

Ministry of Water, Irrigation and Electric

WASTE WATER MANAGEMENT PRACTICE AND FORTHCOMING PROJECTS

September. 2017

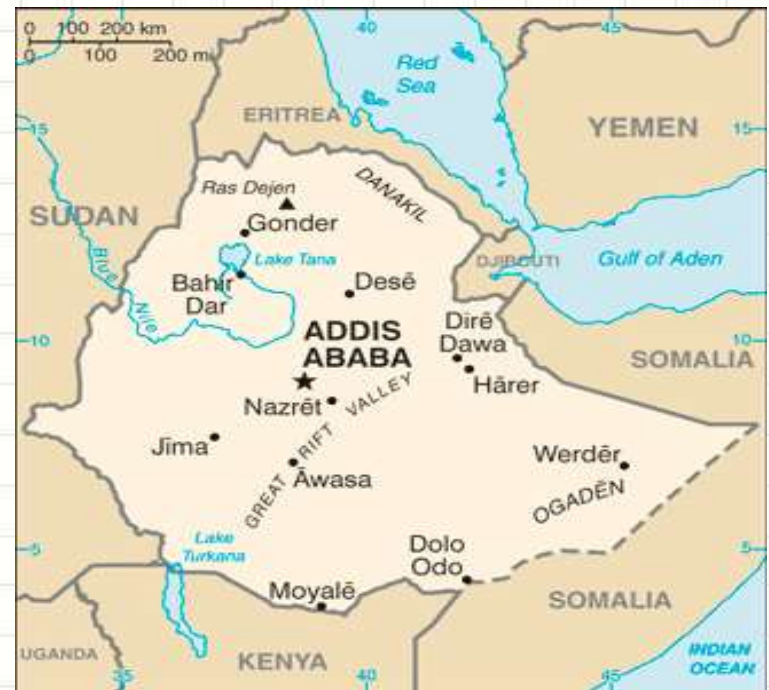
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Ethiopia



- **Ethiopia** is country located in the Horn of Africa bordered by Eritrea to the north, Djibouti and Somalia to the east, Sudan and South Sudan to the west, and Kenya to the south.



unique facts about Ethiopia

- Ethiopia is the cradle of human kind
- Ethiopia has never colonized
- Ethiopians are the pioneers to use a tool before 2.8 million years ago
- Ethiopia is the only African country with its own spoken and written language
- Ert'ale is one of the few places on planet earth where one can see active, live, continued and dramatic volcanic eruption

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- Has more unique species of flora than any other country in Africa
- The single tallest monument ever erected by humanity in the BC is found (Axum)
- Ethiopia and Ethiopians are mentioned many times both in the holy Bible and holy Qur'an
- More than 70% of Africa's maintains found in Ethiopia
- Where the original Ark of the Covenant is found

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- Water resource Ethiopia is often referred to as the "water tower" of Eastern Africa because of the many (14 major) rivers that pour off the high table land. It also has the greatest water reserves in Africa. Ethiopia is the source of the great blue Nile river which runs a distance of 1450 kilometers and contribute 85% of the Nile river.

Background

- The Government of Ethiopia (GoE) in its Growth and Transformation Plan II (GTP II) (2016-2020) in line with the Sustainable Development Goals (SDGs), has set out to transit the country from a rural economy to an urban economy led by industrialization.

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- However, achievement of this objective depends on the ability of Ethiopia's cities' meeting urban living standards with sanitation and hygiene being vital components.
- Most towns still have severe shortages of sanitation infrastructure, with inadequate service facilities to respond in accord with the expected SDG and GTPII goals.

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- According to the SDG goal, by 2030 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.
- While GTP II's goal is to improve urban wastewater management to the citizens of the country by 2020.

CURRENT STATUS OF WASTE WATER MANAGEMENT

- **900 towns of varying** population sizes **and** infrastructures
- Access to improved sanitation 29%
- **Limited WWS management network (3%)**
- **Experience of road side drains smells and excessively polluted rivers**
- Most practices are transportation of sludge by vacuum truck to dry bed (secondary cities) or disposal to open space (most towns)
- Most of on-site sanitation facilities lacks proper standard (like septic tank)
- Very limited capacity to manage WW (skill, finance, business models and institution...)



- ✓ Resulted in
 - Water borne diseases
 - Decreases the quality of water
 - Fisheries and agricultural

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- ✓ The traditional system needs to be transformed into a sustainable, **closed-loop** urban wastewater management system that is based on the conservation of water and nutrient resources.

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Wastewater generation

Major Name	City	Surface area	Development area	Wastewater generating rate	Estimated WW to be removed	Nr Vacuum truck	Current removed	Potential removal rate per day	Deficit	Sludge treatment facility
	Text	Ha	Domestic/ year m3	Ha	M3/day	Nr	M3/Day	M3/Day	M3/Day	
1	Addis Ababa	109800	334074	10980	398,985	104	1727.5	397257	397257.5	Pond/dry bed
2	Mekelle	7400	27361	740	34716	17	123	34593	34593.9	Drying bed
3	Bahir dar	2800	19102	280	25538	5	56	25482	25482.4	no
4	Adama	2986	27157	298.6	33527	16	139	33388	33388.1	no
5	Hawassa	5000	21267	500	26483.416	2	58	26425	26425.4	Drying bed
6	Jimma	4600	14917	460	19607.172	2	58	19549	19549.1	no
7	Dire dawa	37920	26289	3792	32702.148	4	66	32636	32636.1	pond
8	Gondar	4027	25445	402.7	32410.636	3	24	32386	32386.6	WSP
9	Harar	1200	11046	120	16251.66	2	17	16234	16234.7	no

ENABLING POLICIES AND LEGAL FRAMEWORK

Integrated Water Resource Management :WWM is part of the larger framework
National Level Transforming Policies



- ❖ **Constitution of Ethiopia**
- ❖ **Ethiopian Water Resources Management Policy**
- ❖ **Water Resource Management Regulation and strategy**
- ❖ **The Environmental Pollution Control Proclamation ,regulation and standards**
- ❖ **Urban Development Policy of Ethiopia**
- ❖ **Ethiopian Public Health Proclamation, policy and regulation including FMHACA**



- ☐ **Regulation and Guideline**
- ☐ **Federal and Regional level support**
- ☐ **Local Governance enabling Environment**
- ☐ **Obligations of Wastewater Disposing Bodies**
- ☐ **Regulatory tools and incentives system**
- ☐ **Standards Related to Wastewater Management**



KEY ISSUES /CHALLENGES

- **Prioritization:**
- **National Baseline data:**
- **High investment cost:**
- **Lack of sanitation facilities:**
- **Infrastructure:**
- **Ground and surface waters pollution**
- **Duplication of Roles:** (Municipalities and water utilities)
- **Institutional Setup:**
- **Qualified experts and knowledge waste management system**
- **Lack of access and monitoring of wastewater services;**
- **Steady population Growth:**
- **Community Attitude,**
- **Technology options:**



GTP-II Plan

- The **One WaSH National Program (OWNP)** is the Govt. main instrument for achieving the goals set out for WaSH in the (GTP).
- The Program's Development objective is
 - ✓ to improve the health and well-being of communities in rural and urban areas in an equitable and sustainable manner by increasing access to water supply and sanitation and adoption of good hygiene practices.

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- The objectives of the program are directed towards attaining GTP II targets of:
 - 100% access to safe water supply and improved sanitation facilities.
 - Access to safe, sustainable and improved urban wastewater management to Ethiopian citizens.
 - Establishment of an independent regulatory agency to ensure high quality water supply and wastewater service in Category 1-4 towns.

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➤ Establish urban wastewater management system

- Carry out study and design of urban wastewater management system of 36 towns/cities (category 1, 2, and 3)

- build wastewater management infrastructure for 6 towns/cities with a population of 200,000 and more.



➤ Enable all category towns' water supply utilities to have responsible section for wastewater management

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- **Second Urban water supply and sanitation project**
- that has three key components:
 - i) Addis Ababa Sanitation and Water Supply Services Improvement,
 - (ii) Secondary 22 Cities and Towns Sanitation and Water Supply Services Improvement, and
 - (iii) Project management and institutional strengthening. The total budget for the project is US \$445 Million and is to be completed in six years.

Water Supply infrastructures planned to be implemented annually

Sr. N o.	Description	Total (No.)	Annual Targets(number)				
			2016	2017	2018	2019	2020
1	Rural Water Supply Schemes:						
	✓New construction	238,370	42,308	43,485	54,811	48,020	49,745
	✓Maintenance	62,500	11,250	11,250	14,375	12,500	13,125
	Sub-total	300,870	53,558	54,735	79,186	60,520	62,870
	Rural Water Supply Schemes:						
	✓Study and design	300	60	60	60	60	60
	✓New construction	400	90	90	90	70	60
	✓Expansion	200	50	50	40	30	30
	Sub-total	900	200	200	190	160	150
	Total(new construction)	238,770	42,398,	43,575	54,901	48,090	49,805
	Study and design of urban waste water system	36	5	8	8	8	7
	Construction of urban wastewater system	6	-	-	3	3	-

Cumulative rural and urban water supply and urban sewerage expenditure in local and foreign currency

Sr. N o.	Description	Total Expenditure (Birr) local currency	Amount in percent (%)		Amount	
			For local purch ase (Birr)	For Foreig n Purch ase (USD)	For local purchase (Birr)	For Foreign Purchase (USD)
1	Rural water supply	28,042,030,000.00	79%	21%	22,153,203,700.00	259,427,650.00
2	Urban water supply	44,212,677,000.00	70%	30%	30,948,873,900.00	589,502,360.00
3	Urban sewerage	5,517,500,000.00	80%	20%	4,414,000,000.00	49,044,444.00
	Total sum and average %	77,772,207,000.00	76%	24%	57,516,077,600.00	841,263,410.00

Lists of Project having cost estimate exceeding USD 30 million implemented by budgetary institutions

Sr.N o.	Projects ready for implementation	project site	Starting Date	Status	completi on date	allocated budget
1	Shire and its environs WSP	Shire	2017	Study and design doct. Preparation	2020	3,000.00
2	Humera and its environs WSP	Humera	2017	Study and design doct. Preparation	2020	2,000.00
3	Axum WSP	Axum	2017	Study and design doct. Preparation	2020	2,000.00
4	Bahir Dar WSP	Bahir Dar	2017	Study and design doct. Preparation	2019	1,000.00
5	Gonder WSP	Gonder	2017	Study and design doct. Preparation	2018	782.00
6	Geribi Dam WSP	Addis Ababa	2017	Study and design doct. Preparation	2020	6,000.00
7	Adama WSP	Adam	2017	Study and design doct. Preparation	2019	1,000.00
8	MEKELLE Giba dam WSP	Mekelle	2017	study and design ongoing	2020	7,000.00
	Total Allocated Budget(in Million Birr)					22,782.00
9	Sibilu WSP	Addis Ababa	2018	study and design ongoing	2022	12000

STRATEGY DIRECTION

- **Conduct base line survey**
- **Conduct feasibility study of towns'**
- **Develop master plans** of major Cities and towns
- Develop guidelines and standards.
- **Establish a transparent and equitable** tariff /cost recovery
- **Sensitize user payment obligation** for sustainable management
- **Study possible wastewater management** technologies
- **Capacity building** of the institution
- **Build community awareness**
- **Develop wastewater management** business models
- **Rehabilitate and expand** the existing infrastructure
- **Experience sharing and adaptation**
- **Promote innovative mechanisms and research**
- Develop technical guidelines
- Encourage **private sectors** participation
- **Clustering of larger cities/towns**



Ongoing activities in WW Mangt.

- Initiate institutional establishment
- Urban wastewater management strategy
- Five towns wwm feasibility and detail design
- 28 towns situation assessment and development plan
- Capacity building (Trainings + experience sharing)
- Preparation and evaluation of project proposal



Thank You

Source: 2nd GTNP for WSS sub-sector