intervention

³²See Section 7 for potential impact of this on high level cost estimates

³³As stated by WB, the huge budget needed for urban sanitation is not allocated in the Consolidated WASH Account

³⁴ COWASH: *With the current consumption of 30l/c/d, implementing GTPII will be a challenge*

³⁵Goal 4.5: Strengthen WaSH integration to meet the objectives of OOWNP and establish coordination with the MoUDC and its affiliates at all levels in urban WaSH interventions

³⁶As stated by DFID, the Ministry of Urban Development and Ministry of Environment is crucial for OOWNP to be coordinated

5.5 Institutional WASH

5.5.1 School WASH

WHO defines a healthy school as one that constantly strengthens its capacity as a healthy setting for living, learning, and working³⁷. A healthy school environment is one that protects students and staff against immediate injury or disease and promotes prevention activities and attitudes against known risk factors that might lead to future diseases or disability.³⁸

In Ethiopia schools often have inadequate water and sanitation facilities. In 2015:

- 11% of primary schools had appropriate water facilities and 3.2% have all WaSH facilities
- 24% of primary schools had appropriate water facilities and 10% have all WaSH facilities

The provision of safe water and sanitation facilities combined with hygiene education contributes to improving school enrolment and attendance, and can potentially lower the drop-out rate, especially of girls. Educating girls is the single most effective tool for raising economic productivity, girls who are denied education are not only more vulnerable to poverty, hunger, violence, abuse and exploitation, but they are also more likely to die in childbirth and are at greater risk of diseases.

To address the problem of inadequate water supply and sanitation in schools, MoE has developed the following working documents:

- Developing a School WASH Strategy and action plan
- Developing guidelines for water and sanitation needs of school children
- Develop gender and age sensitive curriculum on sanitation and hygiene
- Establish standards for construction of school latrines and hand washing facilities
- Upgrade life skills of school children and teachers on sanitation and hygiene education
- Establish health/environmental/school WASH clubs and promote children as agents of change

Latrine to stance ratio: The general recommended ratio set by Ministry of Education is:

- one stance/cubicle per 50 girls and one toilet for female staffs in rural schools
- one stand/cubicle and one urinal per 75 boys and one toilet for male staffs in rural schools
- In the case of regional capital cities and city administration towns, the number of seat to student ratio should be one stance for every 25 girls and one toilet for female staffs and one stance plus one urinal for every 50 boys and one toilet for male staffs

At least one toilet cubicle should be accessible for staff, boys and girls with disabilities, preferably one for females and one for males. This includes level or ramped access, wide door and sufficient space inside for a wheelchair user or helper to maneuver, and the provision of support structures such as a handrail and toilet seat.³⁹

³⁷ WHO. Healthy Nutrition: an Essential Element of a Health-promoting School, Information Series on School Health. WHO, 1998.

³⁸ American Academy of Paediatrics. Committee on School Health, School Health Policy and Practice, Fifth Edition, 1993.

³⁹ Federal MoE, (October 2017), National School Water, Sanitation and Hygiene Implementation Guideline

The design and construction manual for water supply and sanitary facilities in primary schools⁴⁰ and the production of a package of multi-media materials designed to promote sanitation and hygiene in schools has been produced by the Ministry of Education with support from UNICEF.

The Program will support the review, updating and/or adaptation, translation and dissemination of relevant materials to ensure consistency with the Program's organization, planning procedures, reporting requirements and monitoring indicators.

Currently, health and education WASH capital works and operational costs are poorly funded through regular sector budgets (since WASH is not ring-fenced) and are (inadequately) "temporarily" financed through the CWA. This system should be changed within the short term (to 2020) to ensure that all in-premises institutional WASH facilities are built and operated through regular ministry budgets (whatever the source of funds; GOE, loans, grants, CSO, private, etc. OOWNP (including CWA) funding should be confined to services to the boundary of institutional premises (including prisons, churches, government offices, education and health).

The role of health and education under the OOWNP will then be primarily one of promotion of WASH practices and advocacy for better services and community involvement (see IUSHS&SAP and H&EHS).

MoE is understood to be currently drafting an institutional framework for school WASH for effective and efficient implementation of the OOWNP. Integral to this strategy should be central (ministry) budget ring-fenced funding for all "in-premises" capital, operational and maintenance/replacement WASH costs. It has been proposed to leverage additional finance for Institutional WASH interventions by integrating with Health Care Financing Initiative, CASH, and mobilizing resources from communities and private investors.

The school WASH program demands more attention because the facilities and proper practices are considered to be a major life skill learning to children. Children practicing good hygiene behavior in schools may also transfer the behavior to the family members. It is therefore a way of changing the generation for good and it is recommended that: BY principle school WASH should have:

- Institutions should be provided with full package of WASH services (latrine, hand washing, MHM facilities, urinals, drinking water fountains/taps)
- The latrine facilities should be male/female separated usually located at two corners of the school compound.
- Latrines, hand washing facilities and drinking water taps must be designed considering disability, children's age and height to ensure easy accessibility
- The MHM facilities which will consist of a separate structure with running water or water from Jerry can, floor drainage, pad washing, disposal facility and drying rack and supply of pads with resting facility for adolescent girls should be available in all schools.
- School WASH forums at regional and Woreda level should be formed in order to reduce the lack of awareness on OOWNP from federal to lower level, and for knowledge exchange, experience sharing and learning.
- Having the facilities is not enough but the operation and management aspects of WASH facilities especially in cleaning the sanitation, hygiene and water facilities must be strengthened.

⁴⁰Design and Construction Manual for Water Supply and Sanitary Facilities in Primary Schools, MoE, MoWIE, UNICEF, 2012.

- One of a new initiative recommended to schools is the use of vacuum truck to pump out sludge from the school latrine. Construction of safe and cleanable latrine with secured doors and solid walls for privacy costs a lot of money. Instead of abandoning such latrines and dig a new one each time it is filled, pumping out the sludge and renewing the pit is cost effective. 6.5.2. Manuals, Guidelines and Information Materials
- Allocate budget to support strengthening of WASH services in schools.

5.5.2 WASH in Health Facilities

Lack of improved drinking water, sanitation and hygiene facilities in health centers, health posts, Clinics and public hospitals are particularly unacceptable. Absence or inadequate hand washing before and after patient contact or after using the toilet leads to preventable infections in the health care environment⁴¹.

In Ethiopia there are 15,095 health posts, 2,660 health centers, 122 public hospitals and 4,000 private for-profit and not-for-profit clinics. The water, hygiene and sanitation situation in the health facilities is poor, it is estimated that as many as 80% of the health facilities are without adequate water and sanitation facilities, and 97% are without hand washing facilities. The Program will support construction or rehabilitation of water supply facilities and latrines at health centers and health posts. MoH, through regional/city bureaus and woreda and town health offices, will be responsible for WASH construction activities in health facilities. Implementation may be through WMP or CMP.

A design and construction manual for WASH facilities in health institutions⁴² has been produced by the Ministry of Health with support from UNICEF. This manual has been distributed to all regions and should be used in planning WASH facilities in health institutions.

5.6 Enabling Environment, Sector Coordination and Program Management

Program management and capacity building component aimed at facilitating other components to effectively implement the OWP. Capacity development efforts are targeted to achieve more effective and quality WASH program implementation and to sustain outcomes at all levels. In order to achieve OWP objectives we need to enhance institutional and management capacity of the WASH to solve challenges and address development needs of WASH sectors in a sustainable manner.

This component includes support to improve skills and capacity of WASH organizations and implementing parties at federal, regional/city, woreda/town and kebele and community levels to plan, manage and monitor Program activities as well as strengthening M&E capacity at all levels and support to qualitative research and studies. This will be done through provision of training, equipment, tools, and, where required, software for monitoring and reporting, GIS and accounting and billing systems and post-construction management and technical support.

The capacity building intervention areas include strengthening the legal and regulatory framework, strengthening safeguard and fiduciary management, establishment of WASH MIS, working tools [office equipment, vehicles, guidelines and manuals], recruitment of the much-needed sector personnel to fill gaps and development of human resources skills in different areas.

⁴¹ Rehfuss EQ, Bruce N, Bartram JK (2009). More health for your buck: health sector functions to secure environmental health. Bulletin of the World Health Organization, 87: 880-882 (<http://www.who.int/bulletin/volumes/87/11/08-059865/en/index.html>, accessed 12 January 2012).

⁴² Design and Construction Manual for WASH Facilities in Health Institutions, MoH and MoWIE in collaboration with UNICEF, 2012

WASH manuals, guidelines and other relevant training materials for capacity building will be reviewed, updated and adopted. Technical manuals including operation and maintenance are required for different types and components of urban and rural WASH; manuals will be both in English and different local languages as appropriate for the intended user group.

5.7: Sustainable and climate resilient WASH services

5.7.1. Emergency preparedness, response and recovery WASH

Emergency is an unfortunate happening in a country or society manifested in different ways. The most common emergencies are flood, fire, draught, etc. In Ethiopia common emergencies are created during draught and flood. The most common and frequent is draught. During emergency people in the affected areas may have to move to a different presumably safe location. In this instance the most affected are children, women, and the elderly. The most important need of this affected population in such instances is food, water, sanitation and hygiene services and shelter which are difficult to have in place unless prior preparedness is made.

According to UNICEF Preparedness for emergencies include

- Planning for emergency staff deployment
- Pre-positioning of strategic supplies
- Preparation of pre-approved contracts with local implementation partners (such as water trucking companies) and suppliers
- Advance coordination arrangements with government partners and other stakeholders through the cluster approach.

Ethiopia is in a better position in tackling emergencies due mainly of its infrastructure and mix of professionals that can be deployed for emergencies at any level. However, to be better prepared:

1. Sector staff should have appropriate basic training
2. A manual for WASH emergency which will include application of:
 - Chlorination, storage and distribution of safe water
 - Construction of safe latrine, hand washing station, shower services and operation and management arrangements
 - Solid waste collection and disposal facilities

These demand a budget set aside for emergencies with the necessary financial procedures to follow during emergencies.

5.7.2. Sustainable and Climate Resilient WASH

This is a new component which has objectives focusing on health and well-being of draught affected rural and urban areas. Although the program is also designed to address draught affected areas in the past, it will have prominence and focus during phase II. In the process, attention will be given to look for more reliable water source, use of modern and cost-effective techniques for assessing ground water potentials and expand service levels not only for humans but also consider animals.

6. Readiness Criteria and Targeting

6.1 Introduction

To ensure that there is an enabling environment that will promote effective and efficient implementation and support the sustainability of constructed facilities, “readiness” criteria are proposed at all levels. The readiness criteria are intended to be fulfilled before disbursement of funds for procurement of works and physical implementation takes place. Most of the readiness criteria such as the establishment of organizations, staffing, CWA, separate budget line for water, sanitation and institutions hardware and software activities, systems of social and environmental safeguards, financial agreement between government and partners, etc.... are already established and are in place. Other criteria which has to be in place in each planning cycle are the following proposed readiness criteria at various levels:

Table 5: Readiness Criteria

Federal level	Regional Level
<ul style="list-style-type: none"> • Fiduciary risk assessments • Appraisals concluded with positive results • Budget availability for Phase II approved by MoFEC and partners • NWI data accessible to all relevant parties • M&E staff and procedures with agreed monitoring indicators in place 	<ul style="list-style-type: none"> • Capacity building unit is established and is functioning • Verification workshop held • Consolidated Annual WASH Plan and budget prepared • Budget for WASH activities approved, including Emergency WASH activities in some regions • Zonal WASH offices/command posts established where required in larger regions • M&E staff and procedures with agreed monitoring indicators in place • NWI data accessible to all relevant parties
Zonal Level	Woreda Level
<ul style="list-style-type: none"> • Zonal WASH organization/command post established • Annual WASH budget confirmed with separate budget line for sanitation and hygiene • Consolidated Annual One-WASH plan approved • M&E staff and procedures with agreed monitoring indicators in place • NWI data accessible to all relevant parties 	<ul style="list-style-type: none"> • Agreement on contributions of parties to the Program, including a consolidated annual plan and budget signed between partners and woreda government • Woreda WASH plans prepared and approved by the woreda council • M&E staff and procedures with agreed monitoring indicators in place • NWI data accessible to all relevant parties
Towns/Cities Level	Community level
<ul style="list-style-type: none"> • Consolidated Annual WASH Plan prepared and approved • One WASH organizations established, staffed and operational • Separate budget line for sanitation and hygiene included in annual budget 	<ul style="list-style-type: none"> • WASHCO formally recognized and registered at kebele or woreda level with gender-balanced membership • WASHCO elects’ officers • One WASH annual plan approved by community and WASHCO members

<ul style="list-style-type: none"> • M&E staff and procedures with agreed monitoring indicators in place • NWI baseline data available and accessible to all relevant parties 	<ul style="list-style-type: none"> • WASHCO opens a bank account for community contributions for O&M • Contributions from users collected and deposited in the WASHCO’s bank account
Kebele Level	
<ul style="list-style-type: none"> • Consolidated WASH plan and budget approval by Kebele Chairman and Council 	

6.2 Targeting and Equity

The Program seeks to reduce regional and social disparities in access to safe drinking water and improved sanitation. Doing this requires identifying and targeting areas with low access to safe water or improved sanitation according to the National WASH Inventory (NWI).⁴³ Gender disaggregated indicators will be used where relevant to track gender equity in roles and benefits. In addition, acute water and sanitation “hot spots”⁴⁴ will be identified for priority attention either addressed by Emergency WASH activities or regular WASH program and budget.

Success in creating equity targets requires close coordination between the Program and various humanitarian organizations providing emergency WASH interventions. To this end, it is proposed that the Emergency Preparedness and Response Unit (EPRU) in MoWIE be considered as a member of the NWTT or the CR-WASH Team and provide information on plans, progress and expenditure to the NWCO.

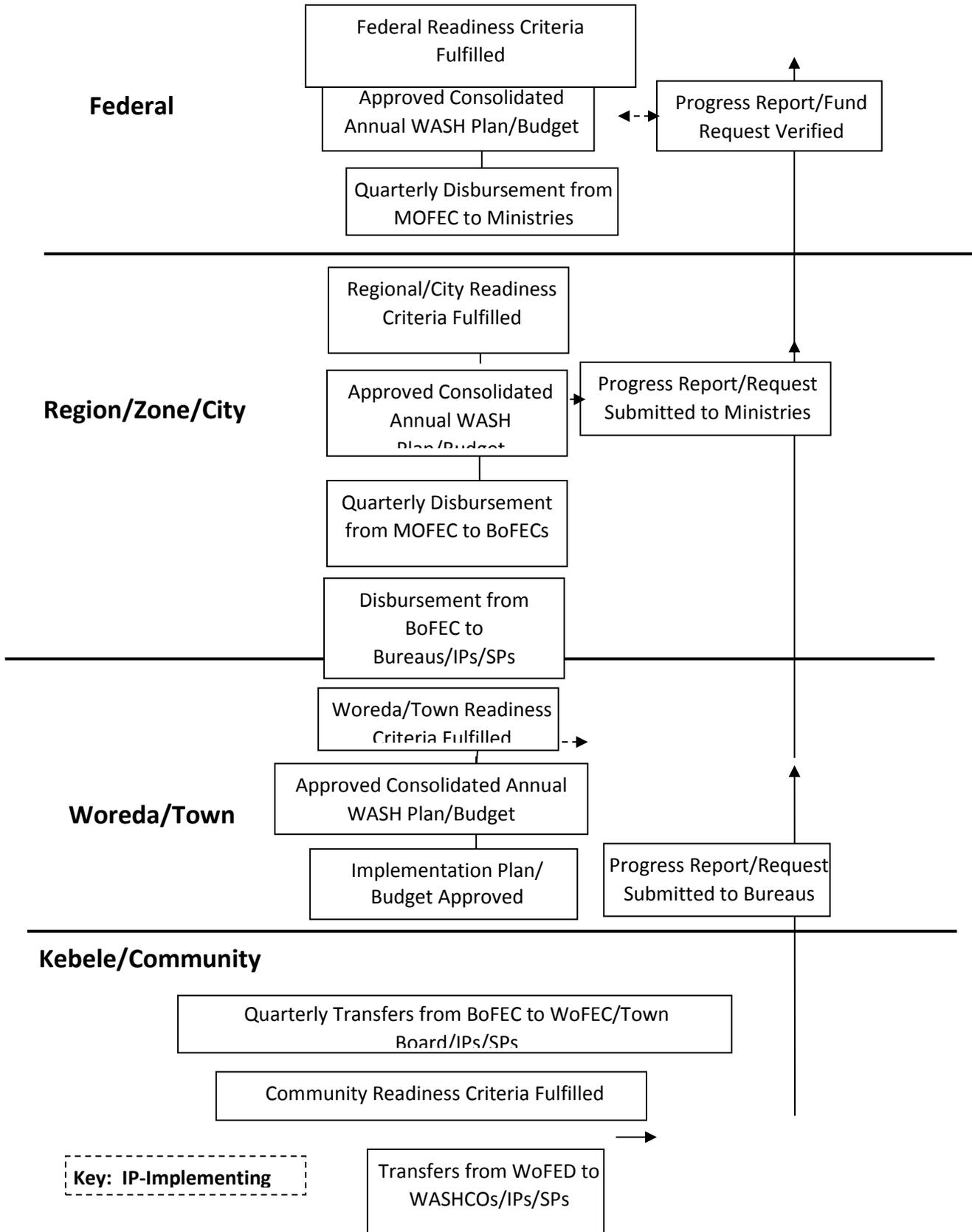
For WASH interventions in hot spots, regional and woreda readiness criteria will still apply. However, at community level, eligibility requirements will not require that the WASHCO be established as a legal entity or that an annual consolidated WASH plan be approved before receiving assistance. However, the WASHCO will still have to formally convene, elect members be trained, and prepare their bye-laws.

The recent social challenges facing Ethiopia is the close to a million refugees that are camped in the north, south-west and Eastern part of the country. From public health point of view such mass influx may be a concern with respect to the transmission of communicable disease, environmental contamination and resource depletion through sharing. Although UNCHR is primarily responsible for refugees there must be a mutual plan to create conditions for both refugees and the host country.

Figure 7: Program Core Planning and Implementation Process

⁴³ See Annex 1 for maps of rural water supply and sanitation access by woreda using NWI data.

⁴⁴Examples of WASH “hot spots” include areas where people have been relocated, such as the Tendaho Sugar Factory near Semera in Afar Region, where it is reported by the Regional Health Bureau that over 12,000 laborers from the highlands were living without adequate sanitation facilities and practicing widespread open defecation.



6.3 Program Implementation Process

The following diagram shows the organization and sequence of activities for the Program's core planning and implementation process at federal, regional, city, zone, woreda, kebele and community levels. The keystone of Program planning and implementation is the Consolidated WASH Plan at woreda, region, city/town and federal levels. These plans will include a budget and procurement plan. (see fig 5.1)

7. Program Organization and Partnerships

7.1 Program Organization

The highest governing body in the Program is the National WASH Steering Committee (NWSC) whose members include Ministers and State Ministers from the ministries of Water, Irrigation and Energy, Health, Education and Finance and Economic Development. The NWSC is chaired by the Minister of Water and Energy.

The technical arm of the NWSC is the National WASH Technical Team (NWTT) consisting of Directors from the four WASH ministries. A similar structure is prescribed at regional level. The lowest level of WASH governance is the woreda. At woreda level WASH activities are implemented by the (District) Woreda WASH Team led by the Woreda (District) Administrator. Its members are from the four WASH sector offices (Water, Health, Education, and Finance, with additional members from the Women Affairs and Agriculture offices). Development partners are presently represented by the Development Assistance Group – Water Technical Working Group.

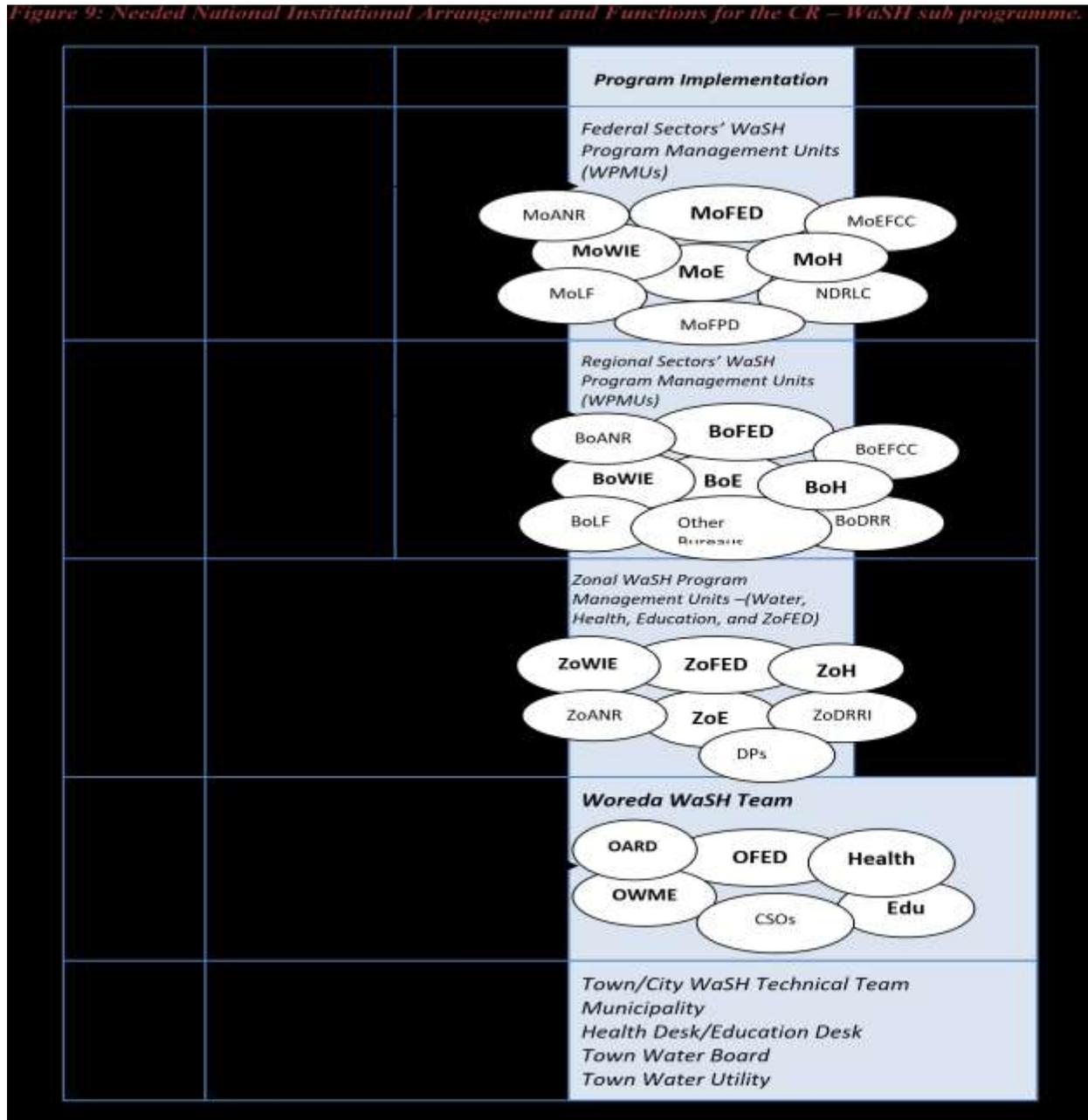
A National WASH Coordination Office (NWCO) will be responsible for coordinating, planning and oversight of Program implementation at federal level and regional level and to stimulate and attract other partners to join the OWNP implementation plan in both the planning and reporting process. The NWCO will report to a National Steering Committee chaired by the Minister of Water and Energy and supported by a National WASH Technical Team consisting of representatives from participating ministries and partners. Implementation of the Program in the sector ministries will be the responsibility of WASH Program Management Units (PMUs) in the ministries of Water and Energy, Health, Education and Finance and Economic Development, respectively.

At regional, zonal and city levels, planning and implementation of the Program will be coordinated by a Regional WASH Coordination Office which will report to a Regional WASH Steering Committee and to the National Coordination Office and be supported by a WaSH Technical Team. Implementation will be managed by WASH PMUs in the bureaus of water resources, health, education and finance and economic cooperation.

The same process is replicated at the zonal, (zonal coordination office) woreda (Woreda WASH Team consisting of water, health, education, finance, women and woreda administration), kebele (kebele chairman/administrator).and at community level by the WASHCOMs.

This diagram shows the institutional arrangements and functions for implementing the Program:

Figure 9: Needed National Institutional Arrangement and Functions for the CR – WaSH sub programme.



7.2 Partnership and partnership arrangement

The Program will be implemented as a joint effort between Government, Development Partners, NGOs, training institutions, the private sector, community members and other stakeholders through contributions to a Consolidated WASH Account at federal level. Other partners, including bilateral aid organizations and CSOs, will support the Program through other funding arrangements, as well as through the provision of technical assistance, supplies and other means.

In the WaSH Implementation Framework (WIF) the Program will have three types of partnership-include the following partnership arrangements:

1. **Partners - organizations** contributing to the Consolidated WASH Account (CWA) at federal level. In this category are international, bilateral and finance organizations who have together with government established the consolidated WASH account.
2. **Associated Partners** – organizations funding construction of water supply and sanitation facilities, technical assistance, supplies and other support to OWNPN, but not using the CWA. These are essentially CSOs who plan and budget WASH services in various parts of the country which actually taken for granted that any NGO contribute some resources to WASH. There is a need to map these partners in order to document their contribution and to harmonize their activities with OWNPN.
3. **Collaborating Partners** – organizations providing other types of assistance to OWNPN, i.e. training, studies, manuals, communication products, participation in the Multi-Stakeholder Forum, etc. These categories could be the international, bilateral and financial organization who are also supporting OWNPN in hiring consultants to augment staff shortage and provide expert service, support organizing forums, workshops, training and preparing and printing manuals and guidelines.

The program focuses on strengthening the guiding principles of OWNPN to enhance the interaction and cooperation of WASH stakeholders [implementing partners, donor agencies, private sector and other institutions). The important partners for OWNPN are not only financial contributors but also others who can support in various other ways other than finance. For this reason, OWNPN should design a strategy whereby it can attract more partners to join the program in one of the categories mentioned and in other sectors. The tactic for this will be:

1. To introduce the program scope through written or mass media
2. Inviting would be partners to forums, meeting and workshops to make them part of the discussion and let them see how aligned their program is with the WASH program and see whether they can benefit by joining hands with.
3. Sending out quarterly, biannual or annual activity and financial reports to wider audiences indicating that WASH is a cross cutting social service that demands the contribution of all such as media, financing organizations, teaching and research organizations, etc.

There is clear evidence that the OWNPN will soon need to be expanded to include the inter-relationship with stakeholders outside of the original four OWNPN signatory ministries.).

For CR-WaSH it may be necessary to design a coordination mechanism to work together the broader non-MOU signatory stakeholders which includes new and relevant ministries like Ministry of Agriculture and Natural Resources; Ministry of Livestock and Fishery; Ministry of Environment, Forest and Climate Change; Ministry of Federal and Pastoralist Development Affairs; and National Disaster Risk Leadership Commission, Key Development Partners and others as needed. The new institutional arrangement that requires broader engagement of stakeholders is indicate would be partners

1. Ministry of urban development and construction who can be engaged or partner in utilities, sanitation services and in protection of water resources
2. Ministry of agriculture who are major water users and also promote afforestation program which has direct relationship with water conservation and water resource management element in their activities.

3. Ministry of environment who are interested, mandated and focused on water pollution control which is also the interest of OWNP
4. Private sectors who could be those working in water drilling, water and waste water construction, FSM businesses, and other contracts relators related to water and sanitation aspects
5. Educational institutions who could support in capacity building designing research and learning program in WASH hence enhancing knowledge that can be shared with WASH signatories and would be partners.

However, working with new partners demand horizontal engagement, coordination and collaborative action which can be solidified by designing some kind of agreement. It can be an MOU or a coordination agreement on general or specific programs. Establishing a well-structured forum with well-designed objectives is also another way of enhancing good work relationship.

7.3 Minimum Staffing Package

In order to effectively implement the Program, the following minimum staffing package is proposed. Focal persons are not full-time staff but will perform their Program-related tasks alongside other duties.

Table 6: HR Requirement

Level	Level
<p>Federal Level</p> <ol style="list-style-type: none"> 1. National WASH Coordinator (1) <ul style="list-style-type: none"> • Study design and construction team • Procurement and contract administration • CD and private sector support team • Resource mobilization team • M&E Reporting and documentation team 2. WASH Coordinator (1) 3. PMU coordinator (one for each of the four ministries) 4. M&E staff (1 M&E specialist and 1 data entry clerk) 5. Procurement and contract management (2 staff so that they can share the regions into two) 6. Financial management/accounting (4 staff) 7. Community management expert (2 staff) 8. Water supply engineer (2 staff) 9. Environmental Health/S&H expert (2 staff) 10. Capacity building experts (2) 11. Gender Specialist (1) 	<p>Regions</p> <ol style="list-style-type: none"> 1. Regional WASH Coordinator 2. M&E focal person (1) 3. Procurement and contract management focal person (1) 4. Financial management/accounting focal person (1) 5. WASH focal person (1 for each of the four bureaus) 6. Community management expert (1) 7. Water supply engineer (1) 8. Environmental Health /S&H Specialist (1) 9. Capacity Building expert (1) 10. PMU (one for each of the four ministries) 11. Gender Specialist (1) 12. Disability Specialist (1)

12.Disability Specialist (1)	
<p>Zones</p> <ol style="list-style-type: none"> 1. WASH Coordinator (1) 2. M&E focal person (1) 3. Procurement and contract management focal person (1) 4. Financial management/accounting focal person (1) 5. Community management focal person (1) 6. Environmental Health/Sanitation and Hygiene expert (1) 	<p>Towns with greater than 50,000 population⁴⁵</p> <ol style="list-style-type: none"> 1.WASH focal person (1) 2.M&E focal person (1) 3.Procurement and contract management focal person (1) 4.Financial management/accounting focal person (1) 5.Customer relations focal person (1) 6.Water supply engineer (1) 7.Environmental Health/S&H Specialist (1)

Where the above focal persons or staff do not exist, arrangements will have to be made to recruit them on contract to support the implementation of the Program.

⁴⁵ Towns with a population of less than 50,000 can get support from larger towns or zones.

8. Assessing Capacity

8.1 Introduction

Capacity is about the ability of organizations and people to function in their environment. Institutional capacity is about mandates & the rules of the game. It establishes who does what, and to what standards. An organization's capacity rests on its structure methods of functioning & on its decision-making processes, as well as the skills & values of its staff.

Strengthening capacity means more than training. Service development at lower level is a factor of skilled, motivated staff, organizational capacity, including resources and the laws and policies that contribute to the sector environment.

Past experiences on the implementation success rate of OWNPs at regional and woreda level indicate lack of capacity, system development, community involvement, planning based on evidences and need assessment and using simplified tools and guidelines, monitoring, learning and knowledge management, enhanced operation and management internally and lack of support (material and logistics), timely financial release, delayed procurement process externally.

As per the WASHBAT workshop held on June 6-8, 2017 at Capital Hotel in Addis Ababa, the following points are found to be the main bottlenecks of capacity building issues.

- No systems for rewarding individuals/households that use sustainable technologies for rural sanitation
- No incentives for private sector (such as tax exemption or loans)
- No full package capacity development plan (including training, monitoring, coaching, software, hardware) Based on needs assessment
- Weak stakeholders' coordination mechanism
- Inadequate budget and weak utilization
- Lack of a system to enable users and stakeholders to validate plans
- Lack of attention at regional level for scaling up best practices & new technologies
- Lack of clear roles and lines of accountability between different stakeholders within the sector and across relevant sectors
- Absence of clearly defined procedures and channels for user participation in the planning process
- Lack of strategy and guidelines for implementation: to be customized to different schemes and service provision
- Lack of policy and strategy to engage the private sector in management and provision of service
- Absence of consumers rights enforcement mechanism

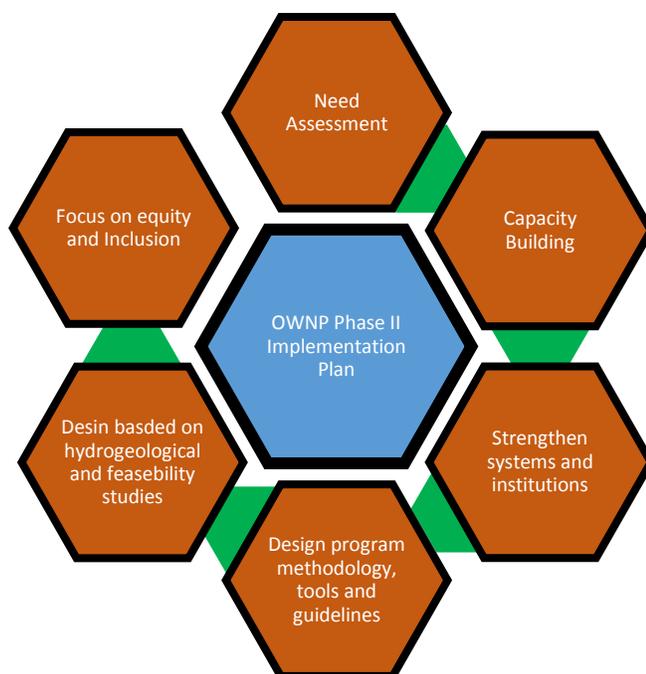


Figure 9: OWP -Phase II Implementation Framework

Phase II which has 7 components including 1) rural and pastoralist Water supply, 2) Rural and pastoralist sanitation 3) Urban and pastoralist water supply 4) urban and pastoralist sanitation 5) Institutional WASH, 6) Emergency WASH 7) Program Management and Capacity Building will be expected to apply the directives mentioned in the framework while implementing GTP II targets.

8.2 Approach to Capacity Building

The adequacy of existing capacity among woredas and towns depends on several factors; the size and population of the areas covered, the number of water supply and sanitation facilities and the amount and type of work remaining to achieve the desired targets, present staffing levels and skills, availability of logistic support, equipment, etc.

A format for self-assessment of capacity at woreda level is available and includes size of the woreda, present number and coverage of WASH facilities, ongoing WASH activities, human resources, logistics and the work to be done to achieve or maintain WASH targets.

Capacity assessments and capacity building activities will be based on the results of a diagnostic capacity assessment and be implemented according to agreed priorities. The following steps will be followed in determining a minimum capacity building package and the Program implementation process in woredas:

The composition of the capacity building package will be determined one case-by-case basis considering the specific capacity building requirements for each woreda or town Capacity building is necessary to improve the ability of WASH sector professionals and service providers to better plan and manage water supply and sanitation. Capacity building interventions, especially training of WASH staffs at lower level on planning, procurement and financial management plays a major role in ensuring effective project implementation based on a capacity

development need assessment. There is a need to design a human resource strategy covering both urban, rural and pastoralist areas. Human resources (HR) capacity building should be provided on a continuous basis and include intensive initial training as well as refresher training, coaching and follow up.

Although each WASH sector is planning and implementing its own training activities, a capacity development unit under National WASH Coordination/Regional WASH Coordination/Woreda WASH Team should be established from federal to woreda levels to coordinate capacity enhancements of implementing WASH institutions and for sustainable development of human resource.

The units could facilitate procedures for new staff orientation, refresher training programs, regional workshops, etc. The unit could also support the Regional WASH Coordinator in the development of training materials based on latest development, new approaches, new learning from the field and use the training program to stimulate actions, innovations, and create momentum to go forward

A cascaded training approach should be used for rural water supply and sanitation. For urban water supply and sanitation, it will also be relevant to use a cascaded training approach for promotion of good hygiene practices and improved on-site sanitation. A cascaded training approach is less relevant for urban water and sewerage utilities, whose capacity needs, should be addressed through formal courses and on-the-job training by relevant training institutions, NGOs and others.

8.3 Guidelines and manuals

WASH guidelines, manuals and other relevant training materials need to be reviewed, adapted and updated, and any new ones shall be prepared as required. Operation and maintenance manuals are required for different types and components of urban water supply schemes and equipment. Manuals should be translated to Amharic and other major regional languages as appropriate for the intended user group.

8.4 Systems and Institutions

Assistance is required to introduce procedures for handing over responsibilities, manuals, guidelines and data when WASH staff leave their positions.

HR capacity building should focus on the supply side (training institutions) as well as creating demand from potential beneficiaries. Focus should be on institutionalizing and professionalizing training capacity by supporting EWTI, TVETCs, HSCs, universities and other training institutions to provide quality and demand-responsive long-term courses as well as tailor-made short-term courses. Universities and training institutes have a major role to play in training water professionals and in organizational and institutional capacity development.

Research and development on WASH should also be supported in sector wide identified priorities; and promoting innovation and knowledge management in the WASH sector through learning and sharing events and other appropriate measures. More research should be done to demonstrate the real costs and the impact of capacity development.

Coordination and partnership with EWTI, TVETCs, HSCs and universities should be enhanced as well as knowledge sharing should also be promoted on the challenge of the WASH sector in an effort to bridge the gaps that will facilitate in achieving the GTP 2 target.

Particular attention should be given to ensuring effective capacity building at the community level using approaches and procedures established by the WSSP, CMP or NGO assisted projects. By doing so, we can strengthen decentralized capacities and provide complementary support and monitoring. The capacity building unit which will be established under NWCO/RWCO office will address sector-wide capacity building requirements in an integrated manner and to thereby enable the training centers to increasingly become a "center of excellence" with state-of-the-art skills, knowledge and competence

8.5 Operation and Management (O&M)

High priority should be given to capacity building in O&M for both rural and urban water supply and sanitation. This should initially focus on addressing the significant number of rural piped water schemes which appear to have been constructed without sufficient community and woreda involvement and ownership and which now have serious O&M problems.

Appropriate and sustainable solutions should be identified so as communities have access to affordable spare parts and maintenance services within a reasonable distance, preferably by the private sector. We should also establish post construction support units for schemes that cross multiple villages in remote arid and semi- arid areas.

We shall also build the capacity of utilities through provision of human resource, improving working environment, facilitating operation and maintenance activities, improving revenue collection through provision of billing software devices, facilitation to improve water demand management and customer care and management skills. Pilot clustering of water utilities shall be started for small towns to create a larger customer base, improve revenue collection, share experiences in management and technical operations and reduce operating costs.

Management of community water supply systems through private water operators shall be started to be effective in improving functionality of water supply systems. Such a model, however, requires significant investment in capacity building of the private water operators and establishment of adequate mechanism for monitoring the performance of the private operators. The water supply systems constructed or upgraded can be handed over to private water operators (PWOs) for operation and maintenance under public-private-partnership arrangements.

The private water operators will be trained and provided operation and maintenance tool kits. This will enhance capacity of the PWOs to manage the systems, collect revenue and undertake timely repairs, and greatly contribute to high functionality and hence increases sustainability. Training of private water operators and water user committees will contribute to effective management of water supply systems and increase functionality.

8.6 Planning, procurement, financial management and monitoring

Training and support in integrated and harmonized WASH planning and budgeting will be provided at woreda, zonal and regional levels as well as at federal level.

Capacity building is needed in procurement and financial management, particularly at water utility, woreda and regional levels. Training in fiduciary management will contribute significantly in improving financial management of WASH sectors.

So as to improve slow procurement processes, periodical contract execution monitoring by NWCO/RWCO/PMU, tailored trainings on contract management, supervision of consultants and implementation of works and

strengthening the coordination of procurement processes of WASH sector offices should be done. Selection criteria for choosing a contractor and measuring qualifications of consultants should be defined and adhered to during the planning phase Procurement units should be strengthened with trainings for speeding up bid processing and strengthening contract management by technical assistance services to bring procurement efficiency. Priority will be given to capacity building in monitoring progress and impact and use of monitoring data for planning.

8.7 Strengthening private sector capacity

Information, training and business opportunities should be offered to the private sector to strengthen its involvement in and contribution to the WASH sector. Initial priority should be increasing capacity in drilling, hydrogeology, design and construction of piped water schemes, contract management and construction supervision, environmental and social impact assessments and quality standards for construction.

8.8 Gender Equity and Mainstreaming

The Program recognizes the importance of gender equity and mainstreaming as a cross-cutting issue that is related to social inclusion, participation and sustainability of Program benefits. The Program will require that the Women's Affairs Directorate prepare a detailed gender equity strategy for the Program using among others, the results of its recent gender assessment in the water sector.

The Women's Affairs Directorate will also be tasked with conducting orientation sessions in implementing the Program's gender equity strategy for the regional and city Program organization.

MoWIE's Gender Mainstreaming Guideline⁴⁶ should be used in training at different levels, including training of teachers in TVETCs, HSCs and other training institutions.

9. One WASH National Program Phase II Strategy (and beyond)

9.1 Background

The Ethiopian government has been very keen to have a fundamental change in people's health and wellbeing for decades. This natural wish is manifested through its design of the national constitution, issuance of different policies developed by different ministries echoing their contribution toward improvement in water, sanitation, health, nutrition and control of communicable and non-communicable diseases. The government water, sanitation and hygiene program evolved from a single water program to water and sanitation program and now to water, sanitation and hygiene program as depicted below.

The One Wash National Program has the potential to scale up WASH intervention to the whole of Ethiopia through fast-tracking activities in water, sanitation and hygiene to a point where all people have sustainable, safe, and affordable access to water and sanitation services; make effective use of these services; and adopt improved hygiene practices.

⁴⁶Gender Mainstreaming Implementation Guideline for the Water and Energy Sector, MoWE, October 2012.

The efforts of integrated and coordinated activities through partnership are very important in assuring the criteria optimum service provision in WASH (see graphics)

he rapid economic growth, demand for safe water and sanitation, combined with the dynamic changes in the external environment, create a need for an updated strategic direction which ensures that OOWNP, within a multi-sector collaboration, continues to deliver on its core mission which is to meet national development goals and in particular to ensure that the poor obtain sustainable access to water and sanitation services

Partnerships are an important way in which OOWNP operates and the program is committed to finding new and better ways to work with local and regional institutions, agencies, sector professionals, non-governmental organizations, the private sector, civil society organizations, and communities.

9.2 Current state of WaSH in Ethiopia



In 2015 Ethiopia met its MDG for water supply. This significant achievement was largely driven by the very rapid increase in safe water access in rural areas where 57 million people got access to piped and protected water sources between 1994 and 2015. In urban areas an additional 10 million people benefited from gaining access to piped water on premises.

According to a World Bank Diagnostic study on Water, Sanitation, Hygiene, and Poverty analysis report, the MDG for sanitation was not met but good progress was made in reducing open defecation in rural areas – over 40 million people built basic latrines (all types) – while in urban areas good progress was made with 8 million people moving up the sanitation ladder from basic to improved toilet facilities.

The study estimated that, currently, there are roughly about 40 million people

Fig. 10: Criteria for success in WASH

without adequate and safe water supply; 72% or about 72 million people without adequate safe and improved sanitation system and 93% or 93 million people who are not practicing safe hygiene. Such a stark evidence compels us to design a more pragmatic, simple and practical strategy for a rapid change and development of OOWNP by 2020.

As can be seen from Section 15, under GTP2 water supply targets (to 2020), it is projected to serve 85% of the unserved rural population of 24 million = 20.4 million and 75% of the unserved urban population of 12.4 million = 9.3 million. The total unserved population of 36 million, estimated in this report through rigorous analysis of available data and government official reports, agrees quite well with the 40 million WB study figure.

The situations in the urban centers and rural communities is such that it demands more improved coverage. The water now being delivered to people is of low quality and unreliable supply. Consumers often resort to private vendor water supply with unregulated tariffs that burden consumers, especially the poor. Compounding the

problem is the rapid urbanization and emergence of peri-urban unplanned settlements creating slums and homelessness and those out of reach to the existing urban water and sanitation services.

In rural areas, inefficient water resource management and inadequate infrastructure combined with poor sanitation and hygiene coverage, has a high health and economic impact on people. Moreover, there is continuous slippage from ODF back to OD in sanitation in rural areas and to some extent in water supply owing to depletion in groundwater tables and often poor maintenance. To improve sustainability and efficiency therefore, the focus should be on set criteria illustrated in **the Figure ...** above.

Therefore, the program should focus and strive to achieve sustainable equitable access and coverage with efficient O&M. (see fig. 10 for criteria in WASH)

9.3 Strategy formulation

It is now considered that the OWP has become more complex, with more and more multi-sector interfaces, and will benefit from an overall 10 to 15-year OWP WASH Strategy. The strategy is:

- Initially “directed” by the **Government of Ethiopia Growth and Transformation Plan 2015-2020**
- Facilitated by means of an “**enabling environment**” for water supply, sanitation and hygiene (WASH)
- **Incorporating new initiatives: utility regulation**, clustering, CR-WASH, refugee areas, delegated management, very deep wells, micro-sanitation plans, etc.
- **Integrated and inter-dependent multi-sector approach** with IWRM, SWM, Industrial waste control (liquid gas, solid), MHM, baby WASH, employment, gender, etc.
- **Implemented by national, regional, zonal, woreda** and urban authorities in collaboration with DPs, CSOs and private enterprise

For details of Phase **II WASH, I strategy** relevant to the WASH sector based on the GTP II goals and indicators is depicted in Annex I where reference for details can be made. The proposed enabling environment, new initiatives, multi sector approach and proposed implementation modalities are described in Section 9.

The purpose is to provide a strategic approach to reaching OWP objectives based on an in-depth analysis of internal factors and external influences such as the 1) 2013 OWP document 2) WIF document 3) GTP II document and indicators 4) OWP Phase I review report 5) SDG indicators and challenges that are influencing integrated WASH approaches for sustainability.

A strategic action plan for WASH is envisaged to provide a roadmap for accomplishing specified goals. Strategy looks at why certain steps should be taken, whereas a plan outlines the “how” of the strategy.

Strategy provide clear communication to stakeholders such as financiers, partners and staff engaged in the change process. Strategic planning is based on identified gaps or challenges, deal with the challenges and plan where we want to be.



Adopted from [https://www.google.com.et search=strategic actions](https://www.google.com.et/search=strategic+actions)

Figure 11: Strategic Planning Approach

9.4 Organizational Direction

Vision - to see that all people in rural, urban and institutions are supplied with sustainable, climate resilient, safe and clean water and sanitation services.

Mission - to mobilize adequate resources through engaging multiple partners and donors with interest and use the human and financial resources efficiently for a lasting change in water and sanitation program in Ethiopia.

Goals -Lack of clean and safe water in quantity and Quality, proper human waste disposal, and liquid wastes management at point of generation are some of the focus areas for the OWNPN strategy. The GTP Goal is to reach out to 85% of the rural population and 75% of the urban population with clean and safe water and 82% with improved sanitation. **(See annex)**

In order to meet this government ambitious program, the followings are the key points to be considered during planning and implementation for both urban and rural water supplies and sanitation

- Develop capacity building strategy and implementation plan including a comprehensive technical support system to improve the functionality of schemes.
- Develop and implement cost effective alternative scheme management (Ownership) models
- Develop and implement professionalize management and leverage sector capabilities

9.5 GTP II and Sustainable Development Goals (SDG)

OWNPN keep at both the GTP II and SDG Goals in focus as the program develops to go forward in ensuring a sustainable WASH service to all people in Ethiopia. Phase II however is more focused in achieving GTPII goals (Annex IV). The strategic overview of SDG for rural and urban water supply is depicted in the following tables.

Table 7: Strategic Overview for Rural Water Supply

Linkage with the SDG	Goal	Result	Indicators	2020 Target
Goal 3: 6.1: 9.1	Improve safe water supply	Increase safe water supply coverage	Increase Rural Water Supply Access Coverage as per GTP-2 Standard Service Level with Improved Water Supply Schemes in %	85
Goal 3: 6.1: 9.1	Ensure sustainability and reliability of safe water supply	Increase safe water supply coverage	Increase Rural Water Supply Access Coverage as per GTP-2 Standard Service Level with Rural Piped Systems in %	20
		Reduce Rural Water Supply Non-functionality	National Average of Non-functional Rural Water Supply Coverage in %	7
Goal 3: 6.1: 9.1	Ensure Water Quality and Water Safety of Water Supply	Strengthen Rural Water Supply Water Quality and Water Safety Monitoring System	Woredas Having Water Quality and Water Safety Monitoring System in %	100%
Goal 3: 6.1: 9.1	Increase Rural Water Supply Access	Increase the Number of Water Supply Beneficiaries	Number of Rural People Planned to be Provided Water Supply Access as per GTP-2 standard Service Level	20,410,759-

Table 8: Strategic Overview for Urban Water Supply

Linkage with the SDG	Goal	Result	Indicators	2020 Target
Goal 3: 6.1: 9.1	Improve safe water supply	Increase safe water supply coverage	Increase Urban Water Supply Access Coverage as per GTP-2 Standard Service Level with Piped systems in %	75
Goal 3: 6.1: 9.1	Ensure sustainability and reliability of safe water supply	Improve continuity of urban water supply	National Average of Continual Urban Water Supply in hours/day Among Towns of Category 1 to 3	16
		Reduce Unaccounted for Water (UfW) for Urban Water Supply	National Average of UfW of Urban Water Supplies in % Among Category 1 to 3 Towns	20
Goal 3: 6.1: 9.1	Ensure Water Quality and Water Safety of Water Supply	Strengthen Urban Water Supply Water Quality and Water Safety	Urban Water Supply Utilities Coverage Among Category 1 to 3 Towns Having Water Quality and	100%

Linkage with the SDG	Goal	Result	Indicators	2020 Target
		Monitoring System	Water Safety Monitoring System in %	
Goal 3: 6.1: 9.1	Increase Urban Water Supply Access	Increase the Number of Water Supply Beneficiaries	Number of Urban People Planned to be Provided Water Supply Access as per GTP-2 standard Service Level	5,648,901

9.6 OWP Phase II Strategy

The principle driver for the WASH sector under Phase II of the OWP is the GTP2. The strategy is guided by the directives, objectives, goals and target of GTP II. (Table 9).

9.7 Strategic Action Plan

The strategic action plan is drawn from the strategic objectives, goals, and indicators set in GTP II and the activities and results formulated in the strategy. (Annex III). The action plan is also based on the action plan designed by regions.

Table 9: Phase II WASH Strategy -2018-2020

Strategic Objectives	Goals	Performance Indicators	Core Activities	Result
1. Increase safe water supply upgrading the service level and improve urban waste water management system	1. By 2020 Provide safe and adequate water supply to rural communities with minimum service level of 25Lt/c/d within a distance of 1 km. from the water delivery point. Coverage to reach 85 % of the rural population of which 20% is with RPS	Percent of households in rural communities served with Clean, safe and adequate water supply access at a rate of 25 l/c/d within 1 km. with on spot supply and RPS	<ul style="list-style-type: none"> Regions map woredas by service levels and prioritize woredas to provide improved and safe water supply Woredas involve and mobilize communities to participate in planning, construction and management Organize governance mechanism (WASHCOMs) With at least 50% women members. Train WASHCOMs on O&M, water handling, book keeping and reporting 	Rural communities in Woredas are provided with conventional, adequate and safe water with well-established governance system ensuring sustainability.
	2. By 2020 Provide safe and adequate Water service to urban communities	Percent of towns/cities provided with 100l/c/d for category 1 town/cities; 80 l/c/d for category 2 town cities; 60 l/c/day for cat. 3; 50 l/c/d for category 4; up to the premises and 40l/c/d for category 5 towns/cities within a distance of 250 mtrs with piped system; Coverage of 75% of the urban population	<ul style="list-style-type: none"> Regions map and categorize towns and provide adequate and safe water Towns establish utilities and utility management mechanism Towns or town water board set tariffs for water usage Towns/water boards establish O&M program, tools and spare parts Towns/water board conduct continuous capacity building on O&M, water treatment, preventive maintenance, record keeping, water safety plan to sector staff 	Towns/cities are provided with safe and adequate water as per their category
	3. By 2020 Carry out study and design for urban waste water management system	Percent of the 36 category 1,2,3 towns and cities Build WWM infrastructure for 6 towns /cities with a	<ul style="list-style-type: none"> Towns/water boards/city administrations identify and document background information on the problem Set budget and time line to conduct feasibility studies on WWM program 	Urban waste water management system is designed

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Strategic Objectives	Goals	Performance Indicators	Core Activities	Result
		population of 200,000 and more	<ul style="list-style-type: none"> Organize/hire professionals to design appropriate WWM system for the selected town/city 	
2. Ensure good governance in rural water supply enhancing sustainability, effectiveness, efficiency and climate change resilience of the services	4. By 2020 Decrease RWS Non-Functionality rate of water supply system in urban and rural communities	Percent achievement of NFR from the present 11.2 %-to the target of 7%	<ul style="list-style-type: none"> Regions together with Woredas map nonfunctional water systems by category Identify common problems Design mechanism/budget and organize manpower and rehabilitate un functional water systems Woredas with support from regions and NGOs etc set a maintenance crew with tools and spare parts and communication system to maintain pumps and reduce downtime and non-functionality rates. 	Number of nonfunctional water systems are decreased to 7%
	5. By 2020 Empower women in WASHCOs management including in decision making	Percent of WASHCOMs that increase membership to 50% and more	<ul style="list-style-type: none"> Woredas involve communities including women in the planning process Discuss with communities on roles and responsibilities in WS management Establish WASHCOMs with women participation of at least 50% Train WASHCOMs on book keeping, O&M, setting tariffs etc 	WASHCOMs are established with 50% women members
	6. By 2020 Strengthen RWS community management through legalization of WASHCOs	Percent of RWS that legalize WASHCOMs by region	<ul style="list-style-type: none"> Regions register the number of WASHCOMs Regions advocate on the importance of legalizing WASHCOMs so that they function legally following government rules Regions continue on capacity building to WASHCOMs to strengthen their water management roles. 	<ul style="list-style-type: none"> 100% of WASHCOMs in all regions are legalized
	7. By 2020 Establish supply chain for low cost WS technologies and spare parts	Number of Private sectors involved in Water supply by category established in each region/ woredas	<ul style="list-style-type: none"> Contact with Micro and Small Enterprise Agency and discuss Private sectors need for water supply Discuss with TVET to develop curriculum for private sectors training 	Regions have motivated private sectors and established supply

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Strategic Objectives	Goals	Performance Indicators	Core Activities	Result
			<ul style="list-style-type: none"> Establish systems, linkage mechanisms of the private sectors to funding agencies 	chain for Water supply.
	8. By 2020 Establish WS extension supporting system at kebele level to enhance implementation of household and communal level self-supply water and improve O&M of RWS	Number of woredas in each region that established support mechanisms for self-supply in woredas	<ul style="list-style-type: none"> Woredas discuss the advantage of self-supply and the support they can get from woredas Woredas organize kebeds and communities to undertake enhancing self-supply water supply system Woredas with support from regions prepare O&M manuals Establish water safety mechanism from the source to use with community using self-supply and other on spot water systems 	Water supply extension system to enhance self-supply water supply is established
	9. By 2020 Ensure rural water supply safety through water quality monitoring and water safety planning and implementation	Number of woredas in each region that established water quality monitoring program urban and rural areas	<ul style="list-style-type: none"> Train selected water surveillance officers from among the staff Purchase portable water analysis kits with adequate supply of reagents Prepare a protocol on frequency of testing, recording and reporting Have in stock water disinfecting chemicals 	Regions have established mechanisms for water quality monitoring
	10. By 2020 Establish ground water monitoring and catchment protection system around water supply sources to be implemented by rural WASHCOs.	Number of WASHCOMS that has establish catchment protection and monitoring mechanism in woredas in each region	<ul style="list-style-type: none"> Conduct surveys on all water systems and identify areas of concern Plan and design protection mechanisms such as protecting from flood, animals, open defecation etc ... 	Regions have made ground water monitoring and catchment protection a well-organized activity.
3. Ensure good governance in UWS enhancing	11. By 2020 Decrease Non-Revenue Water for urban communities	Number of towns that decrease NRW from the 39% to 20% by 2020 for	<ul style="list-style-type: none"> Establish a water policing mechanism to identify NRW hot spot areas 	Nonfunctional water for urban areas is decreased.

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Strategic Objectives	Goals	Performance Indicators	Core Activities	Result
sustainability, effectiveness, efficiency and climate change resilience of the service		UWS utilities of category 1-3		
	12. By 2020 Improve water service hours in the 24 hours in urban areas	Number of towns that has Improved UWS continuity to 16 hrs. per day excluding WS delivery through public taps for UWS utilities of category 1 to 3	<ul style="list-style-type: none"> Assess possibilities of raising service hours Enhance capacity to meet the plan. 	Water service hours is increased to an appreciable level within the 24 hours.
	13. By 2020 Enable cost recovery mechanism for urban water supply system	Number of towns that enable category 1,2 and 3 towns recover their investment cost at least by:80% Category 4 by 60%Category 5 by 30 %And O&M cost by 100% for all towns	<ul style="list-style-type: none"> Prepare an advocacy statement to enable the establishment of cost recovery mechanism Discuss the issue with water board and beneficiaries Involve communities/beneficiaries before setting tariffs 	Urban towns/cities utilities have established reasonable tariffs
	14. By 2020 Ensure UW safety through water quality monitoring system and water safety planning and implementation for UWS utilities of category 1 to 3	Number of regions that established water quality monitoring and reporting program in woredas	<ul style="list-style-type: none"> Train selected water surveillance officers from among the staff Purchase portable water analysis kits with adequate supply of reagents Prepare a protocol on frequency of testing, recording and reporting Have in stock water disinfecting chemicals 	Urban utilities have established a regular water quality monitoring plan
	15. By 2020 Establish ground water monitoring and catchment protection system around WS sources to be	Number of towns of water utilities in urban areas that establish urban water	<ul style="list-style-type: none"> Establish ground water monitoring unit with the necessary tools Conduct surveys on all water systems and identify areas of concern 	Utilities have made ground water monitoring and catchment

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Strategic Objectives	Goals	Performance Indicators	Core Activities	Result
	implemented by urban WS utilities	catchment protection mechanisms.	<ul style="list-style-type: none"> Plan and design monitoring and protection mechanisms such as protecting from flood, animals, open defecation etc.... 	protection a well-organized routine activity.
4. Build the sub-sectors capacity	16. By 2020 Conduct capacity building to higher and middle level professional, artisans and caretakers	Percent achievement in training and engaging the subsector 4, 374 higher and 13,000 medium level professionals and 510,000 artisans and caretakers and ensure that involvement of women in this regard is 25%	<ul style="list-style-type: none"> Design training manuals for higher, medium professionals and artisans Prepare the necessary supporting training materials Use trained trainers for effectiveness 	Capacity building is conducted to higher, middle WASH professionals and artisans.
	17. By 2020 Establish independent WS and Wastewater service regulatory agency to ensure high service quality	Number of regions that has processed the establishment of regulatory agency for water supply and waste water services.	<ul style="list-style-type: none"> Design policy or identify existing policy to establish regulatory agencies Advocate that higher political leaders agree and endorse to establish the agency as per government regulation 	Water and waste water management regulatory agency is established
	18. By 2020 enable category 1,2, 3, and 4 water supply utilities have in their organizational structure responsible section for Waste water management	Number of Waste water management structure is established in all 1,2,3,4 category water utilities	<ul style="list-style-type: none"> Establish a unit for waste water management Establish an integrated and coordinated mechanism with other institutions 	A unit for waste water management within the utilities for category 1,2,3,4 towns is established
	19. By 2020 Increase the involvement of the private sector in the WS activities	Number of new private sectors in water utilities	<ul style="list-style-type: none"> Map existing private sectors who would take the business Advocate about the business and attract private sectors to take up the business of O&M 	Private sectors are organized for water

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Strategic Objectives	Goals	Performance Indicators	Core Activities	Result
	particularly in O&M of urban water supply utilities	who are engaged in water supply and O&M.	<ul style="list-style-type: none"> Design a capacity building program for the private sectors 	supply O&M in urban utilities
	20. By 2020 Strengthen WASH integration to meet the objectives of OOWNP and establish coordination with the Ministry of Urban Development and Construction Affairs at all levels in all urban WASH interventions	Number of integration and coordination initiatives taken by OOWNP with like ministries like ministry of urban development.	<ul style="list-style-type: none"> Advocate the health, development and economic impact of WASH with like ministries Discuss ways and means to integrate the program and for coordinated action for WASH in urban areas Establish standing committees of professionals overlooking design and intervention program Establish forums for wider learning and sharing 	OOWNP has integrated its national WASH plan with like ministries.
	21. By 2020 Implement national ICT based M&E and MIS system for the subsector which enables to capture, collect, analyze and report the data of the sub-sector staffs and service beneficiaries disaggregated in sex and age.	Number of regions that established a functional ICT based M&E and MIS system	<ul style="list-style-type: none"> Learn and share experiences of regions and NGOs and bilateral organizations who have started ICT based monitoring in Ethiopia Speed up the ICT based national program and record real time information in the MIS Establish mechanism for reviewing and learning 	ICT for M&E is established at all levels in Ethiopia

Table 10 GTP2 Sanitation and Hygiene Strategy (Rural/Urban/Institutional) ¹

¹ Strategic Objectives	Goals	Performance Indicators	Activities	Result
1. Establish community centered approach to enhance sustainable sanitation and hygiene services and behaviors Kebeles in all regions	1. By 2020 introduce community centered approach to sector staff at all levels particularly to woreda level (Primary Health Care Unit staff, Kebele WASH team, Kebele leaders, HEWs, HDAs, Limat Budins, WASHCOS and Agricultural extension agents in all Kebeles in the country)	Number of advocacy initiatives undertaken to establish common ground with sector staff and other stakeholders.	<ul style="list-style-type: none"> • Prepare advocacy package prepared to suit the level of local residents, sector staff and officials • Include in the advocacy meetings stakeholders such as local NGOs, religious leaders and schools • Conduct a number of meetings to form common ground on the need of involving communities for behavior change program 	Common ground with sectors and stakeholders and community members established.
2. Improve access and equitable improved sanitation and hand washing practices	2. By 2020 Increase the availability and consistent use of improved latrine from the present 28% to 82% In rural areas.	Percent of improved sanitation coverage in each region by woreda	<ul style="list-style-type: none"> • Identify respected, trusted and prominent residents, teachers and women affairs of a community together with HEW, WHDA • Create awareness on the problem of poor sanitation and hygiene to health and development • Train them on how successfully they carry out and sustain changes if committed and make their community ODF • Demonstrate simple improved sanitation construction and hand washing devise using job aides/pictures • Select community chairperson preferably women or religious leader and secretary (preferably HEW) for the committee • Design an action plan on the way forward 	Improved sanitation system with hand washing increasing in all regions
	3. By 20 20 Increase proportion of ODF communities In kebeles from 18 to 82%	Percent of kebeles in each region who have achieved ODF	<ul style="list-style-type: none"> • Design a follow up mechanism and a support program to the committee established in communities in all kebeles 	ODF Kebeles are increasing in number in all woredas in Ethiopia.

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	4. By 2020 increase hand washing with soap and water from the present 17% to 82%	Percent of households in kebeles who have achieved hand washing with soap in each region.	<ul style="list-style-type: none"> Design a follow up mechanism and a support program to the committee established in communities in all kebeles 	Hand washing with soap has increased in all Kebeles/ woredas in Ethiopia
	5. By 2020 Establish supply chain for sanitation components and low cost WS technologies and spare parts	Number of private sector companies established and started supply chain activities for WASH products	<ul style="list-style-type: none"> Map existing private sectors who would take the business Advocate about the business and attract private sectors to take up the business of O&M Design a capacity building program for the private sectors 	Supply chains for sanitation established in all woredas in Ethiopia
3. Improve Institutional WASH Services	6. By 2020 100% of schools will have hand washing promotional materials in their schools	Percent of schools in each region with hand washing facilities with adequate provision of running water and soap	<ul style="list-style-type: none"> Design simple interactive hygiene messages and distribute to all schools in woredas Advise schools to use all walls, latrine shades, trees to be talking walls and trees with appropriate behavior change messages (<i>Use soap to wash your hands after toilet etc</i>) Prepare print materials such as posters to communicate WASH 	Hand washing promotional materials are made available and displayed in all schools in Ethiopia
	7. By 2020 Improve full package WASH access from the present 3.2% to at least 40% of schools including MHM	Percent of schools in each region that have been provided with complete package of WASH services in Schools	<ul style="list-style-type: none"> Advocate to funding agencies and government about the importance of providing full package WASH for schools than only one or two interventions Arrange the construction of a functional MHM facility in schools even using local materials 	Institutions, donors and government support full package WASH service to schools.
	8. By 2020 Provide improved and gender segregated sanitation facilities with hand washing from the present 36% to 75% of primary schools and	Percent of schools in each region with adequate and gender segregated and	<ul style="list-style-type: none"> Organize parents and teachers' association to participate and support to construct separate latrine for boys, girls, teachers Organize fund raising festivals, or school days to raise money to support latrine construction 	Gender separated improved sanitation and MHM facilities are increasing in all schools

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	100% of high schools including MHM	improved sanitation systems	<ul style="list-style-type: none"> Plan to use revenues usually from coffee, crop, grass, and wood sales to support latrine construction. 	
	9. By 2020 100% of health facilities with full package of WASH facilities including MHM facilities 100%	Percent of health facilities with full package of WASH services	<ul style="list-style-type: none"> Advocate for the need of providing full package to health facilities 	Institutions, donors and government support full package WASH service to schools
4. Water Safety and water quality control	10. By 2020 Increase proportion of households using correct and consistent water treatment and safe storage from 10 to 35%	Percent of households practicing point of use (POU) water treatment.	<ul style="list-style-type: none"> Discuss the need of enhancing point of use treatment with the community centered committee Discuss with water safety supply chains (Wuha agar, wuha telel) to make water disinfectant to the locality Arrange with local drug store to also have wuha agar etc for sale to communities 	Point of use treatment of water is practiced in households in Ethiopia
5. Improve outreach communication for behavior change using communication support materials	11. By 2020 prepare and provide pictorial job aides, operational manuals, implementation guidelines for use by Health Extension Workers to support facilitation of behavior change in communities	Percent of Kebeles provided with set of job aides including latrine construction, hand washing, water safety measures, personal and environmental hygiene materials	<ul style="list-style-type: none"> Explore WASH communication materials availability in the sector ministries Evaluate the content and determine whether to use it or not Design new or additional communication products Kebele level HEW will need pictorial job aides which are available in the ministry of health 	Outreach do-able behavior change program is enhanced using job aides in Kebeles in Ethiopia.

Note: the sanitation and hygiene strategic objectives and target is adopted from the NHEHS and SAP, 2017

9.8 OWNP Facilitation Modality

The strategy will be facilitated with different approaches and inputs (see graphics below) and implemented by national, regional, zonal, woreda and urban authorities in collaboration with DPs, CSOs and private enterprise



Figure.12. Program Facilitation Modality

New initiatives have been developed since conception of the OWNP and as developed through the OWNP review process involving as many as possible national, regional, development partner and other stakeholders. Existing and new approaches are described in **Section 11** below to cover the period from 2018 to 2030 (10 to 15 years horizon). These are enhanced by Guidelines fully described in the **Annexes**.

9.9 OWNP Results Based Framework-2018-2020

The result framework is set out in ANNEX III and is designed to address the main focus areas as stipulated by the GTP II plan. The framework indicates the level of success (outcomes and outputs) , the result chain, goals and indicators. This framework is also the basis for all the OWNP activities in Phase II. It also guides the design process for the technology, process approach, setting of strategies and action plans as quantified in **Section 16**.

9.10 OWNP Stage 2 Structure

This “OWNP document 2018” comprises an update of the “OWNP document 2013” as depicted in the following diagram, enhanced by an overall Strategy and detailed Guidelines and including both short term activities (2018-2020) and longer-term concepts (to 2030). All these are described in this document and in accompanying annexes.

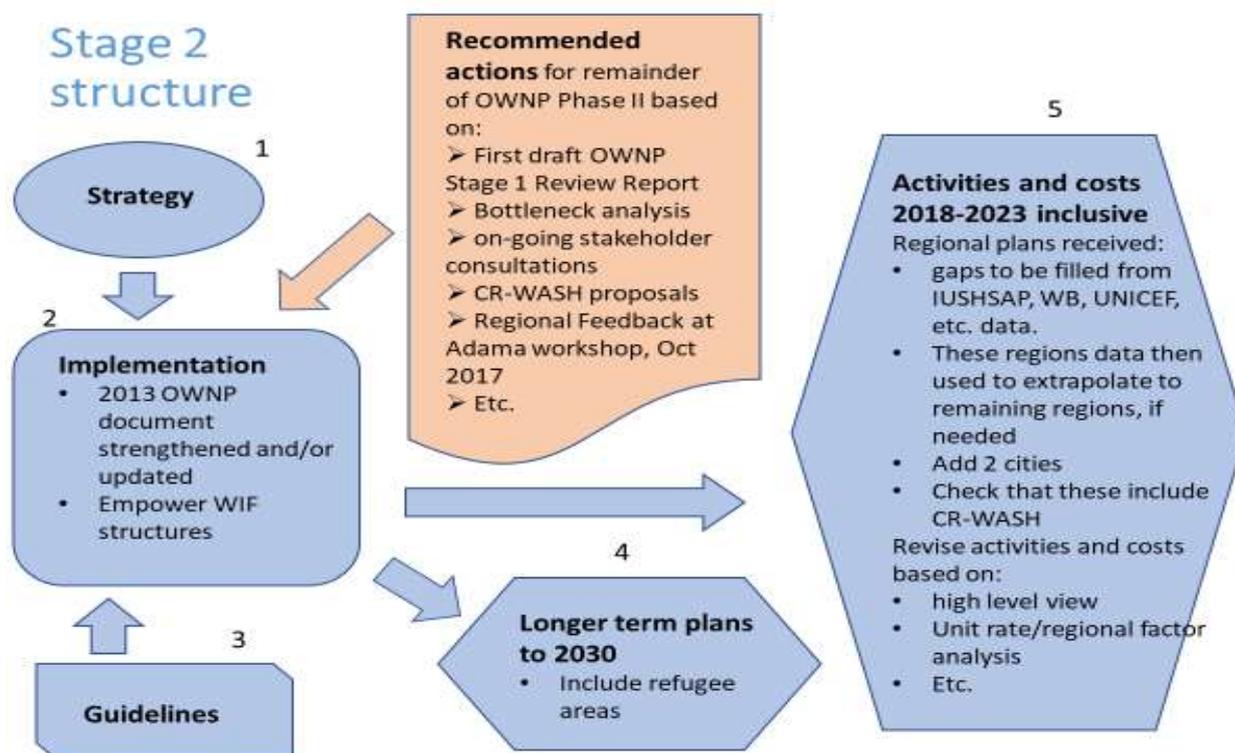


Fig. 13 Strategy Structure

9.11 Guidelines

Practical guidelines including some innovative activities have been designed for use in Phase II and beyond: These are listed and included in ANNEX

10. Existing and New Strategic Approach to WASH (2018 to 2030)

10.1 Short Term Recommendation

10.1.1 Enhancing the Enabling Environment

This sub-section suggests ways in which the OWNP may be moved on to more holistic, long term, approaches. It suggests generic structures and approaches (both for implementation and operational) for the Ethiopian WASH sector for the next decade.

In order to tackle bottlenecks identified in the Phase I review and to lay a stable foundation for the Ethiopia WASH sector, then a strong “Enabling Environment” will be needed. It is envisaged that various WASH strategies and action plans, formulated over the coming years, will use this section, together with the WASH Guidelines (see **Sub-section 10.6** and **Annexes**), as key pointers, along with GTP updates and other policies and guides as they are issued.

Section 15 has identified 6.04 **billion USD** in hardware and software activities to achieve GTP2 WASH targets. The total estimated costs to meet GTP2 targets is **3.99 billion USD** to be funded under the existing funding routes (CWA, WRDF, DPs direct, Government sector budgets, CSOs, community, etc.) and **2.05 billion USD** under the CR WASH Program.

As illustrated in the figure below high-level strategy approach so as to fully understand the complexity of WASH and what is really required at multi-sector level to ensure WASH service delivery to all citizens of Ethiopia in as short a time as possible.

1. There has been some success with establishing the three pillars supporting efforts towards coverage of improved water, hygiene and sanitation services across Ethiopia, but efforts now to be quadrupled in order to attempt to bridge the widening gap between current situation and targets. For instance, it is indicated in Section 15 that around USD 6.04 billion will be required to achieve GTP2 WASH targets while current absorption capacity is only around USD 0.5 billion per year.
2. MoWIE is now shifting its focus from construction of new schemes to ensuring the sustainability of existing schemes and the proportion of rehabilitation to new build appears to be increasing with time. Behavior (or awareness) change is needed as much at policy and management levels as it is at community and household levels, particularly for urban sanitation. Similarly, awareness of business planning and accountability across all sectors is low and needs to be improved and promoted.
3. The Integrated Urban Sanitation and Hygiene Strategy and Action Plan (IUSHS&SAP) has been introduced to address the increasingly critical urban sanitation situation. Similarly, the Hygiene and Environmental Health Strategy (HEHS) is a high impact intervention that addresses WASH as one of the most important causes of morbidity and mortality.
4. There is an urgent need to review water tariff strategy, since tariffs in many cases are currently set at town or Woreda levels that are well below the ability to pay. There will, however, be cases, particularly for piped water supply system involving deep boreholes with associated high-power costs, where operational subsidies will be required to ensure minimum levels of service are maintained (at least 15 l/c/d).
5. In the longer term it will be the role of woredas to levee or approve tariffs proposed by utilities. The regulator will assess tariffs based on technical performance and financial analysis, free from political interference (as is normal for utility regulators worldwide).

6. National guidelines and manuals are required to proscribe design standard and technology selection appropriate to levels of service. The Guidelines in the Annexes are intended as a start on this process; to be updated from time to time based on such things as sharing of good practice, research and development, progress on groundwater exploration mapping, water safety, solar power, CR-WASH, urban sanitation, pastoral sanitation, etc.
7. Currently there is a move to legalize WASHCOs and strengthened the capacity of the committee to properly manage the scheme and to introduce a rural utility approach and “professionalization”⁴⁷. WASHCOs will remain in place for point source schemes. However, longer term, Rural Pipe Supply systems could be absorbed into large (approximately zonal sized) publicly owned utilities for both urban and rural to ensure economy of scale for reasons that include regulation, fast-tracked procurement and implementation, operation, inventories, asset management, quality control, monitoring and evaluation, investment leverage, etc.
8. There is a need to reduce the time for revising and finalizing designs and bidding documents since, on average, the actual time between the hiring of implementation consultants and the start of bidding has been more than two years. These delays have been due to many factors including, most importantly: (i) the review, revision, and approval of changes in project scope, especially major reductions in scope necessitated by large cost escalations due to inflation, (ii) lengthy review and approval of final designs and bid documents and (iii) long-drawn-out bidding processes.
9. Although transparency in bidding for both consultants and contractors is essential and should not be compromised, the regional bureaus should take immediate steps to (a) reduce time for review and approvals and (b) ensure a pipeline of well prepared “bankable” projects (see Guidelines, Annexes 3 and 5) able to both attract funding and also ensure timely delivery of services. At federal level (MoFEC), (1) the rules should be changed to allow autonomy of regions to deal directly with funders, but in collaboration with regional BoFECs and (2) delays in financial reimbursement to the regions at the beginning of each EFY should be eliminated.
10. Government needs to provide swift additional funding or for the program to embed more realistic price and physical contingencies based on past project records and performance. Alternatively, as it has proposed from the regions, the plan budget for imported equipment should be reserved in Euro or US dollar to manage budget scarceness due to escalation.
11. The aspect of unit rates and regional variations across the dozens of technologies that are currently in use and planned is addressed in detail in Section 15 so as to be able to give improved reliability to planning and funding.
12. It is also extremely important for government (MoFEC) to give tax breaks and quick letter of credit approvals for import of critical WASH plant and equipment, where these are not manufactured in Ethiopia to the required specifications. Such equipment includes water drilling machines, pumps, generators, vacuum trucks, laboratory equipment, etc.
13. DBO (Design, Build and Operation) contracts should be considered by the regional bureaus as a possible means to deliver projects in line with time, cost and quality.
14. The majority of water projects in Ethiopia are based on groundwater so that the current program of hydrogeology mapping needs to be accelerated and expanded to all parts of the country but prioritizing areas where high borehole failure rates are occurring. Where groundwater sources are known to be limited, then (1) artificial aquifer recharge needs to be considered in collaboration with

⁴⁷ Rural Public Utility O&M Implementation Manual for Multi Village water Supply Schemes

partners responsible for catchment management and (2) alternative surface water sources need to be thoroughly investigated.

15. One of the most important “enablers” and core to the OOWNP is, of course, knowledge management, made particularly important by the OOWNP Guiding Principles and Activity Pillars and by the fact that the program covers 100 million people in very diverse geographical and social groupings. This subject is addressed further under Sub-section 10.4.
16. There is a need for relevant knowledge and understanding of modern utility management practices and to promote a culture change in terms of service delivery. This needs to be addressed through water and sanitation sector reform (Sub-section 9.5).
17. To achieve the GTP2 targets by 2020 will require radical and innovative approaches driven partly by the new R&S WASH Program, partly by the existing OOWNP principles and pillars (described in sub-sections below) and partly by creating a new enabling environment which may be depicted by the diagram below.

The diagram indicates which “enablers” fall directly under the OOWNP and which may be regarded as “multi-sector”. The enablers are described in greater detail in following sections.

Most importantly, OOWNP overall objectives cannot be achieved without:

- a) knowing what has been done, what is being done and what is planned (knowledge management)
- b) having the capacity to do it (sector reform)
- c) sustainable water resources (hydrogeology and data base)
- d) sustainable systems (planning design and operations)
- e) championing change (promotion and advocacy)
- f) regulatory controls (planning and operations)
- g) funder confidence

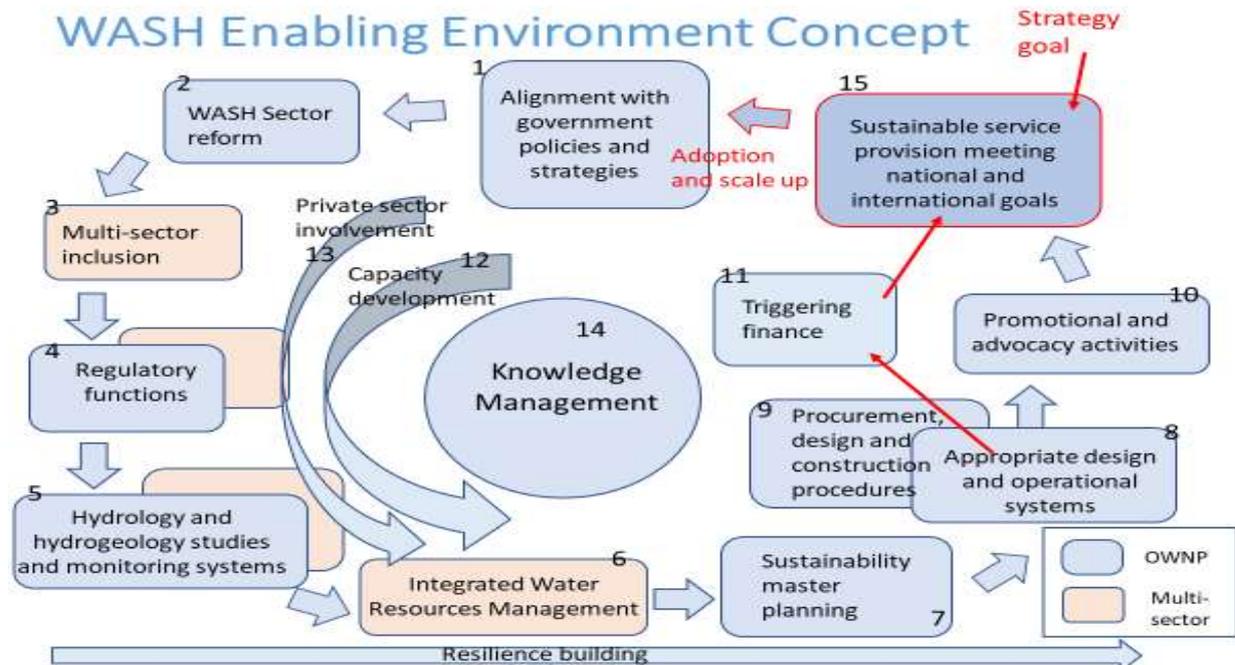


Figure 14: WASH Enabling Environment Concepts

It has been decided that the future approach for the OWP should be a combination of two options (i) “continuity” of the Phase I modality and (ii) “redesign a new approach and modality for Phase II”. The holistic principles (Integration, Harmonization, Alignment and Partnership) embodied in the OWP should be retained and expanded to fully allow for parallel sectors such as H&EH, SWM, commerce and industry, agriculture and livestock, land management, employment, women’s interests, etc. as illustrated below.

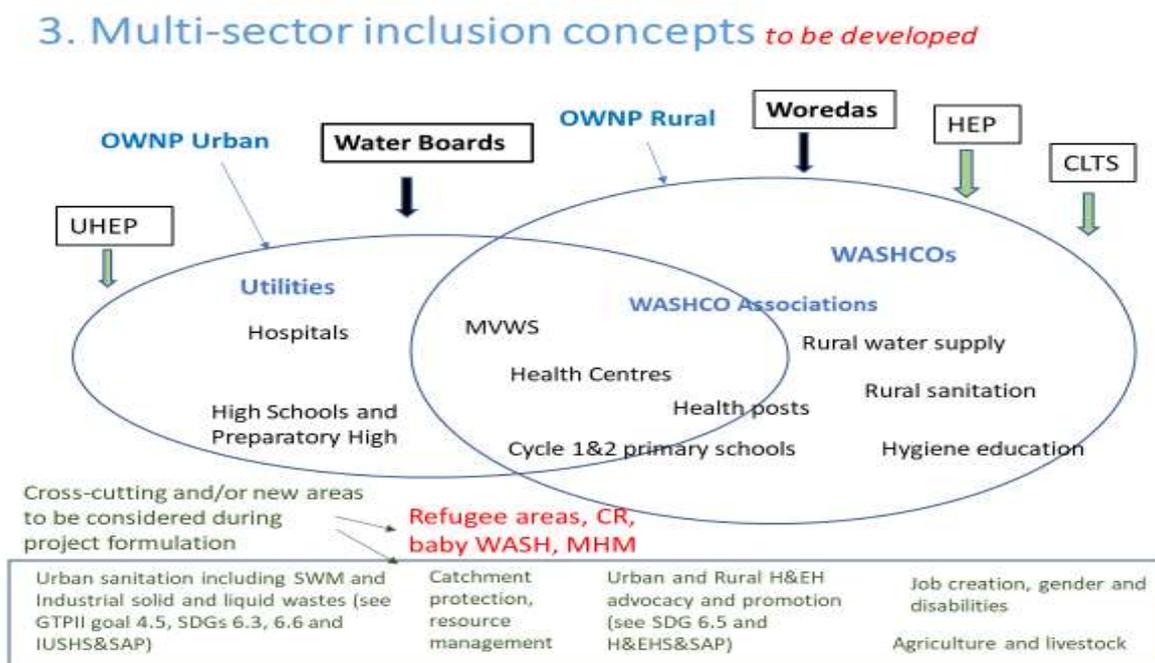


Figure 15: Multi Sector Inclusion Concept

Future changes to the WIF and OWP MoU may be considered to allow for inclusion of cross-cutting and/or new areas, if agreed upon. Such changes could be timed to come into effect before the end of GTP2 timeframe.

10.1.2 Strengthening Integration, Harmonization, Alignment and Partnership

Sector Integration, Harmonization, Alignment and Partnership has been to date aimed at ensuring that the all-important health and education sectors are fully served with sustainable WASH. This goal has yet to be fully met.

There has been significant success in application of the OWP’s four core Guiding Principles (integration, alignment, harmonization, partnership) with CWA members but there is clear evidence that these now need to be expanded to include the inter-relationship with stakeholders outside of the original four OWP signatory ministries and WASH actors.

There is a need for OWP SWAp to prove itself that it is systematic, effective and productive program that is translating its guiding principles and programs effectively on the ground. One of the attractions for more donors to join full force in the future will be based on the success stories of the OWP in all aspects of the planned activities; the full translation of the OWP principles on the ground effectively and the learning made every year. Currently, the CWA partner numbers is not expanding as much as desired. Partners such as Finland government (COWASH) and potential partners such as USAID, and CWA partners such as UNICEF,

AfDB etc. are running a parallel WASH program indicating that OWNP CWA must deliver to attract more partners.

10. 1.3. Maximizing availability and efficient use of human and financial resources

It is paramount that available permanent and contractual sector staff and consultants are fully exploited through the institutionalizing of accountability and encouraging innovation. The program staff should understand that such social services are cross cutting and have to learn to involve as much stakeholders (the common and the uncommon) for one common end which is ensuring sustainable and resilient WASH services.

Release and/or utilization of funds at regional and federal/national levels has been slow. A national framework for fund raising purposes has been suggested whereby regions could do their own planning and implementation based on regional proclamations, directives and implementation modalities.

Capacity development efforts should be targeted to achieve more effective and quality WASH programme implementation and to sustain outcomes at all levels. Due to absence of systematic and coherent approaches, the activities undertaken by WASH stakeholders might have not been as effective as expected in order to meet the OWNP objectives. In order to achieve OWNP objectives, institutional and management capacity of the WASH sectors should be enhanced to solve challenges and address development needs of WASH sectors in a sustainable manner.

10.1.4 Capacity development for improved delivery of WASH services at all levels

One element necessary to reduce delays in implementation and to shorten procurement is to strengthen the capacity and skills of PMUs through intensive, sustained TA, and to prepare more realistic implementation schedules. Improved skills and retained staff with the necessary skills and resources to manage consultants and contractors are key to reducing project start-up time, implementation on time and on budget.

Capacity building resources should also be accessible to the private sector, but at a fee. Insistence on certified engineers, sociologists, financial analysts, quantity surveyors, environmentalists, etc. to be key positions in consultant scoping and feasibility studies and detail designs will (a) improve WASH implementation and (b) provide income to the education establishments to ensure they retain highly qualified staff as well as hardware and software resources.

Capacity of regional laboratories should be strengthened in manpower, equipment and consumables, but as important is to have more laboratories and all large towns and cities to ensure better access and to improve reliability and standardization through inter-laboratory benchmarking⁴⁸. Skilled manpower for water treatment and quality control and, where appropriate, wastewater quality control should be available at all town and Woredas. Training and operational manuals are required for water supply laboratory facilities and for water treatment control and monitoring.

For continuous capacity building there is a need to assess the available human resources pool in each region and where favorable train the individual to lead the program or in the absence of such resources employ new staff and establish regional human resource development units”

⁴⁸For instance, it is understood that Oromiya region and 65,000 schemes but only one centralised laboratory, in Adama

In the short term, before professionalization of RPSs and then absorption into clustered operations, continuous trainings should be given to WASHCOs. Additionally, spare parts supply chains need to be established and maintained initially through DPs, regional governments and CSOs with rapid handover to the private sector.

It is understood that the health and education sectors have conducted a number of hygiene, sanitation and institutional WASH capacity building activities such as development of strategies and implementation guidelines to create the enabling environment for implementation of the OWNPN interventions. However, to get these strategies and guidelines into the public domain and, importantly, translated into practical training syllabi, needs significant investment in training establishments and teachers.

10.1.5 Water Utilities

Urban and MVWS utilities need continuous training and to receive technical assistance to improve utility management, administration, and operations to reach in full cost recovery status. This capacity will be enhanced by proposed clustering and formation of large (perhaps zonal) utilities with oversight from national or regional utility regulators. (See sustainability above)

As technologies and associated business models are developed, trialed and included in master planning and become established within service delivery systems, then lessons can be learnt from both success and failures and these need to be shared within and between regions so as to stimulate improvements in practice and also to avoid any duplication of effort or the repetition of less successful ways of working. For examples of good practice (GP) to be shared it is essential that the chosen examples are appropriately analyzed and understood.

10.1.6. Strengthening NWCO and RWCOs

In order to address the weak regional level coordination between the four WASH sectors, lack of integrated WASH plans, limited effort to coordinate WASH interventions implemented by civil society organizations, lack of awareness and understanding at regional levels about the OWNPN concepts and principles and the differences between the broader OWNPN and CWA, the NWCO and RWCO should be given greater powers and technical capacity, either in-house or through its contracted agents.

<p>Oblige all Funders and Developers to jointly:</p> <ul style="list-style-type: none"> a) Notify all WASH development projects to the Regional WASH Coordination Office. b) Submit proposals to the Regional/Zonal WASH bureaus through the RWCO for scrutiny and Certification to ensure that each project complies with the requirements of OWNP Phase II, as herein detailed. c) Ensure that 6-monthly Project Construction Progress Reports are issued to the RWCO, which obligation will be in addition to, or as substitute for, other Funder and Developer reporting requirements. d) Establish a biannual review meeting including funders or CSO/ NGOs to critically evaluate, learn from and share experiences and knowledge with all stakeholders operating in the region. Notify RWCO of the official project Handover date, the name and address and contact details of the immediate Asset Owners, the name address and contact details for the main Operator and the names addresses and contact details of all Delegated Operators and Delegated Suppliers (This may apply to both urban and MVWS schemes. For point source village schemes then the information will possibly be just the name of the WASHCO and a contact person and registration details, if applicable.)
<p>Oblige Asset Owner or its agents to sign a Contract or Performance Agreement with Operators and oblige Operators to sign Delegation Contracts with Delegated Operators and Delegated Suppliers where:</p> <ul style="list-style-type: none"> a) All such Contracts and Delegated Service Management Contracts shall include requirements for Operational Performance Reports (including Functionality, Service Coverage, Equitability, Financial Sustainability, Environmental Sustainability and other parameters as listed). b) Contracts or Performance Agreements for utilities should include standard internationally recognised KPIs (For point source village schemes then the information will likely be confined to the WASHCO registration details.) c) These contracts shall include the minimum requirements sufficient for the RWCO purposes to maintain a Regional WASH Inventory and Regional WASH Monitoring and Evaluation Data Base.

It has been proposed that “the NWCO should be strengthened in manpower and logistics so that the program coordinate the planning process of CWA, CR-WASH and overall national WASH programs and produce One WASH Program report and improving quality of data collection and reporting in the regions.

In order to have better control and knowledge of projects the following two boxes suggest reform of how all existing and new projects could be registered and monitored. This will assist to keep NWI 2

A data base will be required, perhaps similar to, or adapted from, the existing “Who What Where (4W) Scale-up Form” WASH Cluster spreadsheet⁴⁹ that currently includes regions, zones and woredas (excluding woredas in big cities) and is circulated to all participating DPs and CSOs⁵⁰ on a regular basis for updating emergency WASH activities and contributions. There are over 1,000 urban areas in Ethiopia, but these are not included on the spreadsheet. It has been proposed⁵¹ that the already existing 4Ws matrix could include collecting development partners (IFIs, Bi-lateral, CSOs, etc.) information activities as well as for the OWNP development activities⁵².

10.1.6 Organize Zone Coordination Offices

Since zones are located very near to the woredas than the regions and by virtue that they are in most cases have either a regional status or are departments for the respective bureaus in the region it would be worth

⁴⁹latest version 7.9.17

⁵⁰It does not include all DPs and CSOs; it is just a list of those involved with emergency WASH.

⁵¹UNICEF Sept 2017

⁵²According to CRS, the program does not work much in CSOs/NGOs mapping and no effort is shown to bring NGOs to the program. CRS is very much interested to participate in achieving the program target, but recommends that the program coordination needs to be strengthened and work on mapping of CSO and NGO since their contribution is significant for the program achievement and NGO needs to merge in to the program

utilizing their capacity, human power and time for OWNPs. It is therefore imperative that ZCO, ZPMUs, monitoring and capacity building units be established at that level

10.1.7 Strengthen Advocacy for WASH

Popularizing OWNPs is one aspect of advocacy need. It is only with systematic reach out mechanism that SWPAs can be attractive to donors, bilateral and the government itself as results speak louder than mere talk.

The other advocacy need to mobilize all concerned including beneficiaries for a sustainable change is by designing a communication system which is based on facts. For example, with regard to hygiene and sanitation the following facts speak for themselves.

The sanitation status according to the WHO and JMP updates in 2015 improved sanitation coverage stands at 28% the rest being unimproved and shared latrine. EDHS in 2016 reported that improved sanitation is only 6% (16 urban and 4% rural) and unimproved and shared sanitation together amount to 62% leaving 32% as open defectors.

A global sustainable rural sanitation study (SURS) indicate that the acceleration rate for Ethiopia during the MDG period was 1.2% per year which was why MDG was not met in Ethiopia. The scenario can also be used to see if we will be able to meet the GTP II plan of 82% by year 2020 with the present trend of 1.2% acceleration. As per the graphics below even if we are able to accelerate improved sanitation by 3.0% we can reach to 80% by 2030 indicating that more efforts greater than 3% acceleration rate is required to reach to the target of 82%

The urban population of Ethiopia is growing at slightly more than 5% per year, which is more than twice the growth rate of 2.5 for the country as a whole. (Haddis et al., 2013)⁵³. It is expected that by 2020, one in five Ethiopians will be living in urban areas, and by 2030, half of the country's population will be living in urban centers (Teller et al., 2007).⁵⁴ Ethiopia's urban population has doubled and is predicted to triple from 15.2 million in 2012 to 42 million by 2037⁵⁵. Indicating for more efforts for urban WASH program

The Water and sanitation related diseases are also cause of death to adults and children. According to the Health and Health related annual report since 2008, diarrhea, dysentery and parasitic infections which are always one of the top 10 diseases

Child feces disposal practices in Ethiopia is poor as 69% of families with children of under five years reported that the feces of their youngest child under three were not disposed safely but thrown everywhere.⁵⁶

With regard to other tropical diseases Ethiopia is estimated to have the highest burden of trachoma, podoconiosis and cutaneous leishmaniasis in sub-Saharan Africa (SSA); the second highest burden in terms

⁵³Haddis, A., Getahun, T., Mengistie, E., Jemal, A., Smets, I. and Van der Bruggen, B. (2013) 'Challenges to surface water quality in mid-sized African cities: conclusions from Awetu_Kito Rivers in Jimma, south-west Ethiopia', *Water and Environment Journal*, vol. 28, no. 2.

⁵⁴Teller, C.H., Gebreselassie, T. and Hailemariam, A. (2007) 'Population growth and poverty linkages in Africa', Fifth African Population Conference, 10–14 December, Arusha, Tanzania [Online]. Available at <http://uaps2007.princeton.edu/papers/70214> (Accessed 13 July 2015).

⁵⁵(World Bank, (2016), A transformational approach to urban sanitation improvement in Ethiopia; Briefing note

⁵⁶Godana, W. and B. Mengistie "Determinants of Acute Diarrhoea Among Children Under Five Years of Age in Derashe District, Southern Ethiopia". *Rural and Remote Health* 13: 2329. (Online Version: <http://www.rrh.org.au>, 2013)

of ascariasis; leprosy and visceral leishmaniasis, and the third highest burden of hookworm. Infections such as schistosomiasis, trichuriasis, lymphatic filariasis and rabies are also common. A third of Ethiopians are infected with ascariasis, one in eight Ethiopians lives with hookworm or is infected with trachoma (Kebede D., et'al, 2012)⁵⁷. It is believed that these diseases are preventable through mass drug administration (MDA) and proper hygiene and sanitation (FMOH, 2013)⁵⁸. Helminthic and other infections exposing children to malnutrition is well documented. Children infected with worms are 3.7 times more likely to be underweight and are typically anemic and less physically fit⁵⁹. It is believed that these diseases are preventable through mass drug administration (MDA) and proper hygiene and sanitation (FMOH, 2013)⁶⁰.

According to WSP (2015) study on economics of sanitation in Ethiopia indicates that poor sanitation costs Ethiopia Birr 13.5 billion each year, equivalent to about Birr 170 per person per year or 2.1% of the **national GDP**.⁶¹

Wealth plays a determinant factor in health and educational development and conversely behavior change process is rapid with education and available wealth. According to EDHS ⁶²under five mortality rate and education are correlated with wealth quintiles. The data indicate that the poorer societies are less educated and mortality of under five children also increase. People in rural areas are also poorer than the urban residents.

The facts warrant that continuous advocacy and awareness creation has to be major OWNPs efforts not only to communities to those who are affected but also political leaders and managers.

10.1.8 Behavior Change Communication (BCC)

Behavior change communication can only be effective if it is built on facts as indicated in the advocacy package. Conducting formative research will also indicate social norms, behavior barriers, motivators and also existing approximate behaviors that people practice although not perfect.

Furthermore, it is understood⁶³ that the current CLTS approach (ODF and latrine construction) is in many instances not practical or affordable in the pastoralist physical and economic environment (lack of construction materials such as timber and clay, predominance of animal faeces around dwellings, loose soil, grazing patterns, etc.) and that alternatives need to be researched (for instance, collection and burial of faeces in arable land or as part of preparation conservation tree planting⁶⁴).

Behavior change communication should therefore follow the following for effectiveness.

- **Set Clear goals measurable progress:** A successful advocacy, no matter how we define it has got to begin with very clear, realistic, measurable goals. Advocacy must be measured and evaluated so that we can see where we have made mistakes on what we need to do more for more success

⁵⁷Kebede D, Kadu M, Teshome G, et'al. 2012. The burden of neglected tropical diseases in Ethiopia, and opportunities for integrated control and elimination

⁵⁸ FMOH, 2013

⁵⁹ IRC (2007), Technical paper series 48, International water and sanitation center, Delft, the Netherlands

⁶⁰ FMOH, 2013

⁶¹ Ibid

⁶² EDHS (2011) Ethiopia demographic and Health Survey.

⁶³Discussions with USAID Lowlands March 2018

⁶⁴As practiced in South Africa Natal area

- **Audience identification and segmentation:** Don't try to reach out to the general public but persuade the small group of people such as community representatives rather than the whole woreda people.
- **Design clear, simple, concise message:** Example "wash hands with soap or substitute after visiting the latrine"
- **Planning:** There are a lot of campaigns in WASH. Think how yours is adding to the landscape. Assess what others are doing, review who is doing what in research or advocacy campaigns and identify gaps and or duplication. Think on what can add value to the existing campaigns, think **strategies before moving to Tactics**
- **Specify what people should do:** examples could be use of latrine, hand washing etc
- **Make the case: tell why certain behavior is prescribed to the audience. If addressing mothers talk about childhood diarrhea, its transmission routes and how to control it.**
- **Match strategy and tactics to your target audience: Apply the rule of three that applies to act on a cause you believe. "If they hear about it once, they may ignore it; if they hear it from another person or source they stop and think; if they hear it from someone once more they may actually do something about it.**

In Phase II communication for behavior change and practice should not continue as "business as usual". Communities have to be organized and information and communication efforts must be systematized and involve all means and ways to communicate for a sustainable change. This will involve: Multi-level advocacy, strengthened household outreach, enhancing community-based approaches for change, enhancing media support, increased availability and affordability of hygiene and sanitation products through private commercial and NGO sector initiatives, school hygiene and sanitation, demonstration latrines and hand washing stations

10.1.9 Develop Efficient Program Communication Strategy

The NWCO should develop Program Communication Strategy to create sustainable buy-in of the wide range of stakeholders and partners towards the achievement of the OOWNP objectives. It should also ensure appropriate publicity and dissemination of policies, programs, strategies, water legislation, guidelines, technical standards, regulations. Orders, etc.

So far, the OOWNP vision, mission and guiding principles are not well known to people at all levels. At least beneficiaries should know the program and support it.. High level government officials should also know about the program, the effort being made, the financial implication put forward and the outcome. It would be imperative that communication at scale to popularize the program and harnessing much more donors be one of the focus areas in OOWNP Phase II.

To expand public awareness, knowledge of and commitment to the Program, the Program should move beyond its institutional framework and appeal to the public as potential beneficiaries. This will be achieved through support to a multilevel multimedia communication strategy that will include:

- Formative research, "customer journeys", communication plans, etc. as detailed in **Annex 2** and **Annex 4**
- A "One WASH" logo, mascot and slogan
- Topical spots aired on regional radio stations
- Short programs with health and hygiene messages on ETV and educational broadcasting
- Posters, billboards, banners, pamphlets, stickers and flyers commemorating special events

- WASH educational kit for use in schools
- Use of Goodwill Ambassador(s) and national celebrities to create awareness and spread relevant messages

Profiling the Program at World Water Day, Earth Day, through photo and art contests and other events in collaboration with the WASH Media Forum.

10.1.10 Strengthen Monitoring and Evaluation for WASH

The program should have a strong monitoring and evaluation framework, which includes high-level review meetings, external reviews, and independent sustainability checks, among other measures. This plays a key role in ensuring effective project implementation by identifying bottlenecks in a timely manner and defining adequate measures to address challenges that will impact the progress and sustainability of the project.

A comprehensive WASH sector monitoring framework supported by an information system should be established. MIS enhancements to cover output reporting requirements should be given emphasis in phase 2 to ensure comprehensive real-time OWN phase 2 progress reporting.

There is limited conceptual understanding on monitoring and evaluation at management level and weak capacity to support town water boards to effectively participate in monitoring water supply schemes; the benefits of project evaluation during implementation are either not appreciated or the OWN-CWA reporting formats are seen as being too cumbersome.

It is understood that under NWI 2, 11 KPIs for water and 1 KPI for waste water are being considered along with 26 supplementary KPIs. It is very important for regional, national and international benchmarking and regulatory use that these include the 10 internationally accepted KPIs for utility performance. See example from 6 East and Southern Africa countries above

It is considered that the immediate recommendation of strengthening the NWCO and RWCOs (along the lines indicate above) should go some way to simplify and improve the NWI and M&E going forward, although considerable research and data acquisition is still needed to understand the current baseline.

In order to have WASH sector monitoring framework supported by an information system, tailored trainings for proper data and information inputs for enhanced MIS system users (national and regional levels) should be prioritized.

Computer hardware and software, as well as training, should be provided to strengthen management information at region and Woreda level sector offices. This should include financial management and accounting, and commercial systems for town WSSE at least for category 1-3 towns and for all voluntarily clustered urban/rural utilities.

The MoE has put in place governance mechanisms through which performances of the school WASH strategy can be tracked and monitored as integral part of the Educational Management Information System (EMIS). Performance indicators need to be expanded for School WASH so as to improve the value of the EMIS.

WASH sectors at national level should provide special support to emerging regions so as to be able to perform their planned activities and monitor their performances in human, technical and financial management aspects to the delivery of services

10.1.11 Strategize for Sustainable H&S Development in Rural and Urban Areas

Rural Areas

There is considerable change in rural areas especially in latrine construction but there is still much work regarding latrine design and usage as many latrines are without superstructure or a squat hole cover, have non-washable floors, do not provide adequate privacy, allow fly breeding and impart offensive smell and overall there are about 38 million open defecators in Ethiopia. **(Details in section 5.2 above)**

Urban Areas

This subject is “multi-sectoral” since it involves labor, women’s rights, solid waste management, economic impact of poor sanitation, etc. It has been noted that neither the 2013 OWNPN document nor GTPII pays enough attention to hygiene and sanitation in urban areas.

There are a number of on-site and off-site sanitation options for human waste management system in urban areas. The most practical and affordable on-site system for slum areas in Ethiopia is to construct an improved pit latrine or a VIP latrine, which can have very good features of clean ability, less smell and long lasting. However, public and shared latrines demand good operation and management practices.

Providing equitable, gender sensitive and disability conscious public latrines with hand washing facilities, shower facilities and cloth washing slabs to residents in urban areas is an essential public service. These can be based on viable business models when combined with other services (shop, water sales, and mobile phone top up, rest area). They also offer a platform to promote safe water, good sanitation and hygienic practices.

Having in place full time attendant, trained with simple maintenance and providing tools for maintenance will sustain the service and boost efficiency.

10.1.12 Strengthen Community Involvement/Participation and Empowerment

a. Community participation

Community participation is essential in project planning, in operation oversight roles for both urban and rural water supply, sanitation and hygiene awareness, as well as promotion of services and willingness to pay. Communities, particularly low income communities, should ideally have a sense of “symbolic ownership” (but not physical ownership of assets) and must have a role to play from inception to completion of projects and later in operation and management.

Because communities contribute some money or come for a meeting does not mean an end by itself. Community participation is possible only if communities are organized in some form.

In the urban and MVWS setting, community involvement with service delivery may be as oversight role (Water User Groups, etc.) or as delegated operators of ring-fenced supply areas (single kiosk, street, low income area, etc.).

In the single village low tech system, it is anticipated that the WASHCO management system will prevail. It is stated⁶⁵ that community participation in project planning and construction will facilitate the “user community engagement in the post-implementation management of the WASH systems”. It is then stated that (limited) external support will be required until “the community has developed a capacity to do these activities itself” and that “it is obvious that a rural community cannot take care of the overall management

⁶⁵Comparison of community managed projects and conventional approaches in rural water supply (2016)

without the support of the local governments, private actors and NGOs. These external supporters should establish an enabling environment for post-implementation management activities.”

b. Community empowerment

Ethiopia has been following the CLTSH triggering approach and use of health extension workers as the primary contact in households. Age-old and almost culture-bound hygiene and sanitation behaviors will need a more engaging approach based on knowledge on behaviors and practices among the different tribes in the country.

An innovative approach for a sustainable and improved sanitation and hygiene practice in the future can only be enhanced through the empowerment of women and the communities at large.

Selected, respected, trusted and prominent residents of a community should be trained to support the HEP and undertake community mobilization and follow up actions to ensure sustained behavior changes for their own community.

There are Health Development Army and Health Extension Workers permanently available in villages throughout the country but they have to be supported, their skills enhanced and provided with tools and aides for successful communication.

See also **Annex 4** for guidance on community empowerment in the urban setting.

10.1.13 Ensure Water Safety

The majority of properties in Ethiopia, both urban and rural, rely on in-property water storage of one sort or another (roof tanks, ground level tanks, open containers, etc.): Such water will be bacteriologically contaminated due to negative mains pressures, crowding around wells, open jerry cans, etc. and due to ineffectiveness of chemical disinfection under these conditions. This indicates the need at all service levels for “point-of-use water treatment systems” as complementary actions to ensure safety of water⁶⁶.

In general principle, there will be a need to establish a Water Safety Plan (WSP) by instituting water surveillance program to prevent pollution sources, such as fencing the catchment area in rural areas. Another safety measure is to establish and or strengthen water quality monitoring program in the regions and woredas (but see limitations on laboratories described above). Procuring the necessary field kits and reagents to be distributed to each woreda, designing monitoring manual and reporting protocol is essential.

Infrequent source chlorination may not be either feasible or protective especially if it is a well or spring water, because disinfection is only to the volume of water available at the time of chlorination. If chlorination is done in reservoirs the water will always be clean until new water is added. In both cases it is advisable to popularize “Point-of-Use Treatment” which may include boiling, filtration in addition to chlorination.

Introducing other treatment options for chemical removal, softening hard water, treating high fluoride water with bonechar or clay can be introduced in communities.

⁶⁶USAID (PSI) have pointed out that point of use treatment may conflict with “safe-at-source” strategies, but may be pragmatic at short to medium (to long?) term measure.

10.1.14 Involve the Private Sectors in WASH

The low demand for hand pump spare parts makes it difficult for communities and artisans to access spare parts within a reasonable distance and at an affordable price. MoWIE has made an assessment of supply chains in 2010.⁶⁷ This study showed that supply chains for hand pumps and spare parts, largely driven by market forces, were still in their infant stage in Ethiopia. The study recommended that procurement of hand pumps and spare parts be combined and private suppliers be motivated to open and operate sub-regional outlets. The practice of providing spare parts free to communities should be discouraged in order to increase the incentives for private suppliers to enter this market.

To promote economies of scale, sanitation and hand pump supply chains can be combined and piloted using trained women and youth entrepreneurs that, if successful, could be considered for scaling up. To make supply chains more commercially viable products relating to a healthy household environment like household water treatment and safe storage could also be combined with hand pump spare parts and sanitary products.

The relationships between microfinance institutions and the water and sanitation sector needs to be developed in order to jointly build sustainable access to affordable credit. There is the potential for the poor to better meet their water and sanitation needs through affordable micro-finance loans. However, the business case would have to be developed through case studies and trials to establish affordability for customers and profit for entrepreneurs and suppliers. At the same time, supply chain assessment can be done by directly involving the various actor and stakeholders of the WaSH sector. Business development is covered in **Annex 2** and **Annex 5**.

It is crucial to identify the degree to which these opportunities are constrained by poor quality or lack of access to financial services, identify WaSH supply actors and stakeholders that will benefit from the intervention and finally bring these players together with those who possess the incentives, knowledge, skills and resources to develop and deliver appropriate financial products and services.

10.2 Long term recommendations

10.2.1 Knowledge Management

The fundamental “Core” or “Enabler” of the OWNP is Knowledge Management, particularly in terms of (a) what is already installed, (b) what is being built, (c) who is operating, (d) who has “ownership”, (e) what is functional, (f) what is the performance, (g) what are the gaps, etc.? The **OWNP Phase I Review Report** comments upon the current status of the National WASH Inventory and current M&E systems.

A primary “enabler” is Knowledge Management (KM): It is imperative to know the status of WASH through WASH Inventories and M&E.

⁶⁷Region Specific Supply Chains for Hand pumps and Spare Parts in Ethiopia, MoWIE, May 2010.

The National WASH Inventory (NWI 1) was based on a combination of WASH related data from 12 million households and scheme inventories of communal water supplies and WASH facilities at health institutions and schools for rural and urban areas⁶⁸.

It is suggested that a new, or complimentary, way to achieve M&E and NWI may be through regular collection from, and tighter control of, data from woreda, towns, institutions, developers and operators, possibly by strengthening of the NSCO/RWCO hierarchy and their agents. One suggestion for how this could be achieved is illustrated in two boxes in **Sub-section 11.4**.

A data base will be required, perhaps similar to, or adapted from, the existing “Who, What, Where, why (4W) Scale-up Form” WASH Cluster spreadsheet⁶⁹ that currently includes regions, zones and woredas (excluding woredas in big cities) and is circulated to all participating DPs and CSOs⁷⁰ on a regular basis for updating emergency WASH activities and contributions. There are over 1,000 urban areas in Ethiopia, but these are not included on the spreadsheet. It has been proposed⁷¹ that the already existing 4Ws matrix could include collecting development partners (IFIs, Bi-lateral, CSOs, etc.) information activities as well as for the OWN development activities⁷².

10.2.2 Strengthen Groundwater and Surface Water Development

Water Source Development be based on best available hydrological and hydrogeological information, interpreted by qualified professionals. Alternative water supply and energy sources should be studied at each project site to meet present and future water, fully taking into account the impact to/from other existing and proposed projects in the same surface and subsurface catchment zones.

Water utility staff need continuous specialist training and to receive technical assistance to improve utility management, administration, and operations to ensure sustainable operations, including full cost recovery.

This subject is “multi-sectoral” since there are many competing pulls on water resources (agriculture, hydropower, pastoral, urban and rural) and many risks (industrial, commercial and domestic liquid and solid wastes, refugees, IDPs and climate influenced emergencies). Although water resource management and monitoring are vested in the MoWIE and regional water bureaus, in practice both water and environment bureaus have little control over public and private water resource exploitation and over pollution of aquifers and rivers.

The majority of water projects in Ethiopia are based on groundwater so that the current program of hydrogeology mapping needs to be accelerated and expanded to all parts of the country, but prioritizing areas where high borehole failure rates are occurring. Where groundwater sources are known to be limited, then (1) artificial aquifer recharge needs to be considered in collaboration with partners responsible for catchment management and (2) alternative surface water sources need to be thoroughly investigated.

⁶⁸ Summary of a seminar 8.4.13 by Katherine Welle on NWI, “lessons learned and maximizing value” which in turn refers to data from *Butterworth et al 2013* and *Debela 2013*

⁶⁹ latest version 7.9.17

⁷⁰ It does not include all DPs and CSOs; it is just a list of those involved with emergency WASH.

⁷¹ UNICEF Sept 2017

⁷² According to CRS, Sub-section 4.2, the program does not work much in CSOs/NGOs mapping and no effort is shown to bring NGOs to the program. CRS is very much interested to participate in achieving the program target, but recommends that the program coordination needs to be strengthened and work on mapping of CSO and NGO since their contribution is significant for the program achievement and NGO needs to merge in to the program

Groundwater development should be done in parallel with innovative systems for catchment protection to improve recharge, involving agriculture, irrigation and livestock authorities and enterprises. Long term monitoring stations (purpose-built piezometer tubes, capped wells and pumped wells with flow meters) will be required to monitor levels, quality and discharge to check on long term resource depletion or improvement. Trials may be undertaken on artificial recharge to improve sustainability of relatively shallow aquifers not topped by aquicludes.

Supply chains need to be improved that better anticipate procurement needs and to create stocks of most common spare parts for drilling equipment to avoid delays. This will likely involve easing of import restrictions (approvals of letter of credit) and applying tax breaks: Import taxes held at government level do not benefit WASH implementation where funding will come from a multitude of sources.

10.2.3 WASH Sector Reform

The question has been asked⁷³ as to whether it is “realistic to monitor and regulate the existing large number of schemes ... 280,000 at present, with an additional 50,000 per year anticipated”? To this remark may added that there are over 1,000 urban areas, over 450 woredas, and large number of villages and pastoral communities, in 9 autonomous regions and two cities divided into over 70 zones.

In order to monitor and regulate WASH operations (and implementation) in Ethiopia, it has become clear that the water sector will need to undergo some reorganization. GTPII approaches this through (a) establishment of independent water supply and wastewater service regulatory agency (Goal 4.2), (b) ensure good governance in rural water supply (Objective 2), and (c) increase the involvement of private sector (Goal 4.4). Such changes will need to allow for increased catchment protection (Goal 3.5) and be able to conserve water through reduction in NRW (Goal 3.1).

The IUSHS&SAP approaches WASH sector reform principally through voluntary and formal clustering of urban service providers and delegation of ring-fenced operations and services to private and community enterprises. On the rural side, it has recently been decided⁷⁴ to establish independent sector regulator including performance monitoring and benchmarking of service providers, formally recognize and support rural public utility management for complex large multi village schemes, shift from community management to community participation, allow for cross-subsidies and delegate certain functions.

The Ministry of Finance is emphasizing the need for an independent regulator, particularly in urban settings but increasingly in rural settings as well to include complex rural water supply scheme management.

In view of the above, the Guidelines (**Sub-section 10.6 and Annexes**) suggest possible new implementation and operation modalities both for urban and rural WASH service delivery⁷⁵.

The primary “WASH Sector Reform” principles that may be applicable in the Ethiopia situation and identified so far include, but are not limited to, the list in **Table 18...** below. Some sort of new “Implementation and Operational Modality” is envisaged that is guided by this list and which will (a) address the bottlenecks

⁷³Dr Geremew

⁷⁴Rural Public Utility O&M Implementation Manual for Multi Village Water Supply Schemes

⁷⁵COWASH: *Clustering of weak water utilities might be good to make them financially and technically viable but this can happen or be implemented in a step wise approach. To start with private sector maintenance service then to proceed with operation of the whole system. It can be applicable where there is enabling environment and readiness criteria that utilities have financially feasible business plan and are technically viable to support the adjacent utility.*

identified under Phase I review, (b) take on board GTP and SDG goals and (c) allow as far as possible for new strategies, guidelines and directives as they are adopted/issued.

As discussed above, the Ethiopia WASH sector is complex and the OWP rightly addresses it through the “Framework”, or process, of Integration, Harmonization, Alignment and Partnership. This process will become more complex when the “Cross-cutting and/or new areas” are taken into consideration.

Water and sanitation sector reform is an essential component of creating an enabling environment for both urban WASH and for MVWS systems. However, this will necessarily involve an extended change process (beyond 2020) although, as described, there are actions that can be continued or initiated in the short term, such as clustering and delegated management. **(Principles in ANNEX)**

10.2.4 Resilient and Sustainable WASH Programme in Arid and Semi-Arid Drought Prone Areas of Ethiopia

10.2.4.1 Rural and urban WASH Resilience

Rural WASH presents particular challenges from water stress, related to population and livestock increases, deforestation, climate change, over-pumping of wells, etc. Industrial scale irrigation may also significantly impact on traditional village and pastoral water practices. Where there are towns and cities nearby, the demand for water for domestic, commercial and industrial uses may also compete/impact surrounding village water supplies (see GTP II Goal 3.5 related to catchment protection).

Low reliability of shallow wells is currently being tackled through “networked villages” whereby several villages and livestock watering points are served from a single deep borehole. Where sustainable recharge is insufficient then consideration is being given to very deep boreholes to tap geological water reserves. One of the main challenges is affordability, which signifies the need for sustainability master planning and feasibility studies, or viable business models, as described in **Annex 2**. Electricity production through diesel generators to power down-hole submersible pumps is expensive and use of alternatives (such as solar power and hand powered deep pumps) need to be expanded for rural areas, particularly where hydro-power (or large scale solar and wind generated) grid electricity is out of reach.

SDG 6.4 calls for a substantial increase in water-use efficiency across all sectors, to ensure that water withdrawals are sustainable in order to substantially reduce the number of people suffering from water scarcity. In the urban context this means 100% metering, equitable but sustainable tariffs, economy of scale, low NRW, supportive management, etc.

All these measures would improve both WASH sustainability and WASH resilience.

10.2.4.2 Emergency WASH

Emergency is an unfortunate happening in a country or society manifested in different ways. The most common emergencies are flood, fire, draught, etc. In Ethiopia common emergencies are created during draught and flood. “Droughts” in Ethiopia have become a more frequent than used to be in the past. This creates water shortages usually requiring water trucking which is estimated to be 35 times more costly, per year, than annualized capital and O&M costs of fixed water systems, often involving very deep boreholes. Details of what preparation needed is indicated under emergency component above.

During emergency people in the affected areas may have to move to a different presumably safe location. In this instance the most affected are children, women, and the elderly. The most important need of this affected population in such instances is food, water, sanitation and hygiene services and shelter which are difficult to have in place unless prior preparedness is made.

According to UNICEF Preparedness for emergencies include

- Planning for emergency staff deployment
- Pre-positioning of strategic supplies
- Preparation of pre-approved contracts with local implementation partners (such as water trucking companies) and suppliers
- Advance coordination arrangements with government partners and other stakeholders through the cluster approach.

Ethiopia is in a better position in tackling emergencies due mainly of its infrastructure and mix of professionals that can be deployed for emergencies at any level. However, to be better prepared:

- Sector staff should have appropriate basic training
- A manual for WASH emergency which will include application of :
 - Chlorination, storage and distribution of safe water
 - Construction of safe latrine, hand washing station, shower services and operation and management arrangements
 - Solid waste collection and disposal facilities

These demand a budget set aside for emergencies with the necessary financial procedures to follow during emergencies.

10.2.4.3 Climate screening for WASH

To improve year-round water security and resilience of schemes to drought, the Program will promote and support better understanding of available water resources and climate risk and improved design and siting of schemes. This will include:

- developing linkages between WASH and water resources assessment and monitoring
- mapping and understanding of groundwater resources
- development and use of simple climate risk screening and assessment tools – including catchment screening to assess the balance between available supply and projected demand
- development and training on sizing and siting of rural water points to reduce vulnerability to dry seasons and drought periods
- Meetings held with relevant stakeholders in agricultural and environmental departments to ensure coordination with natural resource management (NRM) interventions and watershed committees in vulnerable areas.

10.2.5 Enhance the use of Renewable Energy

Depending on the hydraulic power and total power needed, there is a range of pumping system, for which a power source is economical. Photovoltaic is estimated to be the most economical for small power system. PV systems are currently considered when the hydraulic power is from 200 to 1500 m³/day and a power rating of 0.5kW or less: In this case the PV system has been found to be viable.⁷⁶

Rural populations in Ethiopia are still, largely, not reached by the national grid. Although hydropower, wind farms, and solar arrays are, to a greater or lesser extent already major contributors to the national grid, probably only solar energy offers the potential for localized remote systems. Biogas has potential at

⁷⁶ MOH and MoWIE (2012) Design and construction Manual for WASH facilities in Health Institutions

intensive livestock centers. Rural Afar and Somali area has extremely high solar irradiation and very limited grid access in remote areas on top of power interruption. Access to water in the same regions is also a critical issue due to limited borehole capacity both quality and quantity.

Renewables, especially solar PV, can provide a solution, but more trials need to be undertaken to establish viability for large multi-village schemes where very large land area is needed for the arrays.

While the upfront investment on solar based water supply schemes is higher than for generator driven systems, the financial costs on a life cycle basis are often more favorable since the much lower running costs, both due to the free supply of energy, improved reliability of photovoltaic and less moving parts to be maintained. There is also experience in Ethiopia⁷⁷ that solar pumping systems are more reliable than conventional hand pump systems, although walking distances will be increased due to more centralized installation.

World Vision uses three levels of solar pumping systems:

- 1.5 l/s system powered by 2 solar panels
- 2.5 l/s system powered by 4 solar panels
- Large systems for extracting deep groundwater (>250m) powered by up to 200 solar panels

Such type of scheme can be applied both for point source rural scheme (with small size overhead tank and standpipe) and piped water supply with distribution pipeline network.

⁷⁷World Vision and USAID (lowland) discussions March 2018

11. Technical Assistance and Academia Support

11.1 Enhancing Technical Assistance

The Program is pursuing ambitious targets while at the same time seeking to fill gaps in capacity at a number of levels. This, coupled with the relative size and complexity of the Program, the many new roles and responsibilities it entails at all levels, the absence of a robust regulatory and monitoring framework and the promotion of new organizational framework, contracting modalities and technologies, make the provision of relevant and timely Technical Assistance (TA) in addition to what are locally available. The technical assistance relevant for Phase II will include:

1. Support to establish a robust capacity building program to contextually design, deliver, evaluate, learn and document result
2. Facilitate support in hydrogeological mapping/ground water mapping
3. Support in establishing mobile technology for real time monitoring and data collection mechanism in regions and woredas.
4. Introduce new technologies in water and sanitation such as wind and solar and other energy sources and facilitate demonstration on the ground whenever possible.
5. Support regions and woredas conduct simple applied research on WASH with a view to support enhancement of sustainable and equitable services.

TA will be provided at federal, regional, city, zonal, woreda and town levels. Planning, coordination, management and quality assurance of TA will be the responsibility of GoE through its contacting entity.

The modalities for the Technical assistance will include

- (i) by GoE through WPMUs in participating ministries and bureaus at federal, regional or city levels using funds from the Program budget; or
- (ii) Directly by a partner, which can be a bilateral or multilateral aid agency, CSO or other organization.

In both modalities, TA will be provided according to a consolidated annual WASH plan and budget, including a procurement plan as approved by the NWCO. Any Technical assistance will be short term and output must include hand-on training to local actors.

11.2 Enhancing the integration of WASH Training Centers of Excellence

11.2.1 Introduction

There is significant peer-reviewed academic research published both within and outside Ethiopia related to and impacting on rural and urban WASH; for instance, pollution of rivers and lakes through industrial, commercial, domestic solid and liquid wastes.

However, the link between this research and those involved with policy making, regulation, enforcement, service delivery, community engagement, etc. may be weak. The enabling environment can be strengthened through establishing strong links with academia, particularly through advocacy, capacity building, sharing good practice, professionalization, etc.

11.2.2 Ethiopian Water Technology Institute (EWTI)

A Proclamation was issued in June 2013 establishing the EWTI (formerly the EWTEC) as a research and training institute with an Advisory Board appointed by GoE. The Institute prepares and conducts short term practical training on courses designed to fill identified skill gaps of manpower working at different levels in water development and related activities. It will also conduct long term trainings as per the national technical and vocational education and training (TVET) qualification framework on higher level programs in accordance with the manpower requirement of the sector.

The Institute will offer higher-level training to graduates from TVETCs and other institutions as well as the private sector. The Institute also offers training to TVETC teachers. The Institute is also in a position to support the improvement of skills to micro and small enterprises that can in turn provide WASH products and services.

The Program will make use of the services of EWTI to provide training to WASH staff, TVETCs and the private sector to increase the availability of skilled personnel to provide services to the WASH sector. The Program will enable EWTI to increasingly become a center of excellence with state of the art skills, knowledge and competence. It will also support research and development on WASH sector wide identified priorities; and promoting innovation and knowledge management in the WASH sector through learning and sharing events and other appropriate measures.

11.2.3 TVETCs and HSCs

In WASH capacity assessments of 16 TVETCs and HSCs conducted by partners before the OWP 2013 document published/circulated, the following capacity gaps were identified and these capacity gaps are still existing:

In WASH capacity assessments of 16 TVETCs and HSCs conducted through SNV and Water Aid, the following capacity gaps are identified:

- Limited and/or non-existence of essential physical and training resources, including equipment and tools, reference books, logistics and support facilities
- Not adequately consulting relevant WASH stakeholders when planning training

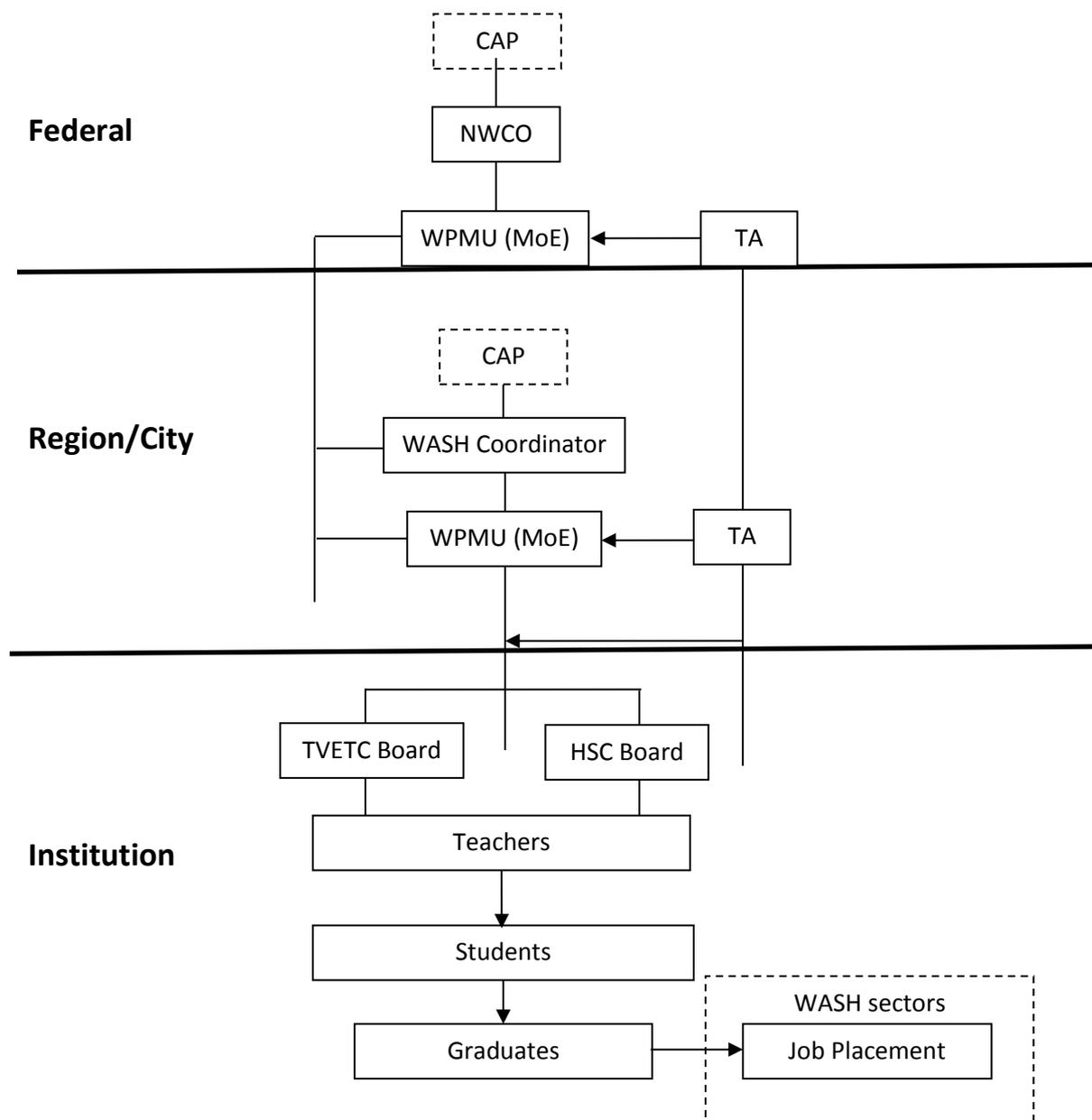


Figure16: Organizational Diagram for Support to TVETCs and HSCs

Key: CAP - Consolidated Annual (WASH) Plan

WPMU- WASH Program Management Unit

- Deficiencies in assessing and responding to their environments and developing appropriate training strategies and programs
- Skill gaps among instructors in conducting practical training, with only a few teachers having completed teaching methodology courses
- Limited knowledge of WASH policies and strategies

To further institutionalize and professionalize the training of much-needed skilled technicians for the WASH sector, the Program will seek to replicate and scale up the support to TVETCs and HSCs provided through UNICEF, SNV, Water Aid and other organizations to additional TVETCs and HSCs. This assistance will include

support to curriculum development and lesson planning, teacher training and basic training equipment and tools for workshops and laboratories.

11.2.5 Health and technology Universities

The graduate level study on WaSH (offering Master of Science in WASH) which is established at Wollo University is one area where collaborative actions will be a good capacity building resource in the future. Other universities and institutes that are training engineers, environmental health, environmental engineering, water engineering etc... are good resources that can be used in many types of technical assistance, research, design and consultancy services.

12. Program Monitoring and Review

12.1 Introduction

Due to the size and scope of the Program and its new elements, procedures and organizational arrangements, it is essential to establish during Phase II a monitoring program to evaluate the planning, learning, implementation and evaluation process through:

1. Monthly and quarterly progress and financial reports from kebeles, woredas/towns⁷⁸, regions/cities and zones using WASH MIS
2. Status/issues reports by the NWCO and WASH Coordinators to quarterly meetings of the One WASH Steering Committees at federal and regional levels
3. Semi-annual Joint Technical Reviews (JTR) and follow-up actions track the level of implementation of the undertakings agreed in the MSF
4. Annual Multi-Stakeholder Forums (MSF) and follow-up actions at national and regional level
5. Infrastructure Audits/Sustainability Checks and follow-up actions
6. Joint supervision visits to Program sites
7. TA and hardware support to strengthen Program monitoring and reporting systems at all levels
8. Service delivery surveys, assessments, research and evaluation for advocacy
9. Learning exchanges by preparing an annual calendar of events

12.2 Key Performance Indicators

12.2.1 Introduction

The Program's main instruments for monitoring, verification and impact assessment consist of a results framework and key performance indicators. The Program's Results Framework contains outputs, outcomes, indicators and impacts for each Program component and for the Program as a whole. The Program's results framework is presented in Annex

Key performance indicators (KPIs) will have the following characteristics:

- Related to important policies, issues and objectives
- Clearly defined and easily measurable and consistently applied
- Few, manageable for regular reporting and provide required information for decision-making
- Allow performance to be assessed regularly and tracked over time to inform key decisions

The following key performance indicators (KPIs) will be used in the Program:

⁷⁸ Numerical Monthly reports from kebeles, woredas and towns may be done by mobile phone or if mobile system is established from the server.

Table.11: Key Performance Indicators (KPI)

S.No	Indicator	Definition	Intervention area	Target		Achievements	
				2019	2020	2019	2020
Access							
1	<p>Access: Percentage of people with access to 25 liters per capita per day within a distance of 1 KM radius in rural areas and 100l/c/d for category 1 town/cities;</p> <p>80 l/c/d for category 2 town cities;</p> <p>60 l/c/day for cat. 3;</p> <p>50 l/c/d for category 4; up to the premises and</p> <p>40l/c/d for category 5 towns/cities within a distance of 250 mtrs with piped system</p> <p>Coverage of 75% of the urban population.</p>	<p>Proportion of people with access to 25 l/c/d water supply source within 1 km radius for rural and from 40l/c/d for category 5 towns to 100l/c/d to category 1 towns/cities in urban areas</p>	Rural				
			Urban				
Functionality							
2	Percentage of improved water supply schemes that are functional	Proportion of improved water sources that are functional at time of spot-check	Rural				
	Percentage of TWU supplying water for more than 16 hours a day for all costumers	Number of towns supplying water more than 16 hours a day to all customers divided by total number of towns	Urban				
	Percentage of non-revenue water	Difference between water supplied and water sold expressed as a percentage of net water sold	Urban				
Quality							
3	Percentage of acceptable water discharge quality tests	Proportion of water quality tests complying with national water quality guideline	Water Quality				
	Percentage of acceptable wastewater discharge quality tests	Proportion of wastewater discharge quality complying with WHO guidelines which is	Wastewater Quality				

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S.No	Indicator	Definition	Intervention area	Target		Achievements	
				2019	2020	2019	2020
		30/30mg/l - BOD and Suspended Solids.					
4	Sanitation: Percentage of people with access to improved human excreta disposal methods Percentage of Kebeles with sustainable ODF achievement	Proportion of people with access to improved human excreta removal within community (Kebele, Woreda, Regional, National level) Proportion of kebeles in woredas with ODF achievements	Rural				
			Urban				
			Shared				
			Private				
5	Hand washing: Percentage of households with access to hand washing facilities	Proportion of households with access to hand washing facilities in community(kebele, woreda, region and national level)	Rural				
			Urban				
6	School WaSH: Percentage of schools with improved water supply (tap/100 student ratio)	Proportion of schools with access to adequate water facilities in kebele with tap/100 student ratio (woreda, region and national level)	Rural				
			Urban				
	Percentage schools with improved human excreta removal (stance/50 female/100 male students)	Proportion of schools with access to adequate human excreta removal in kebele stance/50 female student/100 male student ratio (woreda, region and national level)	Rural				
			Urban				
	Percentage of schools with MHM facilities to adolescent girls	Proportion of schools with access to MHM facilities within community (Kebele, Woreda, Regional, National level)	Rural				
			Urban				
7	Health WaSH: Percentage of health facilities with improved Water supply	Proportion of health facilities with access to adequate water supply facilities in kebele (woreda, region and national level)	Rural				
			Urban				
	Percentage of health facilities with improved human excreta removal	Proportion of health facilities with access to adequate water supply facilities in kebele (woreda, region and national level)	Rural				
			Urban				
8	Management: Percentage of active WASHCOs/ Hygiene and Sanitation Community Groups Percentage of active Water Boards	Proportion of active WASHCOs/Hygiene and Sanitation Community Groups proportion of active Water Boards	Rural				
			Urban				

Draft- One WASH Program Document Phase II Updating- May 2010

S.No	Indicator	Definition	Intervention area	Target		Achievements	
				2019	2020	2019	2020
9	Gender: Percentage of WASHCOs/ Hygiene and Sanitation Community Groups with 50% + of members women at decision making position	Proportion of women members at decision making position of WASHCOs/health and sanitation community groups	Rural				
	Percentage of water boards with 50% of members' with women at decision making position	Proportion of women members at decision making position of Water Boards	Urban				
10	Equity: Woreda/kebele deviation from the national average	Mean deviation from the average number of persons per improved water point by kebele and woreda. Same way by woreda and region as well as region by the national	Rural				
11	Capital Cost: Per capita investment cost	Difference between per capita costs for rural water supply at the beginning of Program and at intervals during the Program	Rural				
		Difference between per capita costs for urban water supply at the beginning of Program and at intervals during the Program	Urban				
12	O&M : Percentage of WASHCOs covering O&M costs, percentage of water utilities covering O&M and replacement costs	Proportion of WASHCOMs who are able to cover O&M costs from among the total number of organized WASHCOMs in the region	Rural				
		Proportion of water utilities who are able to cover their O&M and replacement costs through tariffs from among the certified utilities in the towns/cities	Urban				
13	Percentage of under-5 children mortality rate decrease	Proportion of Under-5 child mortality within a given time period divided by the number of under- 5 children in that time period in the region	Rural				
			Urban				
14	Percentage of under-5 children with diarrheal disease decreased	Proportion of under-5 children with diarrheal diseases within a given time period (usually 15 days) divided by the total number of under- 5 children in that time period in the region	Rural				
			Urban				

12.3 Reviews and Reporting Process

12.3.1 Review

Reviewing of the program progress at all operational levels periodically is part of the monitoring process. For this reason there should be a quarterly, biannual and annual review program for WASH at woreda, regional and federal level respectively to help the program understand on the development levels of the action plans, the challenges and document important learning. The outcome of these reviews will be an input or discussion points for the progress meeting and reporting or timely sharing of information and exchange of data with stakeholders at all levels.

12.3.2 Progress Meetings and Reporting

Program progress meetings will be held as follows:

- The KWT will hold quarterly and annual Program progress meetings with WASH stakeholders.
- The WWT will conduct quarterly and annual Program progress meetings with Woreda WASH stakeholders including Kebele representatives.
- The RWCO will conduct biannual and annual Program progress meetings with regional WASH stakeholders including zonal and woreda representatives.

The NWCO will conduct annual Program progress meetings with national WASH stakeholders, including regional representatives.

12.4 Reporting

The diagram below shows the flow of reporting in the Program as well as existing information flows between sector ministries, bureaus and offices. Arrows indicate direction. (Fig. 8.1)

The Program will ensure that these indicators are understood and used by relevant parties and are contained in the consolidated WASH progress reports to be generated at all levels.

12.4.1 Reporting from Kebele to federal level

Program progress reports will include both physical and financial status. Monthly and quarterly Program reports will show physical progress against planned activities and/or outputs, while the annual report will show achievements in meeting annual targets, i.e. output and outcomes

- The KWT submits monthly⁷⁹, quarterly and annual WASH progress reports to the WWT
- Woreda (WWT) submits monthly⁸⁰, quarterly and annual WaSH progress reports to Zone/Region
- Zonal WASH team Submit quarterly and annual WASH progress report to RWCO
- Implementation partners (CSO) submit monthly, quarterly and annual consolidated report to RWCO
- Region (RWCO) submits monthly, quarterly and annual WASH progress reports to the NWCO
- Development partners submits quarterly and consolidated annual reports to NWCO
- The NWCO submits monthly, quarterly and annual WASH progress reports to the NWTT and through it to the NWSC. The DAG will receive copies of these reports from the NWCO.

⁷⁹ Monthly reports from kebeles may be done by telephone.

⁸⁰ Monthly reports from woredas may be done by telephone.

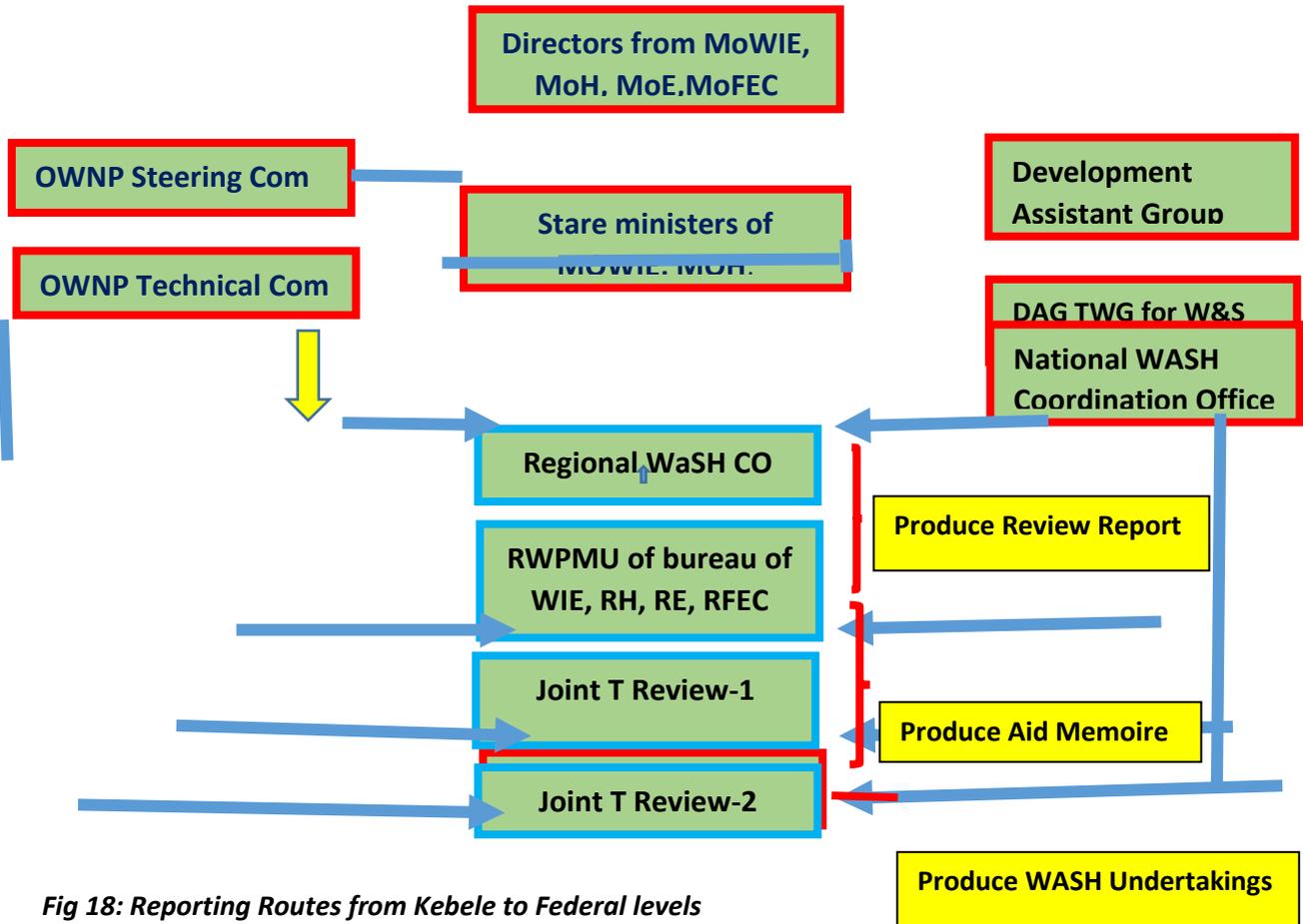


Fig 18: Reporting Routes from Kebele to Federal levels

12.4.2 Reporting at federal level

The NWCO and Technical Teams at national and regional/city levels in collaboration with independent agents will carry out Program monitoring and reviews as follows:

- The NWCO will receive and compile progress and budget utilization reports from the regions and cities for presentation to the NWSC and provide feedback to the regions and cities on issues requiring attention from the federal level.
- WCO and in regions, towns and woredas by ensuring that sufficient staff are in place, training M&E staff in monitoring procedures and responsibilities, data management, reporting and related subjects. Training will be followed up by on-the-job coaching and mentoring.
- Technical Teams at national and regional/city levels will be responsible for following up on implementation of the recommendations of the JTR and MSF and submitting a quarterly status report to the NWCO commencing within three months of each JTR/MSF.

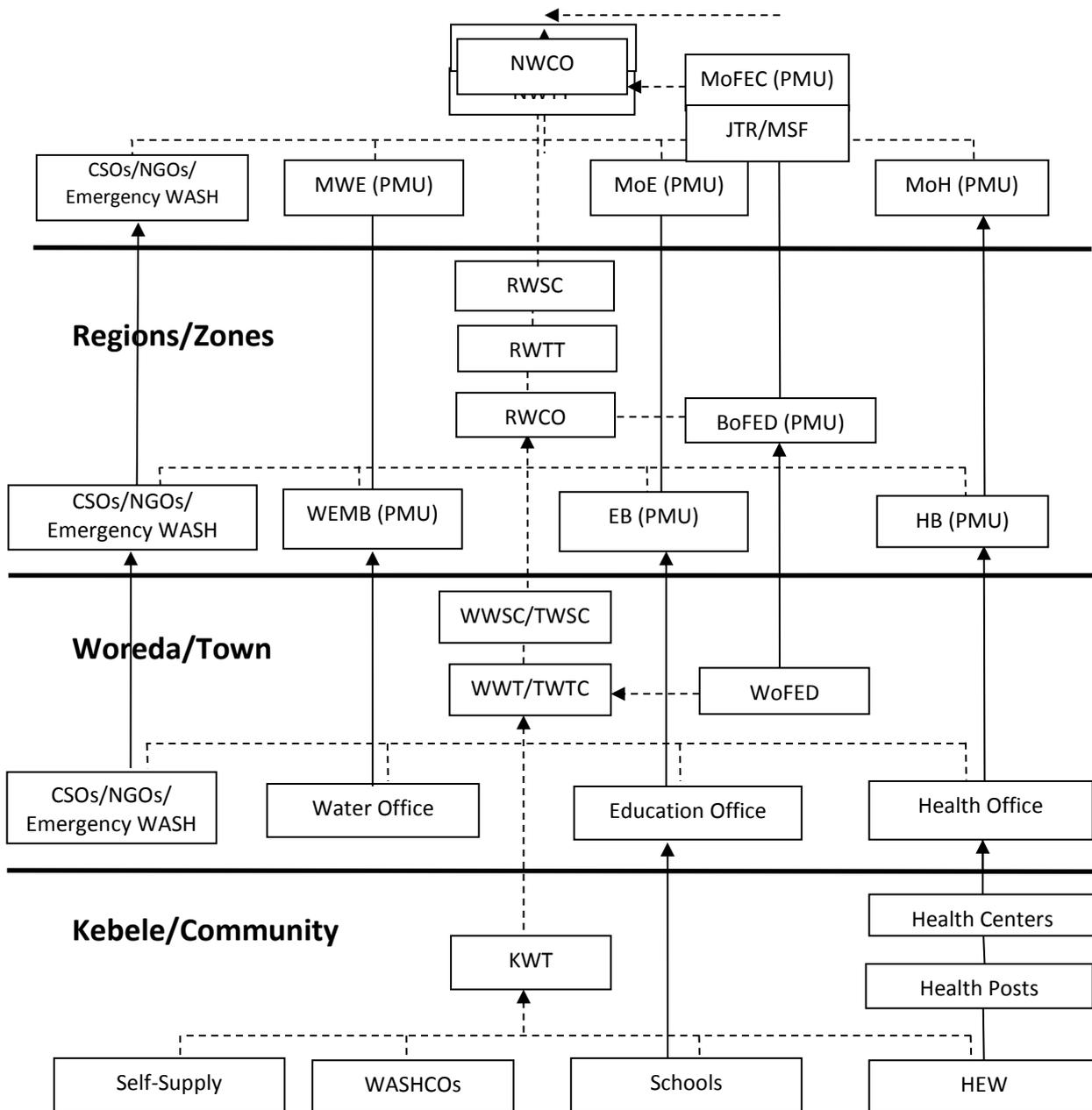


Figure 18: Program Reporting

Key:

----- Program Information Flow

NWSC - National WASH Steering Committee

NWTT - National WASH Technical Team

NWCO - National WASH Coordination Office

RWSC- Regional WASH Steering Committee

----- Existing Information Flow

RWCO - Regional WASH Coordination Office

WWSC/TWSC - Woreda WASH Steering Committee/Town WASH Steering Com.

WWT/TWTC - Woreda WASH Team/Town WASH Technical Com.

KWT – Kebele WASH Team

12.5 Mobile Technology for Transmission of Data and Information

The National WASH Inventory (NWI) represents a large and important step forward in the understanding of the water supply and sanitation situation in Ethiopia. The NWI is a standard, national survey of WASH coverage in Ethiopia. The NWI 1 was a major undertaking of the MOWIE. The NWI was implemented by the National WASH Inventory Project Office (NWIPO) at the Ministry of Water and Irrigation and Electricity, during 2010-11. All regions and cities were included in the NWI.

NWI2 is expected to be finalized during Phase II of OWP. It will be using the experience gained in conducting WASH inventories in 2010-11 (2013-14 EFY) using mobile phones to transmit and collect information.

The NWI 2 will involve as has been done for NWI 1 all community water schemes in rural areas and all urban water supply systems in the regions where each water point will be identified according to its coordinates and Information collected, including the number of users in woredas and kebeles in the country. Information on WASH in schools and health institutions will be also collected. NWI 2 results are expected to be officially released by MoWIE which is currently the chairperson for OWP Steering Committee to WASH stakeholders during the Phase II period.

The continued rapid expansion of mobile technology in rural and remote areas of Ethiopia creates unique opportunities for applications that support transmission of near real time information. This development opens up the possibility for community level monitoring using cell phones.

To harness this potential, the Program will support:

1. A One WASH website with access to current WASH plans, budgets, progress reports, WASH inventory data, information on upcoming events and relevant documents and maps.
2. Training in use of GPS devices and PDAs/tablets for generating and storing WASH data
3. Expanded internet connectivity for woredas
4. IT service and troubleshooting contracts
5. Training in use of MS Excel for data entry and reporting
6. Dedicated links to MIS and databases in MoWIE, MoH, MoE and MoFEC

These services will be provided by a firm procured through NCB and monitored and supervised by the NWCO. Experience from implementing the NWI in Somali Region using mobile phones and software for data entry and transmission will be very useful in this regard.

13. Funding and Financial Management

13.1 Introduction

The total funding required to achieve the GTP II water supply, sanitation and hygiene targets is **USD 5.0 billion (Section 16)**.

To achieve such GTP targets in the set timeframe (to 2020) will be entirely dependent on:

- much greater sector capacity
- involvement of a much stronger NWCO (and associated RWCOs)
- a more facilitated and streamlined fund distribution system, that is, procedures in place to ensure the smooth flow of funds
- fast-track procurement processes
- contracting of consultants, suppliers and contractor at scale (large packages) and on an international procurement basis
- timely availability of adequate financial resources
- systems in place to track implementation progress and fund utilization

See **Section 15** for details of plans to improve procurement and contract management.

13.2 Principles

The guiding principles for Program financing are:

- The cost recovery strategies promulgated in the water resource management policy
- Different financing sources for urban water, urban WASH, rural WASH and CR-WASH
- *Institutional WASH ring-fenced and channeled through sector budgets*
- Consideration of existing financing practices
- Consideration of the available financial resources
- Consideration of the CSO (NGO) contribution in WASH, especially in rural areas
- Considerations of all bilateral, regional and international organizations contribution for WASH
- Urban residents through utility funding should contribute at least the same share of costs as rural communities

13.3 Assumptions

The assumptions for Program financing are:

- To determine the total financial contributions from Government, budgets at federal, regional and woreda/city levels are included
- Community contributions are assumed to be 10% for both urban and rural communities. Rural communities will contribute 5% in cash and 5% in kind (labor, materials, etc.) Community contributions for low and high technology systems will vary during implementation considering the ability of communities to contribute. The fact that rural water services is aiming at MVS and rural pipe system may need to set up a tariff system than only depend only on 5% contribution. The contribution of urban residents is also assumed to be 10% and will come from the utility's own

earnings. By larger utilities higher proportion of co- financing will be attempted while by smaller towns maximum contribution will be limited to 10% because of their current financial situation. However, the program encourages utilities in urban and rural areas to attain higher cost recovery ratios. In Phase II higher cost recovery ratios will be set.

- Federal and regional government contributions are assumed to increase during the Phase II planning period.
- City administration contributions are computed by assessing current matching fund allocations for water supply and wastewater projects. It is also assumed that these contributions will increase.
- Donor contributions are estimated by assessing individual donor commitments.
- WASH contributions from NGOs are assumed to continue at the present level.
- Investment funding from water utilities are assumed as user contributions.
- Water Resource Development Fund will be accessed by towns and cities in Phase II better than what was contributed in Phase I.

13.4 Funding Contributions

Sources and size of projected funding for the Program are shown in the graph below. During Phase I there was a funding gap of 32% which amount to 0.778 billion USD. According to present Phase II estimates the required budget will be **6.04 million USD** (see graph below).

Unless funding sources from government, NGOs, grant, loan or partner contribution is not fully available the program anticipates even more gaps during Phase II. Such conditions will definitely compromise the process of achieving the target set by GTP II.

1.8 of the 6,040 billion USD is identified as required under the R&S WASH Programme (Resilient and Sustainable Water Supply, Sanitation and Hygiene programme in Arid and Semi-Arid Drought Prone Areas of Ethiopia). This figure falls within the 2.0 billion USD to be allocated under a ring-fenced “CR-WASH” funding drive.

The remaining 3.2 billion USD needs to be found for the many other funding stream discussed in sub-sections below.

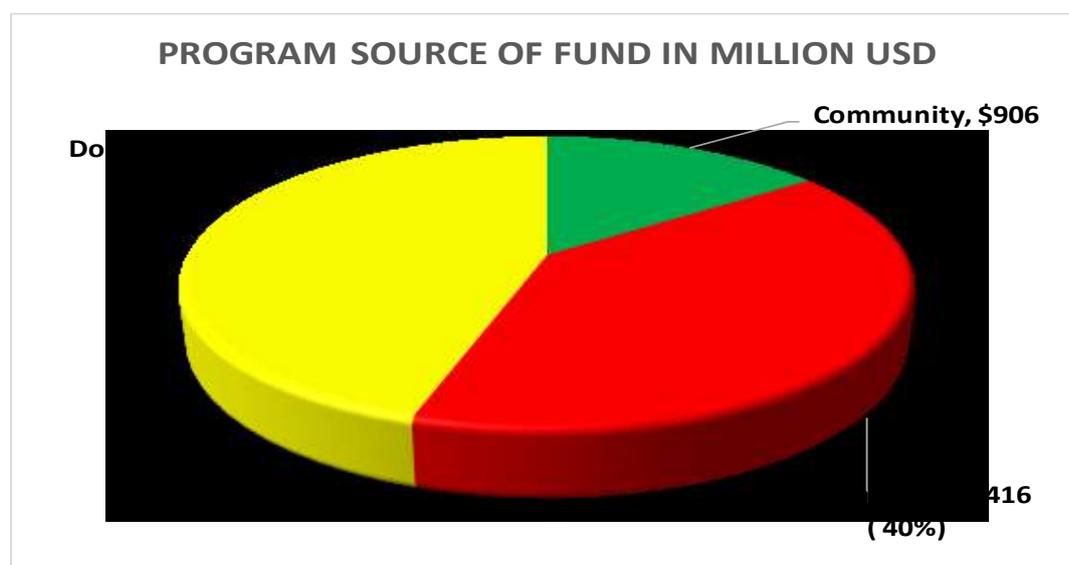


Fig. 19: Sources of fund for WASH program

Primary drivers to funding may be:

- a) reliable data bases and reporting (KM)
- b) groundwater and surface water resource mapping
- c) Regulatory enactment and enforcement (urban planning, pollution control, abstraction licensing, etc.)
- d) plans based on sustainable master plans
- e) Large package contracts for study and design, supply and implementation involving international bidding and facilitated letters of credit, etc.
- f) Water and sanitation sector reform – utility regulation (urban and MVWS), clustering of operational economy of scale utility, performance contract and KPIs, delegation, PPP, etc.
- g) country economic state, GDP (internal funding)
- h) Geo-politics (external funding)

Also:

- Strengthening performance-based program funding; creating awareness and encouraging government at all levels to allocate additional funds to WASH activities

Fund allocation to priority activities and financial disbursements for implementation of activities in accordance to approved financial plan and disbursement schedules improving incentives for the private sector to provide WASH services

- Appealing to committed donors to provide additional funding
- Appealing to interested but uncommitted donors to contribute to the Program
- Introducing cost-effective designs; water supply, drilling and borehole construction methods; low-cost technologies, cost saving measures by using renewable energy sources, etc.
- Increased emphasis on self-supply, and in urban areas on reducing demand through water efficiency audits, water conservation, reuse and other demand-management measures.
- Minimizing non-revenue water and improving revenue collection

13.5 Mitigation measures for budget availability and utilization risks

The following measures can reduce the risk of interruptions and shortfalls in budget allocation:

- Introduce a mechanism in the Joint Financing Agreement with a specific section stating that all parties should ensure the timely availability of committed funds.
- Design project financing so that the sequence of works to be financed by the GOE comes first to force GoE WASH structures to avail the committed budget
- Use all available forums to create awareness on the importance of GoE's budget allocation
- Introduce biannual forums to review availability of funds and ensure that corrective actions are taken.
- Designing mechanisms that ensure SPG (special purpose grants) dedicated to WASH are actually spent on WASH activities.
- Matching funds from water utilities, cities and regions should be on-budget and captured in budget proclamation
- National WASH Steering Committee to take steps to ensure that national authorities allocate the committed budget

- In cases where part of committed GOE budget cannot be made available for justifiable reasons, bring donor funding forward with the agreement that next fiscal year the GoE will increase its budget allocation.
- Move away from non-sustainable systems that demand perpetual budget allocation to water systems and pumping technologies that can serve communities for many years. (Shallow wells and hand pump technology has been tested for many years and its failure rate has demanded new wells and pumps every year.)

13.6 Financial management

13.6.1 Introduction

In line with the principle of alignment with Government systems, the Program will follow GoE's financial management rules and policies. MoFEC will be responsible for the overall financial management of the Program and will carry out financial management in accordance with sound financial management procedures including internal control mechanisms in line with GoE's financial management policies and guidelines.

13.6.2 Sources of Funding

Program funding comes from the following sources:

- Government of Ethiopia
- External Financing Agencies (investors/Development Partners)
- Non-Governmental Organizations (NGOs)
- Participating communities in rural areas
- Water utilities' earnings
- *Woreda municipal rates, tariffs, taxes etc.*
- Cross subsidy from other sectors (for instance, surcharge on electricity, mobile phones, luxury good, etc.)
- Internal subsidies (for instance, from water revenue to sanitation)
- CSR and other private sector funding
- Religious organizations (parish work, including *software such as BCC and clean-ups*)

Government of Ethiopia

The Government of Ethiopia's contributions come from federal, regional, town and woreda level. Government financial support for WASH is, for the most part, by way of the Block Grant that is channeled from the Federal to the Regional governments for both recurrent and investment costs.

While the block grant amount will be allocated to WASH at regional level as regional contribution, federal government contributions come as special purpose grants like the MDG fund, Food Security Program, etc. that will come to regions and then part of the fund is allocated to WASH at regional level.

Institutional (schools, health facilities, government offices, prisons, etc.) WASH should be increasing financed from ring-fenced sector budgets and *less from CWA and CSO sources*.

City administration also put substantial amount of contributions as direct grant to utilities or as co-finance to donor financing.

External Financing Agencies

Donor contributions made specifically for the Program constitute the core budget (including the Consolidated WASH Account). Donors that will contribute to the Program but not through CWA will be considered in the consolidated annual plan resource mapping.

Non-Government Organizations (Civil Society Organizations)

NGOs are investors in, and implementers of, the WASH program. Their funds, however, do not flow through government channels and are therefore “off-budget”. However, NGO planned expenditures on WASH are also included in consolidated annual plan resource mapping.

Communities

All communities undertaking WASH projects make a cash/in-kind contribution to construction/installation costs. These contributions are also “off-budget” but are recorded and reported and included in the resource mapping that initiates annual WASH budgeting in the woredas. Community contributions to the Program include contributions from rural communities and urban residents.

Water Utility Earnings

Urban resident’s contribution is through water service charges. Consequently, the water utilities contribute in OWNPs from own earnings in the WASH fund. It will be accounted at town level for grant programs while for loan financed projects it will be included in to CWA at federal level through transfers as co-financing.

13.6.3 Financial Management – Roles and Responsibility

Federal Level

MoFEC is responsible for the financial management of GoE and CWA funds. Specifically, MoFED. During Phase I activities such as opening foreign currency accounts for Development Partners and the request and receiving funds process, opening of a birr account and transferring development partners’ fund in to CWA, and transferring funds on the basis of approved plans, budgets and reports is well established.

What should be followed and strengthened hereafter are:

- Ensures that adequate internal controls are in place and adhered to
- Reports on use of WASH funds to government, Development Partners and other stakeholders
- Ensures timely replenishment of the Consolidated WASH Account and fund disbursement to implementing agencies (WPMUs and BoFEDs) and NWCO through MoWIE.

Sectoral ministries are responsible for reporting to MoFEC on all Program financial matters.

Regional Level

BoFEC is responsible for management of GoE and CWA funds at regional level. Specifically, BoFEC. At this level also opening special account, maintaining the budget of regional sector bureaus and disbursement; transferring funds on the basis of approved plans and budgets to special accounts are well established.

What should be followed and strengthened hereafter are:

- Monitors performance and receives reports from WoFEC
- Provides technical support to ensure that proper accounting systems established are being maintained in each implementing agency;
- Provides internal auditing,

- Issue of necessary detailed guidelines to all implementing agencies in the management and administration of OWP funds
- Maintains regular communication with the implementing agencies
- Ensures timely replenishment of the regional WASH account and fund disbursement to the implementing agencies (RWCO, RWPMUs, WoFEC and towns).
- Prepares and submits financial reports to MoFEC and regional government

Woreda Level

WoFEC is responsible for managing GoE and CWA funds at the woreda level. At this level also opening special account to receive WASH funds from BoFEC is well established. What should be followed and strengthened hereafter are:

- Ensuring that proper accounting systems and competent accounting staff are established and maintained
- As a member of WWT assists the WWT in the planning and budgeting process
- Facilitates timely fund replenishment
- Provides the WWT with regular financial reports
- Collects and aggregates required financial data and information and submits reports to the Woreda Administrative Council (Cabinet) and BoFEC each quarter
- Disburse payments to WASHCOs based on authorization of the WWT

Town Level

(a) Loan Component

Water utilities are directly responsible for administering the loan component transferred for water supply expansion. The system of opening accounts and transferring contribution to WRDF is established in some towns but need to be accessible to all towns and cities where all who are able to access loans should follow the following procedures.

- Opens a special account to receive loan from WRDF
- Transfers the own contribution amount to WRDF as per agreed schedule
- Ensures that proper accounting systems and competent accounting staff are established and maintained
- Provides the WRDF with regular financial reports
- Collects and aggregates required financial data and information and submits reports to the WRDF each quarter

(b) Grant Component

The grant component is transferred from BoFEC to ToFEC office. The ToFEC office disaggregates the WASH fund in water supply and sanitation component based on the approved budget. The grant for water supply improvement is transferred to the water utility. Other WASH components are managed by Town Finance and Economic Development Office.

If small town utilities recognize lack of capacity to implement the WASH fund they can delegate the regional/zonal water office in writing. They will request BoFEC to transfer the grant amount to the

regional/zonal water sector institution to implement their activities. The regional/zonal institutions should execute the plan according to their agreement and or facilitate the private sector to take part in the implementation of the approved town plan.

13.6.4 Fund Flow and Channeling of Funds

a) Fund Flow

The preferred and primary fund flow will be Channel 1b through CWA.

Channelling of Development Partners' funds will be as follows:

- Development Partners will confirm their precise contributions within the bilateral agreements between MoFEC and the individual Donors.
- Development Partners will inform MoFEC of their annual contribution not later than November for the next fiscal year based on the annual work plan agreed in October.
- Donor contributions will be channeled to special foreign currency accounts at the National Bank of Ethiopia (NBE) for each financing partners.
- Development Partners contributions are transferred from a Foreign Special Account into the Consolidated WASH Account (CWA) administered by MoFEC and
- Flow only through Channel 1b to the governmental WASH implementing agencies at federal level, through BOFEC to regional implementing agencies and to WoFEC.

Channeling of funds will be aligned to the Government's financial management system. Government contributions from federal level are channeled to BOFEC either as SPG or block grants. In both cases the regions decide the amount of money to be used for WASH. The budgeted amount at regional level will either be transferred from BoFEC to regional implementing agencies or WoFEC.

At the Woreda level WoFEC manages the WASH fund. WoFEC will open a special account for WASH funds. In Woredas where CMP projects are implemented. The WoFEC will also open another account dedicated for CMP or can outsource the channeling of the fund to a service provider (Cooperative Bank, MFI). In either case the responsibility for managing Program funds will be WoFEC.

The following figure shows the flow of funds in the Program.

B) Channeling of WASH Funds outside of CWA

B1) Channeling of WASH funds through BoFEC

Some donor investments that are not channeled through CWA are made at the regional level through BoFEC. The fund channeling at regional level will be captured by BoFEC as WASH fund and shall also be included in the quarterly financial reporting in a separate report from CWA.

B2) Channeling of WASH funds through implementing agencies

Some donors channel WASH funds through the implementing agencies like sector ministries and bureaus.

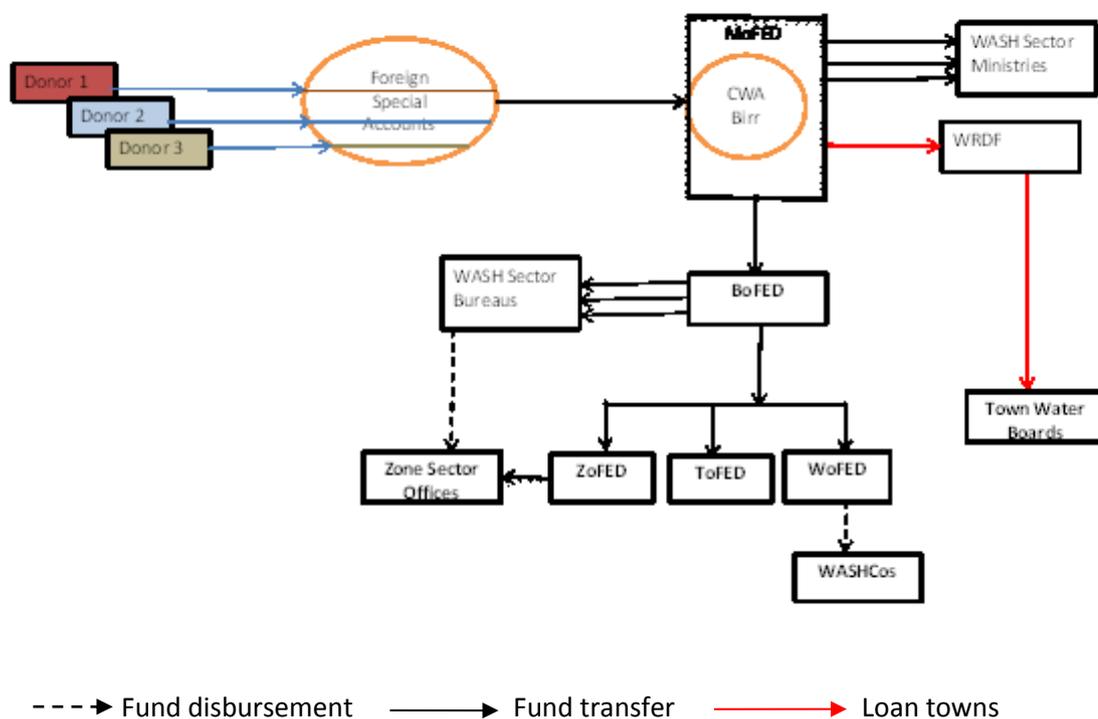


Figure 20: Program Fund Flows

However, they should be reflected in the WASH resource mapping, plans and reports and included in the *Composite WaSH Budget*. The NWCO shall design a budget tracking system and collect annual disbursements of the WASH funds and report to MoFEC.

B3) NGO WASH funding

NGO funds do not flow through government channels and are not part of Program funding. These funds may be used at community level with some contribution from woreda, regional and national levels. NGO investments are captured in regional and woreda resource mapping and included in the consolidated WASH budget. The WASH allocation and their outputs/results are included in WASH reports. Information on NGO plans, budgets and expenditure on WASH activities should be reported to the NWCO through regional WASH coordinators and by the Water and Sanitation Forum.

C) Channeling of CWA Funds

C1) Fund Channeling through MoFEC-BoFEC-WoFEC-ToFEC

Step 1: From Development Partners to the Consolidated WASH Account

Step 2: From the Consolidated WASH Account to Federal and Regional Implementing Agencies (IAs)

On instructions from MoFEC, the National Bank of Ethiopia transfers funds:

- **Federally** – into accounts opened for the three sectoral ministries (WPMUs) and MoFEC for federal-level expenditures and for the NWCO into accounts opened at the MoWIE and to WRDF for the loan component
- **Regionally** – to BoFECs for onward transfer into accounts opened for:

- the RWCO into accounts opened at regional water bureaus (for joint Program support)
- the three sectoral Bureaus and BoFEC (for WPMU-specific expenditures)

Fund Transfer from WRDF to Town as Loans

WRDF receives transfers from MoFEC for the loan component:

- Transfers payments to special accounts of town water boards
- Matching funds from utilities, city administration and regions will be transferred to special account in WRDF

Transfers from BoFEC to regional IA and Zones/Woreda Finance Offices

- Regional /Zonal Sector Offices - BoFEC disburses funds to:
 - Regional Sector Bureaus for WASH expenditure
 - Zonal Finance Offices for WASH expenditure

Regional Water Bureau can delegate WASH activities to be effected by a stronger Zonal Sector Offices. The budget will be disbursed from regional water bureaus.

- **Town/Woredas** - BoFECs also open accounts for, and disburses funds to WoFECs for WWT expenditures Participating towns (for town water supply and sewerage projects and other WASH activities)
- **CMP funds through WoFEC**
BoFEC will transfer WASH funds directly to WoFEC's account. In this case WoFEC will open a special account dedicated for community WASH investment managed by the Woreda Finance Office. WoFEC disburse WASH funds to communities after approval by WWT from the special account.

C2) CMP Fund Transfers through Service Providers

A main feature of the CMP approach is that funds for construction/rehabilitation of WASH facilities are channeled to the WASHCO who is responsible for implementation and procuring materials and services for the project. CMP funds can also be channeled through a service provider (e.g. a bank or MFI). In the COWASH Project MFIs are presently used as a financial intermediary to channel funds for CMP projects to WASHCOs.

WoFECs, in agreement with the WASHCO, can decide to channel funds through a service provider. If a service provider is used, WoFEC, in agreement with the community, will enter into an agreement with the service provider, subject to the prior approval of BoFEC to ensure compliance with GoE's public financial management rules.

Disbursements to the service provider will be subject to prior approval from the WWT and WoFEC. The service provider will submit monthly disbursement and utilization reports to WoFEC. Original copies of relevant financial records will be maintained by the WoFEC. WoFEC will report quarterly to BoFEC on utilization of WASH funds, including funds for CMP projects, with a copy to the WASHCO. Detailed arrangements will be agreed during detailed planning with the community based on CMP financial guidelines.

13.6.5 Fund Allocation

WASH funds are allocated to implementing agencies as follows:

Federal level

The Annual (National) WASH Plan and Budget specifies the amount of WASH funds to be budgeted at the national level for:

- Expenditure by the NWCO and by each of the four national WPMUs
- Expenditure on trans-sector national WASH activities
- Loan component to be transferred to Water Resources Development Fund

It also specifies the total amount to be allocated to the regions. Allocation among regions is prescribed by the government's Block Grant formula and annual WASH plans. Expenditures on trans-sectoral national WASH activities are those expenditures which are allocated for WASH integration and coordination and those that are expended for activities like JTR, MSF and other multi sectoral and monitoring activities.

Regional level

Annual Regional WASH Plans and Budgets specify the amount of WASH funds to be budgeted at the regional level for:

- Expenditure by RWCOs and by each of the four regional WPMUs
- Expenditure on trans-sector regional WASH activities

Regional level trans-sectoral expenditures are those expenses that are expended to facilitate regional level inter sectoral WASH activities like coordination, monitoring and joint intervention activities.

It also specifies the total amount to be allocated to the woredas and towns/cities. Recommendation for allocation among woredas and town/cities are made by the Regional WASH Steering Committee:

- On the basis of need/priority established in approved town/woreda Annual WASH Plans
- Within the framework of the Regional Strategic WASH Plan

In allocation of regional WASH funds to the woredas, the RWSC shall try to follow the policy of 30% for hygiene and sanitation and 70% for water, but the actual annual budget at woreda level will be defined based on needs identified during the annual planning process.

Woreda

The WWT's Annual WASH Plan and Budget specify the amount of funds to be budgeted at woreda level for:

- Expenditure on intersectoral WASH activities
 - The total amount to be allocated for WASH services investment with disaggregation for water, sanitation and hygiene
 - The community water supply investment divided into CMP and WMP components

Towns

The City Council's Annual WASH Plan and Budget specifies the amount of funds to be budgeted for:

- Inter-sectoral WASH activities
- The total amount to be allocated for water supply investment

13.6.6 Budgeting

Budget Preparation

Budgeting takes place based on forms and procedures designed by MoFEC. Sector offices from federal ministries to woreda offices will be responsible for requesting WASH budget. It is based on a comprehensive resource mapping of all resources available to WASH at the given level, i.e. federal, regional, zonal or woreda/town. The basis for annual WASH budgets is approved annual plans, prepared at each level according to a common planning format provided by the NWCO.

WASH budget preparation will follow the government budget preparation schedule. The budget approval process for WASH budget will also follow existing government regulations. While the Development Partners' component is budgeted at federal level the government contribution will be budgeted at respective institutional levels of the government.

Budgeting at Federal Level

The budgeting process begins with the announcement of MoFEC of the ceiling for WASH budget. Based on the ceiling and the approved annual WASH plan the federal ministries of Water and Energy, Ministry of Education and Ministry of Health will identify the budget requirement for federal management and federal implemented WASH activities based on the agreed "Consolidated annual WASH plan". The four sector ministries submit their annual WASH budget to MoFEC. The NWSC through NWCO will coordinate the budget preparation process of the four sector ministries. The NWCO budget will be allocated through the MoWIE.

Regional Level

The NWSC through the NWCO will inform regions the WASH targets for the fiscal year. MoFEC will provide the Regions with indicative CWA budget ceilings. RWCO will prepare regional annual WASH plan based on the regional targets, woreda and town WASH plans and regional sector bureaus plans. This will be the basis for the budgeting process. They will consolidate the regional plan based on aggregated woreda and town plans including regional WASH activities. The regional sector bureaus then will prepare their annual budget request and submit to BoFED. BoFEC will review the budget request based on available resources from CWA and block grants and propose annual budget for the sector bureaus and it will be approved by regional council. The RWCO budget will be allocated through the Regional Water Resource Bureau.

Woreda Level

The WWT will prepare annual WASH plan which will eventually be approved by the Woreda Council. The basis for annual WASH plans is the woreda WASH targets from the region. The woreda sector offices will prepare their WASH annual budget based on the budget ceilings provided by WoFEC. The sector office budgets will be submitted to WoFEC. The WWT will coordinate the budget preparation process. The Woreda WASH budget will be approved by Woreda Council.

Town Level

In towns there are two major WASH structures; Water Utilities and WASH Technical Team. Their activities are coordinated by the City council. The budgeting process follows the same pattern. The town water board (responsible for the water utility) will prepare annual capital budget for water supply improvement and will be submitted to town finance and economic development office. The health and education office will also submit their annual budget to town finance and economic development office. The town finance and economic development office will prepare the aggregate WASH budget and submit to City council for approval.

Budget Control

MoFEC, the BoFECs and the WoFECs are responsible for recording, maintaining and controlling WASH budgets at the federal, regional and woreda levels respectively. MoFEC ensures that sufficient trained personnel are in place to handle the financial management requirements at each level. Provision is made

in the WASH structure for each of the governmental Implementing Agencies to have their own accounting staff to administer WASH funds on a full or contractual basis. MoFEC, BoFEC and WoFEC are responsible for financial reporting; the WASH structures will be primarily responsible for monitoring WASH implementation and provision of guidance to implementers.

Budget control is exercised to ensure that WASH funds are being spent as planned with respect to categories, cost, timeliness and value for money. Primary responsibility for budget control in WASH is with the WASH accountants. However, managers at each level (Woreda Sector Offices, Regional WASH Sector Offices and the Federal WASH Sector Offices) will review on a monthly basis the financial reports prepared by their respective budget sections and take whatever action may be required to ensure effective budget control.

The main tools for budget control will be budget codes, ledger cards, and budget tracking.

13.6.7 Consolidated WASH Account at federal level

The disbursement procedure for Consolidated WASH Account will be as follows:

- Donor's disbursement will be made biannually. Condition for first disbursement is the approved Consolidated Annual WASH Plan. For the first disbursement of the fiscal year, Development Partners will advance at least 50 percent of their expected annual commitment.
- The Development Partners' initial deposits into the program Foreign Currency Special Accounts with National Bank of Ethiopia constituted their advances to the Program.
- Contributions will be converted into Birr and transferred to the Consolidated WASH Account managed by MoFEC.
- MoFEC disburses funds, as advances for the first six months of the Program, into WASH accounts established for implementing agencies at the federal and regional levels.
- A second payment will be made in December, following submission by MoFEC in October of a Interim Financial Report setting out details of eligible expenditures in the first quarter, the balances in the relevant accounts (including unspent funds carried forward from the previous year), and the work-plan and cash-flow forecast for the second and third quarters. The condition for disbursement is utilization of at least 50% of the first transfer.
- MoFEC continues, on the same basis, to make biannual replenishment requests to the Development Partners six weeks in advance of scheduled expenditures.
- Upon receipt of replenishment from the Development Partners, MoFEC immediately transfers funds to the Implementing Agencies.

MoFEC's requests are supported by Interim Financial Reports for the previous quarter.

Fund requests should always include financial reporting. The process of reporting is illustrated in the figure below.

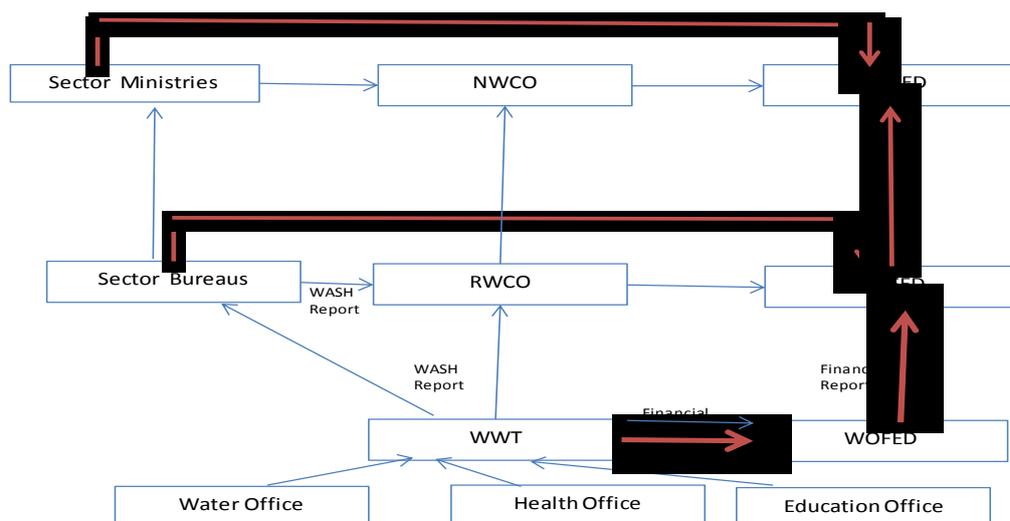


Figure 21: Financial reporting

Implementing Agencies’ Accounts

MoFEC’s and BoFECs’ disbursement of funds to the governmental implementing agencies follows the same pattern. Initially, each implementing agency receives a 1st quarter and 2nd quarter advance based on its approved Annual Work Plan and Budget. At the end of 1st quarter the agency prepare a report on expenditures together with, and a request for, replenishment to cover the amount budgeted for the 3rd quarter less the amount of unexpended funds from the 1st quarter. This “roll over” system means that implementing agencies always have in hand their budget for the upcoming quarter.

Request/reports are vetted and approved at a higher level in each instance and consolidated into the Quarterly Report and Request for Replenishment presented by MoFEC to the Development Partners.

Disbursements of Loans to Towns

Disbursement of loans to water utilities will not follow quarterly period. The cash transfers from WRDF to utilities will be dependent on procurement plan. However, utilities are required to submit quarterly financial reports for WRDF to review cash flow situation and plan for next disbursement. Detailed disbursement schedules will be agreed between the WRDF and the utility.

Payments to WASHCOs

Payment to WASHCOs will follow similar process regardless of the fund channeling (WoFEC/Service Provider like cooperative bank or MFI). After signing the Funding Agreement WWT chairperson writes a letter to WoFEC in order to notify the signatories of the WASHCO and to release the first installment to WASHCO. The WASH accountant opens sub ledgers for all participating WASHCOs with in the cash account.

The first installment shall be made available to WASHCOs within three weeks from the date of signing the Funding Agreement. All payments to WASHCOs will be approved by the WWT.

Second installment of payments will be paid when 80% of the first installment is expended and evidence for transaction is submitted to the CMP supervisor.

The receipts and transaction evidences shall be submitted by WASHCOs to the CMP supervisor and he will work with WASHCOs to clean up all receipts and documents. Then the CMP supervisor will submit the documents to the WASH accountant.

If the WASH accountant does not approve the documents then he will give it back to the CMP supervisor for his follow up and correction.

13.6.8 Bank Accounts

Bank Accounts

Program bank accounts and the process flow and the purpose of the accounts, are described below:

- MoFEC opens foreign currency special accounts at the National Bank of Ethiopia (NBE) for each financing partners. In addition, it opens Birr accounts into which funds from the donors' special accounts will be converted and deposited. The Birr accounts serves as a consolidated fund for all donors, MoFEC will be responsible for the day-to-day management of the special accounts and the pooled Birr account.
- A Bank Account, which will be operated by two official signatories, will be opened in the name of OWNPN at each implementing ministries and WRDF.
- MoFEC at the federal level will transfer funds to the Federal implementing ministries including WRDF and BoFEC bank accounts
- The regional BoFEC will open bank accounts for each of the Bureaus of Sectoral Offices to be operated by joint signatures of BoFEC officials
- BoFEC also open account and disburse the funds to the towns, and Woreda Finance Office bank account, based on approved WASH plan.
- Each woreda will open Woreda Bank Account, which will be operated by joint signatures of WoFEC officials
- Woredas choosing to implement CMP modality will open a "community water investment account" to be operated by joint signatories of Woreda officials
- Each town will open Town Bank Account, operated by joint signatories of the town.
- Each town water utility open special bank account, which will be operated by joint signatories of the utility.

Accounts to be opened at regional and woreda levels are solely dedicated for WASH funding and operations.

13.6.9 Financial Reporting

The objectives of financial reporting by the public finance management entities (from federal to woreda level) are to provide information about the program that is useful to participants for accountability purposes and for decision-making purposes.

Financial reports will be prepared and submitted quarterly. Financial reports will be prepared by WoFEC, BoFEC and MoFEC respectively. WoFEC reports to BoFEC and BoFEC reports to MoFEC. MoFEC compiles and reports to Development Partners.

The financial reporting at each level shall facilitate the distinction of budget utilization to the sources of the fund. For this purpose financial plans will be prepared at each level indicating the source of finances. The financing plan then will be the basis for financial reporting and budget control.

The financial reports will be in line with the financial management system of the GOE and will be complemented by source and use of funds.

The quarterly financial reporting will include the following: trial balance, revenue reports, expense report, receivable report, payable report, monthly bank reconciliation statement

Additional statements to satisfy the One WASH Program are financial reporting requirements:

Statement of Special Accounts

This is a statement showing summary of the movements of each of the financiers' special USD bank accounts.

13.6.10 Fixed Assets

All assets purchased for the Program shall be expensed upon purchase. This is important because, the program is run using pooled funds that will need report of all expenditures as and when incurred.

Fixed assets register would be maintained as per the FGE manual with all the necessary details to know about the location and user of the assets.

An identification number should be given to each of fixed assets, as per the government policy, with indicators showing the assets belong to the One WASH Program.

13.6.11 Preservation of Financial Documents

According to Financial Documents Preservation Guideline No 5/1999 of MoFEC, financial documents shall be preserved for ten years from the date they were created or up to two years after the audit by the Auditor General is completed, whichever comes last. For further detail please refer the guideline.

Documents refer to all the ledger cards, registers and supporting documents. Program documents shall be kept separately and shall be filed in a way that makes referring to the documents very easy. The filing system should enable auditors and anyone who is authorized to review Program documents to easily and systematically trace the required documents and information.

13.6.12 Internal Controls

To satisfy the effectiveness and efficiency of the Program's financial management system to the Government and Development Partners, it is essential to develop or strengthen adequate internal control systems at each and every level. Internal control should be used to support the Program in achieving its objectives by managing its risks, while complying with rules, regulations, and policies of the Program. The Program should therefore make internal control part of program management and integrate both in its overall governance system.

The Program should determine the various roles and responsibilities of different units and personnel with respect to internal control.

The Program should particularly introduce control mechanisms including requirement for approvals, authorizations, verifications, reconciliations and segregation of duties. Program management should foster an organizational culture that motivates members of the program to act in line with risk management strategy and policies on internal control set by the Government of Ethiopia to achieve the program's objectives.

The management and key personnel of the Program should be sufficiently competent to fulfill the internal control responsibilities associated with their roles.

Controls should always be designed, implemented and applied in a response to specific risks like procurement and disbursement. Internal control principles of the Program should be fully understood and correctly applied by *all relevant parties*.

Safeguards at WASHCO level

- The community signs a funding agreement which specifies the obligations of the community.
- For the payment to be released from the bank/MFI, two signatories from WWT shall authorize based on recommendations of the CMP supervisor on the progress of the work
- The artisan and the WASHCO shall prepare and sign jointly progress reports for payment release to be effected and their report shall be verified by woreda water office staff
- The WASHCO shall submit expenditure documents for 80% of advance or previous payment for another request to be effected.

13.6.13 Auditing

According to the Ethiopian Constitution, the Office of Federal Auditor General (OFAG) is responsible for carrying out the audit of all the financial transactions of the federal government and subsidies to the regions. The whole program finance will be audited by OFAG or competent auditing firm assigned by the OFAG.

Internal audits will be carried out in line with the internal audit guidelines of the GOE. The results of internal audits will be made available to external auditors. The implementing agencies are responsible for follow up of audit recommendations.

External audit will be carried out at the end of the fiscal year. MOFEC and Development partners will agree on the TOR and schedule of the audit. MoFEC will facilitate the audit and that the report is provided to the Development Partners. The audit will be conducted by an independent certified auditor. The audit report will include an audit of all program bank accounts, and will specifically identify and audit the pooled fund eligible expenditures.

Development Partners may request a performance related audit to be carried out by an external auditor. The Partners will provide adequate resources for such a purpose. The selection of the auditors and timing for such audit will be done in close collaboration between MoFEC and the Development Partners. The development partners and GOE will jointly agree on the TOR. Based on the outcome of such audit, the Development Partners may convey to GOE any corrective measures they consider necessary to be undertaken.

A periodic joint spot check will be carried out maximum twice a year. The spot checks will be carried out by independent body as agreed between the signatories. The spot checks will focus on high risk areas as identified by Fiduciary Risk Assessment. The independent body conducting the spot check will report to the implementing agency and after agreed on the outcome; will submit official report to MoFEC. MoFEC will notify development partners about the results of the spot check and its full report as required.

An independent evaluation of the performance of the Program will be carried out based on the advice of the MoFEC at periodic intervals. The evaluation reports will be submitted to the Government of Ethiopia and to the Financing partners for review and comments.

Independent evaluation of the Program will include; an assessment of the adequacy of accounting and internal control systems to monitor expenditures and other financial transactions and ensure safe custody of project-financed assets; determining as to whether the program implementing entities have maintained adequate documentation of all relevant transactions and verification that the annual financial statements reflect the actual financial situation of the Program.

For this, the auditor should obtain a sufficient understanding of the internal control structure of the institution as it relates to the One WASH Program, evaluating control risks and identifying reportable conditions, including material weaknesses in the internal control structure. Deficiencies and weaknesses

that do not affect the financial statements may be discussed in a Management Letter, which should report weaknesses in the internal control system, the deficiencies observed, and other findings.

Audit reports must include a summary of the main audit procedures used for planning the audit, evaluating the internal control structure, checking of the figures included in the financial statements and other reports subject to audit, and the evaluation of the compliance with terms of the applicable agreements, laws and regulations.

Annual external financial audits will be planned and coordinated by the Program Steering Committee and managed by the NWCO. The auditor will present their report and management letter to the Steering Committee, who will be responsible for taking follow-up actions.

13.6.14 Taxation

National Wash Steering Committee should identify WASH investment areas where tax and custom privileges to the program can bring reduction of costs and can enhance effectiveness of the Program. The priority WASH investment areas for tax and custom privileges should be submitted for the approval of the Government of Ethiopia as soon as possible in order to gain the advantages for the program.

13.6.15 Per diems

Effective program implementation can only be assured if implementing agencies can regularly conduct supervision of works, monitoring of community activities and periodic consultation at all level. In order to achieve these motivated and competent staff at all level should be maintained. One main reason for lack of motivation is the occurrence of different per diem rates within the same program. Therefore, the National WASH Steering Committee should establish uniform per diem rates across the program and get approval from appropriate authorities.

14. Procurement and Contract Management

14.1 Introduction

During regional consultations it was disclosed that procurement and contract management was identified as major constraint in implementing WASH activities. The Program will make use of the public procurement system and procedures and established procedures for contract management. Ministries, regional bureaus and woreda offices will use standard bidding and contract documents that comply with government rules and regulations⁸¹ for procurement of works, goods and services.

Given the existing capacity constraints at all levels, efficient procurement and contract management is a challenge that can adversely affect implementation of the Program. Therefore, continuous capacity building support with well-designed and focused procurement and contract management training will be provided as TA to relevant staff at federal, regional, city, town and woreda level to help ensure the smooth implementation of Program activities.

Procurement manuals have been prepared by the Ethiopian government, the World Bank and African Development Bank, and attempts have been made to coordinate and align to these guidelines, which are commonly used for procurement and contract administration in the WASH sector. However, capacity limitations in the application and use of these procedures are often a major cause of delays in implementation of projects in the WASH sector.

From experience, procurement on a piece by piece modality have caused delays in accomplishing planned activities. This modality will have to change to bulk purchasing of important items such as electromechanical equipment, pumps and store at federal level to be issued on request from projects and continue to replenish the items. This will require government commitment to avail foreign exchange money on demand and the establishment of a central procurement facility with adequate and qualified personnel.

Packaged contracting has already been tried within the WASH sector in Ethiopia with variable results – depending on the capacity of the client or procuring agency to put together attractive packages for the private sector and then to effectively manage the contract throughout its implementation. The packaging of the different contracts into one has a number of advantages. The first is to have a joint plan of the project, including all aspects of the project execution, drilling, construction, supply order and installation of electromechanical parts, as well as capacity building, so a high level of project organization is achieved.” With a better integration of planning, the different elements of the project should be delivered more timely.

The outcome in the course of OWNP program review and updating process reinforces the immediate need to quickly increase the focus and investment in procurement contracting and contract risk management capabilities at all WASH stakeholder level from federal to Woreda . Delay in transfer and reimbursement of available funding and lack in procurement contracts management process capabilities such as poor procurement, contracting etc has been related to overly bureaucratic or inadequate procedures and poor system design. These are, to a greater or lesser extent, holding up programs and achievement of targets.

⁸¹FDRE, User’s GuideforSimple Requests for Quotations andLocal Purchase Order. January 2006, and;
FDRE, Procurement services and contract administration – Amharic version. Addis Ababa, July 2002 EC.

14.2 Procurement Methods

The Program will follow the Procurement Proclamation issued by the Federal Government (January 12, 2005) and the subsequent Procurement Directives released by MoFEC. At regional level the procurement code is enacted by regional governments and the procurement directive adapted to each Region based on a model prepared by the Federal Government.

According to the Government’s policy to decentralize and devolve responsibility, WASH procurement is carried out, as far as possible, at the level where the goods are utilized and the services delivered to build capacity for local procurement.

The procurement plan is an essential component of annual WASH plans. Training and technical assistance will be available to assist regions, towns, woredas and community planners. Procurement plans are consolidated by WWTs and regional and federal WASH Coordination Offices. Procurement at all WASH cost centers will be reported quarterly.

Procurement of works and goods can be combined in a turnkey contract as is being done by the WRDF in some urban water supply schemes. Where funds are available, longer-term framework contracts for services and works and can be considered, as can combining procurement of pumps and spare parts in one tender.

Where the CMP approach is used, licensed service providers at woreda level can be procured for services or construction work at community level with technical support from kebele and woreda levels as required.

Procurement requires quality assurance (QA). QA for goods can be undertaken in collaboration with the Ethiopian Standards Authority (ESA). The Ethiopian Water Technology Institute (EWTI) can also contribute to the development of standards, BOQs and specifications for works, goods and services.

The Program will recognize the following procurement methods:

Table 12: OOWNP Procurement Methods

Method	Procurement by/through
Government of Ethiopia	GoE and CWA
Woreda managed projects	GoE and CWA
Community managed projects	WASHCOs
NGO projects	NGOs
World Bank	WASH II
Other partners	Respective partners
Self- Supply	Households and groups

The methods to be followed for the procurement of works, goods and services will be specified in the annual procurement plans at federal, regional/city, woreda/town and community levels.

Packaging of services, works and goods is advantageous in terms of cost and time saving, in the same way procurement of works and goods can be combined in a turnkey contract as is being done by the WRDF in some urban water supply schemes. Where funds are available, longer-term framework contracts for services and works can be considered, as can combining procurement of pumps and spare parts in one tender.

Where the CMP approach is used, service providers at woreda level can be procured for services or construction work at community level with technical support from kebele and woreda levels as required.

Woredas and towns may also decide to delegate larger procurements to regional bureaus and regional governments, respectively.

Quality assurance (QA) is an important aspect of procurement. QA for goods can be undertaken in collaboration with the Ethiopian Standards Authority (ESA). The Ethiopian Water Technology Centre can also contribute to the QA of WASH goods, products and works.

Procurement guidelines have been prepared by the Ethiopian government, the World Bank and African Development Bank, and attempts have been made to coordinate and align these guidelines, which are commonly used for procurement and contract administration in the WASH sector. Ministry, region, city and woreda procurement staff are familiar with the content of these guidelines, however capacity limitations in the application and use of these procedures have often been a major cause of delays in implementation of projects in the WASH sector. Furthermore, the approving committee at the federal level are another bottleneck. The committee now formed may not have the time to commit to decide and the necessary consultation with local companies on the products and systems.

Consider taking the following steps will improve procurement processes:

1. Carry out an unbiased and comprehensive assessment of the current procurement contracts Management processes and related capabilities (e.g. Strengthening Federal Level procurement staffs, at region and Woreda level, review of procurement process, Local contractor and Consultant capacity etc.), and then evaluate gaps between the current state and an agreed-upon desired level of capability and performance.
2. Identify immediate short-term actions to address urgent control improvement needs and put the necessary resources behind those short-term actions.
3. Make clear overall strategic and operational objectives and performance expectations for the government procurement contracts management process at all level of program implementation approach, CWA, NGOs, CMP etc . Without such a vision and objectives, it is unlikely that the desired level of performance, control and capability will be achieved.
4. Design, develop and implement strategies and detailed procurement plan, integrated action plans to achieve the desired levels of performance and process maturity, actions that address each and all of contracts management capability, and cover the immediate, middle and longer term horizons (typically current to three years GTPII period).
5. Higher decision-maker management support for the execution of the short-term as well as mid to longer-term improvement plans through facilitation of tax breaks for import of critical WASH plant and equipment, where these are not manufactured in Ethiopia to the required specifications. Such equipment includes water drilling machines, pumps, generators, vacuum trucks, laboratory equipment, etc.
6. Make appropriate mid to longer-term investments in procurement contracts management process capabilities

14.3 Program Procurement Requirements

The Program will require the following types of procurement:

Services

1. Service providers, including artisans, at woreda level providing the following services:
 - Planning and design of water supply schemes

- Sitting and surveying
 - Post-construction support to communities
 - Community mobilization and training of WASHCOs
 - Training water supply caretakers and mechanics
 - Financial services
2. Consultants or firms at regional or national level to:
- Build capacity of woreda WASH teams, prepare annual, strategic and procurement plans
 - Conducting hydrogeological investigations including borehole siting and drilling supervision
 - Carry out study and design for water supply schemes
 - Conduct studies for rehabilitation and expansion of water supply schemes
 - Supervise construction, rehabilitation and expansion of water supply schemes

Works

1. Service providers constructing:
- New hand dug wells and installation of pumps
 - New spring capping
 - Rehabilitation of existing point sources
 - Construction/rehabilitation of institutional sanitation facilities
2. Drilling contractors at regional or national level for:
- Drilling shallow boreholes and installation of hand pumps
 - Drilling deep boreholes, pump installation and construction of distribution system
3. Contractors at regional level or artisans at woreda level for:
- Rural piped gravity schemes from spring sources
 - Rural piped schemes from spring sources with motorized pumping
 - Rehabilitation and expansion of water supply schemes
 - Construction/rehabilitation of institutional and public sanitation facilities
 - Rural piped schemes supplied from deep boreholes (excluding drilling)

Goods

- Service providers, including artisans, at woreda level supplying: Hand pumps and spare parts, Construction materials, Sanitation materials
- Region-based suppliers supplying: Tools for HDW contractors, Office supplies, Hand pumps and spare parts, Submersible pumps with accessories and spare parts, Generators with accessories, Pipes and fittings, Sanitation materials, Desludging equipment, Sewerage works (only in Addis Ababa)

Procurement of design and construction supervision works by service providers licensed at woreda level will be done at woreda level by the Woreda Finance Office in collaboration with the Woreda Water, Health and Education offices as required. Design and supervision of up to 4-5 water supply schemes or construction of latrines in a group of institutions in one kebele can be packaged and offered as one contract in order to take advantage of economies of scale.

Turnkey contracts combining civil works and supply of electromechanical equipment in urban water supply schemes have been executed under the WRDF. Turnkey contracts combining design and construction can also be considered, as well as other contracting modalities such as framework contracts and outsourcing.

14.4 Program Interventions

The adequacy of procurement and contract management capacity for the implementation of the Program at all relevant levels will be assessed using a standardized questionnaire early in Phase I of the Program. The Program will support the provision of qualified needs-based training to relevant staff on public procurement and contract management as a practical training using actual cases.

Due to its critical importance for the timely completion of Program activities, procurement and contract management will be the subject of periodic reviews by independent evaluators. Follow-up compliance with recommendations from these reviews will be important for ensuring Program effectiveness.

As small contractors are expected to bid for contracts up to a threshold of USD 100,000, the Program will support the training of small contractors at regional and city in collaboration with contractors' associations to improve their ability to successfully bid for these contracts. Contractors and consultants are also expected to perform ethically in accordance with a mutually agreed code of conduct.

15. OWNP Phase 2 Completion Program Costs and Budget

15.1 Introduction

The Program planning process includes two converging and complementing processes (scenarios); (i) projections based on updated models used in preparing the UAP & SAP, and (ii) a process based on information received from the regions and cities. The two processes will be compared following an iterative process. The two scenarios have reasonably converged as can be seen from the two sections (billion USD versus billion USD)⁸². It could therefore be concluded that the adjusted regional plan i.e. scenario II is verified. It is foreseen that regions could make use of the scenarios in accordance to their specific situations and preferences.

15.2 Program Planning Process

The planning process is iterative, being done in several steps. The present situation has to be assessed; service levels and problems have to be identified. Then, targets are set to address the problems or increase service levels to reach the intended targets.

By comparing the present situation with the targets, it is possible to identify important issues and possible solutions. These possible solutions are quantified, using planning models as briefly illustrated in sections below. Issues were identified, following which solutions and the quantification of the identified solutions were worked out.

The model output is a Program that will serve as a national multi sectoral SWAp for WASH activities. Additional outputs of the model are "consequences" of the plan, such as financial needs and sectoral and institutional requirements. Based on results of monitoring and periodic reviews, updates and adjustments will be made to the planning parameters.

For the conceptual framework for program planning, see Annex 10, Figure A10-1.

15.2 Program Planning Process

15.2.1 Introduction

The programme planning process for Phase 2 is in many ways similar to the process used for Phase 1. The term "planning process" is used again since a definitive "plan" cannot be made without further iterative steps, as explained in the **Sub-section 16.3** below.

Constraints include:

- Meet GTP2 targets by 2020, that is, within less than 3 years
- Incorporate 40% of the proposed R&S WASH Programme (Resilient and Sustainable Water Supply, Sanitation and Hygiene programme in Arid and Semi-Arid Drought Prone Areas of Ethiopia), that is, USD 2 billion out of the estimated 5 billion budgeted for this programme
- Limited WASH capacity for implementation (planning, design, procurement, implementation)

⁸²In this document scenario I is shown in this chapter i.e. Chapter 15 while scenario II is enclosed in Annex 11. Scenario II is slightly higher since schemes lean towards high technology. Physical and Financial Comparisons of the two scenarios are shown in Annex 11 Table A11.14 and Figure A11.8.

- Low operational capability leading to high level of system failures
- Limited awareness, at all levels, of sanitation and hygiene impacts and needs, impacting health, quality of life and economic activity

In November 2017, regional sector offices (water, health and education) were invited to make 3-year plans to meet GTP2 targets. These plans have been tabulated and compared with both the original OWNPNP document 2013 and available data from CWA, DP and CSO sources.

15.2.2 Planning Parameters

Urban water supply

- Generates resource requirements based on town categories
- A design period of 7 years
- Per capita costs generated from prevailing rates for various town categories
- Complementary use of existing systems is considered for determining resource requirements
- Regional factors are used for labour availability, infrastructure and costs. The highest factors are assigned to Afar and Somali regions.

(3) Urban sanitation

- Generates resource requirements based on town categories
- Resources for desludging, facilities are determined using the model
- Public toilet requirements for 350 towns are determined based on acceptable assumptions
- Current rates are adjusted by 2.5% per annum for determining rates
- Regional factors are used to take labor availability, infrastructure and related matters into consideration (The highest factors are for Afar and Somali regions.)

(4) Rural and peri urban sanitation⁸³

- The model calculates resource requirements in three areas i.e. creation of enabling environment, creation of demand, facilitation of supply from kebele to federal level
- Prevailing rates escalated at 2.5% per annum are used for determining rates
- Regional factors are used to take labor availability, infrastructure and related matters into consideration. The highest factors are assigned to Afar and Somali regions.

15.2.3 Planning Criteria

The planning criteria used for Phase II are as follows:

- Rural water supply: 25 liters per capita per day within 1km radius
- Urban water supply: 40-100 liters per capita per day within 0.5 km radius depending on the class of the towns
- Rural and peri-urban sanitation: reduce open defecation by constructing both traditional and improved latrines using the CLTSH approach.
- Urban sanitation: Sewerage will be considered in Addis Ababa, while desludging facilities and provision of public toilets will be considered for other towns.

The assumptions used in preparing the physical and financing plan are presented in Annex 10.

⁸³Based on the model used for the SAP (2012)

15.2.4 Price Inflation

In mid-2018, the official inflation rate in Ethiopia is around 15%. It is assumed this figure will decrease to around -% by 2015. The estimated foreign portion of the Program budget is % and the local component is %. Domestic inflation is estimated to be about %. The foreign inflation rate is estimated to be around % annually assuming a prevailing foreign inflation rate of %. The local and foreign inflation rate together is %. Since the USD has been used in the current Program, the inflation rate can be lowered to % to compensate for depreciation of the ETB.

15.3 Access

15.3.1 Rural and Urban Water Supply

According to the GTP II targets, water supply access is expected to reach 98.5 % of the population. In order to determine water and sanitation access in Phase II the first step taken was to project the rural and urban population from the base year 2017 to 2020. Therefore the total population to be considered for water supply in rural Ethiopia is 79,473,756 and in urban areas (see details in annex 1

Table12: Rural and Urban Water Supply Access by Region and Year (%)

No.	Region/City	Base Year	Phase II				Phase III				
		2017	2018	2019	2020	2021	2022	2023	2024	2025	
1	Tigray										100
	Rural	66.6	69	77	85	86	90	94	98	100	
	Urban	56.6	59	68	75	78	84	90	96	100	
	Total	64.8	68	76	83	85	89	93	97	100	
2	Gambella										
	Rural	73.6	75	80	85	86	90	94	98	100	
	Urban	40.3	46	61	75	78	84	90	96	100	
	Total	64.2	67	75	83	85	89	93	97	100	
3	B. Gumuz										
	Rural	60	63	75	85	86	90	94	98	100	
	Urban	50	54	65	75	78	84	90	96	100	
	Total	55.2	59	72	83	85	89	93	97	100	
4	Dire Dawa										
	Rural	81	81	83	85	86	90	94	98	100	
	Urban	55	58	67	75	78	84	90	96	100	
	Total	61.1	64	74	83	85	89	93	97	100	
5	Harari										
	Rural	65	68	77	85	86	90	94	98	100	
	Urban	66	67	71	75	78	84	90	96	100	
	Total	65.5	68	76	83	85	89	93	97	100	
6	Somali										
	Rural	66.7	69	77	85	86	90	94	98	100	
	Urban	64.5	66	71	75	78	84	90	96	100	
	Total	65.3	68	76	83	85	89	93	97	100	
7	Amhara										

Draft- One WASH Program Document Phase II Updating- May 2010

	Rural	76.1	77	81	85	86	90	94	98	100
	Urban	69.1	70	73	75	78	84	90	96	100
	Total	75	76	80	83	85	89	93	97	100
8	Afar									
	Rural	44.6	50	69	85	86	90	94	98	100
	Urban	48.2	52	64	75	78	84	90	96	100
	Total	46	52	68	83	85	89	93	97	100
9	SNNPR									
	Rural	50.7	56	71	85	86	90	94	98	100
	Urban	50.3	54	65	75	78	84	90	96	100
	Total	52.5	57	71	83	85	89	93	97	100
10	Oromiya									
	Rural	60.7	64	75	85	86	90	94	98	100
	Urban	51.2	55	65	75	78	84	90	96	100
	Total	59.3	63	74	83	85	89	93	97	100
11	Addis Ababa									
	Urban	92	95	102	109	86	89	92	96	100
	Total	92	95	102	109	86	89	92	96	100
12	National									
	Rural	68.5	71	78	85	86	90	94	98	100
	Urban	54.7	58	67	75	78	84	90	96	100
	Total	65.7	73	77	83	86	89	92	96	100

15.3.2 Water Supply Beneficiaries

Unserved populations to be served to meet GTP2 Urban and rural population figures are indicated in the tables below based on best available information and assumed geometric projections. The spreadsheets below calculate the unserved populations to be served to meet GTP2 urban and rural water supply targets for each region based on draft GTPII Report MoWIE 2009EFY and geometric population projection increases, as indicated in the table above. See also **Annex 10** working spreadsheets.

Accordingly, a total of 20,410,739 million people in rural areas and 5,648,901 million people in urban areas are expected to benefit from Program water supply interventions as shown below.(see table and below)

Table 13. No of Beneficiaries in rural areas in water supply access during Phase II-2018-2020

Unservd Rural Design population								
	Region	Baseline population for Phase II in year 2017	Water supply coverage in year 2017	Projected Population By the year 2020	Served population	Unservd Population	GTP2 target rural %age	Population to be served by 2020
1	Tigray	3,847,000	66.6%	3,934,359	2,560,563	1,373,796	85%	783,642
2	Afar	1,466,000	44.6%	1,545,951	653,836	892,115	85%	660,222
3	Amhara	17,453,000	76.1%	18,025,467	13,283,478	4,741,989	85%	2,038,169
4	Oromiya	30,113,000	60.7%	32,179,185	18,275,580	13,903,605	85%	9,076,728
5	Benishangul	836,000	60.0%	888,278	501,600	386,678	85%	253,437
6	SNNP	15,992,000	50.7%	16,903,089	8,101,547	8,801,542	85%	6,266,079
7	Gambela	288,000	73.6%	305,292	211,968	93,324	85%	47,530
8	Harar	109,000	65.0%	117,053	70,850	46,203	85%	28,645
9	Somali	4,911,000	66.7%	5,308,238	3,275,637	2,032,601	85%	1,236,365
10	Diredawa(35/c/d)	173,000	81.0%	188,298	140,130	48,168	85%	19,923
	National		68.5%	79,395,210	47,075,189	32,320,020		20,410,739
	Note							
	Source: WS Coverage Prepared from data from Fig 8, draft GTP II Report, MoWIE, 2009EFY							

Table 14. No of beneficiaries in urban areas to benefit in water supply access during Phase II -2018-2020

Unservd Urban Design population								
	Region	Baseline population for Phase II in year 2017	Water supply coverage in year 2017	Unservd Proj. Population By the By the year 2020			GTP2 target urban %age	Unservd population to be served by 2020
				Population	Served	Unservd		
1	Tigray	1,400,000	56.6%	1,633,334	792,680	840,654	75%	432,321
2	Afar	346,000	48.2%	414,248	166,772	247,476	75%	143,914
3	Amhara	3,682,000	69.1%	4,335,515	2,543,157	1,792,357	75%	708,479
4	Oromiya	5,354,000	51.2%	6,168,587	2,743,390	3,425,198	75%	1,883,051
5	Benishangul	230,000	50.0%	279,896	115,000	164,896	75%	94,922
6	SNNP	3,178,000	50.3%	3,730,962	1,598,534	2,132,428	75%	1,199,688
7	Gambela	148,000	40.3%	176,690	59,644	117,046	75%	72,874
8	Harar	137,000	66.0%	150,152	90,420	59,732	75%	22,194
9	Somali	838,000	64.5%	920,373	540,510	379,863	75%	149,770
10	Diredawa(35/c/d)	293,000	55.0%	318,749	161,150	157,599	75%	77,912
11	Addis Ababa (35/c/d)	3,434,000	92.0%	3,690,878	3,159,280	531,598	109%	863,777
	National	19,040,000	54.7%	21,819,386	11,970,537	9,848,849		5,648,901

15.3.3 Rural water supply analysis methodology

Each region has given an estimate of total “unserved population to be planned for the remaining 3 Years” in the region, for each of rural and urban water supply, as well as needs for institutional WASH (health and education) and for capacity building. However, in the majority of cases, these populations do not align with the population figures derived under **Sub-section 15.2** above: The unserved 2020 populations have been re-calculated in the spreadsheets described under **Sub-section 15.2** based on MoWIE estimates of GTP2 water supply coverage. Label the re-estimated total regional rural water unserved population as P_R .

Various data sources are used to arrive at best estimates of unit rates and populations served for each technology across the regions. This analysis is presented in **Sub-section 15.4** below.

Two spreadsheets (**scenarios**) are presented in **Sub-section 15.5** for each region:

The first scenario worksheet tool re-calculates the cost and population for the number of schemes n_T proposed by the region, using the unit rates calculated in **Sub-section 15.4**. The population served may be expressed as $\sum (p_T \times n_T)$, where p_T is average population served by each technology type. This may be greater or less than P_R .

The second scenario worksheet tool then adjusts the number of schemes and the technology mix until the population served equals the GTP2 unserved population. P_R . This may be expressed as $\sum (p_T \times n_T) = P_R$. In this scenario the opportunity is taken to vary the technology mix to move towards: (i) meeting proposals under R&S WASH Programme, that is deep boreholes and multi-village schemes, (ii) use of solar power and (iii) introduce what is considered to be more reliable technology.

It is recommended that both national government technical experts and the regional water bureaus staff should be given the opportunity to review the Scenario 2 technology mix and discuss possible amendments with the NWCO (consultants and Task Force) and the RWCOs, but not so as to hold up adoption of the Phase 2 programme and rapid implementation thereafter.

Important Note: The proposed programme will not be successful unless combined with WASH sector reform, capacity building and advocacy as described in this OWP document 2018.

The unit cost rates are conveniently compared with unit rates of 2013 and discussed through chart representation as shown in Annex 1 and the summary of the unit rates and population served is shown in Table 32 below

Table 15: Unit rate USD per capita per technology and people served

Technology Type	Average unit rate	Average Pop. Served
HH dug well with rope pump	133	6
Community dug well with RP	47	19
Dug well with hand pump	25	171
Shallow well with hand pump	66	275
Shallow well with Solar	0	0
Bore hole with distribution	167.9	1560
Bore hole with solar	0	0
Capped spring	25	242
Rain water	40	249
Cistern	140	127
Hafir Dam	13	2225
Single village spring 2-4 WP	62	1452
Single village from spring source + motorised distribution with 2 water points (small)	103.2	1402
Single village from spring source + motorised distribution with 2 water points (small) + solar	52	3000
Multi village from spring source + gravity distribution with 4-6 water points (medium)	68.6	33

Technology Type	Average unit rate	Average Pop. Served
Multi village from spring source + gravity distribution with 6-10 water points (large)	108	9228
Multi village from spring source + motorized distribution with 4-6 water points (medium)	90	3510
Multi village from spring source + motorized distribution with 6-10 water points (large)	54.3	81
Single village borehole source + distribution for 4-6 water points	109	4363
Single village borehole source + distribution for 4-6 water points + Solar	0	0
Multi village from borehole source with 5-8 km distribution (large)	118	9583
Large multi village from one or more very deep boreholes with long km distribution	0	0
Single village from river source with treatment	2	0
Multi village from river source with treatment	115.3	0

The unit cost rates are compared with unit rates of 2013 for each technology and indicate differences and in few cases agreement. In general the recommendation made based on the analysis for each technology in rural water supply systems is depicted in table below and the background details are depicted in tables and graphs in Annex 1 .

Scenario 1 spreadsheet below includes the numbers of schemes and technology mix exactly as proposed by the regions. However, the resultant total costs may vary from the total cost figures from the regions since this analysis uses averages of unit rates as well as numbers of beneficiaries per technology type derived from various sources.

All scenario spreadsheet (10) is in Annex 1.

Scenario 2 assumes that the number of schemes required and the technology mix proposed by the regions have been over-estimated and that the unserved population, based on national level MoWIE data (**Section 15**), is correct. Number of schemes and technology mix are re-assessed by the consultants through consultation with national government, DP and CSO experts and regional stakeholders to both match the needs of the unserved population and also to increase resilience, sustainability and reliability (summary tables for cost technology mix for scenario 2 are depicted in annex 2).

Note:

1. The original proposal for **Tigray region** was **USD 70 million** to serve a population of **2.1 million people** (using their own unit rates and population served per technology)
2. The original proposal from **Gambella region** was **USD 11.4 million** to serve a population of **156,000 people** (using their own unit rates and population served per technology)
3. The original proposal from **Benishangul Gumuz region** was **USD 17.7 million** to serve a population of **0.24 million** (using their own unit rates and population served per technology)
4. The original proposal from **Harari region** was **USD 1.3 million** to serve a population of **0.05 million people** (using their own unit rates and population served per technology)

5. The original proposal from **Somali region** was **USD 335 million** to serve a population of **1.09 million** (using their own unit rates and population served per technology)
6. The original proposal from **Amhara region** was **USD 223 million** to serve a population of **4.3 million people** (using their own unit rates and population served per technology)
7. The original proposal from **Afar region** was **USD 77 million** to serve a population of **0.53 million** (using their own unit rates and population served per technology)
8. The original proposal from **SNNPR region** was **USD 371 million** to serve a population of **13.2 million** (using their own unit rates and population served per technology)
9. The original proposal from **Oromia region** was **USD 254million** to serve a population of **4.6 million people** (using their own unit rates and population served per technology)
10. The regional proposals from **Dire daw administration** did not give details of costs and population to be served.

15.4. Physical and Financial Plan

Rural Water Supply Summary

Additional factors have been applied to the CR-WASH component (that is, using 2030 projected design population) in order to allow for anticipated population movements triggered by installation of reliable water supply. Overall rural water supply cost becomes 2,096 USD million, of which 934 USD million is for CR-WASH Programme (Resilient and Sustainable Water Supply, Sanitation and Hygiene programme in Arid and Semi-Arid Drought Prone Areas of Ethiopia).

The overall cost is high and will be challenging to implement within the GTP2 timeframe. It will need other (software factors) to be concurrently put into place (WASH sector reform, capacity building, advocacy and of course funding).

Table 16: Number of schemes proposed, recalculated and adjusted target population for intervention

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Region		Tigray	Gambella	B. Gumuz	Harari	Somali	Amhara	Afar	SNNPR	Oromiya	Dire Dawa	Addis A	Totals
Original proposal from region (2018-2020)	Number of schemes	5,584	1,396	796	225	6,418	27,860	631	12,331	13,222	61		68,524
	population to be served, million	2.09	0.16	0.24	0.05	1.09	4.30	0.53	13.20	4.62	0.06		26.34
	cost, USD million*	70.3	11.4	17.7	1.3	335.6	223.0	76.8	371.4	254.2	14.8		1,376.5
	Av unit rate USD/c	33.6	71.3	74.8	26.6	307.3	51.9	144.9	28.1	55.1	246.7		52.3
Recalculated regional proposal based on average unit rates and population served per technology (2018-2020)	Number of schemes	5,584	1,396	796	225	6,418	27,860	631	12,331	13,222	61		68,524
	population to be served, million	1.74	0.56	0.25	0.16	1.80	6.25	0.56	4.69	5.14	0.11		21.25
	cost, USD million*	113.5	19.2	12.5	13.1	223.2	141.2	64.8	274.0	294.6	10.5		1,166.7
	Av unit rate USD/c	65.1	34.2	49.2	84.3	124.2	22.6	116.0	58.5	57.4	95.9		54.9
Adjusted target population and technology mix	Number of schemes	2,025	162	796	199	4,506	5,000	721	13,422	23,033	13		49,877
	population to be served, million	0.78	0.05	0.25	0.03	1.24	2.04	0.66	6.27	9.08	0.02		20.41
	cost, USD million*	64.6	2.6	12.5	6.7	160.1	111.1	85.2	367.6	543.9	1.7		1,355.9
	Av unit rate USD/c	82	54	49	235	129	55	129	59	60	87		66
	Factored cost totals, USD million	89.8	3.6	17.3	9.3	222.5	154.4	118.4	510.9	756.0	2.4	0.0	1,884.7
non-CR and CR WASH share estimates	Estimated %age mix of CR-WASH	20%	0%	0%	30%	100%	20%	100%	20%	30%	30%	0%	
	Non CR-WASH %age	80%	100%	100%	70%	0%	80%	0%	80%	70%	70%	100%	
	Estimated non-CR WASH share, USD million	71.8	3.6	17.3	6.5	0.0	123.5	0.0	408.8	529.2	1.7	0.0	1,162.5
	Estimated CR WASH share, USD million	18.0	0.0	0.0	2.8	222.5	30.9	118.4	102.2	226.8	0.7	0.0	

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Region		Tigray	Gambella	B. Gumuz	Harari	Somali	Amhara	Afar	SNNPR	Oromiya	Dire Dawa	Addis A	Totals
	Additional factor for 2030 design population	1.10	1.26	1.27	1.36	1.36	1.14	1.24	1.25	1.31	1.40		
	Total CR WASH, USD million	19.7	0.0	0.0	3.8	303.5	35.2	146.9	127.5	296.2	1.0	0.0	933.9
Final proposed totals	compare with Row 4 above	91.5	3.6	17.3	10.3	303.5	158.7	146.9	536.3	825.4	2.7	0.0	2,096.4
<p><i>*Note 1: To these figures have here been added factors for investigation, design and project management (15%?), inflation (10% for 3 years?) and risk (10%?), combined 39%</i></p>													
1.39													

As can be seen from the table above, there is reasonable correlation (in terms of overall cost but not the detailed make-up) between the regional proposals (Line 4) and the adjusted estimates (Line 14) described in the sub-sections above, except for Oromiya region which appears to have under-estimated the population to be served by a factor of 2 and the cost by a factor of 3.

15.5 Scenario -2 Physical Plan and Financial requirement for Rural Water Supply

15.5.1-New Rural Water Supply Facilities

Table 17: Rural Water Supply Technology Mix Planned for intervention, 2018-2020

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Region	Self-Supply		Spot Supply								Piped Water supply System						Total (2018-2020)	2018	2019	2020
	House hold Dug well with Rope Pump	Comm unity Dug well with Rope Pump	Dug well with Hand Pump	SW (with HP)	SW (Solar system, Small On Spot)	BH +Dist (Small) On Spot	Cappe d Spring	Rain Wate r harvesting	Cist ern	Ha fir Da m	SVS from sprin g sourcea	MVS from sprin g sourcea	SVS fro m BH sourcea	MVS from BH sourcea	SVs from Surf ace Water	MVS from Surfa ce Water				
Oromiya																				
Adjusted Plan			5,875	1,461	4,000	500	4,827	5,000			350	300	700	10		10	23033	3,455	10,365	9,213
Amhara																		-	-	-
Adjusted Plan	500	500	500	500	500	200	2,000	180			20	60	10	25		5	5000	750	2,250	2,000
Tigray																		-	-	-
Adjusted Plan	300	300	300	200	200	80	200		180	180	15		50	20			2025	304	911	810
SNNP																		-	-	-
Adjusted Plan		2,166	1,296	3,000	1,000	0	3,332	1,500			444		584	100			13422	2,013	6,040	5,369
Benishangul-Gumuz																		-	-	-
Adjusted Plan		2,166	1,296	3,000	1,000	0	3,332	1,500			444		584	100			13422	2,013	6,040	5,369
Gambella																		-	-	-
Adjusted Plan			120	624	10		15			7	3		2	1			782	117	352	313

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Afar																		-	-	-
Adjusted Plan			148	96	100		7	100	163	7			70	30			721	108	324	288
Somali																			-	-
Adjusted Plan		500	200		100		65	2,430	967	94			35	80		35	4506	676	2,028	1,802
Harari																			-	-
Adjusted Plan			10			2				180	2		2	1	2		199	30	90	80
Diredawa																			-	-
Adjusted Plan				4	2	2		2			1		1	1			13	2	6	5

15.5.2 Rural Water Supply Facilities to be rehabilitated

The 'Unit Cost analyses made for rehabilitation can only be determined accurately for specific existing schemes only when a scheme inspection has revealed which components needs maintenance and expansion and the magnitude of the capacity expansion that is required. It was not an easy task to determine reasonable unit cost for rehabilitation and capacity inspection at National where scheme by scheme assessments are not available. Therefore, rehabilitation, upgrading and or expansion plan has been taken directly from regional plan with no adjustment. The water supply schemes that needs to rehabilitation and upgrading to reduce non-functionality to 7% in line with GTP-II target as shown below.

Table 18: Facilities to be rehabilitated in Phase II 2018-2020 by regions

No.	Region	Year			Total
		2018	2019	2020	
1	Tigray	1373	2082	1469	4924
2	Afar	NA	NA	NA	0
3	Amhara	NA	NA	NA	0
4	Oromiya	NA	NA	NA	0
5	Somali	NA	NA	NA	0
6	B. Gumuz	200	200	200	600
7	SNNP	56	45	28	129
8	Gambella	18	36	36	90
9	Harari	25	45	13	83
10	Dire Dawa	15	15	15	45

15.5.3-Financial Requirement for Water Supply

A total of USD 2,097 is required for rural water supply to achieve the target of 85% access. As part of the overall rural water supply requirement the financial requirement for, Water Quality Management/Water Safety Plans, study and design, Catchment Protection and Environmental Management Plans, Environmental mental safeguards are determined in addition to construction and rehabilitation of water supplies are also included and are shown below.

Table 19: Cost of scheme construction by region, OOWNP Phase II, 2018-2020

No	Region / City/Year	Cost of Scheme Construction	No.	Region / City/Year	Cost of Scheme Construction
1	Tigray		7	Amhara	
	2018	12,683,769		2018	26,946,757
	2019	38,051,308		2019	80,840,270
	2020	33,823,384		2020	71,858,018
	Total	84,558,460		Total	179,645,045
2	Gambella		8	Afar	
	2018	730,953		2018	15,777,719
	2019	2,036,991		2019	47,333,158
	2020	1,833,703		2020	42,073,918
	Total	4,601,648		Total	105,184,796

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3	B. Gumuz		9	SNNPR	
	2018	2,623,482		2018	85,893,638
	2019	7,696,533		2019	227,919,949
	2020	6,851,024		2020	201,325,947
	Total	17,171,039		Total	515,139,534
4	Dire Dawa		10	Oromia	
	2018	13,955,120		2018	114,593,052
	2019	41,800,139		2019	330,690,756
	2020	37,159,302		2020	293,943,084
	Total	92,914,561		Total	739,226,892
5	Harari		6	Somali	
	2018	1,267,028		2018	30,782,888
	2019	3,738,474		2019	92,348,663
	2020	3,333,523		2020	82,087,701
	Total	8,339,026		Total	205,219,252
6	National				
	2018	307,075,680		Federal	1821273.762
	2019	877,920,062			5463821.287
	2020	779,146,335			4856730.366
		1,964,142,078			12141825.41
	Additional Budget allocated for large MV CR WASH schemes & 2032design pop	132,222,828			
	Grand Total	2,096,364,906			

Note: The detail Cost allocated for each technology by region please see annex---

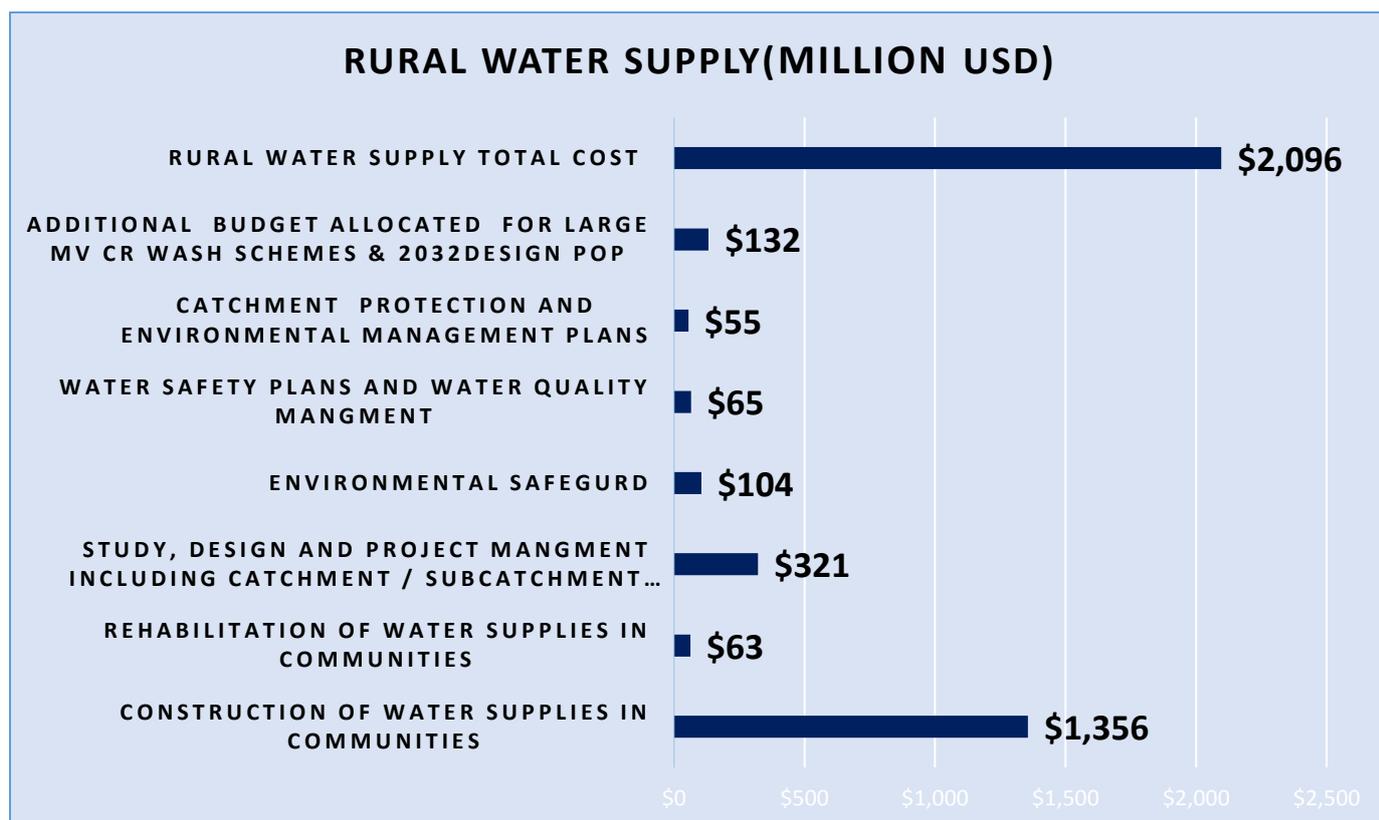


Fig 22: Summery of cost for rural water supply, Phase II 2018-2020

15.6 Institutional WASH

The investments required for water supply and sanitation facilities in institutions have been calculated based on the sanitation micro-plans to achieve universal access by 2030 and adjusted to the specific targets for WASH in institutions included under GTP-2 (80% water coverage in schools and 60% water coverage in health post and health centres).

The budget for School WASH also includes targeting 80% of the 36,518 schools (33,524 primary and 2,994 secondary) with MHM and other hygiene promotion packages.

The budget for WASH in health institutions includes all infrastructure investments to ensure 60% of water coverage in health posts and health centres, as well as software activities such as the IPPS (Infection prevention and patient safety).

Table 20: Summary of cost for WASH in schools by region, Phase II 2018-2020

Region Name	Primary schools rural areas	Primary schools urban areas	Secondary schools (both rural and urban)	Total WASH in schools (ETB)	Total WASH in schools (US\$)
Addis Ababa	-	63,428,000	67,912,320	131,340,320	4,690,725.71

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Afar	473,473,361	-	10,669,440	484,142,801	17,290,814.32
Amhara	3,614,511,987	27,368,000	107,591,840	3,749,471,827	133,909,708.11
Benshangul Gumuz	255,842,370	-	437,340,020	693,182,390	24,756,513.93
Dire Dawa	14,738,589	4,040,000	111,265,000	130,043,589	4,644,413.89
Gambella	89,064,722	-	40,420,900	129,485,622	4,624,486.50
Harari	26,735,471	15,535,560	190,410,060	232,681,091	8,310,038.96
Oromia	6,176,829,243	2,716,800	24,348,200	6,203,894,243	221,567,651.54
SNNP	4,605,655,592	202,290,000	3,394,560	4,811,340,152	171,833,576.86
Somali	1,615,739,068	-	43,033,400	1,658,772,468	59,241,873.86
Tigray	185,751,624	11,320,840	3,801,000	200,873,464	7,174,052.29
Total	17,058,342,027	326,699,200	1,040,186,740	18,425,227,967	658,043,855.96
Total USD	609,226,500.96	11,667,828.57	37,149,526.43	658,043,855.96	

Table 21: Summary of cost for WASH in health centres by region, Phase II 2018-2020

Region Name	Health Post WASH Cost in rural areas (ETB)	Health Centre WASH Cost in rural areas (ETB)	Health Centre in urban areas (ETB)	Total(ETB)	Total(USD)
Addis Ababa			25,200,000	25,200,000	900,000
Afar	56,552,000	38,178,253	55,400,000	150,130,253	5,361,795
Amhara	464,631,241	119,823,030	218,400,000	802,854,271	28,673,367
Benshangul Gumuz	50,677,704	-	10,780,000	61,457,704	2,194,918
Dire Dawa	-	-	4,060,000	4,060,000	145,000
Gambella	18,619,138	-	53,110,000	71,729,138	2,561,755
Harari	-	1,574,733	7,210,000	8,784,733	313,740
Oromia	452,272,505	182,347,862	1,970,000	636,590,367	22,735,370
SNNP	615,273,934	149,900,800	372,810,000	1,137,984,734	40,642,312
Somali	219,572,613	28,382,000	192,140,000	440,094,613	15,717,665
Tigray	75,679,164	105,216,000	24,020,000	204,915,164	7,318,399
Total	1,953,278,299	625,422,678	965,100,000	3,543,800,977	126,564,321
Total USD	69,759,939.25	22,336,524.21	34,467,857.14	126,564,320.61	

15.7. Urban Water Supply

Population to be served under GTP2 by 2020 is included under sub-section 16...

Per capita unit rates have been derived from all sources and variations are illustrated in the figure below. Phase 1 estimates have proved to be too low and the recent rates used by the regions are considered to be unreliable. Hence

Hence limited information from other sources has been analyzed and is recommended for use: see table below

Table 22-Per capita Unit Rate for Urban Water Supply (USD)

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1	Parameters	Urban water unit rates, USD per capita by Regions										
2	Regions and City Administrations	Oromiya	Amhara	Tigray	SNNP	Somali	B Gumuz	Afar	Gambella	Harari	Dire Dawa	Addis Ababa
3	Per capita cost national average of all category	91	91	91	91	91	91	91	91		91	
4	SDG WASH Costing Tools basic water estimate Including price inflation for year 2017	94	94	94	94	94	94	94	94		94	
5	Regional Factor proposed in phase-I	1	1	1.05	1	1.25	1.1	1.25	1.1		1.05	
6	Regional factors developed from unit cost analyses of different NGOs and CWA project records	1.06	1.06	1.10	1.07	1.28	1.08	1.11	1.09		1.08	
7	Regional factors, average of above 2 rows	1.03	1.03	1.07	1.04	1.27	1.09	1.18	1.09		1.06	
8	Per capita unit rate from OWN Phase-I document	28	39	28	23	67	30	33	31		28	
9	Factored per capita unit rate planned by regions for OWN phase-II	34	43	11	459	130	74	122	113		1	
10	Regional unit rates from CR-WASH	127	127	133	127	145		145				
11	Per capita unit rates derived from available sources	94	94	98	94	115	99	107	100		97	
12	Per capita Unit Rate that takes account of the various factors from SDG WASH Costing Tools	97	97	101	97	119	102	111	103		100	
13	Average of above 2 rows recommended for use alongside CR-WASH figures	95	95	99	96	117	101	109	101		98	47
<i>Note: rates in Row 13 to be used, but supplemented by Row 10 according to proportion of very deep well schemes</i>												

Note: These rates are based on design population, assumed to be 2032

15.7 Urban Water Supply Physical and Financial Plan

Urban technology mix

In order to achieve greater resilience and reliability, it has been decided to increase the mix of very deep boreholes in drought prone areas, both urban and rural. Funding source for the drought prone area interventions under CR-WASH (Resilient and Sustainable Water Supply, Sanitation and Hygiene programme in Arid and Semi-Arid Drought Prone Areas of Ethiopia) has been identified separate from other funding sources, so that the table below reflects this distinction.

The percentages of CR-WASH and non-CR-WASH are based on estimates from recent WASH Cluster reports: However, this will require inputs from both national experts and regional actors with local knowledge: The spreadsheet tool, below, is designed to be user friendly so that this can be easily done.

The overall cost **1,013 USD million** (including **218 USD million CR-WASH**) is considered to be reasonable and possible to implement in the GTP2 timeframe, but only if other factors are concurrently put into place (WASH sector reform, capacity building, advocacy and of course funding).

This represents a significant reduction in the 1,919 million USD total proposed by the regions. The difference can be accounted by (a) a higher target population of 11.27 million compared with GTP2 target of 9.27 million and (b) while Oromiya region underestimated costs by half, SNNP region would appear to have overestimated urban costs by a factor of 7.

It could be argued that works to serve the population at the 2020 GTP2 target date should to be based on 2032 design horizon, which could be up to double the 2020 population. This would push the cost to 1,698 million USD (including 384 million USD CR-WASH). This would be a valid argument if the full capacity of the built works were only to be utilised in 2032, but not true in the situation where any works installed in an “under-served” city (as is the case in all of Ethiopia) since any installed capacity will be immediately utilised.

It is recommended that the GTP2 urban water budgets should be based on **1,013 USD million** (including **219 USD million CR-WASH**) and that funding to this amount be identified.(see table 16.8)

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Table 22: Urban water cost, GTP II, 2018-2020

1	Parameters	Urban water costs to meet GTP2, USD million by regions											Total
2	Regions and City Administrations	Oromia	Amhara	Tigray	SNNP	Somali	B Gumuz	Afar	Gambela	Harari	Dire Dawa	Addis Ababa	
3	Unit rates from CR-WASH, USD/c	127	127	133	127	145		145	134	134	134		
4	Recommended for use for non CR-WASH, USD/c	95	95	99	96	117	101	109	101	96	98	47	
5	Unserved population to be served by 2020, million	1.88	0.71	0.43	1.20	0.15	0.09	0.14	0.07	0.15	0.08	4.36	9.27
6	Estimated %age mix of CR-WASH to 2020, from latest	30%	20%	20%	20%	100%	0%	100%	0%	30%	30%	0%	32%
7	Non CR-WASH %age	70%	80%	80%	80%	0%	100%	0%	100%	70%	70%	100%	
8	Cost, USD million = Row 5 x (Row 3 x Row 6 + Row 4 x Row 7)	197.1	72.0	45.8	122.3	21.7	9.5	20.9	7.4	16.1	8.5	206.8	728.2
9	<i>Note: To all these figures must be added factors for investigation, design and project management (15%), Environmental Safe guard(2%), Catchment Protection(2%), inflation (10% for 3 years) and risk (10%), combined 39%.</i>												1.39
10	Totals	274.3	100.1	63.8	170.2	30.2	13.3	29.0	10.3	22.4	11.8	287.8	1,013.2
11	CR-WASH, USD million, without design factor	82.3	20.0	12.8	34.0	30.2	0.0	29.0	0.0	6.7	3.5	0.0	218.6
12	non-CR-WASH, USD million, without design factor	192.0	80.1	51.0	136.2	0.0	13.3	0.0	10.3	15.7	8.3	287.8	794.6
13	<i>Factor to allow for use of 2032 design population compared with GTP2 2020 population for calculating costs</i>	1.76	1.92	1.85	1.90	1.46	2.19	1.85	2.03	1.44	1.40	1.33	
14	Totals with design factors USD million	483.3	192.5	118.2	323.4	44.0	29.1	53.8	20.8	32.4	16.5	384.1	1,698.0
15	CR-WASH, USD million, with design factor	145.0	38.5	23.6	64.7	44.0	0.0	53.8	0.0	9.7	5.0	0.0	384.2
16	non-CR-WASH, USD million, with design factor	338.3	154.0	94.6	258.7	0.0	29.1	0.0	20.8	22.6	11.6	384.1	1,313.8
17	Original regional proposal unserved population to be served by 2020, million	1.71	1.24	0.79	2.61	0.24	0.11	0.11	0.08	0.00	0.01	4.36	11.27
18	Regional proposal, USD million	142.5	106.8	55.2	1242.2	57.0	16.5	39.1	50.3	0.0	2.7	206.8	1919.2
19	Unit rate from regional proposal, USD/c	83	86	70	475	241	144	342	625		300	47	

Note: Note: These rates are based on design population, assumed to be that projected for 2032

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Urban water supply activities will need to be undertaken in 973 towns to achieve 75% access during phase II as shown below.

Table 23: Financial Requirement for planned Urban Water Supply by Region and Year (USD)

Region/City	Activity	Planned Approximate #of towns for intervention	2018	2019	2020	Total(USD)
Tigray	Construction of water supplies in communities	88	5,837,273.33	17,511,820.00	15,566,062.22	38,915,155.54
	Rehabilitation of water supplies in communities		1,244,009.07	3,732,027.21	3,317,357.52	8,293,393.80
	Study, Design and Project Management including catchment and or sub catchment groundwater investigation		1,913,860.11	5,741,580.33	5,103,626.96	12,759,067.39
	Environmental Safeguard		191,386.01	574,158.03	510,362.70	1,275,906.74
	Water Safety Plans and Water Quality Management		191,386.01	574,158.03	510,362.70	1,275,906.74
	Catchment protection and Environmental management plans		191,386.01	574,158.03	510,362.70	1,275,906.74
Total						60,345,336.95
Afar	Construction of water supplies in communities	29	2656895	7970685	7085054	17712634
	Rehabilitation of water supplies in communities		566224	1698671	1509929	3774824
	Study, Design and Project Management including catchment and or sub catchment groundwater investigation		871113	2613339	2322968	5807421

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Region/City	Activity	Planned Approximate #of towns for intervention	2018	2019	2020	Total(USD)
	Environmental Safeguard		87111	261334	232297	580742
	Water Safety Plans and Water Quality Management		87111	261334	232297	580742
	Catchment protection and Environmental management plans		87111	261334	232297	580742
Total						34,844,526
Amhara	Construction of water supplies in communities	144	9,161,107	27,483,320	24,429,618	61,074,045
	Rehabilitation of water supplies in communities		1,952,367	5,857,101	5,206,312	13,015,780
	Study, Design and Project Management including catchment and or sub catchment groundwater investigation		3,003,642	9,010,925	8,009,711	20,024,277
	Environmental Safeguard		300,364	901,092	800,971	2,002,428
	Water Safety Plans and Water Quality Management		300,364	901,092	800,971	2,002,428
	Catchment protection and Environmental management plans		300,364	901,092	800,971	2,002,428
Total						98,118,958
Oromiya	Construction of water supplies in communities	383	25094468	75283403	66918580	167296451
	Rehabilitation of water supplies in communities		5348001	16044004	14261337	35653342

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Region/City	Activity	Planned Approximate #of towns for intervention	2018	2019	2020	Total(USD)
	Study, Design and Project Management including catchment and or sub catchment groundwater investigation		8227694	24683083	21940518	54851295
	Environmental Safeguard		822769	2468308	2194052	5485130
	Water Safety Plans and Water Quality Management		822769	2468308	2194052	5485130
	Catchment protection and Environmental management plans		822769	2468308	2194052	5485130
Total						274,256,478
B/Gumuz	Construction of water supplies in communities	19	1214996.61	3644989.84	3239990.97	8099977.42
	Rehabilitation of water supplies in communities		258933.70	776801.11	690489.88	1726224.70
	Study, Design and Project Management including catchment and or sub catchment groundwater investigation		398359.55	1195078.64	1062292.12	2655730.30
	Environmental Safeguard		39835.95	119507.86	106229.21	265573.03
	Water Safety Plans and Water Quality Management		39835.95	119507.86	106229.21	265573.03
	Catchment protection and Environmental management plans		39835.95	119507.86	106229.21	265573.03
Total						13,278,651.51
SNNP	Construction of water supplies in communities	244	15576424.7	46729274.0	41537132.4	103842831.1

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Region/City	Activity	Planned Approximate #of towns for intervention	2018	2019	2020	Total(USD)
	244		3319565.9	9958697.7	8852175.8	22130439.4
	Study, Design and Project Management including catchment and or sub catchment groundwater investigation		5107024.5	15321073.4	13618731.9	34046829.9
	Environmental Safeguards		510702.4	1532107.3	1361873.2	3404683.0
			510702.4	1532107.3	1361873.2	3404683.0
			510702.4	1532107.3	1361873.2	3404683.0
Total						170,234,149.40
Gambella	Construction of water supplies in communities	15	938,466.03	2,815,398.09	2,502,576.08	6,256,440.19
	Rehabilitation of water supplies in communities		200,000.96	600,002.87	533,335.89	1,333,339.71
	Study, Design and Project Management including catchment and or sub catchment groundwater investigation		307,693.78	923,081.34	820,516.75	2,051,291.87
	Environmental Safeguard		30,769.38	92,308.13	82,051.67	205,129.19
	Water Safety Plans and Water Quality Management		30,769.38	92,308.13	82,051.67	205,129.19
	Catchment protection and Environmental management plans		30,769.38	92,308.13	82,051.67	205,129.19
Total						10,256,459.34
Harari	Construction of water supplies in communities	5	2051542.47	6154627.41	5470779.92	13676949.80
	Rehabilitation of water supplies in communities		437213.97	1311641.91	1165903.92	2914759.79

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Region/City	Activity	Planned Approximate #of towns for intervention	2018	2019	2020	Total(USD)
	Study, Design and Project Management		672636.88	2017910.63	1793698.34	4484245.84
	Environmental Safeguard		67263.69	201791.06	179369.83	448424.58
	Water Safety Plans and Water Quality Management		67263.69	201791.06	179369.83	448424.58
	Catchment protection and Environmental management plans		67263.69	201791.06	179369.83	448424.58
Total						22,421,229.17
Somali	Construction of water supplies in communities	30	2765009.41	8295028.23	7373358.43	18433396.08
	Rehabilitation of water supplies in communities		589264.30	1767792.90	1571371.47	3928428.67
	Study, Design and Project Management		906560.46	2719681.39	2417494.57	6043736.42
	Environmental safeguard		90656.05	271968.14	241749.46	604373.64
	Water Safety Plans and Water Quality Management		90656.05	271968.14	241749.46	604373.64
	Catchment protection and Environmental management plans		90656.05	271968.14	241749.46	604373.64
Total						30,218,682.09
Direedawa	Construction of water supplies in communities	1	1081113.21	3243339.62	2882968.55	7207421.37
	Rehabilitation of water supplies in communities		230401.18	691203.53	614403.13	1536007.83
	Study, Design and Project Management		354463.35	1063390.04	945235.59	2363088.97
	Environmental safeguard		35446.33	106339.00	94523.56	236308.90

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Region/City	Activity	Planned Approximate #of towns for intervention	2018	2019	2020	Total(USD)
	Water Safety Plans and Water Quality Management		35446.33	106339.00	94523.56	236308.90
	Catchment protection and Environmental management plans		35446.33	106339.00	94523.56	236308.90
						11,815,444.87
Addis Ababa	Construction of water supplies in communities	1	26333902.1	79001706.2	70223738.8	175559347.0
	Rehabilitation of water supplies in communities		5612143.1	16836429.2	14965714.8	37414287.1
	Study, Design and Project Management		8634066.2	25902198.7	23024176.7	57560441.6
	Environmental safeguard		863406.6	2590219.9	2302417.7	5756044.2
	Water Safety Plans and Water Quality Management		863406.6	2590219.9	2302417.7	5756044.2
	Catchment protection and Environmental management plans		863406.6	2590219.9	2302417.7	5756044.2
Total						287,802,208.30
Grand Total						1,013,237,129

15.8 Rural and Peri-urban Sanitation Physical Plan

Rural sanitation and hygiene

The target for rural sanitation activities is to increase access to improved sanitation facilities and hygiene practice. An estimated USD 394,689,743 is required to achieve the Program's physical targets. The regional distribution of the financial requirement is shown below cost of software for advocacy and capacity building is described under program management and capacity building section

Region Name	Taking villages to Primary ODF village status		Taking villages to Secondary ODF village status		Taking villages to Safely Managed sanitation village status		Fixed Costs for training; supervision and monitoring	R
	Estimated Cost	Physical Target	Estimated Cost	Physical Target	Estimated Cost	Physical Target		
Addis Ababa	-	-	-	-	-	-	-	
Afar	30,886,825	2,046	28,441,241	2,198	94,804,136	2,198	20,073,600	5,
Amhara	197,496,941	21,454	299,330,475	33,600	312,969,611	35,131	135,453,796	22
Benshangul Gumuz	33,908,074	1,053	75,542,500	2,500	45,100,000	2,500	9,676,000	2,
Dire Dawa	37,602,453	350	38,410,477	381	22,931,628	381	4,477,200	1,
Gambella	29,075,896	767	20,595,120	910	20,595,120	910	483,800	2,
Harari	9,811,474	84	20,934,612	191	12,498,276	191	590,400	8
Oromia	2,055,468,542	104,162	2,773,234,620	149,765	1,661,245,288	150,270	423,189,467	40
SNNP	107,189,109	56,144	302,215,478	31,659	566,350,690	91,960	324,839,034	20
Somali	102,341,190	4,382	89,322,499	4,462	73,253,571	4,468	58,006,832	14
Tigray	181,181,498	950	395,869,420	2,212	278,436,670	2,606	40,153,347	5,
Total	2,784,962,002	191,392	4,043,896,442	227,878	3,088,184,991	290,614	1,016,943,476	110
Total USD	99,462,928.66	6,835.42	144,424,872.94	8,138.48	110,292,321.09	10,379.08	36,319,409.86	4,1

15.9 Urban sanitation

Since the information from the regions on urban sanitation is not complete, the GOE approved IUSHSAP proposals (valid 2016/7) have been used, but excluding SWM components, as can be seen in the table below.

Table 27: Cost for Urban sanitation

No	Particulars	Unit	Quantity	Estimated Financial Requirement (ETB)
A	Hardware		Phase 1 (2016-2020)	PG1:Y4hase 1 (2016 - 2020)
1	Public Toilets Construction in 970 towns	No. of units	1201	939,088,500
2	Communal Toilets Construction in 970 towns	No. of units	2237	1,249,787,500
3	School Toilets Construction in 970 towns	No. of units	1942	1,303,194,000
4	Waste Water Study and Design	No. of towns	36	180,000,000
5	Waste Water Treatment Plants Construction	No. of towns	6	6,161,800,000
6	Decentralized WWT system study design and installation		200	Included in above figure
7	Procurement of 8 m ³ capacity Vacuum Trucks for 50 towns and surrounding cities	No. of units	48	144,000,000
8	Procurement of 5 m ³ capacity Vacuum Trucks for 50 towns and surrounding cities	No. of units	25	62,500,000
9	Procurement of 3 m ³ capacity Vacuum Trucks for 50 towns and surrounding cities	No. of units	1	2,000,000
	Sum			10,042,370,000
10	For Rehabilitation of Sanitation Facilities (7% of Sum)			702,965,900
	Grand Sum Hardware			10,745,335,900
B	Software			
1	322,360,077			
2	Advocacy and communication (0.1% of Grand Sum per annum or 0.5% per phase)			53,726,680
3	Capacity Building			
3.1	Updating/preparation of Manuals (0.05% of Grand Sum)			5,372,668
	Continuous Cascaded training on liquid waste management, composting, etc. (0.1% of Grand Sum per annum or 0.5% per phase)			53,726,680
3.3	Capacity Building in terms of Logistics (4% of Grand Sum)			429,813,436
C	Miscellaneous			
	R&D			
	Seed money for Formative Research (1% of Grand Sum)			107,453,359
	M&E (1% of Grand Sum)			107,453,359
	Technical Assistance by NWCO and S&H TWG (0.5% of Grand Sum)			53,726,680
	Seed money for MFIs (3%)			322,360,077

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Seed money for providing rewards to successful institutions, school, hygiene and sanitation clubs, communities, etc. (1% of Grand Sum)				107,453,359
Seed money for promotion of the RRR principle, use of bio- digesters for generating energy and speeding up pathogen die off at transfer stations (2% of Grand Sum)				214,906,718
Seed money for Enhancing Sanitation supply chain (1.5%of Grand Sum)				161,180,039
Total ETB				12,684,869,032
USD at 23 Birr/\$				\$551,516,045
Grand total USD Including escalation 2017-2020 at 3% per year, USD million				602.7
Proportion for CR-WASH (mean of all values under "urban water costs". USD million				191.8

Table 28: Rural and Pastoralist Program Management Costs by Region and Year (USD)

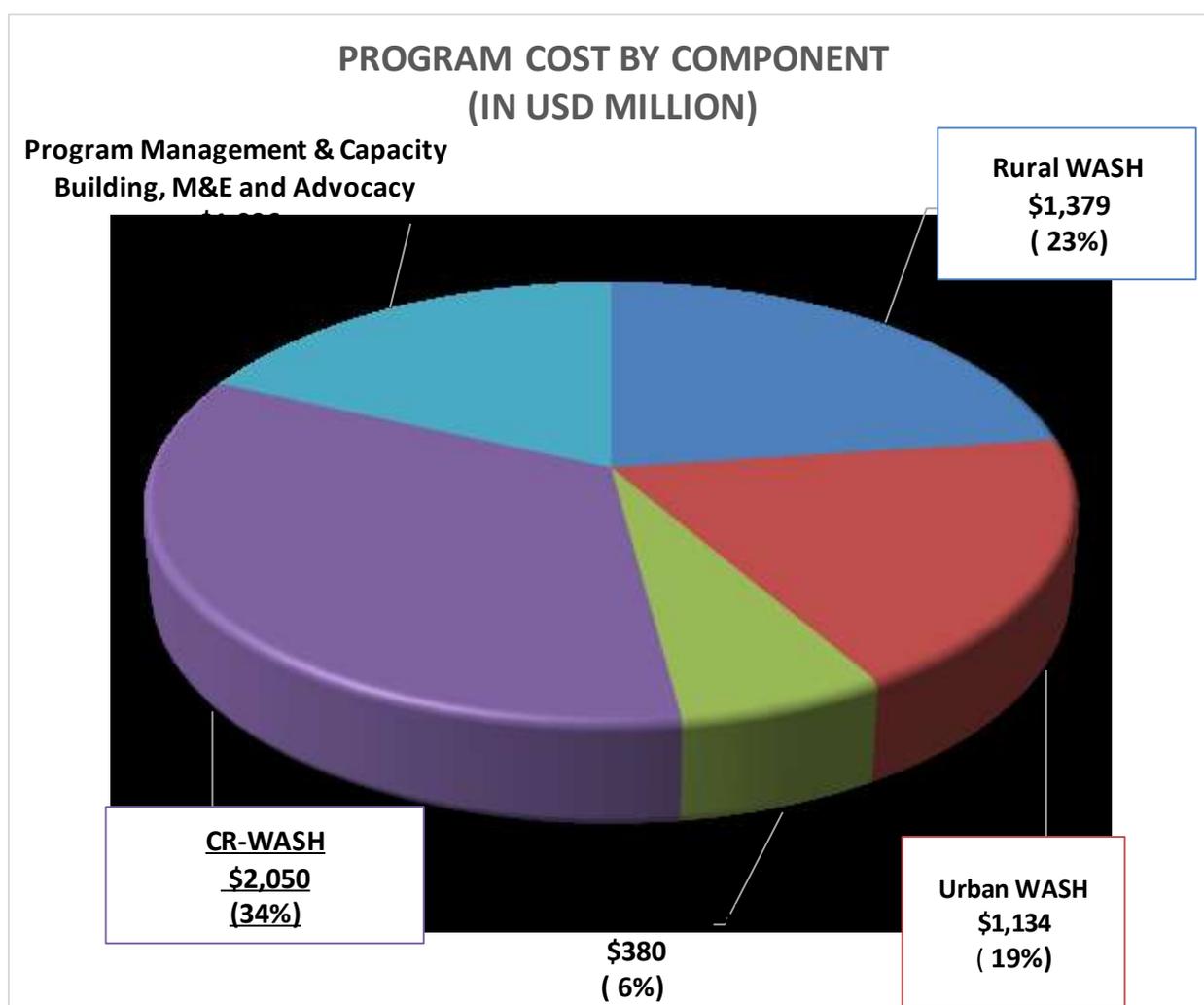
No.	Activity	Total USD
1	Program management	64,000,000
2	Advocacy	19,800,000
3	Capacity Building Costs including TVETCs and HSCs ,Training, Manual Preparation, Procurement of Software, Motor Bikes and Vehicles	190,909,107
4	Support to Research and Water Technology institute	53,000,000
5	Support to Supply Chains by Region and Year (USD)	33,000,000
6	Technical Assistance Pastoralist	53,000,000
7	Technical Assistance for M&E, MIS and Data Management	320,000,000
8	Self-Supply Technical Assistance	40,000,000
9	Technical assistance for Local Drilling private institute	53,000,000
10	Post construction Support	92,400,000
		919,109,107

Table 29: Urban Program Management Costs by Region and Year (USD)

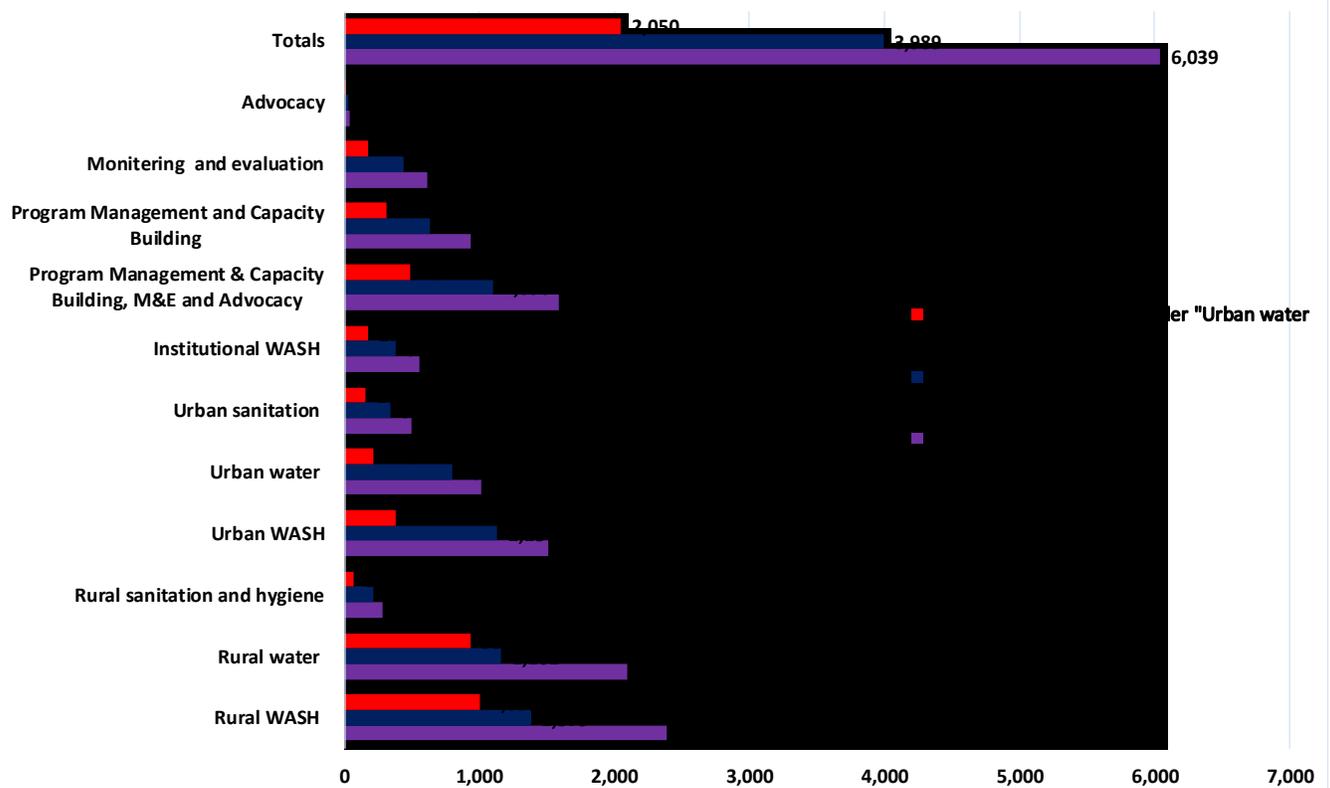
No.	Activity	Total(USD)
1	Program management	29,040,000
2	Advocacy	20,000,000
3	Technical Assistance for M&E, MIS and Data Management	290,400,000
4	Training of Key Utility staffs on water Governance such as asset management, leakage management customer management etc.	65,000,000
5	Standard Design, Supervision, Construction etc. Guideline manual Preparation, Training, Procurement of Software, Motor Bikes and Vehicles	55000000

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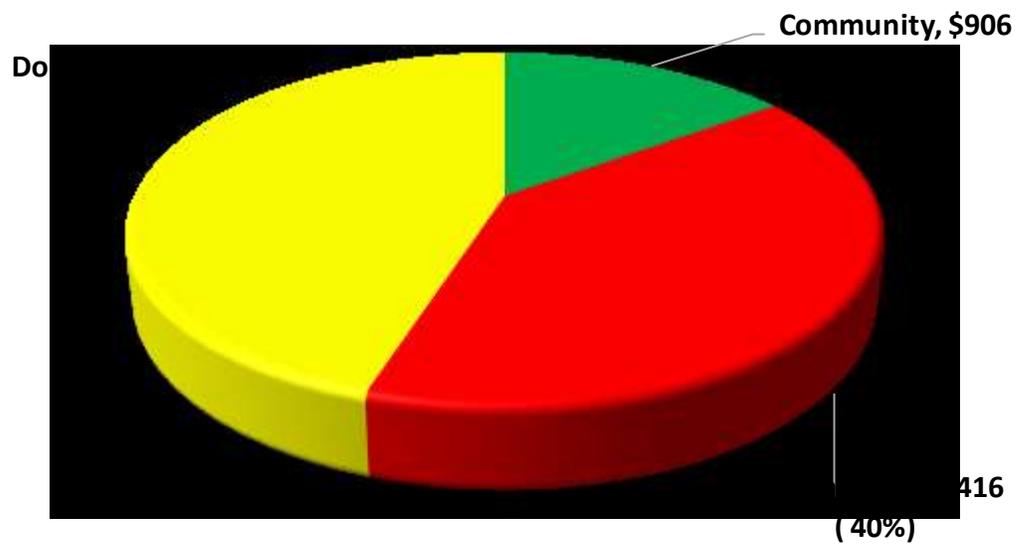
6	Establish independent water supply and wastewater service regulatory agency to ensure high service quality.	26,400,000
7	Establish Utility organizational structure responsible section for wastewater management.	13,200,000
8	Establish Water supply quantity and quality monitoring system	51,960,000
9	Procurement of Pump, Generator and Training for AWSSA	15,000,000
	Software for Urban Sanitation	102,052,774
	Total	668,052,774



Program Cost by Component Total and CR-WASH and Non CR-WASH (Million USD)



PROGRAM SOURCE OF FUND IN MILLION USD



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Table 30: *Recommendation/Remark on each technology mix*

No	Technology Type	Recommendation/Remark
1	Household dug well with rope pump	<ul style="list-style-type: none"> • It appears that, in practice, the unit rates used in the OWNP 2013 document were too low, due to the low number of people served • Averages of the reported figure for other sources, although limited, should be used • This is self-help and therefore does affect the overall budgeting
2	Community dug well with rope pump	<ul style="list-style-type: none"> • As can be seen in the Annex there is a wide variation in reported values and that are too few data points • It is therefore recommended to use the OWNP 2013 rates until better information is available and apply inflation factors in final budgets • This is self-help and therefore does affect the overall budgeting
3	Dug well with hand pump	<ul style="list-style-type: none"> • There is sufficient information from the various sources to be able to use the “average excluding OWNP 2013” • There is reasonable correlation with OWNP 2013 figures, but actual costs appear to be lower overall
4	Shallow well with hand pump	It can be seen that there is reasonable correlation between the averages of figures from various sources and the OWNP 2013, except for high figures used by regional plans and CWA in Somali and SNNPR which should be ignored in budgeting work (See annex ...)
5	Borehole with distribution (small on spot)	The UNICEF supported project data would appear to be reliable and consistent for this technology type region by region across the country.
6	Capped spring	<ul style="list-style-type: none"> • There is reasonable agreement between figures from various sources and the OWNP 2013 figures • Except for regional plan figure for Harari and COWASH figure for Amhara; unless good reason can be found then these figures should be rejected as untypical for overall budgeting use (see Annex...)

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No	Technology Type	Recommendation/Remark
7	Rain water harvesting	There is insufficient data but there are indications that the OWNP 2013 figures were reasonable and appropriate for use
8	Cistern	There is insufficient data from various sources to make any comment The OWNP 2013 figures should therefore be used
9	Hafir Dam	<ul style="list-style-type: none"> • There is insufficient data from various sources to make any comment • The OWNP 2013 figures should therefore be used • However, the rates for Somali need to be re confirmed: in the meanwhile use averages for Somali as a cautionary approach
10	Single village from spring source + gravity distribution with 2-4 water points (small)	<ul style="list-style-type: none"> • The data from various sources appears to be reasonable and appropriately ranged across the regions and the averages could be used in preference to the OWNP 2013 figures for overall budgeting purposes • These figures are significantly lower than the OWNP 2013 figures • Additionally, the high population per technology figures used by OWNP 2013 for Tigray, Amhara, SNNPR and Oromiya do not appear to have not been verified in practice
11	Single village from spring source + motorised distribution with 2 water points (small)	<ul style="list-style-type: none"> • The UNICEF supported project data would appear to be more reliable and consistent for this technology type region by region across the country, and are therefore recommended for use for overall budgeting purposes • However, this results in a 4-fold increase in rates compared to the OWNP 2013 figures
12	Multi village from spring source + gravity distribution with 4-6 water points (medium)	The UNICEF supported project data would appear to be representative (for instance high unit rates for Somali and Afar) and should therefore be used until other data becomes available
13	Multi village from spring source + gravity distribution with 6-10 water points (large)	The UNICEF supported project data would appear to be representative (for instance high unit rates for Somali and Afar) and should therefore be used until other data becomes available

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No	Technology Type	Recommendation/Remark
14	Multi village from spring source + motorized distribution with 4-6 water points (medium)	<ul style="list-style-type: none"> • Except for Afar, the UNICEF supported project data would appear to be representative and should therefore be used until other data becomes available • The UNICEF figure for Afar may be based an error or based on a non-typical project. For Afar the SNNPR figure might be appropriate
15	Multi village from spring source + motorized distribution with 6-10 water points (large)	The UNICEF supported project data would appear to be representative (for instance high unit rates for Somali and Afar) and should therefore be used until other data becomes available
16	Single village borehole source + distribution for 4-6 water points	<ul style="list-style-type: none"> • It can be seen that the regional plans as submitted by B Gumuz, Amhara and Afar include unit rates that are more than double the average values derived from all sources; this offers the opportunity to re-adjust the regional costs downwards. • The UNICEF supported project data would appear to be more reliable and consistent for this technology type region by region across the country (for instance, significantly higher rates for Somali and Afar).
17	Multi village from borehole source with 5-8 km distribution (large)	<ul style="list-style-type: none"> • It can be seen that the regional plans as submitted show wide variations in unit rates that cannot be relied upon • The UNICEF supported project data would appear to be more reliable and consistent for this technology type region by region across the country (for instance, significantly higher rates for Somali and Afar).

List of Annexes

Regional technology mix to meet GTP2

Scenario 1 spreadsheet below includes the numbers of schemes and technology mix exactly as proposed by the regions. However, the resultant total costs may vary from the total cost figures from the regions since this analysis uses averages of unit rates as well as numbers of beneficiaries per technology type derived from various sources

Scenario 2 assumes that the number of schemes required and the technology mix proposed by the regions have been over-estimated and that the unserved population, based on national level MoWIE data), is correct. Number of schemes and technology mix are re-assessed by the consultants through consultation with national government, DP and CSO experts and regional stakeholders to both match the needs of the unserved population and also to increase resilience, sustainability and reliability.

The detail Physical and Financial plan has prepared for each region and each year of the reaming GTPII Plan based on scenario 2

All regions

The working Regional Rural Water spreadsheet “tool” is based on:

- Number of systems proposed for each technology by each region, Column 3 in spreadsheets below
- Average population served by each technology is calculated for each region, Column 6,
- Unit cost per capita for each technology in each region, Column 9, also calculated in **Section 16.4**
- Unserved population to reach 85% GTP2 coverage by 2020, based on MoWIE 2009EFY report, **Sub-section 16.2**above

1 Urban water unit rates, USD per capita	Region										
2 <i>Note: These rates are based on design population, assumed to be 2032</i>	Oromia	Amhara	Tigray	SNNP	Somali	B Gumuz	Afar	Gambela	Harari	Dire Dawa	Addis Ababa
3 Per capita cost national average of all category SDG WASH Costing Tools basic water estimate	91	91	91	91	91	91	91	91		91	
4 Including price inflation for year 2017	94	94	94	94	94	94	94	94		94	
5 Regional Factor proposed in phase-I	1	1	1.05	1	1.25	1.1	1.25	1.1		1.05	
6 Regional factors developed from unit cost analyses of different NGOs and CWA project records	1.06	1.06	1.10	1.07	1.28	1.08	1.11	1.09		1.08	
7 Regional factors, average of above 2 rows	1.03	1.03	1.07	1.04	1.27	1.09	1.18	1.09		1.06	
8 Per capita unit rate from OWNPN Phase-I document	28	39	28	23	67	30	33	31		28	
9 Factored per capita unit rate planned by regions for OWNPN phase-II	34	43	11	459	130	74	122	113		1	
10 Regional unit rates from CR-WASH	127	127	133	127	145		145				
11 Per capita unit rates derived from available sources	94	94	98	94	115	99	107	100		97	
12 Per capita Unit Rate that takes account of the various factors from SDG WASH Costing Tools	97	97	101	97	119	102	111	103		100	
13 Average of above 2 rows recommended for use alongside CR-WASH figures	95	95	99	96	117	101	109	101		98	47
<i>Note: rates in Row 13 to be used, but supplemented by Row 10 according to proportion of very deep well schemes</i>											

Annex 1 Scenario 1

1-Tigray Region

It can be seen that, for Tigray region, for **Scenario 1** (unadjusted):

1. Unserved population to reach 85% GTP2 coverage by 2020 = **783,642**
2. The numbers of systems proposed by the region will serve a (here calculated) **219%** of the actual rural water need (1)

The cost calculated using this tool is **USD 112 million** to serve a rural population of **1.7 million people** (219% of the need), while the original proposal from the region was **USD 70 million** to serve a population of **2.1 million people** (using their own unit rates and population served per technology)

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Technology mix for rural water										
Tigray region										
UnserVED population to be served in the remaining three years according to data derived from draft MoWIE report 2009EFY										783,642
Type	Technology	No. of systems proposed by Region	Adjusted No. of systems	Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Notes
Self supply	1 Household Dug well with Rope Pump	924	924	100%	7	6,468	0.8%	112	723,490	
	2 Community Dug well with Rope Pump	0	0		10	0	0.0%	78	0	
On spot	3 Dug well with Hand Pump	837	837	100%	171	143,127	18.3%	27	3,828,681	
	4 Shallow well with hand pump	2,557	2,557	100%	237	604,731	77.2%	44	26,844,884	
	5 Shallow well with solar system (small on spot)	0	0			0			0	
	6 Borehole with distribution (small on spot)	80	80		1,250	100,000	12.8%	125	12,527,964	
	7 Borehole with distribution (on spot) + solar	0	0		1,250	0			0	
	8 Capped Spring	414	414	100%	253	104,742	13.4%	21	2,171,904	
	9 Rain Water harvesting	0	0		300	0		45	0	
	10 Cistern	0	0		150	0		45	0	
	11 Hafir Dam	0	0			0			0	
	Other	0	0			0			0	
12. Single Village - spring	12a Single village from spring source + gravity distribution with 2-4 water points (small)	0	0		1,650	0	0.0%	39	0	
	12b Single village from spring source + motorized distribution with 2 water points (small)	0	0		1,450	0		75	0	
	12c Single village from spring source + motorized distribution with 2 water points + solar	0	0	0%	3,000	0		52	0	
13. Multi Village - spring	13a Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0		3,000	0	0.0%	79	0	
	13b Multi village from spring source + gravity distribution with 6-10 water points (large)	0	0		8,100	0		39	0	
	13c Multi village from spring source + motorized distribution with 4-6 water points (medium)	0	0		5,500	0		54	0	
	13d Multi village from spring source + motorized distribution with 6-10 water points (large)	0	0		8,100	0		47	0	
	13e Multi village from spring source + motorized distribution with 4-10 water points + solar	0	0			0			0	
14. Single Village - borehole	14a Single village borehole source + distribution for 4-6 water points (medium)	90	90		6,500	585,000	74.7%	88	51,679,393	
	14b Single village borehole source + distribution for 4-6 water points + Solar	0	0			0			0	
15. Multi Village - borehole	15a Multi village from borehole source with 5-8 km distribution (large)	22	22	100%	7,799	171,571	21.9%	84	14,490,591	
	15b Multi village from borehole source with 5-8 km distribution + Solar	0	0	0%		0			0	
	15c Large multi village from one or more very deep boreholes with long km distribution	0	0	0%	10,000	0		140	0	figures from Coffey? Check CR WASH sheets
16. Single Village - river	16 Single village from river source with treatment	0	0			0			0	
17. Multi Village -	17 Multi village from river source with treatment	0	0			0		115	0	
	Other	0	0			0			0	
	Totals	4,924	4,924			1,715,638	218.9%		112,266,907	

Adjust figures in col 4 based on best estimate to reach 100% in col 8

2-Gambella Region

It can be seen that, for Gambella region, for Scenario 1 (unadjusted):

1. Unserved population to reach 85% GTP2 coverage by 2020 = **47,520**
2. The numbers of systems proposed by the region will serve a (here calculated) **342%** of the actual rural water need (1)

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3. The cost calculated using this tool is **USD 14 million** to serve a rural population of **162 thousand people** (342% of the need), while the original proposal from the region was **USD 11.4 million** to serve a population of **156 thousand people** (using their own unit rates and population served per technology)

Technology mix for rural water											
Gambella region											
Unserviced population to be served in the remaining three years according to data derived from draft MoWIE report 2009EFY										47,530	
Type	Technology	No. of systems proposed by Region	Adjusted No. of systems	Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Notes	
Self supply	1 Household Dug well with Rope Pump	650	650	100%	6	3,835	8.1%	133	509,999		
	2 Community Dug well with Rope Pump	0	0		19	0	0.0%	47	0		
On spot	3 Dug well with Hand Pump	163	163	100%	135	22,005	46.3%	34	754,357		
	4 Shallow well with hand pump	238	238	100%	237	56,287	118.4%	95	5,322,697		
	5 Shallow well with solar system (small on spot)	111	111	100%	237	26,252	55.2%	95	2,482,434		
	6 Borehole with distribution (small on spot)	0	0		1,250	0	0.0%	135	0	av unit cost used	
	7 Borehole with distribution (on spot) + solar	0	0		1,250	0		135	0		
	8 Capped Spring	34	34	100%	200	6,811	14.3%	30	206,456		
	9 Rain Water harvesting	0	0		249	0		40	0		
	10 Cistern	0	0		127	0		140	0		
	11 Hafir Dam	0	0		2,225	0		13	0		
	Other	0	0			0			0		
12. Single Village - spring	12a Single village from spring source + gravity distribution with 2 -4 water points (small)	8	8	100%	1,400	11,200	23.6%	96	1,072,908		
	12b Single village from spring source + motorized distribution with 2 water points (small)	0	0		1,300	0		117	0		
	12c Single village from spring source + motorized distribution with 2 water points + solar	0	0		3,000			52	0	from Tigray	
13. Multi Village - spring	13a Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0		3,300	0	0.0%	49	0		
	13b Multi village from spring source + gravity distribution with 6-10 water points (large)	0	0		9,228	0		108	0	av figures used	
	13c Multi village from spring source + motorized distribution with 4-6 water points (medium)	0	0		3,300	0		69	0		
	13d Multi village from spring source + motorized distribution with 6-10 water points (large)	0	0		8,350	0		41	0		
	13e Multi village from spring source + motorized distribution with 4-10 water points + solar	0	0						0		
14. Single Village - borehole	14a Single village borehole source + distribution for 4-6 water points (medium)	12	12		3,000	36,000	75.7%	105	3,782,937		
	14b Single village borehole source + distribution for 4-6 water points + Solar	0	0						0		
15. Multi Village - borehole	15a Multi village from borehole source with 5-8 km distribution (large)	0	0		7,921	0	0.0%	39	0		
	15b Multi village from borehole source with 5-8 km distribution + Solar	0	0			0			0		
	15c Large multi village from one or more very deep boreholes with long km distribution	0	0		10,000	0		140	0	figures from Coffey? Check CR WASH sheets	
16. Single Village - river	16 Single village from river source with treatment	0	0			0			0		
17. Multi Village -	17 Multi village from river source with treatment	0	0			0		115	0		
Other									0		
Totals		1,216	1,216			162,390	341.7%		14,131,786		

Adjust figures in col 4 based on best estimate to reach 100% in col 8

3-Gumuz Region

It can be seen that, for B Gumuz region, for **Scenario 1** (unadjusted):

- Unserviced population to reach 85% GTP2 coverage by 2020 = **253,437**
- The numbers of systems proposed by the region will serve a (here calculated) **105%** of the actual rural water need (1)

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3. The cost calculated using this tool is **USD 12.5 million** to serve a rural population of **0.25 million** (105% of the need), while the original proposal from the region was **USD 17.7 million** to serve a population of **0.24 million** (using their own unit rates and population served per technology)

Technology mix for rural water												
B Gumuz region												
Unserved population to be served in the remaining three years according to data derived from draft MoWIE report 2009EFY										253,437		
Type		Technology	No. of systems proposed by Region	Adjusted No. of systems	Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Notes	
Self supply	1	Household Dug well with Rope Pump	0	0		6	0		133	0		
	2	Community Dug well with Rope Pump	0	0		33	0		38	0		
On spot	3	Dug well with Hand Pump	120	120	100%	115	13,800	5.4%	30	416,311		
	4	Shallow well with hand pump	624	624	100%	236	147,264	58.1%	41	6,034,378		
	5	Shallow well with solar system (small on spot)	10	10	100%	236	2,360	0.9%	41	96,705		
	6	Borehole with distribution (small on spot)	0	0		1,250	0		115	0		
	7	Borehole with distribution (on spot) + solar	0	0		1,250	0			0		
	8	Capped Spring	24	24	100%	188	4,500	1.8%	31	140,042		
	9	Rain Water harvesting	0	0		44	0		39	0		
	10	Cistern	0	0		44	0		106	0		
	11	Hafir Dam	0	0		222	0		105	0		
			Other		0				0		0	
	12. Single Village - spring	12a	Single village from spring source + gravity distribution with 2-4 water points (small)	0	0		1,450	0		66	0	
12b		Single village from spring source + motorized distribution with 2 water points (small)		0		1,400	0		105	0		
12c		Single village from spring source + motorized distribution with 2 water points + solar		0		3,000	0		52	0	from Tigray	
13. Multi Village - spring	13a	Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0		3,200	0		48	0		
	13b	Multi village from spring source + gravity distribution with 6-10 water points (large)		0		8,100	0		37	0		
	13c	Multi village from spring source + motorized distribution with 4-6 water points (medium)		0		3,200	0		69	0		
	13d	Multi village from spring source + motorized distribution with 6-10 water points (large)		0		8,100	0		45	0		
	13e	Multi village from spring source + motorized distribution with 4-10 water points + solar		0						0		
14. Single Village - borehole	14a	Single village borehole source + distribution for 4-6 water points (medium)	10	10	100%	3,000	30,000	11.8%	79	2,371,365		
	14b	Single village borehole source + distribution for 4-6 water points + Solar		0						0		
15. Multi Village - borehole	15a	Multi village from borehole source with 5-8 km distribution (large)	8	8	100%	8,500	68,000	26.8%	50	3,400,447		
	15b	Multi village from borehole source with 5-8 km distribution + Solar		0	0%					0		
	15c	Large multi village from one or more very deep boreholes with long km distribution		0	0%	10,000			140	0	figures from Coffey? Check CR WASH sheets	
16. Single Village - river	16	Single village from river source with treatment	0	0			0			0		
17. Multi Village -	17	Multi village from river source with treatment	0	0			0		115	0		
		Other								0		
Totals			796	796			265,924	104.9%		12,459,248		

4-Harari Region

It can be seen that, for Harari region, for **Scenario 1** (unadjusted):

1. Unserved population to reach 85% GTP2 coverage by 2020 = **28,645**

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- The numbers of systems proposed by the region will serve a (here calculated) **385%** of the actual rural water need (1)
- The cost calculated using this tool is **USD 9.0 million** to serve a rural population of **110,300** (385% of the need), while the original proposal from the region was **USD 1.3 million** to serve a population of **0.05 million** (using their own unit rates and population served per technology)

Technology mix for rural water										
Harari region										
Unserviced population to be served in the remaining three years according to data derived from draft MoWIE report 2009EFY					28,645					
Type	Technology	No. of systems proposed by Region	Adjusted No. of systems	Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Notes
Self supply	1 Household Dug well with Rope Pump	0	0		6	0		133	0	
	2 Community Dug well with Rope Pump	0	0		38	0		32	0	
On spot	3 Dug well with Hand Pump	20	20	100%	193	3,850	13.4%	19	72,094	
	4 Shallow well with hand pump	0	0		280	0		71	0	
	5 Shallow well with solar system (small on spot)	0	0			0			0	
	6 Borehole with distribution (small on spot)	4	4	100%	1,800	7,200	25.1%	117	841,163	
	7 Borehole with distribution (on spot) + solar	0	0			0			0	
	8 Capped Spring	0	0		263	0		27	0	
	9 Rain Water harvesting	0	0		50	0		32	0	
	10 Cistern	0	0		50	0		89	0	
	11 Hafir Dam	0	0		250	0		89	0	
	Other		0			0			0	
12. Single Village - spring	12a Single village from spring source + gravity distribution with 2-4 water points (small)	5	5	100%	1,450	7,250	25.3%	68	490,439	
	12b Single village from spring source + motorized distribution with 2 water points (small)		0		1,400	0		109	0	
	12c Single village from spring source + motorized distribution with 2 water points + solar		0		3,000			52	0	from Tigray
13. Multi Village - spring	13a Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0		3,200	0		52	0	
	13b Multi village from spring source + gravity distribution with 6-10 water points (large)		0		8,100	0		35	0	
	13c Multi village from spring source + motorized distribution with 4-6 water points (medium)		0		3,200	0		73	0	
	13d Multi village from spring source + motorized distribution with 6-10 water points (large)		0		8,100	0		44	0	
	13e Multi village from spring source + motorized distribution with 4-10 water points + solar		0						0	
14. Single Village - borehole	14a Single village borehole source + distribution for 4-6 water points (medium)	4	4	100%	3,500	14,000	48.9%	97	1,360,179	
	14b Single village borehole source + distribution for 4-6 water points + Solar		0						0	
15. Multi Village - borehole	15a Multi village from borehole source with 5-8 km distribution (large)	8	8	100%	8,000	64,000	223.4%	73	4,671,141	
	15b Multi village from borehole source with 5-8 km distribution + Solar		0						0	
	15c Large multi village from one or more very deep boreholes with long km distribution		0		10,000			134	0	
16. Single Village - river	16 Single village from river source with treatment	4	4	100%	3,500	14,000	48.9%	115	1,611,576	
17. Multi Village -	17 Multi village from river source with treatment	0	0		0	0		115	0	
	Other								0	
Totals		45	45			110,300	385.1%		9,046,592	

5-Somali Region

It can be seen that, for Somali region, for **Scenario 1** (unadjusted):

- Unserviced population to reach 85% GTP2 coverage by 2020 = **1,236,365**
- The numbers of systems proposed by the region will serve a (here calculated) **145%** of the actual rural water need (1)

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3. The cost calculated using this tool is **USD 222 million** to serve a rural population of **1.8 million** (145% of the need), while the original proposal from the region was **USD 335 million** to serve a population of **1.09 million** (using their own unit rates and population served per technology)

Technology mix for rural water											
Somali region											
Unserved population to be served in the remaining three years according to data derived from draft MoWIE report 2009EFY										1,236,365	
Type		Technology	No. of systems proposed by Region	Adjusted No. of systems	Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Notes
Self supply	1	Household Dug well with Rope Pump	0	0		3	0		224	0	
	2	Community Dug well with Rope Pump	1,780	1,780	100%	33	58,740	4.8%	44	2,570,320	
On spot	3	Dug well with Hand Pump	670	670	100%	150	100,500	8.1%	20	1,998,509	
	4	Shallow well with hand pump	0	0		300	0		89	0	
	5	Shallow well with solar system (small on spot)	163	163	100%	300	48,900	4.0%	89	4,375,839	
	6	Borehole with distribution (small on spot)	0	0		1,800	0		211	0	
	7	Borehole with distribution (on spot) + solar	0	0		1,800	0			0	
	8	Capped Spring	65	65	100%	175	11,375	0.9%	43	494,407	
	9	Rain Water harvesting	2430	2,430	100%	45	109,350	8.8%	40	4,348,993	
	10	Cistern	967	967	100%	45	43,515	3.5%	118	5,120,265	
	11	Hafir Dam	94	94	100%	493	46,300	3.7%	98	4,558,347	
			Other		0						0
12. Single Village - spring	12a	Single village from spring source + gravity distribution with 2-4 water points (small)	0	0		1,500	0		104	0	
	12b	Single village from spring source + motorized distribution with 2 water points (small)		0		1,000	0		268	0	
	12c	Single village from spring source + motorized distribution with 2 water points + solar		0						0	
13. Multi Village - spring	13a	Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0		2,200	0		173	0	
	13b	Multi village from spring source + gravity distribution with 6-10 water points (large)		0		4,500	0		114	0	
	13c	Multi village from spring source + motorized distribution with 4-6 water points (medium)		0		2,200	0		203	0	
	13d	Multi village from spring source + motorized distribution with 6-10 water points (large)		0		4,500	0		129	0	
	13e	Multi village from spring source + motorized distribution with 4-10 water points + solar		0						0	
14. Single Village - borehole	14a	Single village borehole source + distribution for 4-6 water points (medium)	96	96	100%	4,000	384,000	31.1%	164	63,140,940	
	14b	Single village borehole source + distribution for 4-6 water points + Solar		0						0	
15. Multi Village - borehole	15a	Multi village from borehole source with 5-8 km distribution (large)	98	98	100%	6,500	637,000	51.5%	148	94,272,931	
	15b	Multi village from borehole source with 5-8 km distribution + Solar		0						0	
	15c	Large multi village from one or more very deep boreholes with long km distribution		0		10,000			145	0	
16. Single Village - river	16	Single village from river source with treatment	0	0			0			0	
17. Multi Village -	17	Multi village from river source with treatment	55	55	100%	6,500	357,500	28.9%	115	41,152,741	
		Other								0	
Totals			6,418	6,418			1,797,180	145.4%		222,033,291	

6. Amhara Region

It can be seen that, for Amhara region, for **Scenario 1** (unadjusted):

- Unserved population to reach 85% GTP2 coverage by 2020 = **2,038,169**
- The numbers of systems proposed by the region will serve a (here calculated) **307%** of the actual rural water need (1)
- The cost calculated using this tool is **USD 141 million** to serve a rural population of **6.2 million people** (307% of the need), while the original proposal from the region was **USD 223 million** to serve a population of **4.3 million people** (using their own unit rates and population served per technology)

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Technology mix for rural water										
Amhara region										
Unserviced population to be served in the remaining three years according to data derived from draft MoWIE report 2009EFY						2,038,169				
Technology	No. of systems proposed by Region	Adjusted No. of systems	Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Notes	
1	Household Dug well with Rope Pump	1,260	1,260	100%	6	6,930	0.3%	164	1,136,913	
2	Community Dug well with Rope Pump	1,720	1,720	100%	32	55,040	2.7%	37	2,044,599	
3	Dug well with Hand Pump	12,000	12,000	100%	188	2,253,600	110.6%	26	58,883,836	
4	Shallow well with hand pump	1,500	1,500	100%	274	411,414	20.2%	45	18,669,664	
5	Shallow well with solar system (small on spot)	0	0			0			0	
6	Borehole with distribution (small on spot)	0	0		1,250	0	0.0%	125	0	
7	Borehole with distribution (on spot) + solar	0	0		1,250				0	
8	Capped Spring	9,000	9,000	100%	271	2,439,000	119.7%	19	47,299,978	
9	Rain Water harvesting	180	180	100%	300	54,000	2.6%	45	2,416,107	
10	Cistern	0	0							
11	Hafir Dam	0	0							
	Other		0			0				0
12a	Single village from spring source + gravity distribution with 2-4 water points (small)	0	0		1,395	0	0.0%	34	0	
12b	Single village from spring source + motorized distribution with 2 water points (small)		0		2,000	0		58	0	
12c	Single village from spring source + motorized distribution with 2 water points + solar		0	0%	3,000			52	0	Tigray figures used
13a	Multi village from spring source + gravity distribution with 4-6 water points (medium)	80	80	100%	3,500	280,000	13.7%	38	10,738,255	
13b	Multi village from spring source + gravity distribution with 6-10 water points (large)		0	0%	8,500	0		34		
13c	Multi village from spring source + motorized distribution with 4-6 water points (medium)		0	0%	3,510	0		90		average figures used from Sheet 13c
13d	Multi village from spring source + motorized distribution with 6-10 water points (large)		0	0%	8,500	0		42		
13e	Multi village from spring source + motorized distribution with 4-10 water points + solar		0	0%						
14a	Single village borehole source + distribution for 4-6 water points (medium)	0			4,363	0		109		average figures used from Sheet 14a
14b	Single village borehole source + distribution for 4-6 water points + Solar									
15a	Multi village from borehole source with 5-8 km distribution (large)	60	60	100%	12,500	750,000	36.8%	92		UNICEF fig for population
15b	Multi village from borehole source with 5-8 km distribution + Solar			0%						
15c	Large multi village from one or more very deep boreholes with long km distribution			0%	10,000			140		figures from Coffey? Check CR WASH sheets
16	Single village from river source with treatment	0				0				
17	Multi village from river source with treatment	0				0		115		
	Other									
	Totals					6,249,984	306.6%		141,189,353	

Adjust figures in col 4 based on best estimate to reach 100% in col 8

7. Afar Region

It can be seen that, for Afar region, for **Scenario 1** (unadjusted):

1. Unserviced population to reach 85% GTP2 coverage by 2020 = **660,222**
2. The numbers of systems proposed by the region will serve a (here calculated) **85%** of the actual rural water need (1)

Draft- One WASH Program Document Phase II Updating- May 2010

3. The cost calculated using this tool is **USD 65 million** to serve a rural population of **0.56 million people** (85% of the need), while the original proposal from the region was **USD 77 million** to serve a population of **0.53 million** (using their own unit rates and population served per technology)

Technology mix for rural water										
Afar region										
Unserviced population to be served in the remaining three years according to data derived from draft MoWIE report 2009EFY										660,222
Type	Technology	No. of systems proposed by Region	Adjusted No. of systems	Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Notes
Self supply	1 Household Dug well with Rope Pump	0	0		6	0		133	0	
	2 Community Dug well with Rope Pump	0	0		33	0		44	0	
On spot	3 Dug well with Hand Pump	148	148	100%	185	27,380	4.1%	21	588,027	
	4 Shallow well with hand pump	96	96	100%	350	33,600	5.1%	56	1,866,618	
	5 Shallow well with solar system (small on spot)	53	53	100%	350	18,550	2.8%	56	1,030,529	
	6 Borehole with distribution (small on spot)	0	0		2,000	0		151	0	
	7 Borehole with distribution (on spot) + solar	0	0		2,000	0		151	0	
	8 Capped Spring	7	7	100%	175	1,225	0.2%	30	36,422	
	9 Rain Water harvesting	40	40	100%	44	1,760	0.3%	44	77,000	
	10 Cistern	163	163	100%	44	7,172	1.1%	120	863,085	
	11 Hafir Dam	7	7	100%	222	1,554	0.2%	119	185,339	
	Other		0			0			0	
12. Single Village - spring	12a Single village from spring source + gravity distribution with 2 -4 water points (small)	0	0		1,350	0		103	0	
	12b Single village from spring source + motorized distribution with 2 water points (small)	0	0		1,200	0		186	0	
	12c Single village from spring source + motorized distribution with 2 water points + solar	0	0		1,200	0		52	0	rate from Tigray
13. Multi Village - spring	13a Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0		3,000	0		97	0	
	13b Multi village from spring source + gravity distribution with 6-10 water points (large)	0	0		6,500	0		65	0	
	13c Multi village from spring source + motorized distribution with 4-6 water points (medium)	0	0		3,000	0		76	0	
	13d Multi village from spring source + motorized distribution with 6-10 water points (large)	0	0		6,500	0		76	0	
	13e Multi village from spring source + motorized distribution with 4-10 water points + solar	0	0						0	
14. Single Village - borehole	14a Single village borehole source + distribution for 4-6 water points (medium)	117	117		4,000	468,000	70.9%	129	60,201,342	
	14b Single village borehole source + distribution for 4-6 water points + Solar	0	0						0	
15. Multi Village - borehole	15a Multi village from borehole source with 5-8 km distribution (large)	0	0		7,000	0		112	0	
	15b Multi village from borehole source with 5-8 km distribution + Solar	0	0						0	
	15c Large multi village from one or more very deep boreholes with long km distribution	0	0		10,000			145	0	
16. Single Village - river	16 Single village from river source with treatment	0	0			0			0	
17. Multi Village -	17 Multi village from river source with treatment	0	0			0		115	0	
	Other								0	
	Totals	631	631			559,241	84.7%		64,848,362	

Adjust figures in col 4 based on best estimate to reach 100% in col 8

8. SNNP Region

It can be

seen that, for SNNP region, for **Scenario 1** (unadjusted):

1. Unserviced population to reach 85% GTP2 coverage by 2020 = **6,266,079**

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- The numbers of systems proposed by the region will serve a (here calculated) **75%** of the actual rural water need (1)
- The cost calculated using this tool is **USD 274 million** to serve a rural population of **4.7 million people** (75% of the need), while the original proposal from the region was **USD 371 million** to serve a population of **13.2 million** (using their own unit rates and population served per technology)

Technology mix for rural water											
SNNPR region											
Unserviced population to be served in the remaining three years according to data derived from draft MoWIE report 2009EFY										6,266,079	
Type	Technology	No. of systems proposed by Region	Adjusted No. of systems	Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Notes	
Self supply	1 Household Dug well with Rope Pump	0	0		7	0	0.0%	112	0		
	2 Community Dug well with Rope Pump	2,166	2,166	100%	54	116,964	1.9%	21	2,501,730		
On spot	3 Dug well with Hand Pump	1,296	1,296	100%	234	303,005	4.8%	25	7,709,732		
	4 Shallow well with hand pump	4,659	4,659	100%	260	1,210,296	19.3%	47	56,370,477		
	5 Shallow well with solar system (small on spot)	0	0			0			0		
	6 Borehole with distribution (small on spot)	0	0		1,500	0		140	0		
	7 Borehole with distribution (on spot) + solar	0	0		1,500	0		140	0		
	8 Capped Spring	3,332	3,332	100%	287	955,729	15.3%	19	17,762,375		
	9 Rain Water harvesting	0	0		300	0		45	0		
	10 Cistern	0	0		72	0		59	0		
	11 Hafir Dam	0	0			0			0		
	Other		0	0					0		
12. Single Village - spring	12a Single village from spring source + gravity distribution with 2-4 water points (small)	344	344	100%	1,445	497,208	7.9%	35	17,622,186		
	12b Single village from spring source + motorized distribution with 2 water points (small)		0		1,800	0		92	0		
	12c Single village from spring source + motorized distribution with 2 water points + solar		0		1,800	0		52	0	rate from Tigray	
13. Multi Village - spring	13a Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0		3,800	0		51	0		
	13b Multi village from spring source + gravity distribution with 6-10 water points (large)		0		10,200	0		32	0		
	13c Multi village from spring source + motorized distribution with 4-6 water points (medium)		0		3,800	0		68	0		
	13d Multi village from spring source + motorized distribution with 6-10 water points (large)		0		10,200	0		38	0		
	13e Multi village from spring source + motorized distribution with 4-10 water points + solar		0						0		
14. Single Village - borehole	14a Single village borehole source + distribution for 4-6 water points (medium)	534	534	100%	3,000	1,602,000	25.6%	107	172,026,846		
	14b Single village borehole source + distribution for 4-6 water points + Solar		0						0		
15. Multi Village - borehole	15a Multi village from borehole source with 5-8 km distribution (large)	0	0		11,000	0		51	0		
	15b Multi village from borehole source with 5-8 km distribution + Solar		0						0		
	15c Large multi village from one or more very deep boreholes with long km distribution		0		10,000			127	0		
16. Single Village - river	16 Single village from river source with treatment	0	0			0			0		
17. Multi Village -	17 Multi village from river source with treatment	0	0			0		115	0		
	Other								0		
	Totals	12,331	12,331			4,685,202	74.8%		273,993,345		

Adjust figures in col 4 based on best estimate to reach 100% in col 8

9. Oromiya Region

It can be seen that, for Oromiya region, for **Scenario 1** (unadjusted):

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1. Unserved population to reach 85% GTP2 coverage by 2020 = **9,076,728**
2. The numbers of systems proposed by the region will serve a (here calculated) **57%** of the actual rural water need (1)
3. The cost calculated using this tool is **USD 295 million** to serve a rural population of **5.1 million people** (57% of the need), while the original proposal from the region was **USD 254million** to serve a population of **4.6 million people** (using their own unit rates and population served per technology)

Technology mix for rural water											
Oromia region											
Unserved population to be served in the remaining three years according to data derived from draft MoWIE report 2009EFY										9,076,728	
Type	Technology	No. of systems proposed by Region	Adjusted No. of systems	Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Notes	
Self supply	1 Household Dug well with Rope Pump	0	0		7	0		112	0		
	2 Community Dug well with Rope Pump	0	0		54	0		21	0		
On spot	3 Dug well with Hand Pump	5,875	5,875	100%	166	972,900	10.7%	23	22,372,502		
	4 Shallow well with hand pump	1,461	1,461	100%	217	316,953	3.5%	41	13,034,585		
	5 Shallow well with solar system (small on spot)	0	0			0			0		
	6 Borehole with distribution (small on spot)	0	0		1,500	0		134	0		
	7 Borehole with distribution (on spot) + solar	0	0		1,500	0		134	0		
	8 Capped Spring	4,827	4,827	100%	256	1,236,402	13.6%	20	24,881,648		
	9 Rain Water harvesting	0	0		72	0		21	0		
	10 Cistern	0	0		72	0		90	0		
	11 Hafir Dam	0	0		359	0		59	0		
		Other	0	0			0			0	
12. Single Village - spring	12a Single village from spring source + gravity distribution with 2-4 water points (small)	372	372	100%	1,479	550,079	6.1%	35	19,181,856		
	12b Single village from spring source + motorized distribution with 2 water points (small)		0		2,000	0		81	0		
	12c Single village from spring source + motorized distribution with 2 water points + solar		0		2,000	0		52	0	Unit rate from Tigray	
13. Multi Village - spring	13a Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0		4,200	0	0.0%	44	0		
	13b Multi village from spring source + gravity distribution with 6-10 water points (large)		0		11,000	0		31	0		
	13c Multi village from spring source + motorized distribution with 4-6 water points (medium)		0		4,200	0		60	0		
	13d Multi village from spring source + motorized distribution with 6-10 water points (large)		0		11,000	0		35	0		
	13e Multi village from spring source + motorized distribution with 4-10 water points + solar		0						0		
14. Single Village - borehole	14a Single village borehole source + distribution for 4-6 water points (medium)	687	687	100%	3,000	2,061,000	22.7%	104	215,167,785		
	14b Single village borehole source + distribution for 4-6 water points + Solar		0						0		
15. Multi Village - borehole	15a Multi village from borehole source with 5-8 km distribution (large)	0	0		10,500	0		52	0		
	15b Multi village from borehole source with 5-8 km distribution + Solar		0						0		
	15c Large multi village from one or more very deep boreholes with long km distribution		0		10,000			127	0		
16. Single Village - river	16 Single village from river source with treatment	0	0			0			0		
17. Multi Village -	17 Multi village from river source with treatment	0	0			0		115	0		
	Other								0		
Totals		13,222	13,222			5,137,333	56.6%		294,638,377		

Adjust figures in col 4 based on best estimate to reach 100% in col 8

10. Dire Dawa Region

It can be seen that, for Dire Dawa region, for **Scenario 1** (unadjusted):

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1. Unserved population to reach 85% GTP2 coverage by 2020 = **19,923**
2. The numbers of systems proposed by the region will serve a (here calculated) **552%** of the actual rural water need (1)
3. The cost calculated using this tool is **USD 10.5 million** to serve a rural population of **0.11 million people** (552% of the need). Note that the regional proposals did not give details of costs and population to be served.

Technology mix for rural water											
Dire Dawa rural											
Unserved population to be served in the remaining three years according to data derived from draft MoWIE report 2009EFY										19,923	
Type		Technology	No. of systems proposed by Region	Adjusted No. of systems	Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Notes
Self supply	1	Household Dug well with Rope Pump	0	0		6	0		133	0	
	2	Community Dug well with Rope Pump	0	0		42	0		32	0	
On spot	3	Dug well with Hand Pump	0	0		171	0		25	0	
	4	Shallow well with hand pump	25	25	100%	320	8,000	40.2%	127	1,012,864	
	5	Shallow well with solar system (small on spot)	0	0			0			0	
	6	Borehole with distribution (small on spot)	18	18	100%	2,000	36,000	180.7%	110	3,946,309	
	7	Borehole with distribution (on spot) + solar	0	0		2,000	0		110	0	
	8	Capped Spring	0	0		350	0		25	0	
	9	Rain Water harvesting	0	0		737	0		29	0	
	10	Cistern	0	0		57	0		90	0	
	11	Hafir Dam	0	0		493	0		98	0	
		Other		0		0				0	
12. Single Village - spring	12a	Single village from spring source + gravity distribution with 2-4 water points (small)	5	5	100%	1,400	7,000	35.1%	41	283,837	
	12b	Single village from spring source + motorized distribution with 2 water points (small)		0		1,444	0		130	0	
	12c	Single village from spring source + motorized distribution with 2 water points + solar		0		1,444	0		52	0	unit rate from Tigray
13. Multi Village - spring	13a	Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0		3,200	0	0.0%	55	0	
	13b	Multi village from spring source + gravity distribution with 6-10 water points (large)		0		8,100	0		38	0	
	13c	Multi village from spring source + motorized distribution with 4-6 water points (medium)		0		3,200	0		76	0	
	13d	Multi village from spring source + motorized distribution with 6-10 water points (large)		0		8,100	0		46	0	
	13e	Multi village from spring source + motorized distribution with 4-10 water points + solar		0						0	
14. Single Village - borehole	14a	Single village borehole source + distribution for 4-6 water points (medium)	10	10	100%	3,500	35,000	175.7%	101	3,534,676	
	14b	Single village borehole source + distribution for 4-6 water points + Solar		0						0	
15. Multi Village - borehole	15a	Multi village from borehole source with 5-8 km distribution (large)	3	3	100%	8,000	24,000	120.5%	74	1,771,812	
	15b	Multi village from borehole source with 5-8 km distribution + Solar		0						0	
	15c	Large multi village from one or more very deep boreholes with long km distribution		0		10,000			134	0	
16. Single Village - river	16	Single village from river source with treatment	0	0			0			0	
17. Multi Village -	17	Multi village from river source with treatment	0	0			0		115	0	
		Other								0	
Totals			61	61			110,000	552.1%		10,549,497	

Adjust figures in col 4 based on best estimate to reach 100% in col 8

11. Summary of results for rural water

Draft- One WASH Program Document Phase II Updating- May 2010

As can be seen from the table below, there is reasonable correlation (in terms of overall cost but not the detailed make-up) between the regional proposals (Line 4) and the adjusted estimates (Line 14) described in the sub-sections above, except for Oromiya region which appears to have under-estimated the population to be served by a factor of 2 and the cost by a factor of 3.

Additional factors have been applied to the CR-WASH component (that is, using 2032 projected design population) in order to allow for **anticipated population movements triggered by installation of reliable water supply**. Overall rural water supply cost becomes **2,096 USD million**, of which **934 USD million** is for R&S WASH Programme (Resilient and Sustainable Water Supply, Sanitation and Hygiene programme in Arid and Semi-Arid Drought Prone Areas of Ethiopia).

The overall cost is high and will be challenging to implement within the GTP2 timeframe. It will need other (software factors) to be concurrently put into place (WASH sector reform, capacity building, advocacy and of course funding).

Rural water summary													
Region		Tigray	Gambella	B. Gumuz	Harari	Somali	Amhara	Afar	SNNPR	Oromia	Dire Dawa	Addis A	Totals
Original proposal from region	Number of schemes	5,584	1,396	796	225	6,418	27,860	631	12,331	13,222	61		68,524
	population to be served, million	2.09	0.16	0.24	0.05	1.09	4.30	0.53	13.20	4.62	0.06		26.34
	cost, USD million*	70.3	11.4	17.7	1.3	335.6	223.0	76.8	371.4	254.2	14.8		1,376.5
	Av unit rate USD/c	33.6	71.3	74.8	26.6	307.3	51.9	144.9	28.1	55.1	246.7		52.3
Recalculated regional proposal based on average unit rates and population served per technology	Number of schemes	5,584	1,396	796	225	6,418	27,860	631	12,331	13,222	61		68,524
	population to be served, million	1.74	0.56	0.25	0.16	1.80	6.25	0.56	4.69	5.14	0.11		21.25
	cost, USD million*	113.5	19.2	12.5	13.1	223.2	141.2	64.8	274.0	294.6	10.5		1,166.7
	Av unit rate USD/c	65.1	34.2	49.2	84.3	124.2	22.6	116.0	58.5	57.4	95.9		54.9
Adjusted target population and technology mix	Number of schemes	2,025	162	796	199	4,506	5,000	721	13,422	23,033	13		49,877
	population to be served, million	0.78	0.05	0.25	0.03	1.24	2.04	0.66	6.27	9.08	0.02		20.41
	cost, USD million*	64.6	2.6	12.5	6.7	160.1	111.1	85.2	367.6	543.9	1.7		1,355.9
	Av unit rate USD/c	82	54	49	235	129	55	129	59	60	87		66
	Factored cost totals, USD million	89.8	3.6	17.3	9.3	222.5	154.4	118.4	510.9	756.0	2.4	0.0	1,884.7
<i>* Note 1: To these figures have here been added factors for investigation, design and project management (15%?), inflation (10% for 3 years?) and risk (10%?), combined 39%</i>													
non-CR and CR WASH share estimates	Estimated %age mix of CR-WASH	20%	0%	0%	30%	100%	20%	100%	20%	30%	30%	0%	
	Non CR-WASH %age	80%	100%	100%	70%	0%	80%	0%	80%	70%	70%	100%	
	Estimated non-CR WASH share, USD million	71.8	3.6	17.3	6.5	0.0	123.5	0.0	408.8	529.2	1.7	0.0	1,162.5
	Estimated CR WASH share, USD million	18.0	0.0	0.0	2.8	222.5	30.9	118.4	102.2	226.8	0.7	0.0	
	Additional factor for 2032 design population to be used for large MV CR WASH schemes likely to trigger population movements	1.10	1.26	1.27	1.36	1.36	1.14	1.24	1.25	1.31	1.40		
	Total CR WASH, USD million	19.7	0.0	0.0	3.8	303.5	35.2	146.9	127.5	296.2	1.0	0.0	933.9
Final proposed totals	<i>compare with Row 4 above</i>	91.5	3.6	17.3	10.3	303.5	158.7	146.9	536.3	825.4	2.7	0.0	2,096.4

12. Urban water supply

Population to be served under GTP2 by 2020 is included under **Sub-section 16.2**.

Per capita unit rates have been derived from all sources and variations are illustrated in the figure below. Phase 1 estimates have proved to be too low and the recent rates used by the regions are considered to be unreliable. Hence limited information from other sources has been analyzed and is recommended for use: See table below figure.

13. Urban technology mix

In order to achieve greater resilience and reliability, it has been decided to increase the mix of very deep boreholes in drought prone areas, both urban and rural. Funding source for the drought prone area interventions under CR-WASH (Resilient and Sustainable Water Supply, Sanitation and Hygiene programme in Arid and Semi-Arid Drought Prone Areas of Ethiopia) has been identified separate from other funding sources, so that the table below reflects this distinction.

The percentages of CR-WASH and non-CR-WASH are based on estimates from recent WASH Cluster reports: However, this will require inputs from both national experts and regional actors with local knowledge: The spreadsheet tool, below, is designed to be user friendly so that this can be easily done.

The overall cost **1,012 USD million** (including **218 USD million CR-WASH**) is considered to be reasonable and possible to implement in the GTP2 timeframe, but only if other factors are concurrently put into place (WASH sector reform, capacity building, advocacy and of course funding).

This represents a significant reduction in the 1,919 million USD total proposed by the regions. The difference can be accounted by (a) a higher target population of 11.27 million compared with GTP2 target of 9.27 million and (b) while Oromiya region underestimated costs by half, SNNP region would appear to have overestimated urban costs by a factor of 7.

It could be argued that works to serve the population at the 2020 GTP2 target date should to be based on 2032 design horizon, which could be up to double the 2020 population. This would push the cost to 1,698 million USD (including 384 million USD CR-WASH). This would be a valid argument if the full capacity of the built works were only to be utilized in 2032, but not true in the situation where any works installed in an “under-served” city (as is the case in all of Ethiopia) since any installed capacity will be immediately utilized.

The consultant therefore recommends that the GTP2 urban water budgets should be based on **1,013 USD million** (including **219 USD million CR-WASH**) and that funding to this amount be identified for Urban Sanitation Budget 500 USD million.(including **160 USD million CR-WASH**)

Draft- One WASH Program Document Phase II Updating- May 2010

1	Urban water costs to meet GTP2, USD million	Region											Total
		Oromia	Amhara	Tigray	SNNP	Somali	B Gumuz	Afar	Gambela	Harari	Dire Dawa	Addis Ababa	
2	<i>Note: These rates are based on design population, assumed to be that projected for 2032</i>												
3	Unit rates from CR-WASH, USD/c	127	127	133	127	145		145	134	134	134		
4	Recommended for use for non CR-WASH, USD/c	95	95	99	96	117	101	109	101	96	98	47	
5	Unserved population to be served by 2020, million	1.88	0.71	0.43	1.20	0.15	0.09	0.14	0.07	0.15	0.08	4.36	9.27
6	Estimated %age mix of CR-WASH to 2020, from latest	30%	20%	20%	20%	100%	0%	100%	0%	30%	30%	0%	32%
7	Non CR-WASH %age	70%	80%	80%	80%	0%	100%	0%	100%	70%	70%	100%	
8	Cost, USD million = Row 5 x (Row 3 x Row 6 + Row 4 x Row 7)	197.1	72.0	45.8	122.3	21.7	9.5	20.9	7.4	16.1	8.5	206.8	728.2
9	<i>Note: To all these figures must be added factors for investigation, design and project management (15%), inflation (10% for 3 years) and risk (10%), combined 39%.</i>												
10	Totals	274.3	100.1	63.8	170.2	30.2	13.3	29.0	10.3	22.4	11.8	287.8	1,013.2
11	CR-WASH, USD million, without design factor	82.3	20.0	12.8	34.0	30.2	0.0	29.0	0.0	6.7	3.5	0.0	218.6
12	non-CR-WASH, USD million, without design factor	192.0	80.1	51.0	136.2	0.0	13.3	0.0	10.3	15.7	8.3	287.8	794.6
13	<i>Factor to allow for use of 2032 design population compared with GTP2 2020 population for calculating costs</i>	1.76	1.92	1.85	1.90	1.46	2.19	1.85	2.03	1.44	1.40	1.33	
14	Totals with design factors USD million	483.3	192.5	118.2	323.4	44.0	29.1	53.8	20.8	32.4	16.5	384.1	1,698.0
15	CR-WASH, USD million, with design factor	145.0	38.5	23.6	64.7	44.0	0.0	53.8	0.0	9.7	5.0	0.0	384.2
16	non-CR-WASH, USD million, with design factor	338.3	154.0	94.6	258.7	0.0	29.1	0.0	20.8	22.6	11.6	384.1	1,313.8
17	Original regional proposal unserved population to be served by 2020, million	1.71	1.24	0.79	2.61	0.24	0.11	0.11	0.08	0.00	0.01	4.36	11.27
18	Regional proposal, USD million	142.5	106.8	55.2	1242.2	57.0	16.5	39.1	50.3	0.0	2.7	206.8	1919.2
19	Unit rate from regional proposal, USD/c	83	86	70	475	241	144	342	625		300	47	

Annex 2 Scenario-II

Draft- One WASH Program Document Phase II Updating- May 2010

Table 1 Rural Water Supply: Tigray Water Supply Beneficiaries and Annual Physical and Financial Plan (208-2020)

Type	Sr No	Technology	No. of systems proposed by Region	Adjusted No. of systems	Yearly Physical plan for 2020			Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Yearly Financial Plan			Notes
					2018	2019	2020							2018	2019	2020	
Self supply	1	Household Dug well with Rope Pump	924	300	45	20	8	32%	7	2,100	0.3%	112	234,899	35,235	15,856	6,342	
	2	Community Dug well with Rope Pump	0	300	45	20	8		10	3,000	0.4%	78	234,899	35,235	15,856	6,342	
On spot	3	Dug well with Hand Pump	837	300	45	20	8	36%	171	51,300	6.5%	27	1,372,287	205,843	92,629	37,052	
	4	Shallow well with hand pump	2,557	200	30	14	5	8%	237	47,300	6.0%	44	2,099,717	314,958	141,731	56,692	
	5	Shallow well with solar system (small on spot)	0	200	30	14	5		237	47,300	6.0%	44	2,099,717	314,958	141,731	56,692	
	6	Borehole with distribution (small on spot)	80	40	6	3	1	50%	1,250	50,000	6.4%	125	6,263,982	939,597	422,819	169,128	
	7	Borehole with distribution (on spot) + solar	0	40	6	3	1		1,250	50,000	6.4%	125	6,263,982	939,597	422,819	169,128	
	8	Capped Spring	414	200	30	14	5	48%	253	50,600	6.5%	21	1,049,229	157,384	70,823	28,329	
	9	Rain Water harvesting	0	0	0	0	0		300	0		45	0	0	0	0	
	10	Cistern	180	180	27	12	5		150	27,000		45	1,208,054	181,208	81,544	32,617	
	11	Hafir Dam	180	180	27	12	5			0			0	0	0	0	
		Other		0	0	0	0			0			0	0	0	0	
	12. Single Village - spring	12a	Single village from spring source + gravity distribution with 2-4 water points (small)	180	0	0	0	0		1,650	0	0.0%	39	0	0	0	0
12b		Single village from spring source + motorized distribution with 2 water points (small)		10	2	1	0		1,450	14,500	1.9%	75	1,089,778	163,467	73,560	29,424	
12c		Single village from spring source + motorized distribution with 2 water points + solar		5	1	0	0		3,000	15,000	1.9%	52	782,998	117,450	52,852	21,141	
13. Multi Village - spring	13a	Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0	0	0	0		3,000	0	0.0%	79	0	0	0	0	
	13b	Multi village from spring source + gravity distribution with 6-10 water points (large)		0	0	0	0		8,100	0		39	0	0	0	0	
	13c	Multi village from spring source + motorized distribution with 4-6 water points (medium)		0	0	0	0		5,500	0		54	0	0	0	0	
	13d	Multi village from spring source + motorized distribution with 6-10 water points (large)		0	0	0	0		8,100	0		47	0	0	0	0	
	13e	Multi village from spring source + motorized distribution with 4-10 water points + solar		0	0	0	0			0			0	0	0	0	
14. Single Village - borehole	14a	Single village borehole source + distribution for 4-6 water points (medium)	90	40	6	3	1	44%	6,500	260,000	33.2%	88	22,968,619	3,445,293	1,550,382	620,153	
	14b	Single village borehole source + distribution for 4-6 water points + Solar		10	2	1	0	11%	6,500	65,000	8.3%	88	5,742,155	861,323	387,595	155,038	
15. Multi Village - borehole	15a	Multi village from borehole source with 5-8 km distribution (large)	22	18	3	1	0	82%	7,799	140,376	17.9%	84	11,855,938	1,778,391	800,276	320,110	
	15b	Multi village from borehole source with 5-8 km distribution + Solar		2	0	0	0	9%	7,799	15,597	2.0%	84	1,317,326	197,599	88,920	35,568	
	15c	Large multi village from one or more very deep boreholes with long km distribution		0	0	0	0	0%	10,000	0		133	0	0	0	0	
16. Single Village - river	16	Single village from river source with treatment	60	0	0	0	0			0			0	0	0	0	
17. Multi Village -	17	Multi village from river source with treatment	60	0	0	0	0			0		118	0	0	0	0	
		Other			0	0	0						0	0	0	0	
		Totals	5,584	2,025	304	137	55			839,073	103.6%		64,583,582	9,687,537	4,359,392	1,743,757	

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Table 2 Rural Water Supply: Gambella Water Supply Beneficiaries and Annual Physical and Financial Plan (208-2020)

Type	Sr No	Technology	No. of systems proposed by Region	Adjusted No. of systems	Yearly Physical plan for 2020			Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Yearly Financial Plan			Notes
					2018	2019	2020							2018	2019	2020	
Self supply	1	Household Dug well with Rope Pump	650	100	15	7	3	15%	6	590	1.2%	133	78,461	11,769	5,296	2,118	
	2	Community Dug well with Rope Pump	0	0	0	0	0		19	0	0.0%	47	0	0	0	0	
On spot	3	Dug well with Hand Pump	163	12	2	1	0	7%	135	1,620	3.4%	34	55,535	8,330	3,749	1,499	
	4	Shallow well with hand pump	238	10	2	1	0	4%	237	2,365	5.0%	95	223,643	33,546	15,096	6,038	
	5	Shallow well with solar system (small on spot)	111	10	2	1	0	9%	237	2,365	5.0%	95	223,643	33,546	15,096	6,038	
	6	Borehole with distribution (small on spot)	0	0	0	0	0		1,250	0	0.0%	135	0	0	0	0	av unit cost used
	7	Borehole with distribution (on spot) + solar	0	2	0	0	0		1,250	2,500	5.3%	135	336,596	50,489	22,720	9,088	
	8	Capped Spring	34	15	2	1	0	44%	200	3,005	6.3%	30	91,083	13,662	6,148	2,459	
	9	Rain Water harvesting	0	0	0	0	0		249	0	0.0%	40	0	0	0	0	
	10	Cistern	0	0	0	0	0		127	0	0.0%	140	0	0	0	0	
	11	Hafir Dam	180	7	1	0	0		2,225	15,575	32.8%	13	198,845	29,827	13,422	5,369	
			Other	0	0	0	0		0	0	0.0%		0	0	0	0	
12. Single Village - spring	12a	Single village from spring source + gravity distribution with 2 -4 water points (small)	8	2	0	0	0	25%	1,400	2,800	5.9%	96	268,227	40,234	18,105	7,242	
	12b	Single village from spring source + motorized distribution with 2 water points (small)		0	0	0	0		1,300	0	0.0%	117	0	0	0	0	
	12c	Single village from spring source + motorized distribution with 2 water points + solar		1	0	0	0		3,000	3,000	6.3%	52	156,600	23,490	10,570	4,228	from Tigray
13. Multi Village - spring	13a	Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0	0	0	0		3,300	0	0.0%	49	0	0	0	0	
	13b	Multi village from spring source + gravity distribution with 6-10 water points (large)		0	0	0	0		9,228	0	0.0%	108	0	0	0	0	av figures used
	13c	Multi village from spring source + motorized distribution with 4-6 water points (medium)		0	0	0	0		3,300	0	0.0%	69	0	0	0	0	
	13d	Multi village from spring source + motorized distribution with 6-10 water points (large)		0	0	0	0		8,350	0	0.0%	41	0	0	0	0	
	13e	Multi village from spring source + motorized distribution with 4-10 water points + solar		0	0	0	0		8,350	0	0.0%	52	0	0	0	0	0
14. Single Village - borehole	14a	Single village borehole source + distribution for 4-6 water points (medium)	12	1	0	0	0		3,000	3,000	6.3%	105	315,245	47,287	21,279	8,512	
	14b	Single village borehole source + distribution for 4-6 water points + Solar		1	0	0	0		3,000	3,000	6.3%	105	315,245	47,287	21,279	8,512	
15. Multi Village - borehole	15a	Multi village from borehole source with 5-8 km distribution (large)	0	0	0	0	0		7,921	0	0.0%	39	0	0	0	0	
	15b	Multi village from borehole source with 5-8 km distribution + Solar		1	0	0	0		7,921	7,921	16.7%	39	311,492	46,724	21,026	8,410	
	15c	Large multi village from one or more very deep boreholes with long km distribution		0	0	0	0		10,000	0	0.0%	134	0	0	0	0	
16. Single Village - river	16	Single village from river source with treatment	0	0	0	0			0	0.0%		0	0	0	0		
17. Multi Village -	17	Multi village from river source with treatment	0	0	0	0			0	0.0%	118	0	0	0	0		
		Other							0	0.0%		0	0	0	0		
		Totals	1,396	162	24	11	4		47,741	100.4%		2,574,614	386,192	173,786	69,515		

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Table 3 Rural Water Supply: B-Gumuz Water Supply Beneficiaries and Annual Physical and Financial Plan (208-2020)

Type	Sr No	Technology	No. of systems proposed by Region	Adjusted No. of systems	Yearly Physical plan for 2020			Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Yearly Financial Plan		
					2018	2019	2020							2018	2019	2020
Self supply	1	Household Dug well with Rope Pump	0	0	0	0	0		6	0	0.0%	133	0	0	0	0
	2	Community Dug well with Rope Pump	0	0	0	0	0		33	0	0.0%	38	0	0	0	0
On spot	3	Dug well with Hand Pump	120	120	18	54	48	100%	115	13,800	5.4%	30	416,311	62,447	187,340	166,524
	4	Shallow well with hand pump	624	624	94	281	250	100%	236	147,264	58.1%	41	6,034,378	905,157	2,715,470	2,413,751
	5	Shallow well with solar system (small on spot)	10	10	2	5	4	100%	236	2,360	0.9%	41	96,705	14,506	43,517	38,682
	6	Borehole with distribution (small on spot)	0	0	0	0	0		1,250	0	0.0%	115	0	0	0	0
	7	Borehole with distribution (on spot) + solar	0	0	0	0	0		1,250	0	0.0%		0	0	0	0
	8	Capped Spring	24	24	4	11	10	100%	188	4,500	1.8%	31	140,042	21,006	63,019	56,017
	9	Rain Water harvesting	0	0	0	0	0		44	0	0.0%	39	0	0	0	0
	10	Cistern	0	0	0	0	0		44	0	0.0%	106	0	0	0	0
		Hafir Dam	0	0	0	0	0		222	0	0.0%	105	0	0	0	0
		Other	0	0	0	0	0		0	0.0%		0	0	0	0	0
12. Single Village - spring	12a	Single village from spring source + gravity distribution with 2-4 water points (small)	0	0	0	0	0		1,450	0	0.0%	66	0	0	0	0
	12b	Single village from spring source + motorized distribution with 2 water points (small)	0	0	0	0	0		1,400	0	0.0%	105	0	0	0	0
	12c	Single village from spring source + motorized distribution with 2 water points + solar	0	0	0	0	0		3,000	0	0.0%	52	0	0	0	0
13. Multi Village - spring	13a	Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0	0	0	0		3,200	0	0.0%	48	0	0	0	0
	13b	Multi village from spring source + gravity distribution with 6-10 water points (large)	0	0	0	0	0		8,100	0	0.0%	37	0	0	0	0
	13c	Multi village from spring source + motorized distribution with 4-6 water points (medium)	0	0	0	0	0		3,200	0	0.0%	69	0	0	0	0
	13d	Multi village from spring source + motorized distribution with 6-10 water points (large)	0	0	0	0	0		8,100	0	0.0%	45	0	0	0	0
	13e	Multi village from spring source + motorized distribution with 4-10 water points + solar	0	0	0	0	0		0	0	0.0%		0	0	0	0
14. Single Village - borehole	14a	Single village borehole source + distribution for 4-6 water points (medium)	10	10	2	5	4	100%	3,000	30,000	11.8%	79	2,371,365	355,705	1,067,114	948,546
	14b	Single village borehole source + distribution for 4-6 water points + Solar	0	0	0	0	0		0	0	0.0%		0	0	0	0
15. Multi Village - borehole	15a	Multi village from borehole source with 5-8 km distribution (large)	8	8	1	4	3	100%	8,500	68,000	26.8%	50	3,400,447	510,067	1,530,201	1,360,179
	15b	Multi village from borehole source with 5-8 km distribution + Solar	0	0	0	0	0	0%	0	0	0.0%		0	0	0	0
	15c	Large multi village from one or more very deep boreholes with long km distribution	0	0	0	0	0	0%	10,000	0	0.0%	140	0	0	0	0
16. Single Village - river	16	Single village from river source with treatment	0	0	0	0	0		0	0	0.0%		0	0	0	0
17. Multi Village -	17	Multi village from river source with treatment	0	0	0	0	0		0	0	0.0%	118	0	0	0	0
		Other	0	0	0	0	0		0	0	0.0%		0	0	0	0
		Totals	796	796	119	358	318			265,924	104.9%		12,459,248	1,868,887	5,606,661	4,983,699

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Table 4 Rural Water Supply: Harari Water Supply Beneficiaries and Annual Physical and Financial Plan (2018-2020)

Type+A5: Q26C4A5: Q21	Sr No	Technology	No. of systems proposed by Region	Adjusted No. of systems	Yearly Physical plan for 2020			Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Yearly Financial Plan		
					2018	2019	2020							2018	2019	2020
Self supply	1	Household Dug well with Rope Pump	0	0	0	0	0	6	0	0.0%	133	0	0	0	0	0
	2	Community Dug well with Rope Pump	0	0	0	0	0	38	0	0.0%	32	0	0	0	0	0
On spot	3	Dug well with Hand Pump	20	10	2	5	4	50%	193	1,925	6.7%	19	36,047	5,407	16,221	14,419
	4	Shallow well with hand pump	0	0	0	0	0		280	0	0.0%	71	0	0	0	0
	5	Shallow well with solar system (small on spot)	0	0	0	0	0			0	0.0%		0	0	0	0
	6	Borehole with distribution (small on spot)	4	1	0	0	0	25%	1,800	1,800	6.3%	117	210,291	31,544	94,631	84,116
	7	Borehole with distribution (on spot) + solar	0	1	0	0	0	25%	1,800	1,800	6.3%	117	210,291	31,544	94,631	84,116
	8	Capped Spring	0	0	0	0	0		263	0	0.0%	27	0	0	0	0
	9	Rain Water harvesting	0	0	0	0	0		50	0	0.0%	32	0	0	0	0
	10	Cistern	0	0	0	0	0		50	0	0.0%	89	0	0	0	0
	11	Hafir Dam	180	180	27	81	72		250	45,000	157.1%	89	4,003,380	600,507	1,801,521	1,601,352
	Other		0	0	0	0			0	0.0%		0	0	0	0	
12. Single Village - spring	12a	Single village from spring source + gravity distribution with 2 -4 water points (small)	5	1	0	0	0	20%	1,450	1,450	5.1%	68	98,088	14,713	44,140	39,235
	12b	Single village from spring source + motorized distribution with 2 water points (small)		0	0	0	0		1,400	0	0.0%	109	0	0	0	0
	12c	Single village from spring source + motorized distribution with 2 water points + solar		1	0	0	0	20%	1,400	1,400	4.9%	52	73,080	10,962	32,886	29,232
13. Multi Village - spring	13a	Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0	0	0	0		3,200	0	0.0%	52	0	0	0	0
	13b	Multi village from spring source + gravity distribution with 6-10 water points (large)		0	0	0	0		8,100	0	0.0%	35	0	0	0	0
	13c	Multi village from spring source + motorized distribution with 4-6 water points (medium)		0	0	0	0		3,200	0	0.0%	73	0	0	0	0
	13d	Multi village from spring source + motorized distribution with 6-10 water points (large)		0	0	0	0		8,100	0	0.0%	44	0	0	0	0
	13e	Multi village from spring source + motorized distribution with 4-10 water points + solar		0	0	0	0			0	0.0%		0	0	0	0
14. Single Village - borehole	14a	Single village borehole source + distribution for 4-6 water points (medium)	4	1	0	0	0	25%	3,500	3,500	12.2%	97	340,045	51,007	153,020	136,018
	14b	Single village borehole source + distribution for 4-6 water points + Solar		1	0	0	0	25%	3,500	3,500	12.2%	97	340,045	51,007	153,020	136,018
15. Multi Village - borehole	15a	Multi village from borehole source with 5-8 km distribution (large)	8	1	0	0	0	13%	8,000	8,000	27.9%	73	583,893	87,584	262,752	233,557
	15b	Multi village from borehole source with 5-8 km distribution + Solar		0	0	0	0			0	0.0%		0	0	0	0
	15c	Large multi village from one or more very deep boreholes with long km distribution		0	0	0	0		10,000	0	0.0%	134	0	0	0	0
16. Single Village - river	16	Single village from river source with treatment	4	2	0	1	1	50%	3,500	7,000	24.4%	118	828,055	124,208	372,625	331,222
17. Multi Village -	17	Multi village from river source with treatment	0	0	0	0	0		0	0	0.0%	118	0	0	0	0
		Other		0	0	0	0		0	0	0.0%		0	0	0	0
		Totals	225	199					75,375	263.1%		6,723,213	1,008,482	3,025,446	2,689,285	

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Table 5 Rural Water Supply: Somali Water Supply Beneficiaries and Annual Physical and Financial Plan (2018-2020)

Type	Sr No	Technology	No. of systems proposed by Region	Adjusted No. of systems	Yearly Physical plan for 2020			Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Yearly Financial Plan		
					2018	2019	2020							2018	2019	2020
Self supply	1	Household Dug well with Rope Pump	0	0	0	0	0	3	0	0.0%	224	0	0	0	0	
	2	Community Dug well with Rope Pump	1,780	500	75	225	200	28%	33	16,500	1.3%	44	722,000	108,300	324,900	288,800
On spot	3	Dug well with Hand Pump	670	200	30	90	80	30%	150	30,000	2.4%	20	596,570	89,485	268,456	238,628
	4	Shallow well with hand pump	0	0	0	0	0		300	0	0.0%	89	0	0	0	0
	5	Shallow well with solar system (small on spot)	163	100	15	45	40	61%	300	30,000	2.4%	89	2,684,564	402,685	1,208,054	1,073,826
	6	Borehole with distribution (small on spot)	0	0	0	0	0		1,800	0	0.0%	211	0	0	0	0
	7	Borehole with distribution (on spot) + solar	0	0	0	0	0		1,800	0	0.0%		0	0	0	0
	8	Capped Spring	65	65	10	29	26	100%	175	11,375	0.9%	43	494,407	74,161	222,483	197,763
	9	Rain Water harvesting	2430	2,430	365	1,094	972	100%	45	109,350	8.8%	40	4,348,993	652,349	1,957,047	1,739,597
	10	Cistern	967	967	145	435	387	100%	45	43,515	3.5%	118	5,120,265	768,040	2,304,119	2,048,106
	11	Hafir Dam	94	94	14	42	38	100%	493	46,300	3.7%	98	4,558,347	683,752	2,051,256	1,823,339
		Other		0	0	0	0		0	0.0%		0	0	0	0	
12. Single Village - spring	12a	Single village from spring source + gravity distribution with 2 -4 water points (small)	0	0	0	0	0		1,500	0	0.0%	104	0	0	0	0
	12b	Single village from spring source + motorized distribution with 2 water points (small)		0	0	0	0		1,000	0	0.0%	268	0	0	0	0
	12c	Single village from spring source + motorized distribution with 2 water points + solar		0	0	0	0			0	0.0%		0	0	0	0
13. Multi Village - spring	13a	Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0	0	0	0		2,200	0	0.0%	173	0	0	0	0
	13b	Multi village from spring source + gravity distribution with 6-10 water points (large)		0	0	0	0		4,500	0	0.0%	114	0	0	0	0
	13c	Multi village from spring source + motorized distribution with 4-6 water points (medium)		0	0	0	0		2,200	0	0.0%	203	0	0	0	0
	13d	Multi village from spring source + motorized distribution with 6-10 water points (large)		0	0	0	0		4,500	0	0.0%	129	0	0	0	0
	13e	Multi village from spring source + motorized distribution with 4-10 water points + solar		0	0	0	0			0	0.0%		0	0	0	0
14. Single Village - borehole	14a	Single village borehole source + distribution for 4-6 water points (medium)	96	30	5	14	12	31%	4,000	120,000	9.7%	164	19,731,544	2,959,732	8,879,195	7,892,617
	14b	Single village borehole source + distribution for 4-6 water points + Solar		5	1	2	2	5%	4,000	20,000	1.6%	164	3,288,591	493,289	1,479,866	1,315,436
15. Multi Village - borehole	15a	Multi village from borehole source with 5-8 km distribution (large)	98	50	8	23	20	51%	6,500	325,000	26.3%	148	48,098,434	7,214,765	21,644,295	19,239,374
	15b	Multi village from borehole source with 5-8 km distribution + Solar		0	0	0	0			0	0.0%		0	0	0	0
	15c	Large multi village from one or more very deep boreholes with long km distribution		30	5	14	12	31%	10,000	300,000	24.3%	145	43,500,000	6,525,000	19,575,000	17,400,000
16. Single Village - river	16	Single village from river source with treatment	0	0	0	0	0				0.0%		0	0	0	0
17. Multi Village -	17	Multi village from river source with treatment	55	35	5	16	14	64%	6,500	227,500	18.4%	118	26,911,775	4,036,766	12,110,299	10,764,710
		Other			0	0	0			0	0.0%		0	0	0	0
		Totals	6,418	4,506	676	2,028	1,802			1,279,540	103.5%		160,055,488	24,008,323	72,024,970	64,022,195

Draft- One WASH Program Document Phase II Updating- May 2010

Table 6 Rural Water Supply: Amhara Water Supply Beneficiaries and Annual Physical and Financial Plan (2018-2020)

Type	Sr No	Technology	No. of systems proposed by Region	Adjusted No. of systems	Yearly Physical plan for 2020			Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Yearly Financial Plan		
					2018	2019	2020							2018	2019	2020
Self supply	1	Household Dug well with Rope Pump	1,260	500	75	225	200	40%	6	2,750	0.1%	164	451,156	67,673	203,020	180,462
	2	Community Dug well with Rope Pump	1,720	500	75	225	200	29%	32	16,000	0.8%	37	594,360	89,154	267,462	237,744
On spot	3	Dug well with Hand Pump	12,000	500	75	225	200	4%	188	93,900	4.6%	26	2,453,493	368,024	1,104,072	981,397
	4	Shallow well with hand pump	1,500	500	75	225	200	33%	274	137,138	6.7%	45	6,223,221	933,483	2,800,450	2,489,289
	5	Shallow well with solar system (small on spot)	1,500	500	75	225	200		274	137,138	6.7%	45	6,223,221	933,483	2,800,450	2,489,289
	6	Borehole with distribution (small on spot)	0	100	15	45	40		1250	125,000	6.1%	125	15,659,955	2,348,993	7,046,980	6,263,982
	7	Borehole with distribution (on spot) + solar	0	100	15	45	40		1250	125,000	6.1%	125	15,659,955	2,348,993	7,046,980	6,263,982
	8	Capped Spring	9,000	2,000	300	900	800	22%	271	542,000	26.6%	19	10,511,106	1,576,666	4,729,998	4,204,443
	9	Rain Water harvesting	180	180	27	81	72	100%	300	54,000	2.6%	45	2,416,107	362,416	1,087,248	966,443
	10	Cistern	180	0	0	0	0			0	0.0%		0	0	0	0
	11	Haflir Dam	180	0	0	0	0			0	0.0%		0	0	0	0
			Other		0	0	0	0			0.0%		0	0	0	0
12. Single Village - spring	12a	Single village from spring source + gravity distribution with 2 -4 water points (small)	180	0	0	0	0		1395	0	0.0%	34	0	0	0	0
	12b	Single village from spring source + motorized distribution with 2 water points (small)		10	2	5	4		2000	20,000	1.0%	58	1,158,340	173,751	521,253	463,336
	12c	Single village from spring source + motorized distribution with 2 water points + solar		10	2	5	4		3000	30,000	1.5%	52	1,560,000	234,000	702,000	624,000
13. Multi Village - spring	13a	Multi village from spring source + gravity distribution with 4-6 water points (medium)	80	20	3	9	8	25%	3500	70,000	3.4%	38	2,684,564	402,685	1,208,054	1,073,826
	13b	Multi village from spring source + gravity distribution with 6-10 water points (large)		20	3	9	8	25%	8500	170,000	8.3%	34	5,816,555	872,483	2,617,450	2,326,622
	13c	Multi village from spring source + motorized distribution with 4-6 water points (medium)		10	2	5	4	13%	3500	35,000	1.7%	58	2,013,423	302,013	906,040	805,369
	13d	Multi village from spring source + motorized distribution with 6-10 water points (large)		5	1	2	2	6%	8500	42,500	2.1%	42	1,789,709	268,456	805,369	715,884
	13e	Multi village from spring source + motorized distribution with 4-10 water points + solar		5	1	2	2	6%	8500	42,500	2.1%	52	2,210,000	331,500	994,500	884,000
14. Single Village - borehole	14a	Single village boreholes source + distribution for 4-6 water points (medium)	80	5	1	2	2		3000	15,000	0.7%	75	1,118,568	167,785	503,356	447,427
	14b	Single village borehole source + distribution for 4-6 water points + Solar		5	1	2	2		3000	15,000	0.7%	75	1,118,568	167,785	503,356	447,427
15. Multi Village - borehole	15a	Multi village from borehole source with 5-8 km distribution (large)	60	20	3	9	8	33%	12500	250,000	12.3%	77	19,239,374	2,885,906	8,657,718	7,695,749
	15b	Multi village from borehole source with 5-8 km distribution + Solar		5	1	2	2	8%	12500	62,500	3.1%	77	4,809,843	721,477	2,164,430	1,923,937
	15c	Large multi village from one or more very deep boreholes with long km distribution			0	0	0	0%	10000	0	0.0%	127	0	0	0	0
16. Single Village - river	16	Single village from river source with treatment	60		0	0	0			0	0.0%		0	0	0	0
17. Multi Village -	17	Multi village from river source with treatment	60	5	1	2	2		12500	62,500	3.1%	118	7,393,345	1,109,002	3,327,005	2,957,338
		Other								0.0%		0	0	0	0	
		Totals	28,040	5,000	750	2,250	2,000			2,047,926	100.5%		111,104,864	16,665,730	49,997,189	44,441,946

Draft- One WASH Program Document Phase II Updating- May 2010

Table 6 Rural Water Supply: Amhara Water Supply Beneficiaries and Annual Physical and Financial Plan (2018-2020)

Type	Sr No	Technology	No. of systems proposed by Region	Adjusted No. of systems	Yearly Physical plan for 2020			Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Yearly Financial Plan		
					2018	2019	2020							2018	2019	2020
Self supply	1	Household Dug well with Rope Pump	1,260	500	75	225	200	40%	6	2,750	0.1%	164	451,156	67,673	203,020	180,462
	2	Community Dug well with Rope Pump	1,720	500	75	225	200	29%	32	16,000	0.8%	37	594,360	89,154	267,462	237,744
On spot	3	Dug well with Hand Pump	12,000	500	75	225	200	4%	188	93,900	4.6%	26	2,453,493	368,024	1,104,072	981,397
	4	Shallow well with hand pump	1,500	500	75	225	200	33%	274	137,138	6.7%	45	6,223,221	933,483	2,800,450	2,489,289
	5	Shallow well with solar system (small on spot)	1,500	500	75	225	200		274	137,138	6.7%	45	6,223,221	933,483	2,800,450	2,489,289
	6	Borehole with distribution (small on spot)	0	100	15	45	40		1250	125,000	6.1%	125	15,659,955	2,348,993	7,046,980	6,263,982
	7	Borehole with distribution (on spot) + solar	0	100	15	45	40		1250	125,000	6.1%	125	15,659,955	2,348,993	7,046,980	6,263,982
	8	Capped Spring	9,000	2,000	300	900	800	22%	271	542,000	26.6%	19	10,511,106	1,576,666	4,729,998	4,204,443
	9	Rain Water harvesting	180	180	27	81	72	100%	300	54,000	2.6%	45	2,416,107	362,416	1,087,248	966,443
	10	Cistern	180	0	0	0	0			0	0.0%		0	0	0	0
12. Single Village - spring	12a	Single village from spring source + gravity distribution with 2-4 water points (small)	180	0	0	0	0		1395	0	0.0%	34	0	0	0	0
	12b	Single village from spring source + motorized distribution with 2 water points (small)		10	2	5	4		2000	20,000	1.0%	58	1,158,340	173,751	521,253	463,336
	12c	Single village from spring source + motorized distribution with 2 water points + solar		10	2	5	4		3000	30,000	1.5%	52	1,560,000	234,000	702,000	624,000
	Other			0	0	0	0			0	0.0%		0	0	0	0
13. Multi Village - spring	13a	Multi village from spring source + gravity distribution with 4-6 water points (medium)	80	20	3	9	8	25%	3500	70,000	3.4%	38	2,684,564	402,685	1,208,054	1,073,826
	13b	Multi village from spring source + gravity distribution with 6-10 water points (large)		20	3	9	8	25%	8500	170,000	8.3%	34	5,816,555	872,483	2,617,450	2,326,622
	13c	Multi village from spring source + motorized distribution with 4-6 water points (medium)		10	2	5	4	13%	3500	35,000	1.7%	58	2,013,423	302,013	906,040	805,369
	13d	Multi village from spring source + motorized distribution with 6-10 water points (large)		5	1	2	2	6%	8500	42,500	2.1%	42	1,789,709	268,456	805,369	715,884
	13e	Multi village from spring source + motorized distribution with 4-10 water points + solar		5	1	2	2	6%	8500	42,500	2.1%	52	2,210,000	331,500	994,500	884,000
14. Single Village - borehole	14a	Single village borehole source + distribution for 4-6 water points (medium)	80	5	1	2	2		3000	15,000	0.7%	75	1,118,568	167,785	503,356	447,427
	14b	Single village borehole source + distribution for 4-6 water points + Solar		5	1	2	2		3000	15,000	0.7%	75	1,118,568	167,785	503,356	447,427
15. Multi Village - borehole	15a	Multi village from borehole source with 5-8 km distribution (large)	60	20	3	9	8	33%	12500	250,000	12.3%	77	19,239,374	2,885,906	8,657,718	7,695,749
	15b	Multi village from borehole source with 5-8 km distribution + Solar		5	1	2	2	8%	12500	62,500	3.1%	77	4,809,843	721,477	2,164,430	1,923,937
	15c	Large multi village from one or more very deep boreholes with long km distribution			0	0	0	0%	10000	0	0.0%	127	0	0	0	0
16. Single Village - river	16	Single village from river source with treatment	60		0	0	0			0	0.0%		0	0	0	0
17. Multi Village -	17	Multi village from river source with treatment	60	5	1	2	2		12500	62,500	3.1%	118	7,393,345	1,109,002	3,327,005	2,957,338
		Other								0	0.0%		0	0	0	0
		Totals	28,040	5,000	750	2,250	2,000			2,047,926	100.5%		111,104,864	16,665,730	49,997,189	44,441,946

Draft- One WASH Program Document Phase II Updating- May 2010

Table 7 Rural Water Supply: Afar Water Supply Beneficiaries and Annual Physical and Financial Plan (2018-2020)

Type	Sr No	Technology	No. of systems proposed by Region	Adjusted No. of systems	Yearly Physical plan for 2020			Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Yearly Financial Plan		
					2018	2019	2020							2018	2019	2020
Self supply	1	Household Dug well with Rope Pump	0	0	0	0	0	6	0	0.0%	133	0	0	0	0	
	2	Community Dug well with Rope Pump	0	0	0	0	0	33	0	0.0%	44	0	0	0	0	
On spot	3	Dug well with Hand Pump	148	148	22	67	59	100%	185	27,380	4.1%	21	588,027	88,204	264,612	235,211
	4	Shallow well with hand pump	96	96	14	43	38	100%	350	33,600	5.1%	56	1,866,618	279,993	839,978	746,647
	5	Shallow well with solar system (small on spot)	53	100	15	45	40	189%	350	35,000	5.3%	56	1,944,394	291,659	874,977	777,758
	6	Borehole with distribution (small on spot)	0	0	0	0	0		2,000	0	0.0%	151	0	0	0	0
	7	Borehole with distribution (on spot) + solar	0	0	0	0	0		2,000	0	0.0%	151	0	0	0	0
	8	Capped Spring	7	7	1	3	3	100%	175	1,225	0.2%	30	36,422	5,463	16,390	14,569
	9	Rain Water harvesting	40	100	15	45	40	250%	44	4,400	0.7%	44	192,500	28,875	86,625	77,000
	10	Cistern	163	163	24	73	65	100%	44	7,172	1.1%	120	863,085	129,463	388,388	345,234
	11	Hafir Dam	7	7	1	3	3	100%	222	1,554	0.2%	119	185,339	27,801	83,403	74,136
			Other		0	0	0	0		0	0.0%		0	0	0	0
12. Single Village - spring	12a	Single village from spring source + gravity distribution with 2 -4 water points (small)	0	0	0	0	0	1,350	0	0.0%	103	0	0	0	0	
	12b	Single village from spring source + motorized distribution with 2 water points (small)		0	0	0	0	1,200	0	0.0%	186	0	0	0	0	
	12c	Single village from spring source + motorized distribution with 2 water points + solar		0	0	0	0	1,200	0	0.0%	52	0	0	0	0	
13. Multi Village - spring	13a	Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0	0	0	0	3,000	0	0.0%	97	0	0	0	0	
	13b	Multi village from spring source + gravity distribution with 6-10 water points (large)		0	0	0	0	6,500	0	0.0%	65	0	0	0	0	
	13c	Multi village from spring source + motorized distribution with 4-6 water points (medium)		0	0	0	0	3,000	0	0.0%	76	0	0	0	0	
	13d	Multi village from spring source + motorized distribution with 6-10 water points (large)		0	0	0	0	6,500	0	0.0%	76	0	0	0	0	
	13e	Multi village from spring source + motorized distribution with 4-10 water points + solar		0	0	0	0		0	0.0%		0	0	0	0	
14. Single Village - borehole	14a	Single village borehole source + distribution for 4-6 water points (medium)	117	60	9	27	24	4,000	240,000	36.4%	129	30,872,483	4,630,872	13,892,617	12,348,993	
	14b	Single village borehole source + distribution for 4-6 water points + Solar		10	2	5	4	4,000	40,000	6.1%	129	5,145,414	771,812	2,315,436	2,058,166	
15. Multi Village - borehole	15a	Multi village from borehole source with 5-8 km distribution (large)	0	0	0	0	0	7,000	0	0.0%	112	0	0	0	0	
	15b	Multi village from borehole source with 5-8 km distribution + Solar		0	0	0	0			0.0%		0	0	0	0	
	15c	Large multi village from one or more very deep boreholes with long km distribution		30	5	14	12	10,000	300,000	45.4%	145	43,500,000	6,525,000	19,575,000	17,400,000	
16. Single Village - river	16	Single village from river source with treatment	0	0	0	0	0		0	0.0%		0	0	0	0	
17. Multi Village -	17	Multi village from river source with treatment	0	0	0	0	0		0	0.0%	118	0	0	0	0	
		Other							0	0.0%		0	0	0	0	
		Totals	631	721	108	324	288		690,331	104.6%		85,194,282	12,779,142	38,337,427	34,077,713	

Draft- One WASH Program Document Phase II Updating- May 2010

Table 8 Rural Water Supply: SNNP Water Supply Beneficiaries and Annual Physical and Financial Plan (2018-2020)

Type	Sr No	Technology	No. of systems proposed by Region	Adjusted No. of systems	Yearly Physical plan for 2020			Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Yearly Financial Plan		
					2018	2019	2020							2018	2019	2020
Self supply	1	Household Dug well with Rope Pump	0	0	0	0	0	7	0	0.0%	112	0	0	0	0	
	2	Community Dug well with Rope Pump	2,166	2,166	325	975	866	100%	54	116,964	1.9%	21	2,501,730	375,260	1,125,779	1,000,692
On spot	3	Dug well with Hand Pump	1,296	1,296	194	583	518	100%	234	303,005	4.8%	25	7,709,732	1,156,460	3,469,379	3,083,893
	4	Shallow well with hand pump	4,659	3,000	450	1,350	1,200	64%	260	779,328	12.4%	47	36,297,796	5,444,669	16,334,008	14,519,118
	5	Shallow well with solar system (small on spot)	0	1,000	150	450	400		260	259,776	4.1%	47	12,099,265	1,814,890	5,444,669	4,839,706
	6	Borehole with distribution (small on spot)	0	0	0	0	0		1,500	0	0.0%	140	0	0	0	0
	7	Borehole with distribution (on spot) + solar	0	0	0	0	0		1,500	0	0.0%	140	0	0	0	0
	8	Capped Spring	3,332	3,332	500	1,499	1,333	100%	287	955,729	15.3%	19	17,762,375	2,664,356	7,993,069	7,104,950
	9	Rain Water harvesting	0	1,500	225	675	600		300	450,000	7.2%	45	20,134,228	3,020,134	9,060,403	8,053,691
	10	Cistern	0	0	0	0	0		72	0	0.0%	59	0	0	0	0
	11	Hafir Dam	0	0	0	0	0			0	0.0%		0	0	0	0
		Other	0	0	0	0	0		0	0.0%		0	0	0	0	
12. Single Village - spring	12a	Single village from spring source + gravity distribution with 2-4 water points (small)	344	344	52	155	138	100%	1,445	497,208	7.9%	35	17,622,186	2,643,328	7,929,984	7,048,874
	12b	Single village from spring source + motorized distribution with 2 water points (small)		0	0	0	0		1,800	0	0.0%	92	0	0	0	0
	12c	Single village from spring source + motorized distribution with 2 water points + solar		100	15	45	40		1,800	180,000	2.9%	52	9,395,973	1,409,396	4,228,188	3,758,389
13. Multi Village - spring	13a	Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0	0	0	0		3,800	0	0.0%	51	0	0	0	0
	13b	Multi village from spring source + gravity distribution with 6-10 water points (large)		0	0	0	0		10,200	0	0.0%	32	0	0	0	0
	13c	Multi village from spring source + motorized distribution with 4-6 water points (medium)		0	0	0	0		3,800	0	0.0%	68	0	0	0	0
	13d	Multi village from spring source + motorized distribution with 6-10 water points (large)		0	0	0	0		10,200	0	0.0%	38	0	0	0	0
	13e	Multi village from spring source + motorized distribution with 4-10 water points + solar		0	0	0	0			0	0.0%		0	0	0	0
14. Single Village - borehole	14a	Single village borehole source + distribution for 4-6 water points (medium)	534	534	80	240	214	100%	3,000	1,602,000	25.6%	107	172,026,846	25,804,027	77,412,081	68,810,738
	14b	Single village borehole source + distribution for 4-6 water points + Solar		50	8	23	20		3,000	150,000	2.4%	107	16,107,383	2,416,107	7,248,322	6,442,953
15. Multi Village - borehole	15a	Multi village from borehole source with 5-8 km distribution (large)	0	100	15	45	40		11,000	1,100,000	17.6%	51	55,928,412	8,389,262	25,167,785	22,371,365
	15b	Multi village from borehole source with 5-8 km distribution + Solar		0	0	0	0			0	0.0%		0	0	0	0
	15c	Large multi village from one or more very deep boreholes with long km distribution		0	0	0	0		10,000	0	0.0%	127	0	0	0	0
16. Single Village - river	16	Single village from river source with treatment	0	0	0	0	0		0	0.0%		0	0	0	0	
17. Multi Village -	17	Multi village from river source with treatment	0	0	0	0	0		0	0.0%	118	0	0	0	0	
		Other	0	0	0	0	0		0	0.0%		0	0	0	0	
		Totals	12,331	13,422	2,013	6,040	5,369				102.0%		367,585,925	55,137,889	165,413,666	147,034,370

Draft- One WASH Program Document Phase II Updating- May 2010

Table 9 Rural Water Supply: Oromiya Water Supply Beneficiaries and Annual Physical and Financial Plan (2018-2020)

Type	Sr No	Technology	No. of systems proposed by Region	Adjusted No. of systems	Yearly Physical plan for 2020			Adjust-ment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Yearly Financial Plan		
					2018	2019	2020							2018	2019	2020
Self supply	1	Household Dug well with Rope Pump	0	0	0	0	0	7	0	0.0%	112	0	0	0	0	0
	2	Community Dug well with Rope Pump	0	0	0	0	0	54	0	0.0%	21	0	0	0	0	0
On spot	3	Dug well with Hand Pump	5,875	5,875	881	2,644	2,350	100%	166	972,900	10.7%	23	22,372,502	3,355,875	10,067,626	8,949,001
	4	Shallow well with hand pump	1,461	1,461	219	657	584	100%	217	316,953	3.5%	41	13,034,585	1,955,188	5,865,563	5,213,834
	5	Shallow well with solar system (small on spot)	0	4,000	600	1,800	1,600		217	867,770	9.6%	41	35,686,749	5,353,012	16,059,037	14,274,700
	6	Borehole with distribution (small on spot)	0	0	0	0	0		1,500	0	0.0%	134	0	0	0	0
	7	Borehole with distribution (on spot) + solar	0	500	75	225	200		1,500	750,000	8.3%	134	100,671,141	15,100,671	45,302,013	40,268,456
	8	Capped Spring	4,827	4,827	724	2,172	1,931	100%	256	1,236,402	13.6%	20	24,881,648	3,732,247	11,196,742	9,952,659
	9	Rain Water harvesting	0	5,000	750	2,250	2,000		72	360,000	4.0%	21	7,700,000	1,155,000	3,465,000	3,080,000
	10	Cistern	0	0	0	0	0		72	0	0.0%	90	0	0	0	0
	11	Hafir Dam	0	0	0	0	0		359	0	0.0%	59	0	0	0	0
			Other	0	0	0	0			0	0.0%		0	0	0	0
12. Single Village - spring	12a	Single village from spring source + gravity distribution with 2-4 water points (small)	372	300	45	135	120	81%	1,479	443,612	4.9%	35	15,469,239	2,320,386	6,961,157	6,187,696
	12b	Single village from spring source + motorized distribution with 2 water points (small)		0	0	0	0		2,000	0	0.0%	81	0	0	0	0
	12c	Single village from spring source + motorized distribution with 2 water points + solar		50	8	23	20		2,000	100,000	1.1%	52	5,219,985	782,998	2,348,993	2,087,994
13. Multi Village - spring	13a	Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	100	15	45	40		4,200	420,000	4.6%	44	18,344,519	2,751,678	8,255,034	7,337,808
	13b	Multi village from spring source + gravity distribution with 6-10 water points (large)		0	0	0	0		11,000	0	0.0%	31	0	0	0	0
	13c	Multi village from spring source + motorized distribution with 4-6 water points (medium)		100	15	45	40		4,200	420,000	4.6%	60	25,055,928	3,758,389	11,275,168	10,022,371
	13d	Multi village from spring source + motorized distribution with 6-10 water points (large)		100	15	45	40		11,000	1,100,000	12.1%	35	38,926,174	5,838,926	17,516,779	15,570,470
	13e	Multi village from spring source + motorized distribution with 4-10 water points + solar		0	0	0	0			0	0.0%		0	0	0	0
14. Single Village - borehole	14a	Single village borehole source + distribution for 4-6 water points (medium)	687	600	90	270	240	87%	3,000	1,800,000	19.8%	104	187,919,463	28,187,919	84,563,758	75,167,785
	14b	Single village borehole source + distribution for 4-6 water points + Solar		100	15	45	40		3,000	300,000	3.3%	104	31,319,911	4,697,987	14,093,960	12,527,964
15. Multi Village - borehole	15a	Multi village from borehole source with 5-8 km distribution (large)	0	10	2	5	4		10,500	105,000	1.2%	52	5,467,562	820,134	2,460,403	2,187,025
	15b	Multi village from borehole source with 5-8 km distribution + Solar		0	0	0	0			0	0.0%		0	0	0	0
	15c	Large multi village from one or more very deep boreholes with long km distribution		0	0	0	0		10,000	0	0.0%	127	0	0	0	0
16. Single Village - river	16	Single village from river source with treatment	0	0	0	0			0	0.0%		0	0	0	0	
17. Multi Village -	17	Multi village from river source with treatment	0	10	2	5	4		10,000	100,000	1.1%	118	11,829,351	1,774,403	5,323,208	4,731,741
		Other							0	0.0%		0	0	0	0	
		Totals	13,222	23,033	3,455	10,365	9,213			9,292,637	102.4%		543,898,759	81,584,814	244,754,441	217,559,504

Draft- One WASH Program Document Phase II Updating- May 2010

Table 10 Rural Water Supply: Dire Dawa Water Supply Beneficiaries and Annual Physical and Financial Plan (2018-2020)

Type	Sr No	Technology	No. of systems proposed by Region	Adjusted No. of systems	Yearly Physical plan for 2020			Adjustment %age	Av. population served per system in this region	Adjusted regional population to be served by this system	Proportion of unserved population	Unit cost per capita USD	Total cost USD	Yearly Financial Plan		
					2018	2019	2020							2018	2019	2020
Self supply	1	Household Dug well with Rope Pump	0	0	0	0	0	6	0	0.0%	133	0	0	0	0	
	2	Community Dug well with Rope Pump	0	0	0	0	0	42	0	0.0%	32	0	0	0	0	
On spot	3	Dug well with Hand Pump	0	0	0	0	0	171	0	0.0%	25	0	0	0	0	
	4	Shallow well with hand pump	25	4	1	2	16%	320	1,280	6.4%	127	162,058	24,309	72,926	64,823	
	5	Shallow well with solar system (small on spot)	0	2	0	1	1	320	640	3.2%	127	81,029	12,154	36,463	32,412	
	6	Borehole with distribution (small on spot)	18	1	0	0	0	6%	2,000	2,000	10.0%	110	219,239	32,886	98,658	87,696
	7	Borehole with distribution (on spot) + solar	0	1	0	0	0	2,000	2,000	10.0%	110	219,239	32,886	98,658	87,696	
	8	Capped Spring	0	0	0	0	0	350	0	0.0%	25	0	0	0	0	
	9	Rain Water harvesting	0	2	0	1	1	737	1,474	7.4%	29	42,452	6,368	19,103	16,981	
	10	Cistern	0	0	0	0	0	57	0	0.0%	90	0	0	0	0	
	11	Hafir Dam	0	0	0	0	0	493	0	0.0%	98	0	0	0	0	
			Other	0	0	0	0	0	0	0.0%	0	0	0	0	0	
	12. Single Village - spring	12a	Single village from spring source + gravity distribution with 2 -4 water points (small)	5	1	0	0	0	20%	1,400	1,400	7.0%	41	56,767	8,515	25,545
12b		Single village from spring source + motorized distribution with 2 water points (small)	0	0	0	0	0	1,444	0	0.0%	130	0	0	0	0	
12c		Single village from spring source + motorized distribution with 2 water points + solar	0	0	0	0	0	1,444	0	0.0%	52	0	0	0	0	
13. Multi Village - spring	13a	Multi village from spring source + gravity distribution with 4-6 water points (medium)	0	0	0	0	0	3,200	0	0.0%	55	0	0	0	0	
	13b	Multi village from spring source + gravity distribution with 6-10 water points (large)	0	0	0	0	0	8,100	0	0.0%	38	0	0	0	0	
	13c	Multi village from spring source + motorized distribution with 4-6 water points (medium)	0	0	0	0	0	3,200	0	0.0%	76	0	0	0	0	
	13d	Multi village from spring source + motorized distribution with 6-10 water points (large)	0	0	0	0	0	8,100	0	0.0%	46	0	0	0	0	
	13e	Multi village from spring source + motorized distribution with 4-10 water points + solar	0	0	0	0	0	0	0	0.0%	0	0	0	0	0	
14. Single Village - borehole	14a	Single village borehole source + distribution for 4-6 water points (medium)	10	1	0	0	0	10%	3,500	3,500	17.6%	101	353,468	53,020	159,060	141,387
	14b	Single village borehole source + distribution for 4-6 water points + Solar	0	0	0	0	0	0	0	0.0%	0	0	0	0	0	
15. Multi Village - borehole	15a	Multi village from borehole source with 5-8 km distribution (large)	3	1	0	0	0	33%	8,000	8,000	40.2%	74	590,604	88,591	265,772	236,242
	15b	Multi village from borehole source with 5-8 km distribution + Solar	0	0	0	0	0	0	0	0.0%	0	0	0	0	0	
	15c	Large multi village from one or more very deep boreholes with long km distribution	0	0	0	0	0	10,000	0	0.0%	134	0	0	0	0	
16. Single Village - river	16	Single village from river source with treatment	0	0	0	0	0	0	0	0.0%	0	0	0	0	0	
17. Multi Village -	17	Multi village from river source with treatment	0	0	0	0	0	0	0	0.0%	118	0	0	0	0	
		Other	0	0	0	0	0	0	0	0.0%	0	0	0	0	0	
		Totals	61	13	2	6	5		20,294	101.9%		1,724,857	258,729	776,186	689,943	

Draft- One WASH Program Document Phase II Updating- May 2010

Table 11: Summary of Rural Water Supply: Scheme Technology mix ratio planned by the regions and Adjusted plan

Sr No	Region	Unserved population To be served in the remaining three years	Self-Supply		Spot Supply							Piped Water supply System					Total		
			Household Dug well with Rope Pump	Community Dug well with Rope Pump	Dug well with Hand Pump	SW (with HP)	SW (Solar system, Small On Spot)	BH+Dist (Small) On Spot	Capped Spring	Rain Water harvesting	Cistern	Hafir Dam	SVS from spring source	MVS from spring source	SVS from BH source	MVS from BH source		SVs from Surface Water	MVS from Surface Water
	Oromiya																		
A	Regional Plan	4,616,200			5875	1461			4827				372		687				13222
	Mix ratio"A"		0.00	0.00	0.44	0.11	0.00	0.00	0.37	0.00	0.00	0.00	0.03	0.00	0.05	0.00	0.00	0.00	1.0
B	Adjusted Plan	9,292,637			5,875	1,461	4,000	500	4,827	5,000			350	300	700	10		10	23033
	Mix ratio"B"		0.00	0.00	0.26	0.06	0.17	0.02	0.21	0.22	0.00	0.00	0.02	0.01	0.03	0.00	0.00	0.00	1.0
2	Amhara																		
2	Regional Plan	4,300,607	1,260	1,720	12,000	1,500			9,000	180				80		60			25800
	Mix ratio		0.05	0.07	0.47	0.06	0.00	0.00	0.35	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.0
A	Adjusted Plan	2,047,926	500	500	500	500	500	200	2,000	180			20	60	10	25		5	5000
	Mix ratio"B"		0.10	0.10	0.10	0.10	0.10	0.04	0.40	0.04	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	1.0
3	Tigray																		
A	Regional Plan	2,092,712	924		837	2557		80	414						90	22			4924
	Mix ratio		0.18	0.00	0.17	0.51	0.00	0.02	0.08	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	1.0
B	Adjusted Plan	839,073	300	300	300	200	200	80	200		180	180	15		50	20			2025

Draft- One WASH Program Document Phase II Updating- May 2010

	Mix ratio"B"		0.15	0.15	0.15	0.10	0.10	0.04	0.10	0.00	0.09	0.09	0.01	0.00	0.02	0.01	0.00	0.0	1.0
4	SNNP																		
A	Regional Plan	12,203,384		2166	1296	4659			3332				344		534				12331
	Mix ratio		0.00	0.18	0.11	0.38	0.00	0.00	0.27	0.00	0.00	0.00	0.03	0.00	0.04	0.00	0.00	0.0	1.0
B	Adjusted Plan	6,394,009		2,166	1,296	3,000	1,000	0	3,332	1,500			444		584	100			13422
	Mix ratio"B"		0.00	0.16	0.10	0.22	0.07	0.00	0.25	0.11	0.00	0.00	0.03	0.00	0.04	0.01	0.00	0.0	1.0
5	Benshiangul-Gumuz																		
A	Regional Plan	13,203,384			120	624	10		24						10	8			796
	Mix ratio		0.00	0.00	0.15	0.78	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.0	1.0
B	Adjusted Plan	265,924		2,166	1,296	3,000	1,000	0	3,332	1,500			444		584	100			13422
	Mix ratio"B"		0.00	0.16	0.10	0.22	0.07	0.00	0.25	0.11	0.00	0.00	0.03	0.00	0.04	0.01	0.00	0.0	1.0
6	Gambela																		
A	Regional Plan	116,331	650		163	238	111		34				8		12				1216
	Mix ratio		0.53	0.00	0.13	0.20	0.09	0.00	0.03	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.0	1.0
B	Adjusted Plan	47,741			120	624	10		15			7	3		2	1			782
	Mix ratio"B"		0.00	0.00	0.15	0.80	0.01	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.0	1.0
7	Afar																		
A	Regional Plan	125,028.3			148	96	53		7	40	163	7			117				631
	Mix ratio		0.00	0.00	0.23	0.15	0.08	0.00	0.01	0.06	0.26	0.01	0.00	0.00	0.19	0.00	0.00	0.0	1.0
B	Adjusted Plan	690,331			148	96	100		7	100	163	7			70	30			721

Draft- One WASH Program Document Phase II Updating- May 2010

	Mix ratio"B"		0.00	0.00	0.21	0.13	0.14	0.00	0.01	0.14	0.23	0.01	0.00	0.00	0.10	0.04	0.00	0.0	1.0
8	Somali																		
A	Regional Plan	4,793,269		1780	670		163		65	2430	967	94			96	98	0.00	55	6418
	Mix ratio		0.00	0.28	0.10	0.00	0.03	0.00	0.01	0.38	0.15	0.01	0.00	0.00	0.01	0.02	0.00	0.0	1.0
B	Adjusted Plan	1,279,540		500	200		100		65	2,430	967	94			35	80		35	4506
	Mix ratio"B"		0.00	0.11	0.04	0.00	0.02	0.00	0.01	0.54	0.21	0.02	0.00	0.00	0.01	0.02	0.00	0.0	1.0
9	Harari																		
A	Regional Plan	50,517.00			20			4					5		4	8	4		45
	Mix ratio		0.00	0.00	0.44	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.11	0.00	0.09	0.18	0.09	0.0	1.0
B	Adjusted Plan	75,375			10			2				180	2		2	1	2		199
	Mix ratio"B"		0.00	0.00	0.05	0.00	0.00	0.01	0.00	0.00	0.00	0.90	0.01	0.00	0.01	0.01	0.01	0.0	1.0
10	Diredawa																		
A	Regional Plan	60,147				25		18					5		10	3			61
	Mix ratio		0.00	0.00	0.00	0.41	0.00	0.30	0.00	0.00	0.00	0.00	0.08	0.00	0.16	0.05	0.00	0.0	1.0
B	Adjusted Plan	20,294				4	2	2		2			1		1	1			13
	Mix ratio"B"		0.00	0.00	0.00	0.31	0.15	0.15	0.00	0.15	0.00	0.00	0.08	0.00	0.08	0.08	0.00	0.0	1.0

Draft- One WASH Program Document Phase II Updating- May 2010

Table 12: Rural Water Supply Rehabilitation

No.	Region/City	Year			Total
		2018	2019	2020	
1	Tigray	NA	NA	NA	NA
2	Gambella	121,087	207,391	207,391.3043	535869.3043
3	B. Gumuz	86,956.52	86,956.52	86,956.52	260869.56
4	Dire Dawa	32,609	32,609	32,609	97827
5	Harari	52,173.91	93,913.04	93,913.04	239999.99
6	Somali	NA	NA	NA	0
7	Amhara	NA	NA	NA	0
8	Afar	NA	NA	NA	0
9	SNNPR	14,880,482	14,880,482	11,957,530	41,718,494.00
10	Oromiya	6,724,808	7,086,025	6,294,434	20105267
	Total	21,898,116	22,387,377	18,672,834	62,958,327

Table A13: Rural Water Supply Study and Design Financial Requirement by Region and Year USD)

No.	Region/City	Year			Total
		2018	2019	2020	
1	Tigray	1,509,610.18	4,528,831	4,025,627	10,064,068
2	Gambella	59,048.78	177,146	157,463	393,659
3	B. Gumuz	285,752.84	857,259	762,008	1,905,019
4	Harari	170,718.81	512,156	455,250	1,138,125
5	Somali	5,008,366.62	15,025,100	13,355,644	33,389,111
6	Amhara	2,619,342.05	7,858,026	6,984,912	17,462,280
7	Afar	2,424,593.81	7,273,781	6,465,583	16,163,959
8	SNNPR	8,848,939.82	26,546,819	23,597,173	58,992,932
9	Oromiya	13,619,322.79	40,857,968	36,318,194	90,795,485

Draft- One WASH Program Document Phase II Updating- May 2010

10	Dire Dawa	13,619,322.79	40,857,968	36,318,194	90,795,485
	Total	48,165,018.49	144,495,055	128,440,049	321,100,123

Table 14: Rural Water Supply Environmental safeguards

No.	Region	Year			Total (USD)
		2018	2019	2020	
1	Afar	266,628	799,885	711,009	1,777,523
2	Amhara	3,350,952	10,052,857	8,935,873	22,339,682
3	B. Gumuz	133,314	399,943	355,505	888,761
4	Dire Dawa	25,711	77,134	68,563	171,408
5	Gambella	57,135	171,404	152,359	380,898
6	Harari	19,998	59,993	53,327	133,318
7	Oromiya	5,690,621	17,071,863	15,174,989	37,937,473
8	SNNP	3,213,829	9,641,487	8,570,211	21,425,527
9	Somali	879,875	2,639,625	2,346,333	5,865,834
10	Tigray	788,460	2,365,379	2,102,559	5,256,397
11	Federal	1,188,477	3,565,430	3,169,271	7,923,178
	Total	15,615,000	46,845,000	41,640,000	104,100,000

Table 15 Rural Water Supply Water safety, Catchment protection & Water resource management plan

No.	Region	Year			Total (USD)
		2014	2015		
1	Tigray	278,352	835,055	742,271	1,855,677
2	Gambella	77,070	231,211	205,521	513,803
3	B. Gumuz	177,589	532,767	473,570	1,183,926
4	Diredawa	5,058	15,173	13,487	33,717
5	Harari	5,008	15,023	13,354	33,385
6	Somali	417,839	1,253,516	1,114,237	2,785,592

Draft- One WASH Program Document Phase II Updating- May 2010

No.	Region	Year			Total (USD)
		2014	2015		
7	Amhara	2,526,539	7,579,617	6,737,437	16,843,593
8	Afar	165,390	496,171	441,041	1,102,603
9	SNNPR	2,101,315	6,303,945	5,603,507	14,008,767
10	Oromiya	3,943,550	11,830,651	10,516,134	26,290,335
	Total	9,697,710	29,093,130	25,860,560	64,651,400

Table 16 Rural Water Supply: Catchment Protection & Water Resource Management plan

No.	Region	Year			Total (USD)
		2018	2019	2020	
1	Afar	141,965	425,894	378,572	946,431
2	Amhara	1,784,194	5,352,581	4,757,850	11,894,625
3	B. Gumuz	70,982	212,947	189,286	473,215
4	Dire Dawa	13,690	41,069	36,506	91,265
5	Gambella	30,421	91,263	81,123	202,807
6	Harari	10,648	31,943	28,394	70,985
7	Oromia	3,029,936	9,089,808	8,079,829	20,199,573
8	SNNP	1,711,183	5,133,550	4,563,156	11,407,889
9	Somali	468,484	1,405,452	1,249,291	3,123,227
10	Tigray	419,810	1,259,431	1,119,494	2,798,736
11	Federal	632,797	1,898,391	1,687,459	4,218,647
	Total	8,314,110	24,942,330	22,170,960	55,427,400

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Table 17 Rural Sanitation: Establish local builder Supply Chain/sanitation market or products and services for rural sanitation low cost technologies and spare parts.

No.	Region	Year			Total (USD)
		2018	2019	2020	
1	Afar	1,561,500	4,684,500	4,164,000	10,410,000
2	Amhara	780,750	2,342,250	2,082,000	5,205,000
3	B. Gumuz	780,750	2,342,250	2,082,000	5,205,000
4	Dire Dawa	780,750	2,342,250	2,082,000	5,205,000
5	Gambella	780,750	2,342,250	2,082,000	5,205,000
6	Harari	1,561,500	4,684,500	4,164,000	10,410,000
7	Oromia	2,342,250	7,026,750	6,246,000	15,615,000
8	SNNP	1,561,500	4,684,500	4,164,000	10,410,000
9	Somali	2,342,250	7,026,750	6,246,000	15,615,000
10	Tigray	3,123,000	9,369,000	8,328,000	20,820,000
	Total	15,615,000	46,845,000	41,640,000	198,000,000

Table 18 Rural Sanitation: Research and Produce pilot projects for Rural communal and HH sanitation

No.	Region	Year			Total (USD)
		2018	2019	2020	
1	Afar	990,000	2,970,000	2,640,000	6,600,000
2	Amhara	495,000	1,485,000	1,320,000	3,300,000
3	B. Gumuz	495,000	1,485,000	1,320,000	3,300,000
4	Dire Dawa	495,000	1,485,000	1,320,000	3,300,000
5	Gambella	495,000	1,485,000	1,320,000	3,300,000
6	Harari	990,000	2,970,000	2,640,000	6,600,000
7	Oromia	1,485,000	4,455,000	3,960,000	9,900,000
8	SNNP	990,000	2,970,000	2,640,000	6,600,000
9	Somali	1,485,000	4,455,000	3,960,000	9,900,000
10	Tigray	1,980,000	5,940,000	5,280,000	13,200,000

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	Total	9,900,000	29,700,000	26,400,000	66,000,000
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Table 19 Rural Sanitation: Rural public latrines at market place with Bio-digester-production of bio-gas

No.	Region	Year			Total (USD)
		2018	2019	2020	
1	Afar	336,600	1,009,800	897,600	2,244,000
2	Amhara	168,300	504,900	448,800	1,122,000
3	B. Gumuz	168,300	504,900	448,800	1,122,000
4	Dire Dawa	168,300	504,900	448,800	1,122,000
5	Gambella	168,300	504,900	448,800	1,122,000
6	Harari	336,600	1,009,800	897,600	2,244,000
7	Oromia	504,900	1,514,700	1,346,400	3,366,000
8	SNNP	336,600	1,009,800	897,600	2,244,000
9	Somali	504,900	1,514,700	1,346,400	3,366,000
10	Tigray	673,200	2,019,600	1,795,200	4,488,000
	Total	3,366,000	10,098,000	8,976,000	22,440,000

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Table 20 Urban Sanitation Activity and Financial Plan by Year

No	Description of Activities	Unit	Total Activity Plan	Activity Plan (2018-2020)			Estimated Financial Requirement (USD) (2018-2020)			
				2018	2019	2020	Total (2016 -2020)	2018	2019	2020
1	Public Toilets Construction in 970 towns	No. of units	1201	180.15	540.45	480.40	44.62	6.69	20.08	17.85
2	Communal Toilets Construction in 970 towns	No. of units	2237	335.55	1006.65	894.80	59.38	8.91	26.72	23.75
3	School Toilets Construction in 970 towns	No. of units	1942	291.30	873.90	776.80	61.91	9.29	27.86	24.77
4	Waste Water Study and Design	No. of towns	36	5.40	16.20	14.40	8.55	1.28	3.85	3.42
5	Waste Water Treatment Plants Construction	No. of towns	6	0.90	2.70	2.40	292.75	43.91	131.74	117.10
6	Decentralized WWT system study design and installation		200	30.00	90.00	80.00				
7	Procurement of 8 m ³ capacity Vacuum Trucks for 50 towns and surrounding cities	No. of units	48	7.20	21.60	19.20	6.84	1.03	3.08	2.74
8	Procurement of 5 m ³ capacity Vacuum Trucks for 50 towns and surrounding cities	No. of units	25	3.75	11.25	10.00	2.97	0.45	1.34	1.19
9	Procurement of 3 m ³ capacity Vacuum Trucks for 50 towns and surrounding cities	No. of units	1	1.00			0.10	0.01	0.04	0.04
10	For Rehabilitation of Sanitation Facilities (5% of Sum)						22.90	3.44	10.31	9.16
Grand Total			5696	855	2563	2278	500	75	225	200

Table 21 Institutional WASH: Health Post WASH Facility by Region and year in (USD)

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No.	Region	Health WASH package		Cost of Health Post WASH package for three Years			Total Cost(USD)
		Health Post Total Number without full package	Health Post Unit WASH package cost(USD)	2018	2019	2020	
1	Tigray	110	7319	120,758	362,275	322,022	805,056
2	Afar	105	7628	120,134	360,403	320,359	800,896
3	Amhara	602	10172	918,428	2,755,284	2,449,141	6,122,853
4	Oromiya	1,733	10456	2,718,075	8,154,226	7,248,201	18,120,503
5	Somali	207	11970	371,657	1,114,970	991,084	2,477,711
6	B. Gumuz	333	10082	503,609	1,510,826	1,342,957	3,357,391
7	SNNP	4,042	5917	3,587,512	10,762,536	9,566,699	23,916,746
8	Gambella	74	9157	101,641	304,922	271,041	677,604
9	Harari	23	10826	37,350	112,049	99,599	248,997
10	Dire Dawa	24	7296	26,266	78,797	70,042	175,104
	Total	7,253	90,822	8,505,429	25,516,288	22,681,145	56,702,861

Table 22 Institutional WASH: Health Post WASH Facility by Region and year in (USD)

No.	Region	Health WASH package		Cost of Health Center WASH package for three Years			
		Health Center Total Number without full package	Health Center Unit WASH Package cost(USD)	2018	2019	2020	Total Cost(USD)
1	Tigray	12	24396	43,912	131,736	117,099	292,748
2	Afar	15	25425	57,207	171,621	152,552	381,379
3	Amhara	171	33907	867,435	2,602,304	2,313,159	5,782,898
4	Oromiya	252	34854	1,317,475	3,952,424	3,513,265	8,783,163
5	Somali	98	39899	586,511	1,759,534	1,564,030	3,910,075
6	B. Gumuz	26	33608	131,069	393,208	349,518	873,796
7	SNNP	466	19724	1,378,674	4,136,023	3,676,465	9,191,163
8	Gambella	6	30523	27,470	82,411	73,254	183,136

Draft- One WASH Program Document Phase II Updating- May 2010

No.	Region	Health WASH package		Cost of Health Center WASH package for three Years			
		Health Center Total Number without full package	Health Center Unit WASH Package cost(USD)	2018	2019	2020	Total Cost(USD)
9	Harari	2	36087	10,826	32,478	28,869	72,173
10	Dire Dawa	6	24320	21,888	65,664	58,368	145,920
11	Addis Ababa (peri-urban)	27	28,041	113,567	340,701	302,845	757,113
	Total	1,081	330,782	4,556,034	13,668,103	12,149,425	30,373,563

Table 23 Institutional WASH: Primary School WASH Facility by Region and year in (USD)

No.	Region	Primary School WASH package		Cost of Primary School WASH package for three Years			
		Total Number without full package	WASH package unit cost(USD)	2018	2019	2020	Total Cost(USD)
1	Tigray	356	18401	982,587	2,947,761	2,620,232	6,550,581
2	Afar	47	18193	128,261	384,784	342,030	855,076
3	Amhara	44	24416	161,145	483,436	429,721	1,074,303
4	Oromiya	9,314	25098	35,063,746	105,191,238	93,503,323	233,758,307
5	Somali	169	21526	545,675	1,637,025	1,455,134	3,637,834
6	B. Gumuz	464	22237	1,547,704	4,643,112	4,127,211	10,318,027
7	SNNP	5,483	20851	17,149,120	51,447,359	45,730,986	114,327,464
8	Gambella	108	20028	324,451	973,354	865,204	2,163,009
9	Harari	27	20140	81,567	244,702	217,513	543,782
10	Dire Dawa	14	11030	23,163	69,489	61,768	154,419
11	Addis Ababa (peri-urban)	110	10,096	166,583	499,750	444,222	1,110,554.56
	Total	16,026	201,919	56,007,420	168,022,261	149,353,121	373,382,803

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Table 24 Institutional WASH: Secondary School WASH Facility by Region and year in (USD)

No.	Region	Secondary School WASH package		Cost of Secondary School WASH package for three Years			
		Total Number without full package	WASH package unit cost(USD)	2018	2019	2020	Total Cost(USD)
1	Tigray	375	36801	2,070,057	6,210,171	5,520,152	13,800,381
2	Afar	38	36386	207,401	622,204	553,070	1,382,676
3	Amhara	32	48832	234,393	703,180	625,049	1,562,623
4	Oromiya	686	50195	5,165,070	15,495,209	13,773,519	34,433,798
5	Somali	85	43051	548,904	1,646,712	1,463,744	3,659,360
6	B. Gumuz	92	44474	613,745	1,841,234	1,636,653	4,091,632
7	SNNP	409	41703	2,559,951	7,679,853	6,826,536	17,066,340
8	Gambella	61	40056	366,510	1,099,530	977,360	2,443,399
9	Harari	7	40280	42,294	126,882	112,784	281,961
10	Dire Dawa	3	22060	9,927	29,781	26,472	66,180
11	Addis Ababa (peri-urban)	30	20,192	90,864	272,591	242,303	605,757.04
	Total	1,818	424,030	11,909,116	35,727,348	31,757,642	79,394,106

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Table 25 Institutional WASH: School and Health WASH facility Rehabilitation budget requirement by Region

No.	Region/City	Health Facility WASH package Budget requirement	School WASH package Rehabilitation Budget requirement	Total (USD)
1	Addis Ababa City	662,737	1,060,901.0	1,723,638
2	Afar	13,181	505190	518,371
3	Amhara	6,809	87,832	94,641
4	B. Gumuz	75,299	2,502,192	2,577,491
5	Dire Dawa	1,472,748	894,855	2,367,603
6	Gambela	2,465,065	1,015,884	3,480,949
7	Harari	15,608	26,174	41,782
8	Oromia	314,853	2,449,411	2,764,264
9	SNNPR	24,140	2,127,025	2,151,165
10	Somali	2,209,122	510,067	2,719,189
11	Tigray	30,542	490,380	520,922
	National	6,627,367	11,669,911	18,960,014

Draft- One WASH Program Document Phase II Updating- May 2010

Table 26 Rural Program Management

No.	Region/City	2018	2019	2020	Total(USD)
1	Tigray	547,958	1,643,873	1,461,220	3,653,050.71
2	Gambella	225,842	677,527	602,246	1,505,615.83
3	B.Gumuz	325,054	975,163	866,812	2,167,029
4	Dire Dawa	77,186	231,559	205,830	514,575
5	Harari	77,186	231,559	205,830	514,575
6	Somali	634,606	1,903,818	1,692,283	4,230,707
7	Amhara	2,060,131	6,180,392	5,493,682	13,734,205
8	Afar	460,985	1,382,955	1,229,294	3,073,234
9	SNNPR	1,712,889	5,138,667	4,567,704	11,419,260
10	Oromiya	3,250,674	9,752,023	8,668,465	21,671,161
11	Federal	227,487	682,470	606,631	1,516,578
		9,602,017	28,802,025	25,599,996	64,000,000

Table 27 Rural Post-Construction Management Support by Region and Year (USD)

No.	Region/City	2018	2019	2020	Total(USD)
1	Tigray	1,645,875	4,937,626	4,389,001	10,972,501.7
2	Gambella	693,000	2,078,999	1,847,999	4,619,998.7
3	Gumuz	693,000	2,078,999	1,847,999	4,619,998.7
4	Dire Dawa	346,500	1,039,501	924,001	2,310,001.5
5	Harari	346,500	1,039,501	924,001	2,310,001.5
6	Somali	1,386,000	4,158,001	3,696,001	9,240,001.7
7	Amhara	2,079,000	6,237,000	5,544,000	13,860,000.4
8	Afar	693,000	2,078,999	1,847,999	4,619,998.7
9	SNNPR	2,772,000	8,316,000	7,392,000	18,479,999.2
10	Oromiya	3,465,000	10,394,999	9,239,999	23,099,997.9
	Total	13,860,000	41,580,000	36,960,000	92,400,000

Table 28 Support to Research and Water Technology Institute

Years			
2018	2019	2020	Total(USD)
7,950,000	23,850,000	21,200,000	53,000,000

Table 29 Support to Supply Chain

Region	Groups	Training Cost			Other Support			Total(USD)
		2018	2019	2020	2018	2019	2020	
Tigray	3	97,059	97,059	97,059	445,500.00	1,336,500	1,188,000.00	2,970,000

Draft- One WASH Program Document Phase II Updating- May 2010

Region	Groups	Training Cost			Other Support			Total(USD)
		2018	2019	2020	2018	2019	2020	
Gambella	2	97,059	97,059	97,059	222,731	668,192	593,949	1,484,872
B.Gumuz	2	97,059	97,059	97,059	222,731	668,192	593,949	1,484,872
Dire Dawa	2	97,059	97,059	97,059	222,731	668,192	593,949	1,484,872
Harari	2	97,059	97,059	97,059	222,731	668,192	593,949	1,484,872
Somali	3	97,059	97,059	97,059	445,500	1,336,500	1,188,000	2,970,000
Amhara	4	97,059	194,118	97,059	668,231	2,004,692	1,781,949	4,454,872
Afar	3	97,059	97,059	97,059	445,500	1,336,500	1,188,000	2,970,000
SNNPR	4	97,059	194,118	97,059	668,231	2,004,692	1,781,949	4,454,872
Oromiya	5	97,059	291,176	97,059	891,000	2,673,000	2,376,000	5,940,000
Total	30	970,588	1,358,824	970,588	4,454,885	13,364,655	11,879,693	29,699,233

Table 30 TA Pastoralist WASH

N O	Technical Assistance	Number of regions	2018	2019	2020	Total
1	Range land for Resource mapping	6	3,975,000	11,925,000	10,600,000	26,500,000
2	Appropriate water supply and sanitation Technology	6	2,385,000	7,155,000	6,360,000	15,900,000
3	Establishment of Scheme management System and Build capacity (For Spot supply and MVS) of water supplies	6	1,590,000	4,770,000	4,240,000	10,600,000
	Total		7,950,000	23,850,000	21,200,000	53,000,000

Table 31 Rural TA Self Supply

No.	Activity	Cost (USD)	2014-2015
1	Inception Phase		6,897,944
2	Technical options and advisory services		4,614,974
3	Capacity Building		13,844,922
4	Facilitating access to credit(MFIs in self supply)		1,874,833

Draft- One WASH Program Document Phase II Updating- May 2010

5	Self-supply acceleration planning and implementation	4,621,897
6	Monitoring, reporting, communications and learning	1,845,990
7	Guidelines for self-supply(first draft, review, final draft, publishing update, republishing)	934,532
8	Research, advocacy and fundraising activities	1,153,744
9	National coordination, communication and learning	1,153,744
10	Program management	1,153,744
11	Supervision and monitoring	1,730,615
12	Support costs - office and vehicle running, staff costs	173,062
	Total	40,000,000

Table 32 Rural Technical assistance for Zone/Woreda water office on Drilling Cost

NO	Technical Assistance	NO	2018	2019	2020
1	Short term training for drilling technician	50	31,800	1,590,000	1,590,000.00
2	Short term training for Drilling Engineers	50	53,000.0	2,650,000	2,650,000.00
3	Procurement of Drilling Machines At zone or Woreda water office	50	500,000	25,000,000	25,000,000
4	Training of Engineers on Ground water investigation and Monitoring of Boreholes 2 person for each region and provide with instrument	30	792,000.00	23,760,000	23,760,000
	Total			-	53,000,000

Table 33 Rural Post-Construction Management Support by Region and Year (USD)

No.	Region	2018	2019	2020	Total(USD)
1	Tigray	1,386,000	4,158,000	3,696,000	9,240,000
2	Gambella	693,000	2,078,999	1,847,999	4,619,999
3	Gumuz	693,000	2,078,999	1,847,999	4,619,999
4	Dire Dawa	346,500	1,039,501	924,001	2,310,001
5	Harari	346,500	1,039,501	924,001	2,310,001
6	Somali	1,386,000	4,158,001	3,696,001	9,240,002
7	Amhara	2,079,000	6,237,000	5,544,000	13,860,000
8	Afar	693,000	2,078,999	1,847,999	4,619,999
9	SNNPR	2,772,000	8,316,000	7,392,000	18,479,999
10	Oromiya	3,465,000	10,394,999	9,239,999	23,099,998
	Total	13,860,000	41,580,000	36,960,000	92,400,000

Draft- One WASH Program Document Phase II Updating- May 2010

Table 34 Rural M&E: for M&E, MIS and Develop Knowledge Management and Dissemination System

No.	Region/City	Year			Total(USD)
		2018	2019	2020	
1	Tigray	2,880,000	8,640,000	7,680,000	19,200,000
2	Gambela	960,000	2,880,000	2,560,000	6,400,000
3	B.Gumuz	1,440,000	4,320,000	3,840,000	9,600,000
4	Dire Dawa	480,000	1,440,000	1,280,000	3,200,000
5	Harari	480,000	1,440,000	1,280,000	3,200,000
6	Somali	2,880,000	8,640,000	7,680,000	19,200,000
7	Amhara	9,600,000	28,800,000	25,600,000	64,000,000
8	Afar	2,880,000	8,640,000	7,680,000	19,200,000
9	SNNPR	7,200,000	21,600,000	19,200,000	48,000,000
10	Oromia	14,400,000	43,200,000	38,400,000	96,000,000
11	Federal	4,800,000	14,400,000	12,800,000	32,000,000
	Total	48,000,000	144,000,000	128,000,000	320,000,000

Table 35 Rural Advocacy

No.	Region/City	Year			Total(USD)
		2018	2019	2020	
1	Tigray	267,300.00	801,900.00	7,680,000	1,782,000
2	Gambella	267,300.00	801,900.00	2,560,000	1,782,000
3	Gumuz	267,300.00	801,900.00	3,840,000	1,782,000
4	Dire Dawa	267,300.00	801,900.00	1,280,000	1,782,000
5	Harari	267,300.00	801,900.00	1,280,000	1,782,000
6	Somali	267,300.00	801,900.00	7,680,000	1,782,000
7	Amhara	267,300.00	801,900.00	25,600,000	1,782,000
8	Afar	267,300.00	801,900.00	7,680,000	1,782,000
9	SNNPR	267,300.00	801,900.00	19,200,000	1,782,000
10	Oromia	267,300.00	801,900.00	38,400,000	1,782,000
11	Federal	297,000.00	891,000.00	12,800,000	1,980,000
		2,970,000	8,910,000	128,000,000	19,800,000

Draft- One WASH Program Document Phase II Updating- May 2010

Table 36 Urban Program Management and Capacity Building Costs by Region and Year (USD)												
No.	Activity	Oromiya	Amhara	Tigray	SNNP	Somali	B Gumuz	Afar	Gambella	Harari	Dire Dawa	Addis
1	Program management	11,035,200	4,065,600	2,613,600	6,969,600	871,200	580,800	871,200	580,800	871,200	580,800	
	2018	1,655,280	609,840	392,040	1,045,440	130,680	87,120	130,680	87,120	130,680	87,120	
	2019	4,965,840	1,829,520	1,176,120	3,136,320	392,040	261,360	392,040	261,360	392,040	261,360	
	2020	4,414,080	1,626,240	1,045,440	2,787,840	348,480	232,320	348,480	232,320	348,480	232,320	
		11,035,200	4,065,600	2,613,600	6,969,600	871,200	580,800	871,200	580,800	871,200	580,800	
2	Training of Key Utility staffs on water Governance such as asset management, leakage mangment customer management etc.	24,700,000	9,100,000	5,850,000	15,600,000	1,950,000	1,300,000	1,950,000	1,300,000	1,950,000	1,300,000	
	2018	3,705,000	1,365,000	877,500	2,340,000	292,500	195,000	292,500	195,000	292,500	195,000	
	2019	11,115,000	4,095,000	2,632,500	7,020,000	877,500	585,000	877,500	585,000	877,500	585,000	
	2020	9,880,000	3,640,000	2,340,000	6,240,000	780,000	520,000	780,000	520,000	780,000	520,000	
		24,700,000	9,100,000	5,850,000	15,600,000	1,950,000	1,300,000	1,950,000	1,300,000	1,950,000	1,300,000	
3	Standard Design, Supervision , Construction etc. Guidline manual Preparation, Training, Procurement of Software, Motor Bikes , Vehicles etc.	20,900,000	7,700,000	4,950,000	13,200,000	1,650,000	1,100,000	1,650,000	1,100,000	1,650,000	1,100,000	
	2018	3,135,000	1,155,000	742,500	1,980,000	247,500	165,000	247,500	165,000	247,500	165,000	
	2019	9,405,000	3,465,000	2,227,500	5,940,000	742,500	495,000	742,500	495,000	742,500	495,000	
	2020	8,360,000	3,080,000	1,980,000	5,280,000	660,000	440,000	660,000	440,000	660,000	440,000	

Draft- One WASH Program Document Phase II Updating- May 2010

		20,900,000	7,700,000	4,950,000	13,200,000	1,650,000	1,100,000	1,650,000	1,100,000	1,650,000	1,100,000	
4	Establish independent water supply and wastewater service regulatory agency to ensure high service quality.	10,032,000	3,696,000	2,376,000	6,336,000	792,000	528,000	792,000	528,000	792,000	528,000	
	2018	1,504,800	554,400	356,400	950,400	118,800	79,200	118,800	79,200	118,800	79,200	
	2019	4,514,400	1,663,200	1,069,200	2,851,200	356,400	237,600	356,400	237,600	356,400	237,600	
	2020	4,012,800	1,478,400	950,400	2,534,400	316,800	211,200	316,800	211,200	316,800	211,200	
		10,032,000	3,696,000	2,376,000	6,336,000	792,000	528,000	792,000	528,000	792,000	528,000	
5	Establish Utility organizational structure responsible section for wastewater management.	5,016,000	1,848,000	1,188,000	3,168,000	396,000	264,000	396,000	264,000	396,000	264,000	
	2018	752,400	277,200	178,200	475,200	59,400	39,600	59,400	39,600	59,400	39,600	
	2019	2,257,200	831,600	534,600	1,425,600	178,200	118,800	178,200	118,800	178,200	118,800	
	2020	2,006,400	739,200	475,200	1,267,200	158,400	105,600	158,400	105,600	158,400	105,600	
		5,016,000	1,848,000	1,188,000	3,168,000	396,000	264,000	396,000	264,000	396,000	264,000	
6	Establish Water supply quantity and quality monitoring system	19,744,800	7,274,400	4,676,400	12,470,400	1,558,800	1,039,200	1,558,800	1,039,200	1,558,800	1,039,200	
	2018	2,961,720	1,091,160	701,460	1,870,560	233,820	155,880	233,820	155,880	233,820	155,880	
	2019	8,885,160	3,273,480	2,104,380	5,611,680	701,460	467,640	701,460	467,640	701,460	467,640	
	2020	7,897,920	2,909,760	1,870,560	4,988,160	623,520	415,680	623,520	415,680	623,520	415,680	
		19,744,800	7,274,400	4,676,400	12,470,400	1,558,800	1,039,200	1,558,800	1,039,200	1,558,800	1,039,200	
7	Capacity Building for urban sanitation Procurement & Software	38,780,054	14,287,388	9,184,750		3,061,583	2,041,055	3,061,583	2,041,055	3,061,583	2,041,055	
	2018	5,817,008	2,143,108	1,377,712	-	459,237	306,158	459,237	306,158	459,237	306,158	
	2019	17,451,024	6,429,325	4,133,137	-	1,377,712	918,475	1,377,712	918,475	1,377,712	918,475	
	2020	15,512,022	5,714,955	3,673,900	-	1,224,633	816,422	1,224,633	816,422	1,224,633	816,422	

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		38,780,054	14,287,388	9,184,750	-	3,061,583	2,041,055	3,061,583	2,041,055	3,061,583	2,041,055
8	Procurement of Pump, Generator and Training for AWSSA										
	2018	-	-	-	-	-	-	-	-	-	-
	2019	-	-	-	-	-	-	-	-	-	-
	2020	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-
	Total	130,208,054	47,971,388	30,838,750	57,744,000	10,279,583	6,853,055	10,279,583	6,853,055	10,279,583	6,853,055

Table 37: Urban M&E, for M&E, MIS and Develop Knowledge Management and Dissemination System

No.	Region/City	Year			Total (USD in Million)
		2018	2019	2020	
1	Tigray	2.6	7.8	7	17.42
2	Gambela	0.9	2.6	2	5.81
3	B.Gumuz	1.3	3.9	3	8.71
4	Dire Dawa	0.4	1.3	1	2.90
5	Harari	0.4	1.3	1	2.90
6	Somali	3.0	9.1	8	20.33
7	Amhara	8.7	26.1	23	58.08
8	Afar	2.2	6.5	6	14.52
9	SNNPR	6.5	19.6	17	43.56
10	Oromia	13.1	39.2	35	87.12
11	Federal	4.4	13.1	12	29.04
	Total	43.6	130.7	116	290.40

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Table 38 Urban Advocacy

No.	Region/City	Year			Total(USD)
		2018	2019	2020	
1	Tigray	276,000	828,000	736,000	1,840,000
2	Gambella	276,000	828,000	736,000	1,840,000
3	B.Gumuz	276,000	828,000	736,000	1,840,000
4	Dire Dawa	276,000	828,000	736,000	1,840,000
5	Harari	276,000	828,000	736,000	1,840,000
6	Somali	276,000	828,000	736,000	1,840,000
7	Amhara	276,000	828,000	736,000	1,840,000
8	Afar	276,000	828,000	736,000	1,840,000
9	SNNPR	276,000	828,000	736,000	1,840,000
10	Oromiya	276,000	828,000	736,000	1,840,000
11	Federal	270,000	810,000	720,000	1,800,000
		3,030,000	9,090,000	8,080,000	20,000,000

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Annex III Summary compares regional plan and adjusted plan, with target population and technology Mix ratio

Sr No	Region	Unserved population To be served in the remaining three years	Self-Supply		Spot Supply								Piped Water supply System						Total
			Household Dug well with Rope Pump	Community Dug well with Rope Pump	Dug well with Hand Pump	SW (with HP)	SW (Solar system , Small On Spot)	BH+Dis t (Small) On Spot	Cappe d Spring	Rain Water harvestin g	Ciste rn	Hafi r Da m	SVS from spring source	MVS from spring source	SVS from BH source	MVS from BH source	SVs from Surfac e Water	MVS from Surfac e Water	
1	Oromia																		
A	Regional Plan	4,616,200			5875	1461			4827				372		687				13222
	Mix ratio "A"		0.00	0.00	0.44	0.11	0.00	0.00	0.37	0.00	0.00	0.00	0.03	0.00	0.05	0.00	0.00	0.00	1.0
B	Adjusted Plan	9,292,637			5,875	1,461	4,000	500	4,827	5,000			350	300	700	10		10	23033
	Mix ratio "B"		0.00	0.00	0.26	0.06	0.17	0.02	0.21	0.22	0.00	0.00	0.02	0.01	0.03	0.00	0.00	0.00	1.0
2	Amhara																		
	Regional Plan	4,300,607	1,260	1,720	12,000	1,500			9,000	180				80		60			25800
	Mix ratio		0.05	0.07	0.47	0.06	0.00	0.00	0.35	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.0
A	Adjusted Plan	2,047,926	500	500	500	500	500	200	2,000	180			20	60	10	25		5	5000
	Mix ratio "B"		0.10	0.10	0.10	0.10	0.10	0.04	0.40	0.04	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	1.0
3	Tigray																		
A	Regional Plan	2,092,712	924		837	2557			80	414					90	22			4924
	Mix ratio		0.18	0.00	0.17	0.51	0.00	0.02	0.08	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	1.0
B	Adjusted Plan	839,073	300	300	300	200	200	80	200		180	180	15		50	20			2025
	Mix ratio "B"		0.15	0.15	0.15	0.10	0.10	0.04	0.10	0.00	0.09	0.09	0.01	0.00	0.02	0.01	0.00	0.00	1.0

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Sr No	Region	Unserved population To be served in the remaining three years	Self-Supply		Spot Supply								Piped Water supply System						Total
			Household Dug well with Rope Pump	Community Dug well with Rope Pump	Dug well with Hand Pump	SW (with HP)	SW (Solar system , Small On Spot)	BH+Dist (Small) On Spot	Cappe d Spring	Rain Water harvestin g	Ciste rn	Hafi r Da m	SVS from spring source	MVS from spring source	SVS from BH source	MVS from BH source	SVs from Surfac e Water	MVS from Surfac e Water	
4	SNNP																		
A	Regional Plan	12,203,384		2166	1296	4659			3332				344		534				12331
	Mix ratio		0.00	0.18	0.11	0.38	0.00	0.00	0.27	0.00	0.00	0.00	0.03	0.00	0.04	0.00	0.00	0.00	1.0
B	Adjusted Plan	6,394,009		2,166	1,296	3,000	1,000	0	3,332	1,500			444		584	100			13422
	Mix ratio"B"		0.00	0.16	0.10	0.22	0.07	0.00	0.25	0.11	0.00	0.00	0.03	0.00	0.04	0.01	0.00	0.00	1.0
5	Benshian gul-Gumuz																		
A	Regional Plan	13,203,384			120	624	10		24						10	8			796
	Mix ratio		0.00	0.00	0.15	0.78	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	1.0
B	Adjusted Plan	265,924		2,166	1,296	3,000	1,000	0	3,332	1,500			444		584	100			13422
	Mix ratio"B"		0.00	0.16	0.10	0.22	0.07	0.00	0.25	0.11	0.00	0.00	0.03	0.00	0.04	0.01	0.00	0.00	1.0
6	Gambela																		
A	Regional Plan	116,331	650		163	238	111		34				8		12				1216
	Mix ratio		0.53	0.00	0.13	0.20	0.09	0.00	0.03	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	1.0
B	Adjusted Plan	47,741			120	624	10		15			7	3		2	1			782

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Sr No	Region	Unserved population To be served in the remaining three years	Self-Supply		Spot Supply								Piped Water supply System						Total
			Household Dug well with Rope Pump	Community Dug well with Rope Pump	Dug well with Hand Pump	SW (with HP)	SW (Solar system , Small On Spot)	BH+Dist (Small) On Spot	Cappe d Spring	Rain Water harvestin g	Ciste rn	Hafi r Da m	SVS from spring source	MVS from spring source	SVS from BH source	MVS from BH source	SVs from Surfac e Water	MVS from Surfac e Water	
	Mix ratio"B"		0.00	0.00	0.15	0.80	0.01	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.0
7	Afar																		
A	Regional Plan	125,028.3			148	96	53		7	40	163	7			117				631
	Mix ratio		0.00	0.00	0.23	0.15	0.08	0.00	0.01	0.06	0.26	0.01	0.00	0.00	0.19	0.00	0.00	0.00	1.0
B	Adjusted Plan	690,331			148	96	100		7	100	163	7			70	30			721
	Mix ratio"B"		0.00	0.00	0.21	0.13	0.14	0.00	0.01	0.14	0.23	0.01	0.00	0.00	0.10	0.04	0.00	0.00	1.0
8	Somali																		
A	Regional Plan	4,793,269		1780	670		163		65	2430	967	94			96	98	0.00	55	6418
	Mix ratio		0.00	0.28	0.10	0.00	0.03	0.00	0.01	0.38	0.15	0.01	0.00	0.00	0.01	0.02	0.00	0.01	1.0
B	Adjusted Plan	1,279,540		500	200		100		65	2,430	967	94			35	80		35	4506
	Mix ratio"B"		0.00	0.11	0.04	0.00	0.02	0.00	0.01	0.54	0.21	0.02	0.00	0.00	0.01	0.02	0.00	0.01	1.0
9	Harari																		
A	Regional Plan	50,517.00			20				4					5	4	8	4		45
	Mix ratio		0.00	0.00	0.44	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.11	0.00	0.09	0.18	0.09	0.00	1.0
B	Adjusted Plan	75,375			10				2			180	2		2	1	2		199

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Sr No	Region	Unserved population To be served in the remaining three years	Self-Supply		Spot Supply								Piped Water supply System						Total
			Household Dug well with Rope Pump	Community Dug well with Rope Pump	Dug well with Hand Pump	SW (with HP)	SW (Solar system , Small On Spot)	BH+Dist (Small) On Spot	Cappe d Spring	Rain Water harvestin g	Ciste rn	Hafi r Da m	SVS from spring source	MVS from spring source	SVS from BH source	MVS from BH source a	SVs from Surfac e Water	MVS from Surfac e Water	
	Mix ratio"B"		0.00	0.00	0.05	0.00	0.00	0.01	0.00	0.00	0.00	0.90	0.01	0.00	0.01	0.01	0.01	0.00	1.0
10	Diredawa																		
A	Regional Plan	60,147				25		18					5		10	3			61
	Mix ratio		0.00	0.00	0.00	0.41	0.00	0.30	0.00	0.00	0.00	0.00	0.08	0.00	0.16	0.05	0.00	0.00	1.0
B	Adjusted Plan	20,294				4	2	2		2			1		1	1			13
	Mix ratio"B"		0.00	0.00	0.00	0.31	0.15	0.15	0.00	0.15	0.00	0.00	0.08	0.00	0.08	0.08	0.00	0.00	1.0

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ANNEX IV Strategic Action Plan, Phase II, OWP-2018-2020

Goal 1: By 2020 Provide safe and adequate water supply to rural communities with minimum service level of 25Lt/c/d within a distance of 1 km. from the water delivery point. Coverage to reach 85 % of the rural population of which 20% is with RPS							Achievement level		
Result	Core activities	Indicators	Baseline	Targets by Year			2018	2019	2020
				2018	2019	2020			
Rural communities in Woredas are provided with adequate and safe water with well-established governance system ensuring sustainability.	<ul style="list-style-type: none"> Regions map woredas by service levels and prioritize woredas to provide improved and safe water supply Woredas involve and mobilize communities to participate in planning, construction and management Organize governance mechanism (WASHCOMs) With at least 50% women members. Train WASHCOMs on O&M, water handling, book keeping and reporting 	1.1 Percent of households in rural communities served with conventional, clean, safe and adequate water supply access at a rate of 25 l/c/d within 1 km. with on spot supply and RPS							
		1.2 Percent of households in rural communities served with RPS access at a rate of 25 l/c/d within 1 km.							
Goal 2: By 2020 Provide safe and adequate Water service to urban communities									
Towns/cities are provided with safe and adequate	<ul style="list-style-type: none"> Regions map and categorize towns and provide adequate and safe water Towns establish utilities and utility management mechanism 	Percent of category 1 towns/cities provided with 100 l/c/d							

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water as per their category	<ul style="list-style-type: none"> Towns or town water board set tariffs for water usage Towns/water boards establish O&M program, tools and spare parts Towns/water board conduct continuous capacity building on O&M, water treatment, preventive maintenance, record keeping, water safety plan to sector staff 	Percent of category 2 towns/cities provided with 80 l/c/d ;							
		Percent of Category 3 towns/cities provided with 60 l/c/day							
		Percent of Category 4 towns/cities provided with 50 l/c/d up to the premises							
		Percent of Category 5 towns/cities provided with 40 l/c/d within a distance of 250 mrs with piped system;							
Goal 3:By 2020 Carry out study and design for urban waste water management system									
Urban waste water management system is designed	<ul style="list-style-type: none"> Towns/water boards/city administrations identify and document background information on the problem Set budget and time line to conduct feasibility studies on WWM program Organize/hire professionals to design appropriate WWM system for the selected town/city 	Percent of the 36 category 1,2,3 towns and cities Build WWM infrastructure for 6 towns /cities with a population of 200,000 and more							
Goal 4:By 2020 Decrease RWS Non Functionality rate of water supply system in urban and rural communities									
Number of nonfunctional water systems are decreased to 7%	<ul style="list-style-type: none"> Regions together with Woredas map non functional water systems by category Identify common problems 	Percent achievement of NFR From the present 11.2 %-to the target of 7%	11.2						

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	<ul style="list-style-type: none"> Design mechanism/budget and organize manpower and rehabilitate un functional water systems Woredas with support from regions and NGOs etc set a maintenance crew with tools and spare parts and communication system to maintain pumps and reduce downtime and non-functionality rates. 								
Goal 5: By 2020 Empower women in WASHCOs management including in decision making									
WASHCOMs are established with 50% women members	<ul style="list-style-type: none"> Woredas involve communities including women in the planning process Discuss with communities on roles and responsibilities in WS management Establish WASHCOMs with women participation of at least 50% Train WASHCOMs on book keeping, O&M, setting tariffs etc... 	Percent of WASHCOMs that increase membership to 50% and more							
Goal 6. By 2020 Strengthen RWS community management through legalization of WASHCOs									
100% of WASHCOMs in all regions are legalized	<ul style="list-style-type: none"> Regions register the number of WASHCOMs Regions advocate on the importance of legalizing WASHCOMs so that they function legally following government rules Regions continue on capacity building to WASHCOMs to strengthen their water management roles. 	<ul style="list-style-type: none"> Percent of RWS that legalize WASHCOMs by region 	<ul style="list-style-type: none"> 						
Goal 7. By 2020 Establish supply chain for low cost WS technologies and spare parts									

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Regions have motivated private sectors and established supply chain for Water supply.	<ul style="list-style-type: none"> • Contact with Micro and Small Enterprise Agency and discuss Private sectors need for water supply • Discuss with TVET to develop curriculum for private sectors training • Establish systems, linkage mechanisms of the private sectors to funding agencies 	Number of Private sectors involved in Water supply by category established in each region/ woredas							
Goal 8. By 2020 Establish WS extension supporting system at kebele level to enhance implementation of household and communal level self-supply water and improve O&M of RWS									
Water supply extension system to enhance self-supply water supply is established	<ul style="list-style-type: none"> • Woredas discuss the advantage of self-supply and the support they can get from woredas • Woredas organize kebel and communities to undertake enhancing self-supply water supply system • Woredas with support from regions prepare O&M manuals • Establish water safety mechanism from the source to use with community using self-supply and other on spot water systems 	Number of woredas in each region that established support mechanisms for self-supply in woredas <ul style="list-style-type: none"> • 							
9. By 2020 Ensure rural water supply safety through water quality monitoring and water safety planning and implementation									
Regions have established mechanisms for	<ul style="list-style-type: none"> • Train selected water surveillance officers from among the staff 	Number of woredas in each region that established water quality							

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water quality monitoring	<ul style="list-style-type: none"> • Purchase portable water analysis kits with adequate supply of reagents • Prepare a protocol on frequency of testing, recording and reporting • Have in stock water disinfecting chemicals 	monitoring program urban and rural areas								
10. By 2020 Establish ground water monitoring and catchment protection system around water supply sources to be implemented by rural WASHCOs.										
Regions have made ground water monitoring and catchment protection a well-organized activities	<ul style="list-style-type: none"> • Conduct surveys on all water systems and identify areas of concern • Plan and design protection mechanisms such as protecting from flood, animals, open defecation etc 	Number of WASHCOMs that has establish catchment protection and monitoring mechanism in woredas in each region	.							
11. By 2020 Decrease Non Revenue Water for urban communities										
Nonfunctional water for urban areas is decreased.	Establish a water policing mechanism to identify NRW hot spot areas	Number of towns that decrease NRW from the 39% to 20% by 2020 for UWS utilities of category 1-3								
Goal 12. By 2020 Improve water service hours in the 24 hours in urban areas										
Water service hours is increased to an appreciable	<ul style="list-style-type: none"> • Assess possibilities of raising service hours • Enhance capacity to meet the plan. 	Number of towns that has Improved UWS continuity to 16 hrs. per day excluding WS delivery	.							

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level within the 24 hours		through public taps for UWS utilities of category 1 to 3								
Goal 13. By 2020 Enable cost recovery mechanism for urban water supply system										
Urban towns/cities utilities have established reasonable tariffs	<ul style="list-style-type: none"> • Prepare an advocacy statement to enable the establishment of cost recovery mechanism • Discuss the issue with water board and beneficiaries • Involve communities/beneficiaries before setting tariffs 	Number of towns that enable category 1,2 and 3 towns recover their investment cost at least by:80% Category 4 by 60%Category 5 by 30 %And O&M cost by 100% for all towns								
Goal 14. By 2020 Ensure UW safety through water quality monitoring system and water safety planning and implementation for UWS utilities of category 1 to 3										
Urban utilities has established a regular water quality monitoring plan	<ul style="list-style-type: none"> • Train selected water surveillance officers from among the staff • Purchase portable water analysis kits with adequate supply of reagents • Prepare a protocol on frequency of testing, recording and reporting • Have in stock water disinfecting chemicals 	Number of regions that established water quality monitoring and reporting program in woredas								
Goal 15. By 2020 Establish ground water monitoring and catchment protection system around WS sources to be implemented by urban WS utilities										

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Utilities have made ground water monitoring and catchment protection a well-organized routine activities	<ul style="list-style-type: none"> • Establish ground water monitoring unit with the necessary tools • Conduct surveys on all water systems and identify areas of concern • Plan and design monitoring and protection mechanisms such as protecting from flood, animals, open defecation etc 	<ul style="list-style-type: none"> • Number of towns of water utilities in urban areas that establish urban water catchment protection mechanisms 							
Goal 16. By 2020 Conduct capacity building to higher and middle level professional, artisans and caretakers									
Capacity building is conducted to higher, middle WASH professionals and artisans.	<ul style="list-style-type: none"> • Design training manuals for higher, medium professionals and artisans • Prepare the necessary supporting training materials • Use trained trainers for effectiveness 	Percent achievement in training and engaging Higher subsector 4, 374		4374					
		Percent achievement in training and engaging midlevel of which 25% are women		13000					
		Percent achievement in training and engaging artisans of which 25% are women		510000					
Goal 17. By 2020 Establish independent WS and Wastewater service regulatory agency to ensure high service quality									

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Water and waste water management regulatory agency is established	<ul style="list-style-type: none"> • Design policy or identify existing policy to establish regulatory agencies • Advocate that higher political leaders agree and endorse to establish the agency as per government regulation 	Number of regions that has processed the establishment of regulatory agency for water supply and waste water services.							
Goal 18. By 2020 enable category 1,2, 3, and 4 water supply utilities have in their organizational structure responsible section for Waste water management									
A unit for waste water management within the utilities for category 1,2,3,4 towns is established	<ul style="list-style-type: none"> • Establish a unit for waste water management • Establish an integrated and coordinated mechanism with other institutions 	Number of Waste water management structure is established in all 1,2,3,4 category water utilities							
Goal 19. By 2020 Increase the involvement of the private sector in the WS activities particularly in O&M of urban water supply utilities									
Private sectors are organized for water supply O&M in urban utilities	<ul style="list-style-type: none"> • .Map existing private sectors who would take the business • Advocate about the business and attract private sectors to take up the business of O&M • Design a capacity building program for the private sectors 	<ul style="list-style-type: none"> • Number of new private sectors in water utilities who are engaged in water supply and O&M 							

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Goal 20. By 2020 Strengthen WASH integration to meet the objectives of OWNP and establish coordination with the Ministry of Urban Development and Construction Affairs at all levels in all urban WASH interventions									
OWNP has integrated its national WASH plan with like ministries.	<ul style="list-style-type: none"> • Advocate the health, development and economic impact of WASH with like ministries • Discuss ways and means to integrate the program and for coordinated action for WASH in urban areas • Establish standing committees of professionals overlooking design and intervention program • Establish forums for wider learning and sharing 	Number of integration and coordination initiatives taken by OWNP with like ministries like ministry of urban development.							
21. By 2020 Implement national ICT based M&E and MIS system for the subsector which enables to capture, collect, analyze and report the data of the sub-sector staffs and service beneficiaries disaggregated in sex and age									
ICT for M&E is established at all levels in Ethiopia	<ul style="list-style-type: none"> • Learn and share experiences of regions and NGOs and bilateral organizations who have started ICT based monitoring in Ethiopia • Speed up the ICT based national program and record real time information in the MIS • Establish mechanism for reviewing and learning 	Number of regions that established a functional ICT based M&E and MIS system							

Table: Strategic Action Plan for Sanitation in Phase II OWNP-2018-2020

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Goal 1. By 2020 introduce community centered approach to sector staff at all levels particularly to woreda level (Primary Health Care Unit staff, Kebele WASH team, Kebele leaders, HEWs, HDAs, Limat Budins, WASHCOS and Agricultural extension agents in all Kebeles in the country)									
Result	Core activities	Indicators	Baseline	Targets by year			Achievements level		
				2018	2019	2020	2018	2019	2020
Common ground with sectors and stakeholders and community members established.	<ul style="list-style-type: none"> • Prepare advocacy package prepared to suit the level of local residents, sector staff and officials • Include in the advocacy meetings stakeholders such as local NGOs, religious leaders and schools • Conduct a number of meetings to form common ground on the need of involving communities for behavior change program 	Number of advocacy initiatives undertaken to establish common ground with sector staff and other stakeholders.							
Goal 2: By 2020 Increase the availability and consistent use of improved latrine from the present 28% to 82% In rural areas.									
Improved sanitation system with hand washing increasing in all regions	<ul style="list-style-type: none"> • Identify respected, trusted and prominent residents, teachers and women affairs of a community together with HEW, WHDA • Create awareness on the problem of poor sanitation and hygiene to health and development • Train them on how successfully they carry out and sustain changes if committed and make their community ODF 	Percent of improved sanitation coverage in each region by woreda <ul style="list-style-type: none"> • 							

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	<ul style="list-style-type: none"> • Demonstrate simple improved sanitation construction and hand washing devise using job • aides/pictures • Select community chairperson preferably women or religious leader and secretary (preferably HEW) for the committee <p>Design an action plan on the way forward</p>									
Goal 3: By 20 20 Increase proportion of ODF communities In kebeles from 18 to 82%										
ODF Kebeles are increasing in number in all woredas in Ethioia.	Design a follow up mechanism and a support program to the committee established in communities in all kebeles	Percent of kebeles in each region who have achieved ODF								
Goal 4. By 2020 increase hand washing with soap and water from the present 17% to 82%										
Hand washing with soap has increased in all Kebeles/ woredas in Ethiopia	.Design a follow up mechanism and a support program to the committee established in communities in all kebeles	Percent of households in kebeles who have achieved hand washing with soap in each region								
Goal 5. By 2020 Establish supply chain for sanitation components and low cost WS technologies and spare parts										
Supply chains for sanitation established in all woredas in Ethiopia	<ul style="list-style-type: none"> • Map existing private sectors who would take the business • Advocate about the business and attract private sectors to take up the business of O&M 	Number of private sector companies established and started supply chain activities for WASH products								

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	<ul style="list-style-type: none"> Design a capacity building program for the private sectors 	<ul style="list-style-type: none"> 							
<p>Goal 6. By 2020 100% of schools will have hand washing promotional materials in their schools</p>									
Hand washing promotional materials are made available and displayed in 100% Of schools in Ethiopia	<ul style="list-style-type: none"> Design simple interactive hygiene messages and distribute to all schools in woredas Advise schools to use all walls, latrine shades, trees to be talking walls and trees with appropriate behavior change messages (<i>Use soap to wash your hands after toilet etc</i>) Prepare print materials such as posters to communicate WASH 	Percent of schools in each region with hand washing facilities with adequate provision of running water and soap							
<p>Goal 7. By 2020 Improve full package WASH access from the present 3.2% to at least 40% of schools including MHM</p>									
Institutions, donors and government support full package WASH service to schools.	<ul style="list-style-type: none"> Advocate to funding agencies and government about the importance of providing full package WASH for schools than only one or two intervention Arrange the construction of a functional MHM facility in schools even using local materials 	Percent of schools in each region that have been provided with complete package of WASH services in Schools							
<p>Goal 8. By 2020 Provide improved and gender segregated sanitation facilities with hand washing from the present 36% to 75% of primary schools and 100% of high schools including MHM</p>									

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Gender separated improved sanitation and MHM facilities are increasing in all schools	<ul style="list-style-type: none"> Organize parents and teachers association to participate and support to construct separate latrine for boys, girls, teachers Organize fund raising festivals, or school days to raise money to support latrine construction Plan to use revenues usually from coffee, crop, grass, and wood sales to support latrine construction. 	Percent of schools in each region with adequate and gender segregated and improved sanitation systems							
Goal 9. By 2020 100% of health facilities with full package of WASH facilities including MHM facilities 100%									
Institutions, donors and government support full package WASH service to schools	<ul style="list-style-type: none"> Advocate for the need of providing full package to health facilities 	Percent of health facilities with full package of WASH services							
Goal 10. By 2020 Increase proportion of households using correct and consistent water treatment and safe storage from 10 to 35%									
Point of use treatment of water is practiced in households in Ethiopia	<ul style="list-style-type: none"> Discuss the need of enhancing point of use treatment with the community centered committee Discuss with water safety supply chains (Wuha agar, wuha telel) to make water disinfectant to the locality Arrange with local drug store to also have wuha agar etc for sale to communities 	Percent of households practicing point of use (POU) water treatment.							

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<p>Goal 11. By 2020 prepare and provide pictorial job aides, operational manuals, implementation guidelines for use by Health Extension Workers to support facilitation of behavior change in communities</p>									
<p>Outreach do-able behavior change program is enhanced using jobaides in Kebeles in Ethiopia.</p>	<ul style="list-style-type: none"> • Explore WASH communication materials availability in the sector ministries • Evaluate the content and determine whether to use it or not • Design new or additional communication products • Kebele level HEW will need pictorial jobaides which are available in the ministry of health 	<p>Percent of Kebeles provided with set of job aides including latrine construction, hand washing, water safety measures, personal and environmental hygiene materials</p>							

ANNEX V WASH sector reform principles

ANNEX VI OWN Result Framework-2018-2020

Level	Result Chain	Performance Indicators	Year of completion	Indicators
Outcome	Increased access and use of improved water supply and sanitation services, and hygiene practices by all people	Percent of households served with Clean, safe and adequate water supply access at a rate of: <ul style="list-style-type: none"> • 25 l/c/d within 1 km. to rural communities • 100 l/c/d for big towns to 40 l/c/d to small towns 	<u>By 2020</u>	<p><u>Definition:</u> measures how far intervention woredas have managed to achieve Improved water, sanitation and hygiene services from the baseline</p> <p>Definition: Numerator # of HH with improved water, sanitation and hygiene in 2020; Denominator# of HH with improved water, sanitation and hygiene at baseline</p> <p><u>Source of data:</u> Local Government</p> <p><u>Responsibility:</u> RWCO and NWCO Government</p>
Intermediate outcome	Government, partners and CSOs scales up improved water supply and sanitation services and hygiene programs for all people in urban, rural and pastoralist areas through public and private participants.	Percent of rural, urban, pastoralist and Institutional population with access to improved water supply, sanitation and hygiene practices	<u>By 2018-2020</u>	<p><u>Definition:</u> This indicator measures the achievement in WASH in all implementation areas demonstrating an improved service scenario.</p> <ul style="list-style-type: none"> • % of communities that are supplied with safe water from MVS system • % of communities that are supplied safe water from Boreholes • % of communities that are supplied with safe water from RPS • % of population that are supplied safe water from hand pumps • % of communities that are supplied with safe water from self-supply

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				<ul style="list-style-type: none"> • % of households in kebeles that are triggered for CLTSH to adopt good behavior and practice • % of households in Kebeles with improved sanitation status after triggering • % of households in Kebeles with ODF status after triggering • % of households in Kebeles who installed hand washing facilities after triggering <p><u>Source of data:</u> MoWIE, MoH, MoE, CSO, Urban utilities</p> <p><u>Responsibility:</u> NWCO and RWCO</p>
		Percent of WASH implementation partners/NGOs and private sectors that adopt OWNP principles .	By 2019	<p><u>Definition:</u> This indicator measures the replication of the principles at all levels for all sector actors</p> <p><u>Source of data:</u> Government, partners and CSO</p> <p><u>Responsibility:</u> RWCO and NWCO</p>
		The number of WASH indicators by category included in the WASH MIS and used for OWNP performance monitoring system at all level	By 2018- 2020	<p>Definition: measures the number of indicators for water, sanitation and hygiene that are included in WASH MIS system</p> <p>Source of data: <u>MoWIE, MoH, MoE,</u></p> <p>Responsibility: RWCO and NWCO</p>
		Number of International, bilateral and CSO organizations that have aligned and delivering products and services around a common set of results to support the OWNP	<u>By 2018-2020</u>	<p><u>Definition:</u> Measures the extent to which partnerships have operationalized through a common set of objectives and results and aligned action.</p> <p><u>Source of data:</u> International, bilateral and CSO organizations</p> <p><u>Responsibility:</u> NWCO, DAG</p>

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		Number of new and innovative technology options by type introduced for water supply services during the year in comparison to previous year	<u>By 2018-2020</u>	<p><u>Definition:</u> Measures the percent increase of appropriate technology use in comparison to previous years</p> <p>Source of data: RWCO</p> <p>Responsibility: RWCO</p>
		Number of behavior determinants identified and used to enhance behaviour change in all rural, urban, periurban and pastoralist areas where the CLTSH &SM is being implemented.	<u>By 2018-2020</u>	<p><u>Definition:</u> this indicator measures effectiveness of behavior change interventions in improving behavioral determinants identified as significant through formative research</p> <p><u>Source of Data:</u> District & Regional Health Offices, Joint Technical Reviews (JTR)</p> <p><u>Responsibility:</u> Regional & District Governments, partners and NGOs</p>
		Number of sector staff, contractors, consultants who are trained on important areas to support effective and efficient implementation of WASH program	<u>2018-2020</u>	<p><u>Definition:</u> This indicator measures extent of different capacity building programs are designed and implemented to support WASH program implementation.</p> <p>Source of Data: NWCO, RWCO, Consultants</p> <p>Responsibility:</p>
		Number of staff by category, corresponding logistics and budget added by category to NWCO list to support to expedite support and follow up program to all regions	<u>By 2019</u>	<p><u>Definition:</u> This indicator measures the number of staff employed, logistics bought and budget increase.</p> <p>Source of data: NWCO</p> <p>Responsibility: OWNPN Steering committee</p>

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Output	Regions map woredas by service levels and prioritize woredas to provide improved and safe water supply a. -----Woredas by 2019 with different schemes b. -----Woredas by 2020 with different schemes	<u>By 2019</u>	<u>Definition:</u> Indicator measures that target woredas are selected from each region and CLTSH triggering is conducted. <u>Source:</u> WSP annual reports on progress <u>Responsibility:</u> WSP, regional State Government
	1. Capacity building training is given to <ul style="list-style-type: none"> • -----water engineers • -----Electrical engineers • -----Procurement officers • -----M&E technicians • -----Contractors • -----Consultants 	<u>By 2019</u>	<u>Definition:</u> Indicator measures capacity to implement safe water supply, install and maintain electromechanical equipment, improve contract management and M&E process <u>Source of data:</u> Regional Capacity Building Unit <u>Responsibility:</u> RWCO
	2. Advocacy conducted for possible integrated Hygiene and environmental health program in cities and towns with Ministries, municipalities, higher educational institutions governments, sector stakeholders	<u>2019</u>	<u>Definition:</u> This indicator measures the number of high level advocacies conducted for an integrated action in towns and cities <u>Source of Data:</u> MoH <u>Responsibility</u> MoH

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		<p>3. Master trainers trained on CLTSH, &SM, and community centered behavior change approaches and tools to selected facilitators from the regional bureaus, TVET, and other higher institutions</p>	<p>By 2019</p>	<p>Definition: This indicator measures capacity of regional and local government and NGOs who create cadre of trainers to scale up WASH behavior change through community mobilization/triggering and promotional process.</p> <p>Source: RWCO, Sector PMUs</p> <p>Responsibility: Regional capacity building unit</p>
		<p>4. Master trainers train Woreda level sector actors or WASH implementers on CLTSH tools, SM principles and approaches, community centred behaviour change programs in all woredas of each region</p>	<p>By 2019</p>	<p>Definition: This indicator measures capacity of local government and NGOs who trained cadre of implementers to scale up WASH behavior change through community mobilization/triggering and promotional process.</p> <p>Source: Woreda WT</p> <p>Responsibility: Regional capacity building unit</p>
		<p>5. Water, sanitation and hygiene performance system for tracking the number of water construction by type and population served, NFR status, sanitation and hygiene improvement, ODF communities documentation in all woredas.</p>	<p>By 2018-2020</p>	<p>Definition: This Indicators measure capacity for progress monitoring and strategic planning through the tracking system being utilized in intervention districts.</p> <p>Source: Quarter, biannual and annual reports from government sectors, partners and CSO</p> <p>Responsibility: WWT, ZWCO, RWCO, Sector PMUs</p>
		<p>6. Establish and or strengthen the OWNPN enabling</p>	<p><u>2018-2020</u></p>	<p>Definition: This Indicator measures extent of the enabling environment established to support and sustain the OWNPN</p>

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		environments at federal, regional and district level is implemented		<p>approach through positive changes in each of the 4 dimensions of the enabling environment at regional and district levels, including measures to strengthen policies, define/clarify institutional roles, allocate dedicated budgets , adopt cost-effective approaches , establish outcome-based incentive programs, reinforce existing M&E systems, develop partnerships etc...</p> <p><u>Source:</u> Quarterly ,biannual review and annual reports</p> <p><u>Responsibility:</u> RWCO, NWCO</p>
		7. Behavior Change Communication, Safe Water Management communication plan integrated into all WASH programs	2018-2020	<p>Definition: This Indicator measures state of behavior change program through systematic behavior change communication and mass engagement of communities and community empowerment to develop a sustainable system of behavior change.</p> <p>Source: Regional capacity building unit</p> <p>Responsibility: Regional Capacity building Unit, RWCO, RPMUs</p>
		8. Private Sector development for water and sanitation works, products and supplies, establishment of supply chains strengthened through project activities (e.g training, micro finance, franchising) to supply improved sanitation facilities	2018-2020	<p>Definition : This Indicator measures the district government capacity to deliver training to masons and private providers capacity to implement and improve supply (volume, cost, and quality),</p> <p>Source of data : Quarter Review and biannual and annual reports</p> <p>Responsibility: RWCO</p>

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Component 5: Program Management and capacity building

Summary Program management and capacity building for rural and urban

Number of Human Resource Requirement, Training and Job Creation Opportunity by Region						
No.	Region	Population Ratio	2010	2011	2012	Total
1	Amhara	0.23	26,212	25,078	25,078	76,369
2	Benishangul Gumuz	0.01	1,291	1,235	1,235	3,762
3	Ethiopia Somali	0.06	7,006	6,703	6,703	20,413
4	Tigray	0.06	6,496	6,215	6,215	18,927
5	SNNPR	0.20	23,482	22,466	22,466	68,414
6	Harari	0.00	298	285	285	868
7	Gambella	0.00	526	503	503	1,531
8	Oromiya	0.37	43,289	41,417	41,417	126,122
9	Afar	0.02	2,214	2,118	2,118	6,450
10	Addis Ababa	0.04	4,205	4,023	4,023	12,252
11	Dire Dawa	0.00	565	541	541	1,647
	Total Trainees		115,585	110,585	110,585	336,755

Note: The Human resource Requirement is for High level professionals such as water Engineer, Hydro geologist, Hydrologist etc.. and for medium level professionals such as water supply technicians, E&M technicians etc. Adopted from GTP II Subsector plan for water supply and sanitation 2015-2020