



The Federal Democratic Republic of Ethiopia

Ministry of Health

**National Hygiene and Environmental Health
Strategy (2016-2020)**

Dec, 2016

National Hygiene and Environmental Health Strategy

DECLARATION

Federal Democratic Republic of Ethiopia National Hygiene and Environmental Health Strategy Implementing Sectors Declaration

We, the undersigned, representing the Government of the Federal Democratic Republic of Ethiopia, in the WASH sector, **National Hygiene and Environmental Health Strategy** Coordination Body, fully recognize each Ministry's mandate and pledge our commitment to support the achievement of the targets laid out in this strategy document and will strive towards equitable and sustainable multi sectoral actions towards the realization of optimal rural and urban Hygiene and Environmental health status for all Ethiopian citizens.

We, as a government, shall work through enhanced strategic partnerships and integration to prioritize the achievement of Rural, Urban and Institutional hygiene and Environmental health implementation to bring better achievement for all Ethiopian as one of the most viable strategies for achieving the Growth and Transformation Plan II for the attainment of positive livelihood.

Outcomes will be achieved through evidence based programming and responsiveness and the promotion of accountability towards these results by each Ministry here undersigned.

Signatures:

H.E. Dr. Kebede Worku
State Minister of Health

H.E Ato Alemayehu Gujo
State Minister of Finance & Economy Cooperation

H.E. Mr. Kare Chewicha
State Minister of Environment, Forestry and Climate Change

H.E..Mr. Demese Shito
State Minister of Urban development and Housing

H.E. Mr.Jems Denkcholtot
State Minister of Water, Irrigation and Electricity

H.E. Dr. Kaba Urgesa
State Minister of Education

H.E. W/ro Tadelech Dalecho
State Minister of Culture and Tourism

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National Hygiene and Environmental Health Strategy

DEFINITION OF TERMS/ OPERATIONAL DEFINITION

- ◆ **Basic latrine:** defined by the Millennium Development Goals Task Force is “the lowest-cost option for securing sustainable access to safe, hygienic and convenient facilities and services for excreta and sillage disposal that provide privacy.”
- ◆ **CLTSH:** A community mobilization approach or a behavior change triggering tool that is administered by trained and skilled facilitators to mobilize communities through self-realization resulting from fear, disgust and shame which the tool is creating on individuals and communities to ultimately initiate a rapid behavior change in constructing improved latrine with proper hand washing facilities.
- ◆ **Community resource People:** are prominent, respected, trusted and informal community leaders permanently residing in community setting
- ◆ **Community Empowerment:** engaging communities to take the upper hand in recognizing their heartfelt problems in hygiene and environmental health and plan for an intervention program using their knowledge, skill, time and material resources for a sustainable health outcome, and take part in the planning, implementation ,and monitoring and evaluation.
- ◆ **Environmental Health:** Environmental health addresses all the physical, chemical, and biological factors external to a person, and all the related factors impacting behaviors. It encompasses the assessment and control of those environmental factors that can potentially affect health. It is targeted towards preventing disease and creating health-supportive environments (WHO 2016)
- ◆ **Health:** A state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity. (WHO 1950)
- ◆ **Health Development Army:** is a network of women volunteers organized to promote health, prevent disease through community participation and empowerment.
- ◆ **Hygienic latrine:** A hygienic latrine is essentially an improved latrine but one that is clean, cleanable and odor free.
- ◆ **Hygienic behavior:** A behavior that manifested when people transform themselves to demand, develop and sustain a hygienic and healthy environment for themselves by erecting barriers to prevent the transmission of diseases primarily deriving from fecal contamination
- ◆ **Household Water Treatment and Safe Storage:** A water safety practice of treating water at point of use and safe guarding clean water from contamination during storage and withdrawing from storage
- ◆ **Improved latrine:** A hygienic sanitation option for securing sustainable access to safe, hygienic, sealed and convenient service for excreta disposal providing adequate and secured privacy,

protected from rain, built either on site or connected to sewer or septic tank while at the same time ensuring a clean and healthful living environment

- ◆ **Liquid Waste management:** The proper containment and disposal of wastes generated at household, industries, farms and institutions which may be hazardous or just sullage from causing nuisance, infection, poisoning to people and animals
- ◆ **Model community:** A model community in the context of this strategy is that where all residents in a community use clean toilets; wash hands and other personal hygiene practices; have clean and cleanable house with separate bedrooms; have safe food and water storage; vigilant management of insect vectors and rats and good management of solid and liquid waste and the immediate housing environment.
- ◆ **Sanitation:** refers to the principles and practices relating to the proper collection, removal or disposal of human excreta, household waste water and refuse to prevent adverse effect upon people and their environment
- ◆ **Sanitation marketing:** Sanitation marketing is a social marketing approach which uses all marketing principles of price, place and products which satisfy the sanitation requirements (needs and wants) through a commercial exchange process Satisfying improved sanitation requirements (both demand and supply) through social and commercial marketing process as opposed to a welfare package
- ◆ **Solid organic waste management:** The proper containment and disposal of solid organic waste generated in household, farms, institutions and other processing industries from causing nuisance, animal and insect breeding.
- ◆ **Solid Inorganic waste management:** The proper containment and disposal of inorganic solid waste including hazardous, infectious and non-biodegradable waste from being health and environmental hazards.
- ◆ **Unimproved latrine:** sometimes known as traditional latrines are the lowest-cost option considered at the bottom of the sanitation ladder which is mostly open, un-cleanable, poor superstructure, unsafe, and accessible to flies, domestic fowl, and other animals.
- ◆ **Universal Access Plan:** The Universal Access Plan was drawn up by the Government of Ethiopia to chart process and investment to the achievement of the national target of universal access to improved water, sanitation and hygiene by 2012.
- ◆ **Ventilated Improved Pit Latrine (VIPL):** A latrine system that is essentially an improved latrine but having features of vent pipe, well-constructed superstructure and having cleanable floor and secured door to provide the necessary privacy and security.

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- ◆ **Waste Water:** Water that is wasted from leaking pipes and spillover from water drawing areas such as water pumps or communal distribution sites usually forming ponds around the site attracting animals, encouraging mosquito breeding or infiltrating to contaminate the water source.
 - ◆ **Adequate sanitation:** each of the following sanitation facility types is considered as adequate sanitation
 - facility is shared among no more than 5 families or 30 persons (whichever is fewer)
 - A pit latrine with a superstructure, and a platform or squatting slab constructed of durable, material.
 - A variety of latrine types can fall under this category, including composting latrines, pour-flush latrines, and VIPs., A toilet connected to a septic tank.
 - A toilet connected to a sewer (small bore or conventional).
 - ◆ **Integrated solid waste management service:** the strategic approach to sustainable management of solid wastes covering all sources and all aspects, covering generation, segregation, transfer, sorting, treatment, recovery and disposal in an integrated manner, with an emphasis on maximizing resource use efficiency
 - ◆ **Hand washing at critical times:** is the act of cleaning one's hands with or without the use of water or another liquid, or with the use of soap for the purpose of removing soil, dirt, and/or microorganisms at five critical times (before eating, before cooking, after using the latrine, after cleaning, a baby or an adult's bottom or cleaning the pott, before and after taking care of a sick person)
 - ◆ **Water safety plan:** is a plan to ensure the safety of drinking water through the use of a comprehensive risk assessment and risk management approach that encompasses all steps in water supply from catchment to consumer.
 - ◆ **Complete WASH package:** Availability of WASH services provide for water availability and quality, presence of sanitation facilities and availability of soap and water for handwashing.

National Hygiene and Environmental Health Strategy

ACRONYMS

AEA	Agriculture Extension Agents
ARI	Acute Respiratory Infection
CASH	Clean and Safe Health Facility
CLTSH	Community led Total sanitation and Hygiene
CRP	Community Resource People
CSA	Central Statistics Agency
EPHI	Ethiopian Public Health Institute
ESI	Economics of Sanitation
EWRM	Ethiopian Water Resources Management Institute
FMHACA	Food, Medicine and Health Care Administration and Control Authority
FSM	Fecal Sludge Management
GDP	Gross Domestic Product
GoE	Government of Ethiopia
GTP	Growth and Transformation Plan
HDAs	Health Development Armies
HEH	Hygiene and Environmental Health
HEP	Health Extension program
HEWs	Health Extension Workers
HPDP	Health Promotion and Disease Prevention
HSDP	Health Sector Development Plan
HSTP	Health Sector Transformation Plan
HWTS	Household water treatment and Safe Storage
IE	Impact Evaluation
IEC	Information, Education and Communication
IRT	Integrated refresher Training
JMP	Joint Monitoring program
M&E	Monitoring and Evaluation
MDG	Millennium Development Goal
MOANR	Ministry of Agriculture and Natural Resources

MOCT	Ministry of Culture and Tourism
MoE	Ministry of Education
MOEFCC	Ministry of Environment, Forestry and Climate Change
MOI	Ministry of Industry
MoLSA	Ministry of Labor and Social Affairs
MOT	Ministry of Transport
MoU	Memorandum of Understanding
MOUDHC	Ministry of Urban Development, Housing and Construction
MOWIE	Ministry of Water, Irrigation and Electricity
NCD	Non Communicable Disease
NTD	Neglected Tropical Diseases
OD	Open defecation
ODF	Open Defecation Free
OWNP	One WaSH national Program
PASDEP	Plan for Accelerated and Sustained Development to End poverty
PHCU	Primary Health Care Unit
SBCC	Social, Behavior Change Communication
SDG	Sustainable Development Goals
SLTS	School led total; sanitation
SM	Sanitation Marketing
SME	Small and Micro Enterprise
STH	Soil transmitted helminthes
TIP	Trials of Improved Practice
UHEP	Urban Health Extension Professionals
VIP	Ventilated Improved Pit
WaSH	Water, Sanitation and Hygiene
WaSHCO	Water, Sanitation and Hygiene Committee
WDG	Women Development Group
WHO	World Health Organization
WIF	WaSH Implementation Framework

WSP

Water Safety Plan

WWT

Woreda WaSH Team

National Hygiene and Environmental Health Strategy

EXECUTIVE SUMMARY

In Ethiopia, the Federal Ministry of Health of Ethiopia (FMOH) takes the primary responsibility for hygiene and Environmental Health development. The Government of Ethiopia, with the support of its development partners, has been committed to changing the country's poor record in hygiene and environmental health especially access to sanitation and hygiene practices. This commitment is well demonstrated by the training of sanitarians/environmental health professionals; adapting, and committing to international programs by the focus placed on achieving the relevant Millennium Development Goal targets (2000-2015) and the Health Extension Program.

In order to take the rural health development forward the ministry has designed woreda transformation as one of the Health Sec. Through this transformation it is hoped that services are rendered equitably to the people. The Hygiene and Environmental Health strategy is designed for 5 years (2016-2020) to support the HSTP plan taking into considerations the promising achievements as well as, drawbacks and gaps of the past and with a pragmatic and innovative plan for 100% achievements in Hygiene and environmental Health in the future

The strategy is developed after reviewing existing enabling environments such as policies, strategies, guideline documents, national administrative reports and other national data and documents. Thorough analysis was also made on the enabling environment, behavior analysis on the basic environmental domains, SWOT and stakeholders. Moreover, field investigation on the seven domains using data collection instruments was also conducted to document first hand and up-to-date information. The documents reviewed, analysis made and data from the field indicate the availability of conducive enabling environment, policy and organization; the need for more concerted effort to change the hygiene and environmental health related conditions and disease burden; the need to involve and empower communities through which strengthen the health extension program.

The learning done through the various processes was used to design the strategy framework, the vision and strategic goals. The strategic goals designed include : empowering communities and community resource people; enhance capacity building program; establish intervention and transformation program based on local skills and resources; enhance behavior change communication through the expansion of approximate behaviors; establish a bottom up and top down communication and feedback mechanism; make hygiene and environmental health a viable program in the promotion of community health and improve research and monitoring especially on behaviors, emerging environmental challenges

The strategy will focus on improving human excreta disposal systems through the construction and constant use of improved latrine; enhancing safe water use from source to the point of use; hygienic practices including personal, oral and menstrual hygiene; food safety including storage, preservation and protection from vermin; improvement of the living environment including vector control, indoor air pollution and safe energy use and enhancing institutional (schools and health facilities) hygiene.

Health Extension Workers (HEWs) and Women Development Groups (WDG) will be supported by local government including Woreda WaSH team (WWT), Woreda command post, PHCUs, Kebele WaSH Team, and WaSHCOs. Federal, regional, zonal and woreda authorities shall have input mostly revolving around onsite supportive supervision, giving feedback, capacity building, verifying open defecation free (ODF) achievements, printing and distributing guidelines and manuals, posters, billboards and other community mobilization support materials. Besides, in order to reinforce and give the program a national flavor, a strong well planned review and reward program is also indicated to igniting changes through mass engagement of communities or people and for benchmarking. Motivating best performers, scale up of best practices and looking for context specific solutions will be employed will be employed to bring the expected transformation in Hygiene and Environmental Health (HEH).

PART I

1. BACKGROUND

Ethiopia with a population of more than 95million in nine regional States and two City Administrations has an estimated land area of 1.1 million square kilometers making it the second most populous country in Africa. In addition to its rich and unique religious and cultural history it has become better known today as the fastest growing economy in the World. Over the last decade the Ethiopian economy has expanded and registered an average GDP growth of 10.9%. The rural population in Ethiopia which is estimated to be about 80% of the total population is primarily engaged in subsistence farming. The government is making meaningful strides towards improving agriculture technology, to support better income and food security for the rural population. In doing so, it is hoped that majority of the Ethiopian population can break the vicious cycle of poverty, illiteracy and disease. It is theorized that improvement in societal economy support sanitary and hygienic living. Comprehensive HEH work in Ethiopia started on 1978 as a department in the ministry of health but established as a unit in 1906 under the Ministry of Interior and since then the EH work has been disintegrated in many government ministry structures living a system or a structure that can coordinate EH activities in the country (Abera K.2010)

The Government of Ethiopia, with the support of its development partners, has for many decades committed in changing the country's poor record in hygiene & environmental health especially access to safe water, sanitation and hygiene development and behavior change practices. This commitment is well demonstrated by the training of environmental health professionals; adapting, and committing to international programs such as the Primary Health Care Initiative (1970–1980); the engagement in the International Drinking Water Supply and Sanitation Decade (1980–1990), and by the focus placed on achieving the relevant Millennium Development Goal target (2000-2015).

In early 2003, the government and partners agree to design a National Hygiene and Sanitation Strategy (NHSS) to set out key principles and has served as an important first step to give sanitation the prominence it deserves. Hereafter, in 2005 HSDP III (2005-2010) gave focus to community based environmental health programs through the development and implementation of the Health Extension program (HEP)

However, the progress of hygiene and sanitation work in the country was not satisfactory with regard to many standards, for instance the low percent increase in improved latrine growth which is only 1.2%

annually, with low improved latrine coverage which is 28%. These problems have contributed to the existing child and maternal mortality rate, chronic malnutrition, increased environmental pollutions and furthermore; has linkage with the economic and sustainable development of the country.

Currently the Health Sector Transformation Plan (HSTP) (2015-2020) is designed to realize the universal health coverage by setting four transformation agendas; the Woreda Transformation, health service quality and equity, Information revolution and creating caring, respectful and compassionate health care professionals. Environmental Health is one of the program areas of the HSTP and other Environmental health related strategies of the country.

This Hygiene and Environmental Health National strategy is designed taking into consideration all the drawback and gaps of the past and with a pragmatic and innovative plan for transforming the HEH conditions in the future.

2. RATIONALE

The strategy is designed to address existing gaps and introduce innovative ideas to safeguard the environment and the society. :

- The HEH programs implemented are mainly focused on sanitation and hand washing promotion.
- Lack and inadequate HEH structure and implementation capacity from federal to Woreda level including health facilities.
- Improved latrine coverage in the last 25 years is only 28%. The average annual improved latrine growth rate is sluggish (1.2% per year), with this pace it will take us another 25 years to reach to 51%, unless a new thinking and effort is in-place.
- HEH activities are not planned implemented, monitored and evaluated as per the need due to lack of environmental health personnel at right place, shortage of trained human resources with high staff turnover.
- The existing hygiene and sanitation strategy does not address emerging problems related with population pressure, unplanned and rapid urbanization, climate change, recorking public health emergencies and development in all aspects of industrialization and agriculture technology
- Institutions are deprived of adequate supply of safe water and sanitation facilities exposing beneficiaries and contribute to negative health outcomes, bad images and poor behavior.
- Weak integration and collaboration with in and /or among sectors on promotion, regulation and research related with HEH programs.
- The Health Sector Transformation Plan (HSTP) as part of the Growth and Transformation Plan (GTP) II is undertaking a robust rural and urban transformation program for which HEH strategy and action plan will play fundamental role.
- A comprehensive and robust HEH monitoring and evaluation system shall be generated from community level upwards to support evidence based planning, innovation, tactical change for better and sustainable change.
- The commitment and leadership for the implementation of HEH is not as expected at different level
- Inadequate participation and partnership of different stakeholders and duplication of efforts between different sectors
- Inadequate and inconsistent funding for HEH programs.

3. SCOPE

The strategy addresses public health issues related to HEH components; behavioral, social, technical and other related issues and conditions. Hence, the strategy will focus on strategizing to change the prevailing HEH problems, as well as to address the emerging environmental health (EH) issues in urban, rural, pastoralist and agrarian communities throughout the country by targeting households and institutions in each HEH components: -

HEH Strategic components:

- Sanitation
- Personal hygiene
- Water quality
- Food hygiene
- Housing and institutional health
- Vector control
- Pollution
- Occupational health and safety

The basic premises of this national hygiene and environmental health strategy stands that household and institutions are the sources of all pollutants that go into water, air or land. It is believed that focusing on households and institutions at a community level and managing problems at the source will certainly improve the environment and thereby the health of people.

4. SITUATIONAL ANALYSIS

Official government reports and published researches made in Ethiopia and other similar countries were reviewed to have an insight on HEH problems and solutions. The findings are summarized below to clearly see the context.

4.1. Status of HEH in Ethiopia

Rural

According to Boydell (1987), around the MDG baseline, rural sanitation coverage in Ethiopia was only 1%; and another researcher in 2003 found that 87.5% of rural population in Ethiopia has no latrine and the rest (10.2 %) have holes with no superstructure, 1.5% have improved pit latrine and 0.8% have VIP latrines (World Bank. 2005)

A study conducted in 2011 on child feces disposal conditions in Ethiopia found that 69% reported that shows the feces of their youngest child under three were not deposited into a toilet/latrine – i.e. that the child feces were unsafely disposed (World bank and UNICEF 2014). A preliminary study by World Bank (2012) on child feces disposal methods in Ethiopia also found statistically significant associations between disposal of infant feces not into a latrine, and acute childhood diarrhea.

In 2003, prior to the full roll-out of the HEP, sanitation coverage was around 20%. After training and mobilizing the Health Extension Workers (HEWs), a clear increase in sanitation coverage was realized though most latrines were unimproved. According to FMOH's fourth Health Sector Development report (2010) both the unimproved and improved latrine coverage was 60% (56% rural and 88% urban). However, the JMP report in 2015 showed that improved sanitation coverage is 28% and shared 14 % and unimproved latrine 29%. Whereas EDHS (2016) report indicates that only 32.3% of the Ethiopian population didn't have latrine which shows a good improvement when we compare it from EDHS (2011) report that is 45%. A global sustainable rural sanitation (SURS) study by Water and Sanitation Program of the world Bank indicate that the improved latrine acceleration rate in 2013/14 for Ethiopia was 1.2% per year predicting that it would be difficult for Ethiopia to meet the MDG goal by year 2015. The study further stated that to reach to the MDG goal (51%) coverage with improved sanitation at the present 1.2% rate will take us 25 more years (until 2040).

EDHS 2016 result Reveals, overall 20 percent of households in Ethiopia have water on their premises, 77 percent in urban areas versus only 6 percent in rural areas. Forty-five percent of households spend 30 minutes or longer to obtain their drinking water, 53 percent in rural areas, as compared with only 13

percent in urban households. In addition, EDHS 2016 report also shows that more than 9 in 10 households (91 percent) do not treat their drinking water; this is more common in rural than in urban areas (92 percent versus 88 percent respectively). The most commonly used method of water treatment is adding bleach or chlorine (3 percent). Overall, 7 percent of households use an appropriate treatment method.

Working hard towards narrowing the existing regional, gender, rich-poor, differently-able disparities for the WASH service need to be focused. Girls-friendly WASH services in schools could attract female student's enrolment, attendance, privacy and comfort during menstruation, which therefore could ensure gender equity, equality and empowerment. WASH services in communities, similarly help women to have more time for caring their offspring, and it can also ensure their equality and security.

According to the latest Ethiopian Welfare Monitoring Survey (CSA, 2011), the proportion of households using a waste disposal vehicle/container for solid waste management was 38.8 percent whereas the number of people who handle their solid waste locally, by dumping in a pit, throwing away or burning, were estimated as 58.4 percent. The balance is made up of 2.9 percent being used as manure and 0.6 percent defined as 'other'.

Urban

As a result of fast urbanization and population increase, focusing on improving WASH service delivery in urban areas is not only necessary but also urgent demand to be addressed. In many of the cities, towns and peri-urban settlements in Ethiopia households live and raise their children in highly polluted environments. Much of the pollution is caused by lack of awareness of hygienic behavior, poor access to safe and improved latrines and poor management of existing facilities. As cities expand and populations increase, the need for safe, sustainable and affordable sanitation systems becomes a matter of urgency to prevent outbreaks of diarrhea, worms, skin and eye infections and devastating epidemics of typhoid and cholera.

Sanitation coverage in urban residents as revealed by a study in 17 major urban communities was only 3% which has flush toilets and 49% with access to pit latrine. WHO/UNICEF (2001) reported that urban sanitation coverage in Ethiopia in 1980 and 2000 was 24% and 33% respectively but the 2016 EDHS report showed the sanitation coverage of urban dwellers were increased to 93.1% which means only 6.9% of the urban communities defecate openly.

The 2016 EDHS report showed 40.5% of the Ethiopian urban population uses Pit latrine without slab/open pit sanitation facility. In Addis Ababa (91.1%) use pit latrines where evacuation of fecal sludge was considered a solution but, 85.4% are dissatisfied with the service and over 50% of the pits were found to be overflowing

An estimated 90% of wastewater in cities in developing countries is discharged untreated directly into rivers, lakes or the ocean (UNEP, 2010). Wastewater-related emissions of methane and nitrous oxide could rise by 50% and 25%, respectively, between 1990 and 2020 (UNEP, 2010). Visits to 4 woreda towns found in Amhara, Tigray and Afar and discussion with Woreda towns health offices in the regions visited revealed that solid waste collection and management is very crude except one woreda which has a recycling program, liquid waste is discharged in the environment or in open ditches. Open ditches are full of waste including plastics, silt, dead animals etc. Fecal sludge management is absent. Even if they manage to hire vacuum truck from other cities. The pumped out waste is dumped in the open outside the town mostly in farms.

The problem of human waste disposal is acute and need very stringent and community based approach as obviously past intervention were slow to achieve the desired target. Majority of the population are still at lowest level of the sanitation ladder.

Urban sewer systems are limited to very few areas and are not fully functional. The collection of faecal sludge is also reportedly lacking in most parts of the country. For example, sludge collection services were available in only 11 of the 30 large towns and that small towns are further disadvantaged in that little to no sludge collection services exist. Solid waste management systems, in particular the storage and disposal systems are considered inadequate, unhygienic and have both health and environmental consequences (ACIPH, 2014).

Pollution of the environment especially in developing countries such as Ethiopia has a ripple effect on human health and social wellbeing due to a high rate of industrialization and urbanization combined with low capacity to abate - and combat the health and social consequences of pollution. Environmental pollution control is a multifaceted and diversified issue that demands for multi-stakeholder action and policy intervention. The 24-hourly PM10 and 8-hr average of CO were below US-EPA permissible levels, while the annual PM10 concentrations could exceed the guideline (Addis Ababa Administration, et al, 2007). The other concluded, averaged concentrations of CO in both sampling periods were within US-EPA and WHO limits, however, added there is a reasonable indication that these guidelines might

be exceeded in the long run air pollution related environmental and health problems (Kume et al., 2010). The variation of BOD mg/l in a river affected by coffee processing plant effluent was found significant. It ranges from 0.5 mg/l BOD in impacted to 1,900 mg/l BOD in impacted areas. On the other hand, acidic pH (4.6–7.4) (4.5), high nitrate concentration 6.1–12.4 (6.8) and pollution resistant macro invertebrates (16 times higher) was reported in impacted sites. Studies also identified the presence of heavy metals bioaccumulation in edible fish in the rift valley lakes. Additional concern was raised about the synergistic effects of all pesticides added.

In Ethiopia, the process of industrialization and mechanized farming are liable to complex occupational health and safety problems which need timely attention and consideration before it leads to a major public health consequences.

4.2. Health and economic effect of poor HEH Conditions

According to WHO (1997), 30% of the disease burden in Ethiopia is attributable to poor sanitation and 15% of total deaths are due to diarrhea. The MDG report (2010) clearly states that 23% of the causes of under-five mortality in Ethiopia are due to diarrhea resulting from poor sanitation and hygiene. The recent Health Sector Transformation Plan (HSTP) and the 2008/9 and 2009/10 Health and Health related Indicator also indicated that diarrhea is the second biggest killer for under five children next to acute respiratory infection. According to EDHS 2011, the wealth index, under 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 increases with poverty. The costs of poor sanitation are inequitably distributed with the highest economic burden falling disproportionately on the poorest. The richest 20 per cent in sub-Saharan Africa are five times more likely to use improved facilities than the poorest 20 per cent. (Achieving the MDGs with Equity, UNICEF 2015)

The study by World Bank 2013, established that malnutrition is not only due to lack of food but also the result of environment risk factors such as poor sanitation and hygiene. However, the nutrition status in Ethiopia is improving as indicated by three years result of the EDHS 2011. But still total removal or control of the risk factors is the most important guarantee for a sustained child development

The effect of poor HEH in society is not only limited to health but also to an economic and welfare dimension. Economics of Sanitation Initiative (ESI) desk review conducted by WSP/World Bank 2013¹, indicates that poor sanitation costs Ethiopia Birr 13.5 billion each year, equivalent to about Birr 170 per

¹ World bank 2013

person per year or 2.1% of the national GDP. Yet, eliminating the bad practice would require only 6 million improved latrines to be built and used.

4.3. Emerging Hygiene and Environmental Health challenges

Indoor and outdoor air pollution

Most of the population in Ethiopia (83%) lives in rural villages where biomass fuel such as using of fire wood and dung is the main source of energy. This energy source is also considered as the source of indoor air pollution. The health effect caused by indoor air pollution due to biomass fuel is the most unrecognized in Ethiopia although, the potential health effect of biomass smoke especially to eye disease and respiratory problems has been well established by World Health Organizations (WHO).

The ambient air pollution problem sources are vehicles, industries, charcoal processing, solid waste dumps, indoor biomass smoke **etc.** With industrialization, population growth, commercial agriculture etc. and poor monitoring and control mechanism air pollutant emissions in Ethiopia will be eminent. A study made by Kumie, 2010 after rigorous sampling using CO data logger of a total of 80 road side and 24 on-road daily traffic air samples during wet and dry seasons in 2007 and 2008, respectively, found that a mean CO concentration of 5.4ppm. In general 15% of road side samples and all on-road samples showed more than 50% of the 8hr. CO WHO guideline values.

Water Pollution

The sources of water pollution include agricultural overflows from irrigation schemes carry fertilizers and chemicals; Solid and liquid wastes dumped or discharged in water source catchment areas, river formations and drains and open defecation in water ways and depressions. And about 40-50% of urban waste is dumped in unsuitable areas or let to pour into rivers that traverse the urban centers, wetlands and ecosystems. Such in the case with “*Tilku and Tinishu Akaki river*” in the Awash basin which has unacceptable levels of chemical oxygen demand, heavy metal and pesticides

Land pollution

Land pollution sources and types of pollutant includes solid waste especially plastic products, metals, electronic wastes, feces, dead domestic and wild animals, chemicals, drugs, infectious wastes dumped in an uncontrolled manner is a well-established fact. Regulating land pollution source is now a challenge and may get worse with expansion of cities and population growth potentially creating squatter settlements which may remain to be a worsening challenge unless it is regulated

Noise Pollution

The problem of noise emanating from highly amplified music centers, advertisement from vehicles mounted loud speakers, minarets and churches is being felt by institutions and individuals.

Noise measurement and coordinated control program should be one aspect of the environmental health program in the future.

Looking at all the above pollution sources and absence of controlling mechanism, it can be concluded that water sources in Ethiopia is threatened by pollutants. The rivers in Addis Ababa are already considered dead as they no more support lives and this condition should not be the fate of other rivers whose source passes through cities and towns.

4.4. SWOT Analysis

Strengths:

- ◆ Strong commitment of the leadership for equitable service and community level sanitation and hygiene program to continuously adopt innovative and effective interventions in the attainment of HEH targets.
- ◆ Availability of some HEH program guidelines protocols, manuals directives and initiatives
- ◆ A functional HEH Task Force and TWGs that serves as a platform to coordinate and foster partnership, as well as harmonize and align HEH interventions.

Weaknesses:

- ◆ Limited use of the enabling Environments such as existing WASH institution, program methodologies, and technology options.
- ◆ Limited number of environmental health professionals at all level.
- ◆ Inadequate implementation capacity for HEH activities.at all level.
- ◆ Weak monitoring and evaluation systems, including limited indicators in the HMIS.
- ◆ Poor utilization of available resources
- ◆ Poor recording, and documentation as well as inconsistent reporting at all level.
- ◆ Insufficient evidence and use of formative assessments in the development and production of Hygiene and environmental IEC/BCC materials.
- ◆ Inadequate sensitization and enforcement of existing public health laws and legal frameworks
- ◆ weak emergency communication capacity and system to address HEH emergencies

Opportunities:

- ◆ Favorable National Constitution and health policy guiding program focus and action
- ◆ Proclamations and policies related with HEH
- ◆ The Health Sector Transformation Plan

-
- ◆ Decentralized government structure
 - ◆ Public demand for sanitation and hygiene.
 - ◆ National One WaSH Program with Consolidated donor fund and MOU among WASH sectors
 - ◆ MOU by sector ministries to work together for WaSH Availability of WIF (WaSH Implementation Framework)
 - ◆ Presence of partners with good expertise and resource for WaSH
 - ◆ The HEP and WDA.
 - ◆ expansion of schools and increased literacy rate
 - ◆ Increasing opportunities for public-private partnerships and small scale microenterprises to promote Environmental health activities
 - ◆ The community health platform, the HEP/HDAs, where about seven of the sixteen of HEP packages are focused on HEH..
 - ◆ Availability of supportive policies and strategies

Threats:

- ◆ Slow progress of WaSH coordination at all level
- ◆ Lack of coordination and collaboration among different stakeholders
- ◆ Scattered and overlapping mandates given to different sectors especially in urban areas
- ◆ Staff turnover resulting in loss of trained human power and institutional memory
- ◆ Emergency situations such as outbreaks and natural disasters.
- ◆ Climate change.
- ◆ Negative impact of industrialization, population pressure and, unplanned and rapid urbanization

5. STRATEGY DEVELOPMENT PROCESS

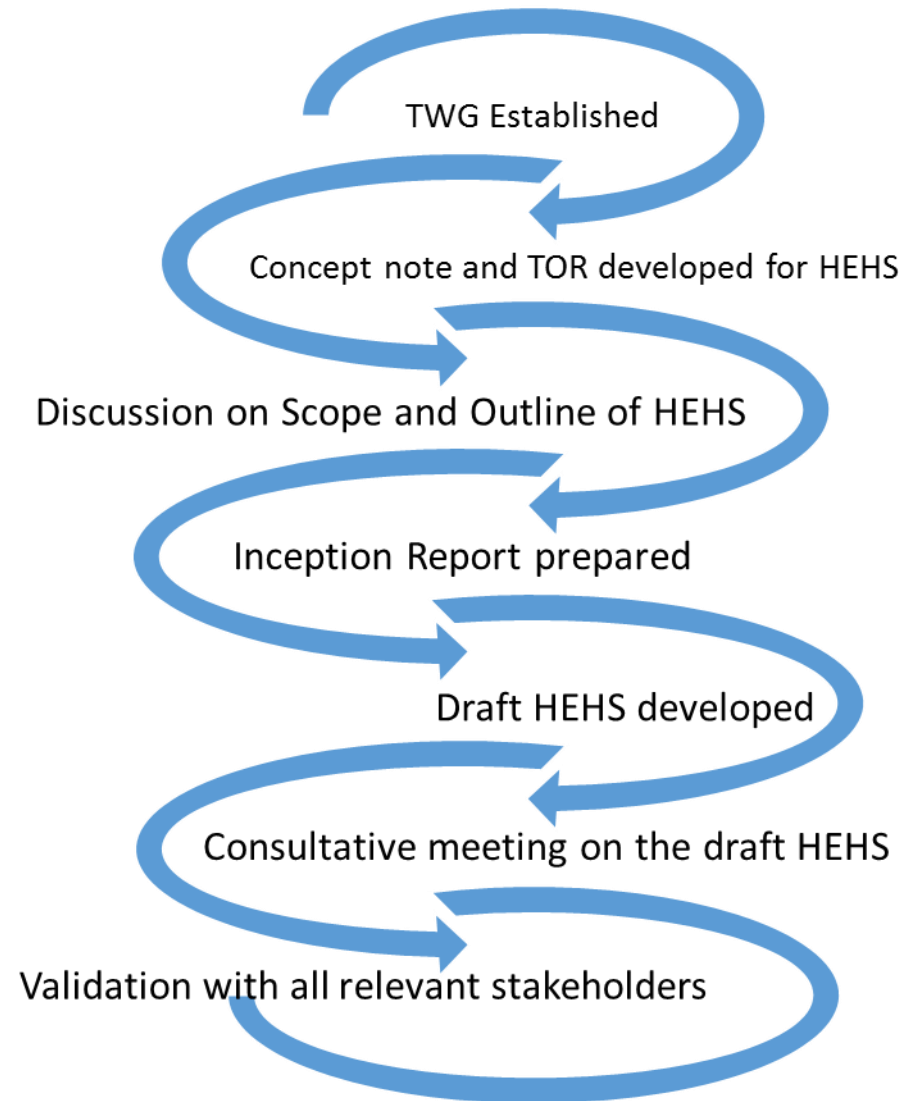


Fig. 1: Strategy development process for HEH strategy

PART II

HYGIENE AND ENVIRONMENTAL HEALTH PROGRAM STRATEGY

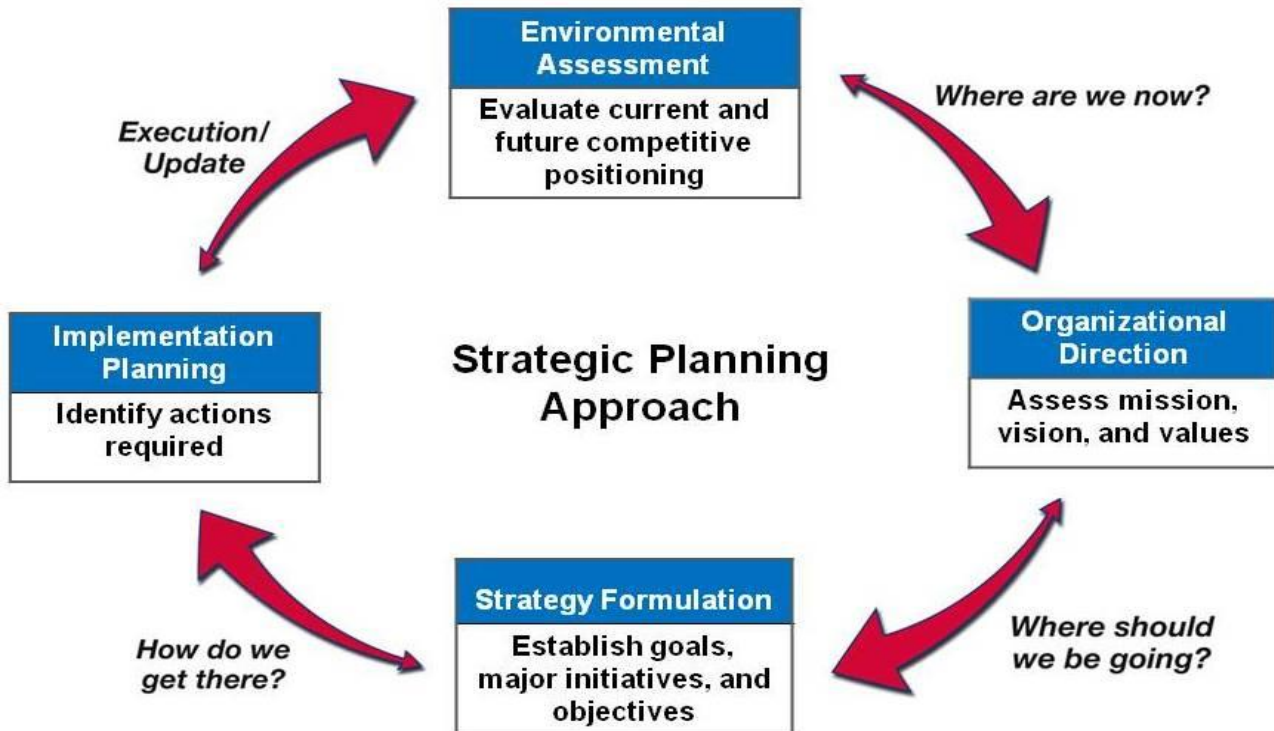


Fig. 2: strategy development logical order Adopted from <https://www.google.com.et> search=strategic actions (Accessed date on 20/11/2015.)

The hygiene and Environmental health strategy follows a logical order starting from current situational assessment to implementation planning and learning. Through this process we would know where we are, where we want to go and how we reach to our goals.

1. Vision

“To see healthy, productive and prosperous Ethiopians “

2. Mission

To prevent disease, promote health, safety and wellbeing of Ethiopians through provision and regulation of comprehensive HEH services and ensuring the highest possible quality in an equitable manner.”

3. Core Values

- Community first
- Integrity, loyalty, honesty
- Transparency, accountability,
- Confidentiality
- Impartiality
- Quality
- Respect
- Be a role model
- Collaboration
- Professionalism
- Change/Innovation
- Compassion

4. Guiding Principles

- Self-reliance
- Community ownership
- Universal HEH coverage
- Focus on community based approachclient centered quality HEH service
- Equity and inclusiveness
- Good governance
- Appropriate technology and innovation
- Participatory partnership
- High impact interventions
- Learning institution/system
- Professional ethics
- Continuous professional development

5. Strategy Formulation

5.1. Strategic framework

The strategy consists of eight strategic domains and specific focus areas under each of the domains as well as underpinning pillars (see annex 1).



Fig. 3: *Sstrategic framework for HEH Strategy*

The community based HEH activities are mainly focused on Health Extension hygiene and environmental packages that is to be delivered at household and Kebele level, including local institutions. These promotional package based activities are expected to be coordinated with woreda and Kebele command post regulatory bodies for the health of the community.

5.2. Goals

The ultimate goal of this strategy is to comprehensively implement key domains of the HEH through community empowerment and institutional enhancement.

5.3. Strategic Objectives

The objectives of the strategy are designed to address national and global interest and targets. The strategic objectives are grouped by headings for easy reference.

Objective 1: By 2020 achieve access to adequate and equitable sanitation for all.

Strategic initiatives:

1. Increase access to improved latrines and hand washing facilities
2. Increase latrine utilization
3. Increase Open Defecation Free (ODF) verified Kebeles
4. Increase integrated solid waste management service
5. Increase integrated liquid waste management service
6. Increase latrines emptied and properly disposal services

Objective 2: By 2020 promote basic hygiene behavior in order to control related communicable diseases.

Strategic initiatives:

1. Increase hand washing practice with soap/substitute at all critical moments
2. Increase face, oral and body hygiene practice
3. Increase menstrual hygiene management practices

Objective 3: By 2020 ensure safe water from the point of source to consumption.

Strategic initiatives:

1. Increase using drinking water from protected source
2. Increase effective correct and consistence use of household water treatment
3. Increase household water treatment products regulation
4. Increase implementation in improved water scheme
5. Increase water supply system quality surveillance and regulation

Objective 4: By 2020 ensure basic WASH in all institutions.

Strategic initiatives:

1. Increase institutions with gender and differently-able sensitive complete improved WASH package
2. Increase institutional WASH surveillance and regulation
3. Increase health facilities implementing Clean and Safe Health facilities (CASH) (risk based WASH) and national health facility standards

Objective 5: By 2020 ensure food safety from farm to fork

Strategic initiatives:

1. Increase good hygienic practice implementation at household level
2. Increase institutional food safety surveillance and regulation
3. Increase institutions implementing good manufacturing practice and other food safety management systems
4. Increase surveillance and regulation of food products

Objective 6: By 2020 reduce vector borne diseases.

Strategic initiatives:

1. Increase environmental management for vector control
2. Increase awareness of the population to maintain household hygiene
3. Increase biological vector control

Objective 7: By 2020 ensure safe and conducive working environment in all institutions

Strategic initiatives:

1. Increase the number of institutions implementing occupational health and safety standards
2. Ensure the implementation of HEH standards in the institutions

Objective 8: By 2020 enable abatement of generation and exposure to sources of pollution

Strategic initiatives:

1. Increase the number of institutions emitting environmental pollutants (air, water, land and noises) below the limiting standard
2. Increase institutional surveillance and regulation

Objective 9: By 2020 ensure community empowerment through organized and promotional interventions

Strategic initiatives:

1. Increase awareness, attitude and behavior on HEH
2. Increase community HEH practices

Objective 10: By 2020 create reliable and enabling environment for HEH activities

Strategic initiatives:

1. Develop and implementation capacity of HEH activities
2. Strength sector wide coordination, integration, networking and partnership.
3. Develop and put in action implementation guidelines for each domains of the strategy
4. Human resource development and capacity building
5. Ensure adequate Finance/budget
6. Create adequate and strengthen public and environmental laboratories.
7. Ensure ongoing and continuous learning and research.
8. Strengthen Monitoring and evaluation.

6. Program Management/Implementation framework

The strategy have the following management components in order to develop the program, create access and change to basic environmental health services, strengthen partnership and communication, capacity building, resources, monitor and learn.

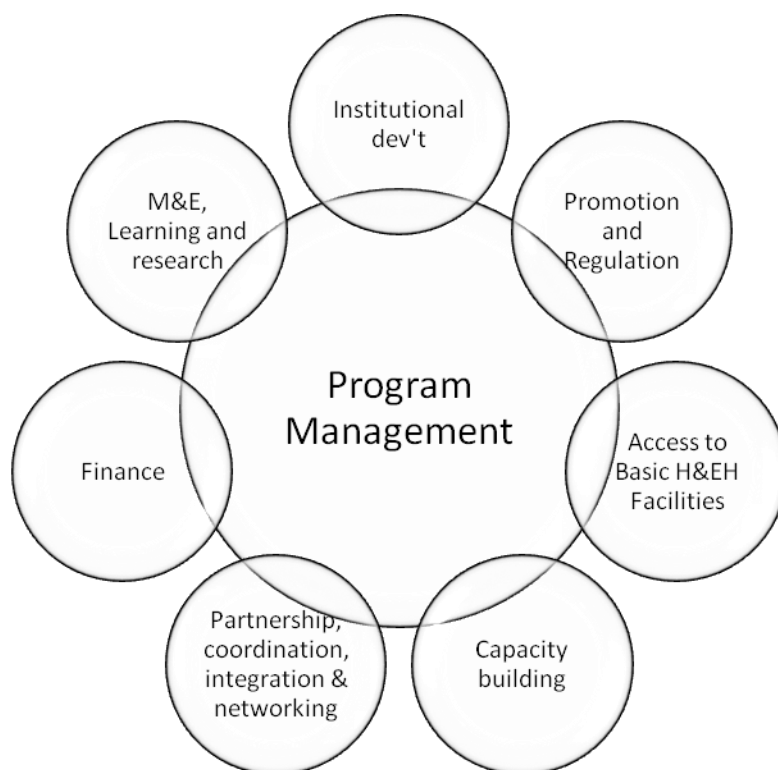


Fig 4: Program management components

6.1. Institutional Development

Putting in place an appropriate and enabling structure from federal to kebele level that can support the implementation of the domains of the strategy is the first step. Filling the structure with appropriate professionals with a focus to assist and capacitate communities to deliver HEH activities at household and institutional levels is critical.

6.2. Capacity building

Capacity building element will focus on putting in place skills through cascading of trainings, based on manuals, protocols and guidelines which will address the HEH domains in this strategy. In addition to

cascading trainings, long term and short term on/off job trainings will be given to the professionals working on HEH

6.3. Access to Basic HEH Facilities

Creating access to basic and equitable HEH facilities at community and institutional level to provide affordable quality products (supply) and services. Facilitating production and marketing of appropriate and effective products through different mechanisms, such as sanitation marketing centers, water utilities, health facilities and other institutions.

6.3.1. PROMOTION

An effort ensuring community empowerment and social change, influencing appropriate behavioral change and demand for use of environmental health facilities and products to happen through the application of relevant promotional methodologies (CLTSH, WSP, HEP, IEC, SBCC). Sustained advocacy and social mobilization efforts to be conducted.

Empower communities and make the households the center of planning, action and follow up for sustainable HEH/sanitation behavior change. Perhaps, this may be the time to stop the top down approach and replace it more to community centered approach to enhance local involvement, using local aspiration, knowledge and skill and local motivation and action. Community empowerment is also made by the full scale application of community based HDA and strong HEP implementation that make the community empower by technical and feasible behavioral actions.

Focus on feasible behavior than jumping direct to ideal behavior. Environmental health/Sanitation improvement program should address the problem incrementally basing the intervention program on do-able actions rather than jump into the ideal behavior. Clean, safe, appropriate environmental health/sanitation system can be developed using local skill and available local material at the beginning and build up than to introduce a more expensive system which may be ideal progressively.

Engaging political leaders: from federal, regional and local levels and influential people such as religious leaders, WDGs, youth at the regional, woreda, kebele and community levels through a multi stakeholder planning process

Catalyzing “the multiples”

- Using multi-level (national, Regional, Zonal, Woreda, Kebele and Community levels) advocacy and planning

- Engaging multi-sectoral partners (health, education, water, development partners' youth, women, private commercial),
- Employing Multi-communication channel (face-to-face, community events, religious institutions, school curriculum, mass media, advocacy, IEC, mobile film shows, drama, soap opera, etc.)

6.3.2. Regulation and Legislation

There is limited public awareness and commitments on policy implementation and low commitment of regional and local environmental affiliated government good regulation of HEH, and also requires improving the enforcement capacity. Public urban and rural HEH sector actors, especially those at the city/town level need to be aware of the existing regulations, its enforcement and follow up mechanisms.

Despite the fact that manufacturing industries across the country are found to be a major factor associated with environmental pollution issues in towns in Ethiopia, there is hesitation on behalf of the government to enforce existing regulation. This has to be addressed through negotiated agreements with individual and staged mitigation, applying the polluter pays principle, backed by clear threat of penalty through legal enforcement institutions.

Equally important, but not enforced, are the regulations developed by the Ministry of Health, Ministry of Environment, Forestry and Climate Change, Ministry of Urban Development and Housing, and the Ministry of Water, Irrigation and Electricity indicating that the owners of houses/institutions are required to invest in improved HEH facilities and/or services and adopting improved HEH behaviors. To address these and related challenges currently existing, the following actions are required:

- conduct mapping of the existing regulations on urban and Rural HEH and take action on the gaps and overlaps within the existing regulations
- agree on enforcement mechanisms and responsible institutions to enforce those regulations at the lower level
- organize awareness creation events for urban and rural Hygiene and Environmental sector actors and for the community on the existing regulations and enforcement mechanisms such as the polluter pays principle
- Development and Enforcement of uniform regulatory guidelines and standards from the federal to Kebele level.
- To regulate HEH activities at the community and institutions.

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Food safety is a primary global concern. This subject is more pertinent as the society becomes more commercialized and eating out becomes a norm. Increasing activity in the food industry due to economic pressures is resulting in more people turning to food vending as a means of economic sustenance. Also the growth of the tourism industry has placed greater demands for local cuisine. Government regulation and supervision is important to ensure that standards are maintained throughout the food chain. Monitoring of standards, conditions and supervision of food preparation is critical in ensuring the health of the nation.

The provision of an adequate supply of safe water is paramount public health importance and can never be over emphasized; its impact on health is profound and is both direct and indirect. The direct impacts are related to quality of water utilized, (in particular water, which is consumed,) and water reintroduced to the environment through means of treatment processes (effluent). Thus surveillance is conducted to evaluate the suitability of the water supplied to the public with the ability of implementing mitigation actions to alleviate any potential hazard.

The compliance and monitoring Programme covers the following:

- Private (commercial/institutional) water supply systems
- Testing of municipal water supply
- Sanitary surveys of water systems
- Inspection & licensing of water trucks & bottled water plants
- Inspection and licensing of swimming pools
- Inspection of waste water plants
- Assessment & processing of development plan applications
- Investigation of complaints
- Monitoring of recreational waters
- Solid waste monitoring
- Technical support in standards development for recreational water.
- Technical support in implementation of recreational water quality projects.

The expansion of international travel and trade has been cited as a primary cause for the global transmission of emerging and reemerging infectious diseases. Recent epidemics of Ebola, SARS, Avian Influenza virus infection, Norwalk virus and H1N1 virus infection across continents have taken a significant toll on humans by way of death and disease and a severe economic cost impact as a result of their direct impact on the

productive sectors (e.g. tourism). As a result, there is a heightened awareness worldwide for Port Health Surveillance Systems as a strategy for mitigating international threats to public health.

The impact of industrialization on the health and safety of workers and on the environment is one of the subjects currently being studied throughout the United Nations, and specifically in the International Labor Organization (ILO) and the World Health Organization (WHO). Although this impact varies greatly from one country to another, the present findings suggest there are certain requirements that have to be met if industrialization is not to exact the same toll of accidents and diseases on the 21st century as it did on the 20th . For that reason workers who may be exposed to hazards should be monitored in a systematic program of medical surveillance that is intended to prevent occupational injury and disease.

6.4. Cross cutting issues

6.4.1. Equity

In order to achieve universal coverage, the HEH takes into consideration the situation and needs of underserved members of the society who often live in congested inner city slum areas and outskirts of towns. In the Ethiopian context, this includes women, children, differently-able people, elderly people, people with chronic illness, including HIV/AIDS and people living in remote and/or peripheral areas, and people living on the street. People living in low quality rented houses, shelters provided by towns and religious orders, even prisons, may also be inaccessible to quality HEH services. The HEH strategy will adopt the following strategies to address the issue of equity:

- The HEH program shall address exclusion from urban, rural and pastoral HEH and promote universal access to services based on the principle of nobody will be left behind.
- HEH related studies, communications and development programs shall give due attention in addressing the problem related with equity. Standards have to be developed for different types of facilities at different functions to give access to everyone including those identified as differently-abled, women/girls, elders and so forth.
- All public facilities including public toilets, showers, and access that are either under operation or under construction should be checked for safety for differently-able users. Country-wide standards for facilities in the public domain and services to institutions such as hotels, bars, schools and health facilities should be applied and enforced by municipalities. The standards should take note of safety for everyone but with special emphasis for differently-able..

National Hygiene and Environmental Health Strategy and Strategic Action Plan

- The Strategy shall address women's needs as well as access to HEH facilities for people living with HIV-AIDS. In addition the HEH strategic action plan shall consider:
 - Ways to increase the continuity of the supply of water (quantity or facilities or both) in all public, community, health, school and institutional facilities
 - Avoidance of physical infrastructure such as steps, narrow entrances, slippery floors for HEH services
 - Setting up of responsible institutions which could handle policy/strategy provisions for the differently-able, knowledge, skills, information, appropriate designs and consultation mechanisms and
 - Preparation of legal provisions and social environment that protect prejudice, pity, isolation, overprotection, stigma, misinformation and shame.
- Public recreations sites, schools, religious establishments, open areas where elders gather and children play should be maintained clean and accessible.
- Towns, rural and pastoral areas need to special basket fund that is dedicated to creating access to improved HEH facilities that may include proper excreta disposal, liquid and solid waste containment facilities for residents living in extreme poverty. Such municipal funding can be directed to the mandated service providers to extend services to the poor through clear contractual arrangements and through onward delegation of services to locally-based SMEs.
- HEH management systems should be used as a source of income to the able poor and those who can participate in one way or another through job creation.

6.4.2. Gender

The HEH strategy recognizes the important value that is linked with gender HEH in general. With active and enhanced involvement of the UHEP and the WDA, the HEH aims to:

- Increase the involvement of women in designing rural, urban and pastoral HEH programs; which, in turn, helps empowerment and local ownership and capacity
- Increase the focus on the needs of women and girls by integrating HEH programs such as separate sanitation facilities and menstrual hygiene management
- Empower and capacitate women in economically viable management of HEH facilities

- Increase opportunities for women and girls in developmental activities related to prevention of HEH related diseases
- Use model women as change agents in addressing HEH related issues
- Increase engagement of women associations, forums and stakeholders working on gender
- Encourage creation of job opportunities for unemployed women, female school-leavers and youth through construction work, through business management roles, through engagement within SMEs in primary solid waste collection, waste reuse and recycling, public toilet service provision and fecal sludge management.

6.4.3. Environment

Effective urban, rural and pastoral HEH is important not only for human health and for economic and social benefit, but is also essential for preservation of sensitive ecosystems. It is necessary to reverse the damage that has been caused through water, soil and air pollution.

The serious deficiencies in HEH services, the inadequacy of sewerage infrastructure, random defecation in urban areas and poor control of industrial and commercial wastes have created dangerous EH problems.

Rivers and streams in the vicinity of both big cities and small towns have become open sewers and is one of the main sources of infections resulting in diarrhea and other related diseases. They also damage aquatic ecosystems thereby compromising their ability to filter, cleanse, aerate and mitigate polluted water.

In this Strategy, the following interventions are given due attention in order to reduce the impact of poor urban, rural and pastoral HEH and industrial and commercial activities on the environment:

- Ensure that Environmental Impact Assessments are carried out strictly and implemented accordingly for all new urban, rural and pastoral domestic, institutional, commercial and industrial activities as per existing proclamations.
- Ensure that adequate resources are included for Environmental Impact Assessments and mitigation measures in all development programs.
- Conduct continuous environmental monitoring of effluent treatment, drainage systems, water bodies, ecosystems and open areas, and identify sources of possible pollution sources.
- Ensure that environmental protection requirements are fully enforced for all new and existing domestic, institutional, commercial and industrial premises.

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- Encourage residents to reduce waste at sources, and to sort out the waste into classifications aimed at possible reuse and recycling.
- Follow optimum standards in disposing of effluents and other wastes.

Particular attention should be given to climate change. Erratic and extreme meteorological events are likely to undermine the development of urban, rural and pastoral areas, the state of the environment and will have health impacts. It is of utmost importance that the systems and the facilities that will be developed through the HEH are conceived in order to i) limit the impact in the terms of greenhouses emissions and therefore limit the impact on the environment and the climate and ii) ensure an increased resilience to the communities/towns served against the effect of climate change.

6.4.4. Health and Safety

The strategy will make the maximum effort possible to reduce and eventually eliminate all accidents, injuries and occupational illnesses of those involved in urban, rural and pastoral HEH service provision. Continuous efforts to identify and eliminate or manage safety risks associated with the activities will be given due attention by implementing the following interventions:

- Those engaged in urban, rural and pastoral HEH service provision will get training on health and safety as well as risks associated with service delivery
- Provision of PPE and enforcement of use
- Establish systems to respond quickly, effectively and with care to emergencies or accidents that result from operational activities
- All operators are required to establish and monitor low accident tolerance zones with full investigation and reporting procedures. The expense related to risk mitigation will be covered partly by operators through inclusion in tariffs and partly it will be covered through a subsidy from the government administration

6.4.5. Private sector engagement

There is some scope for private sector participation in HEH services installation and management. The engagement of the private sector is mainly limited to consultancy, construction and supervision of facilities, solid and liquid waste collection, manufacturing and supply of sanitation facilities. These are expected to continue while efforts are also made to create financially viable business environment to attract further

National Hygiene and Environmental Health Strategy and Strategic Action Plan

involvement of the private sector in HEH service delivery. The lead Federal institutions will play a critical role in creating the enabling environment for increased engagement of the private sector.

The strategy will address the stepping stones for including private sector provision within a contracting, supply chain and delegated management framework. It will be necessary to ensure that health and safety measures are put into place to protect workers and that both the public and the environment are protected. At the same time it will be necessary to ensure that private operators are able to run viable businesses within an enabling regulatory framework. This can be achieved through clear contractual arrangements it is envisaged that the private sector could be viably and advantageously engaged in most parts of the HEH supply chains, including:

- Formative research and IEC interventions, including creative concepts for behavior change at both consumer and institutional levels
- Research and development
- Provide consultancy services in a wide area including institutional reform, financial analysis and business planning, master planning, feasibility studies, design and contract supervision
- Capacity building in terms of system development and implementation, organizing tailor-made short-term training
- Primary solid waste collection
- Secondary solid waste storage, sorting and transport
- Solid waste disposal site operation
- Recycling industries
- Pit latrine, cesspit and septic tank manual and mechanized emptying services
- FSM treatment and product marketing stages
- Production of sanitation marketing products such as pre-fabricated latrine and toilet units

Overall feasibility of business models will be conducted for each intervention to see how the private sector or SMEs can be engaged to deliver services of quality and in an efficient manner.

In order for the private sector to engage and contribute in the chain of HEH are expected:

- To review all possible bottlenecks that hinder the engagement of the private sector in the sanitation chain.
- Revise or develop operational guidelines that create a suitable enabling environment for the private sector. Special arrangement will be made in the areas that have not yet been traditional areas of engagement for the private sector
- To ensure business opportunities through clustering or packaging different HEH service components
- To support the private sector in accessing finance (special loan arrangement to be used for investment), tax relief period, and capacity building of staff

6.4.6. *Community engagement and ownership*

The success of urban, rural and pastoral HEH management is highly dependent on the level of community engagement. The GoE has developed and introduced different arrangements to increase engagement of the community. The current widely adopted arrangements whereby political leaders and local communities are brought together on one platform could be used to discuss the type of services to be provided, set standards, reflect on tariff setting, trigger community mobilization, and monitor performance.

The HDA and HEWs shall continue to serve community members to work hand in hand in promoting urban health extension programs. The main activity supports are a) leading communities to climb up the sanitation ladder, b) construct and arrange their own sanitation facilities, c) agents for integration, coordination and partnership and d) continue to bear the responsibility of clean green sustainable village and city/towns. The main contribution expected from households within each community for achieving total HEH will be in terms of on-site HEH facilities and will involve contributions in labour, cash and materials. The following include strategies for community engagement;

- Community representation in HEH committees should be made from different segments of the society. Mainly representation is expected from women associations, youth associations, elders, private operators, private businesses, public institutions, CBO's, NGO's, and representatives of people with disabilities.
- Communities can play a very important role as “watchdog” consumer groups in monitoring how public and private service providers (water, liquid and solid wastes) and delegated operators perform

in relation to their small and micro cooperation. Consumer complaints and willingness to pay can be monitored by such groups and play a vital role in efficient service delivery. Generally, such groups of responsible citizens may have either monetary incentives, from the money being generated from tariffs and collection fees, or non-monetary incentives.

- The federal and regional governments are responsible for developing guidelines and checklists on how the community engagement and representation should look and for establishing possible platforms of engagement. They should also monitor and ensure functionality of the platforms.
- All towns and rural dwellers should then create community engagement platforms that are compatible with the expectations set out. Towns are fully mandated to decide and create the enabling ground on how to manage and use community engagement platforms to achieve minimum standards of HEH services. Urban, rural and pastoral communities should note that the success of HEH management is highly dependent on the level of transparent community engagement.

6.4.7. Sustainability

The need for sustainable service delivery is the key challenge facing HEH services development in all Ethiopian towns, rural and pastoral communities. Addressing sustainability requires a comprehensive institutional, technological, financial and environmental approach and places users and communities at the center of service development.

Institutional sustainability involves choosing sound service delivery and regulatory mechanisms with full consumer participation while technological sustainability needs full involvement of SMEs to establish appropriate tools and equipment. Financial analysis to determine business viability related to levels of service and affordable tariffs and charges is at the heart of public service sustainability, while environmental sustainability means compliance with environmental management plans (EMPs) based on environmental protection laws and guidelines.

Sustainability has a direct link with the amount of resources allocated for the operation, maintenance and rehabilitation and the financing systems put in place. Though government requires cost recovery on public service delivery, it is clear that, in reality, tariffs and charges for solid waste, sludge and liquid waste collection, treatment and disposal only cover a fraction of the operating costs. Most water utilities struggle to cover their operational costs for water supply. However, demand and willingness to pay for reliable and safe water is higher than paying for sanitation services. Improvements in water service delivery therefore

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offer the potential for cross subsidy to the sanitation services. Many Ethiopian utilities are responsible for both water and sanitation so there is the possibility of subsidizing sanitation costs from water revenues at local level (within clusters of municipalities for instance)..

Key sustainability strategies include:

- Both financial and environmental sustainability gains will be made by application of the 3Rs (Reduce, Reuse, Recycle). However, sustainable service delivery will mostly depend on highly efficient but labour intensive methods, short hauls to local treatment and transfer stations located within the communities, low energy treatment, local reuse, clear sub-contract conditions and strict regulation.
- It is expected that sustainable HEH service delivery will require grants, loans and subsidies in the short to medium term. This means that sustainability will rely on long-term agreement on funding and subsidies from non-sanitation revenue streams to some degree.
- The HEH strategy encourages all actors to prioritize sustainability in all studies and implementation of programs.
- Different responsible federal and regional institutions together with the private sector will build the technical and managerial capacity of local government to ensure that sustainability is factored properly with all interventions.
- Adequate budget provision will need to be allocated and all necessary technical measures considered improving services to a level where they exceed minimum agreed standards in all towns. Federal and regional governments can advise towns on how to carry out socio-economic studies and financial analyses so as to set levels of service compatible with consumer ability to pay. At a minimum, operation and maintenance of HEH facilities should be covered by a combination of revenue and agreed subsidy mechanisms.
- Urban, rural and pastoral communities will assign HEH standards that are aligned with national standards and options. The federal and regional responsible institutions will promote the use of sustainable, affordable and acceptable facilities to urban, rural and pastoral communities.
- Subsidies targeted to the destitute and extremely vulnerable groups to sustain proper functioning of facilities can be arranged at local service delivery level. Involvement of local management staff in delegated operations helps to identify individuals and families in the greatest need.
- Creating community ownership by engaging the community members through the whole processes of planning, implementation, monitoring and evaluation of urban, rural and pastoral HEH issues.

6.5. Partnership, coordination integration and networking

Strengthen coordinated activities at all levels, initiate aligned and integrated planning with stakeholders, create partnership and networking with governmental, and non- government actors, such as faith based and private sectors, NGOs to enhance and scale up desired HEH changes. And, it is also very crucial strengthening the integration of HEH with other programs and initiatives, such as nutrition, maternal and child health, CASH, NTD control, public health emergency management and climate change related programs.

6.6. Finance

The strategy is expected to be funded by regular government budget allocation, multilateral and bilateral sources, one WASH national program, fund raising mechanisms using a structured system, and by engaging the community.

6.7. Monitoring, Evaluation, Learning and research

Monitoring and evaluation will be done at various levels to review progress and take prompt actions. Data exchange, documentation and regular reporting with different stakeholders implementing the domains of the strategy. In addition research in each of the domains will be encouraged through identifying priority research topics. Program evaluation will be applied through establishing baseline and mid and terminal data collection and analysis. Quarterly and annual data generation, analysis and reporting at different level for selected indicators will be done. Annual multi stakeholder's program review and learning will be conducted at different level.

PART III

STRATEGIC ACTION PLAN

1. Program Management Arrangements

In order to ensure high level coordination, create harmonious relationship, support, simplifying monitoring and feedback mechanism are necessary to strengthen the existing resources and organizations at all level. Community development draws on existing human and material resources from the community to enhance self-help and social support, and to develop flexible systems for strengthening public participation in all health matters. The HEWs and WDA give avenue to accelerate the community engagement in HEH programs

2.1. HEH INITIATIVES

2.1.1. Basic hygiene and sanitation

- Hand, oral, face and body hygiene
- Menstrual Hygiene Management
- Neglected tropical diseases prevention and control
- Proper Excreta Disposal
- Slum and informal settlement WASH
- Domestic and commercial Solid and liquid waste management
- Sanitation marketing promotion
- E-waste management
- Emergency WASH response / Strengthen Emergency WASH for epidemic control

2.1.2. Food hygiene and water safety

- Food hygiene and safety promotion/ Promotion of Food Hygiene and Safety at household level
- Water quality monitoring and surveillance
- Water Safety Plan (Introduce and implement water safety plan)
- Household water treatment and safe storage
- Promotion of Hazard Analysis Critical control Point (HACCP)

2.1.3. Institutional health and environmental management

- Climate change adaptation on health
- Indoor and ambient air pollution prevention
- Hazardous and toxic chemical waste management
- Institutional (School, Health Facilities, Prison and Public gathering) WASH promotion
- Healthful housing promotion/ Promote & regulate construction materials safety (glass shield buildings etc..)
- Health care waste management
- Work place health and safety promotion
- Promote safe use of chemicals for control of vector and rodent control
- Pollution control and climate change mitigation measure

3. Strategic Solutions for Successful outcome

3.1. Create or strengthen the enabling/ supportive environments

The focus of this HEH strategic action plan is to deal with the problem of HEH domains. In the rural or urban communities.

Existing enabling environments that needs to be strengthen includes:

- a. The trained human resources in the system at all levels to be more involved and motivated (right person at right place)
- b. Enhancing the use of policies, strategies, standards, guidelines, protocols and directives that related with HEH
- c. The organization structure at woreda (WWT) to support all WaSH activities and at kebele (KWT) level to be more focused and supportive of the community level activities
- d. Strengthening the community outreach initiative conducted by HEW to be even more robust and supportive of community based initiatives and the WDA.
- e. Enhancement of coordination and collaboration activities with stakeholders

3.2. ENGAGE STAKEHOLDERS AT ALL LEVEL

HEH is a cross cutting discipline that all have to function as one in order to rip the benefits of living in a clean and healthy environment. For this reason federal, regional, zone, woreda and kebele level government organizations; international, bilateral and local partners; community based organizations (CBOs) should be involved to support the implementation of HEH activities at all levels. Organizations at all levels will have

to coordinate intervention programs in their settings and attract support from outside their circles. Learning from practice and sharing and scale up of best experience and knowledge to others will have to be the norm at all levels

3.3. CAPACITY BUILDING

Environmental health professionals, HEWs and other sector staffs working on HEH programs need practical training on the following thematic areas:

- ◆ **Community dialogue** which is needed to communicate do-able-actions at community, household and institutional level using job aids. It also helps to have persistent contacts and dialogue for more simple intervention methods.
- ◆ **CLTSH and SLTSH facilitation skills:** CLTSH training for HEWs in the integrated Refreshment training was not adequate for facilitation of CLTSH since it has its own steps and each step must be addressed efficiently CLTSH as a tool needs to be refreshed to those HEWs, environmental health professionals and other sector staffs for effective facilitation.
- ◆ **The Planning process** should be a continuous exercise by all sectors especially to start behavior change activities
- ◆ **Conducting surveys, analyzing data and presentation:** It is known that timely, reliable and up to date report with quality data is useful for planning program management such as, planning and evaluation. One of the main gaps in the health sectors is the lack of correct, reliable and up-to-date data. Sector staff should be able to collect relevant and make analysis and use information for making evidence based decision..

3.4. SBCC and MEDIA SUPPORT

Starting with positive aspect of hygiene is much preferable than using of the germ theory and disease. Basing our behavior change approach on the existing behavior and qualifying it further according to appropriate communication models/theories

Successful behavior change program will focus on the following principles:

- ◆ Behavior change and practice for sanitation and hygiene become more productive if it is based on knowledge on key aspects of what people KNOW, DO AND WANT
- ◆ New knowledge does not equal new practice but existing knowledge can be developed further.

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- ◆ Build capacities of those common WaSH actors and the uncommon community groups on simple and focused behavior change methods and principles of approximate behaviors
- ◆ Relate behavior change programs to social issues such as dignity, pride, comfort than to germs and diseases
- ◆ Start from behavior that is truly a stumbling block but which does not incur any unnecessary material and financial burden beyond the means of the households in a community.
- ◆ Keep the technology options introduced to be appropriate, replicable, sustainable and yet functional
- ◆ Total engagement communities using different media, such as radio, written materials, community conversation, local drama and in churches and , mosques etc using approximate practices may enhance behavior change .

Media is a very important mechanism to transmit information to the general public. Nowadays, FM, national and regional radios, TVs, cell phones/mobiles, other social media and newspapers are resources that we have to capitalize. HEH is very important social issue that need to be addressed and get the requires attention of the media. .

3.5. DEVELOP PERSONAL SKILLS

Enabling people to learn, throughout life will help to prepare them cope with environmental problems in the change processes. This has to be facilitated in school, home, work and community settings. Health promotion supports personal and social development through providing information, education for health, and enhancing life skills.

3.6. STRENGTHEN COMMUNITY ACTIONS

Health promotion works through concrete and effective community action in setting priorities, making decisions, planning strategies and implementing them to achieve better health. Community development draws on existing human and material resources in the community to enhance self-help and social support, and to develop flexible systems for strengthening public participation in and direction of health matters. This requires full and continuous access to information, learning opportunities for health, as well as funding support

3.7. STRIVE TO ENSURE SUSTAINABILITY AND REPLICABILITY

Sustainability is ensured only when a program is owned by individuals, groups or community. Since this HEH strategy is designed to promote health, wealth, dignity and development to communities. Hence, it will be owned, promoted, monitored and evaluated by community resource people who are residents, trusted and influential individuals, and hence ensuring sustainability.

Community based and owned program which uses indigenous knowledge and skill processed by communities will be replicated by other similar communities. The learning and community mobilization is embedded on what people know, practice and believe.

In the community based approach the religious leaders will be leading the HEH programs in their communities and is believed to be replicated easily in other communities.

The fact that the skill, technology, tools and materials used in all intervention programs are natural resources available in the community ensure replicability and sustainability.

4. Strategic Action Steps and Milestones

Developing the National HEH Strategy Program requires an integrated strategic plan and the collaboration of partners. The program has created a timeline to plan for the annual milestones, FY 2016 to 2020. These milestones are guided by the goals and objectives stated within this strategic plan and will support the vision and mission of the Program.

Table 1: Five Years Strategic Plan

Strategic Objectives	Targets	Strategic Initiatives	Strategic Activities	Indicators	Implementation Period				
					2016 (%)	2017 (%)	2018 (%)	2019 (%)	2020 (%)
SO1: By 2020 achieve access to adequate and equitable sanitation for all.	Target 1: Increase proportion of households with access to improved latrines and hand washing facilities from 28% to 82%.	Increase access to improved latrines and hand washing facilities	Construction of new improved latrines	% of households with access to improved latrine	28	41.5	55	68.5	82
			Upgrading basic latrines to improved latrine	Number of sanitation marketing centers established / Proportion of Woredas with at least 1 sanitation market centers	0	10	15	25	20
			Initiate communal and public latrine facilities for slum and informal settlements						
	Create and strengthen sanitation marketing centers								
	Target 2: Increase proportion of latrine utilization from 71% to 100%	Increase latrine utilization	Create awareness at community level on proper utilization of latrine facilities	% of households properly utilizing latrine facilities	71	78	85.5	92	100
	Target 3: Increase proportion of Open Defecation Free (ODF) and verified Kebeles from 18% to 82%	Increase Open Defecation Free (ODF) verified Kebeles	Supporting kebeles to become open defecation free	% of open defecation free kebeles	18	34	50	66	82
Scale-up and sustain ODF kebeles									

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	Target 4: Proportion of households with integrated solid waste management service from 22% to 82%	Increase integrated solid waste management service	Raising public awareness on integrated solid waste management	% of households practicing proper handling and storage of solid waste	22	37	52	67	82
			Strengthen private sector and Medium and small scale enterprises participation						
			Improve institutional capacity in collecting, practicing 3Rs (reduce, recycle and re-use) and disposing solid waste management						
	Target 5: Proportion of households with integrated liquid waste management service from 50% to 80%	Increase integrated liquid waste management service	Construction of sewer line and treatment plant in urban areas	% of households practicing proper handling and disposing of liquid waste	50	57.5	65	72.5	80
	Target 6: Proportion of household latrines emptied and properly disposed from baseline to 100%	Increase latrines emptied and properly disposal services	Create public awareness on emptying and managing latrines	% of household latrines emptied and properly disposed					100
			Emptying latrines and proper disposing of sludge						
SO2: By 2020 promote basic hygiene behavior in order to control related communicable diseases.	Target 1: Increase the number of households practicing hand washing with soap/substitute at all critical moments from the present 1% to 82%	Increase hand washing practice with soap/substitute at all critical moments	Awareness creation on benefits and utilization of hand washing facilities	% of population practicing hand washing with soap/substitute at critical moments	1	21	41.5	61	82
			Facilitate Installation of hand washing facilities with soap around latrines						
	Target 2: Increase the number of people practicing face, oral and body hygiene from 58.3% to 100%.	Increase face, oral and body hygiene practice	Creating awareness on face and body hygiene	% of population practicing face washing with soap at least once a day.	58.3	69	79	89	100
Create water supply and soap for face and body washing at house hold level			% of population practicing oral hygiene during morning and evening time.						

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	Target 3: Increase the number of women practicing menstrual hygiene from 46% to 100%.	Increase menstrual hygiene management practices	Create awareness on menstrual hygiene	% of women practicing menstrual hygiene	46	59.5	73	86.5	100
			Develop /Improve menstrual hygiene facilities at house hold level						
			Facilitate market availability of menstrual hygiene products supply						
			Deliver training on BCC/SBCC						
SO3: By 2020 ensure safe water from the point of source to consumption	Target 1: Increase number of households using drinking water from protected source from the baseline 57% to 100%	Increase using drinking water from protected source	Expansion of municipal water supply systems	% of households with access to safe water supply.	57	67	78	89	100
				% of households using safe narrow necked water storage container					
			Strengthening community based WASHCOs						
	Target 2: Increase effective correct and consistence use of household water treatment options from baseline 10% to 35%	Increase effective correct and consistence use of household water treatment	Provision of effective capacity building on water quality testing and sanitary risk assessment.	% of households use water treatment options	10	16	22.5	28	35
			Engage private sectors on provision and marketing of effective water treatment options						
			Facilitating different pathways for HWTS options						
			Awareness creation on household water treatment, proper handling and storage						

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	Target 3: Increase regulation of water treatment products from the baseline to 100%	Increase household water treatment products regulation	designate & strengthen the capacity of national laboratory in regulating water treatment products Properly implement the regulation guideline	Number of water treatment product granted market authorization						100
	Target 4: Increase proportion of improved water scheme implementing water safety plan from the baseline to 100%.	Increase implementation in improved water scheme	training for local actors on water safety plan Improve the capacity of water utilities	% of water improved schemes implementing water safety plan						100
	Target 5: Increase water supply system quality surveillance and regulation from the baseline to 100%	Increase water supply system quality surveillance and regulation	Train professionals on water quality testing Equip rural woreda's with portable water quality test kits Sensitize and enforce water safety proclamation and laws Establish water quality surveillance system.	% of water supply facilities regulated						100
SO4: By 2020 ensure basic WASH in all institutions	Target 1: Increase proportion of institutions with gender and disable sensitive complete improved WASH package from 20% to 60%.	Increase institutions with gender and disable sensitive complete improved WASH package	Construction and maintenance of gender and disable friendly complete WASH facilities (water, VIPL, handwashing and waste disposal pit) Promote proper hygiene and latrine utilization practice in institutions	% of schools with adequate gender and differently abled friendly latrines	20	30	40	50	60	
	Target 2: Increase institutional WASH surveillance and regulation	Increase institutional WASH	Establish and strengthen regular WASH institutional surveillance and regulation	% schools with access to improved water supply system						100

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	from the baseline to 100%	surveillance and regulation	system	Proportion of other institutions with solid and liquid waste management					
				Proportion of other institutions with access to safe water supply facilities					
				Proportion of other institutions with adequate gender and differently abled friendly latrines					
	Target 3: Increase proportion of health facilities implementing CASH (risk based WASH) and national health facility standards from the baseline to 100%.	Increase health facilities implementing CASH (risk based WASH) and national health facility standards	Implement CASH and national health facility standards	% of health facilities with adequate and gender friendly latrine facilities					100
				% of health facilities with adequate water supply system					
SO5: By 2020 ensure food safety from farm to fork	Target 1: Increase number of households implementing good hygienic practice from the baseline to 100%	Increase Good Hygienic Practice implementation at household level	Implement safe storage and handling of food at household level	% of households implementing Good Hygienic Practice					100
			Implement hygienic utensil handling and preparation area.						
			Conduct different trainings on food hygiene and safety at community level.						
	Introduce innovative technologies for proper food hygiene and safety								
Target 2: Increase institutional food safety surveillance and regulation from the baseline to 100%	Increase institutional food safety surveillance and	Conducting Comprehensive baseline survey and periodic researches on food service providers and street vendors		% of institutions regulated to implement food hygiene and safety					100

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		regulation	Capacitate regional regulatory bodies and strengthen coordination						
			Establish and Capacitate federal and regional food laboratory facility						
			Certifying and register all food establishments and food service providers in all value chains.						
Target 3: Increase number of institutions implementing Good Manufacturing Practice and other food safety management systems and Good Hygienic Practice from the baseline to 100%	Increase institutions implementing Good Manufacturing Practice and other food safety management systems		Develop national food hygiene and safety policy	% of institutions implementing good manufacturing practice and other food safety management system and GHP					100
			Endorse regulation tools (Food GMP GHP, HACCP guidelines and other different ISO standards)						
			Provide training for health inspectors on hygiene & safety of food.						
			Support and enforce institutions to establish internal quality assurance system						
Target 4: Increase surveillance and regulation of food products from the baseline to 100%.	Increase surveillance and regulation of food products		Sensitize and enforcing food hygiene and safety proclamation and laws	Number of food products granted market authorization					100
			Implement continual inspection and auditing of food products						
			Create early response and recall system from federal to kebele level.						

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			Confirm quality and safety standard of food through laboratory analysis.								
SO6: By 2020 reduce vector borne diseases.	Target 1: Increase environmental management for vector control by mobilizing communities from the baseline to 100%	Increase environmental management for vector control	Create awareness on vector control and the need for environmental management.	% of communities mobilized for environmental management of vector breeding sites						100	
			Mobilize communities to manage vector breeding sites								
	Target 2: Increase household hygiene by creating awareness at household level from the current baseline to 100%	Increase household hygiene	Create awareness at household level basic household hygiene	% of households implementing basic hygiene						100	
	Target 3: Increase biological vector control from the baseline to 43%.	Increase biological vector control	Strengthen and establish biological vector control developing institutions	Number of institutions developing biological vector controls	Number of regions implementing biological vector control						43
			Create awareness on necessity and use of biological vector control at community level								
			Implement biological vector control on selected regions								
SO7: By 2020 ensure safe and conducive working environment in all institutions.	Target 1: Increase number of institutions implementing occupational health and safety standards from the baseline to 100%.	Increase institutions implementing occupational health and safety standards	Create occupational health and safety awareness in all institutions	% of institutions Implementing occupational health and safety standards.						100	
			Implement occupational health and safety standards.	% of institutions regulated on occupational health and safety							
			Conduct occupational health and safety surveillance and regulation.								
		Increase									

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		implementation of HEH standards in the institutions							
SO8: By 2020 enable abatement of generation and exposure to sources of pollution.	Target 1: Increase the number of institutions that are emitting environmental pollutants (air, water, land and noises) below the limiting standard from the baseline to 100%.	Increase the number of institutions emitting environmental pollutants (air, water, land and noises) below the limiting standard	Support and enforce institutions to implement environmental management plan.	% of institutions implementing environmental management plan.					100
			Sensitize and enforce institutions to comply with pollutants regulation proclamation, laws and standards	Proportion of industries/factories applying Environment friendly production					
			Promote Environmental friendly production and environmental management plan						
			Capacitate institutions on Management of toxic and infectious wastes						
	Target 2: Increase institutional surveillance and regulation from the baseline to 100%	Increase institutional surveillance and regulation	Monitor institutions hazardous waste generation and chemicals management	% of institutions regulated					100
			Develop Institutional early warning system for release of hazardous and toxic substances	% of institutions regulated and monitored for hazardous waste management					
			Create awareness on early warning system for hazardous and toxic substances	Developed early warning system in place for release of hazardous and toxic substances					

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<p>SO9: By 2020 ensure empowered community through organized and promotional interventions.</p>	<p>Target 1: Increase awareness, attitude and behavior of the people towards targeted behavioral indicators of HEH from the baseline to 90%.</p>	<p>Increase awareness, attitude and behavior on hygiene and environmental health Increase community hygiene and environmental health practices</p>	<p>Awareness creation, attitudinal and behavior change on targeted hygiene and environmental health indicators Organize community members and provide capacity building interventions Strengthen community based development groups to improve implementation of hygiene and environmental health activities Conducting advocacy and social mobilization for influential leaders and decision makers on community empowerment Enhancing the capacity of religious leaders, clan leaders and other social networks.</p>	<p>Number of community development groups strengthened</p>					90
<p>SO10: By 2020 create reliable and enabling environment for hygiene and environmental health activities</p>	<p>Target 1: Develop and implement hygiene and environmental health viable structure from federal to kebele level.</p>	<p>Develop and implement hygiene and environmental health viable structure</p>	<p>Establishing appropriate structure at all level and sectors</p>	<p>Created hygiene and environmental health directorate</p>					
	<p>Target 2: Strength sector wide coordination, integration, networking and partnership.</p>	<p>Strength sector wide coordination, integration, networking and partnership.</p>	<p>Establishing and/or strengthening the hygiene and environmental health task force at federal and regional level and technical working groups for each of the</p>	<p>Number of sectoral working group organized and functional</p>					

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		domains							
		Design sector wide coordination and implementation framework on hygiene and environmental health issues							
		Strengthen WASH integration in related health and other relevant programs							
		Facilitate networking with Universities and research institutions.							
Target 3: Develop and put in action implementation guidelines for each domains of the strategy	Develop and put in action implementation guidelines for each domains of the strategy	Development of hygiene and sanitation implementation guidelines	Number of implementation guide lines developed						
		Development of HWTS and water quality surveillance implementation guideline							
		Development of HWT products regulation guideline							
		Development of food safety implementation guideline							
		Development of pollution control and regulation guideline							
Target 4: Human resource development and capacity building	Human resource development and capacity building	Fulfilling structure with skilled human resource at all level and sectors	Number of professionals trained						

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		Education and training of environmental health workers							
		Developing and/ or revising and using standardized guidelines and manuals to capacitate front line health workers and WDGs							
		TOT training cascading in all targets of the strategic objectives							
		Continuous professional development through certification and accreditation in collaboration with professional associations							
Target 5: Ensure adequate Finance for the implementation of the strategic objectives.	Ensure adequate Finance	Government commitment and allocation of funds.							
		Advocate donors and partners for funding							
Target 6: Create adequate and strengthen public and environmental Laboratories.	Create adequate and strengthen public and environmental Laboratories.	Establishing environmental lab at national and regional level							
		Provision of field testing kit at all levels							
Target 7: Ensure ongoing and continuous learning and research.	Ensure ongoing and continuous learning and research.	Create platform for continues learning and reporting	Number of researches and evidence generated on hygiene and environmental health						
		Organize annual multi stakeholder learning events							
		Facilitate and support research undertaking and survey							

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			Continuously innovate, adopt, and implement new technologies.						
Target 8: Strengthen Monitoring and evaluation.	Strengthen Monitoring and evaluation.		Conduct supportive supervision						
			Establish baseline and conduct mid and end term performance evaluation						
			Conduct sector wide HEH activities inventory						

N.B. The strategic targets that leave as empty are those targets doesn't have baseline data

1. RESEARCH, LEARNING AND SHARING

The natural resources such as water, land and air are continuously threatened by industrialization, population growth and urbanization. Pollution of these resources expose to adverse and chronic health problems, climate change, land degradation and water resources pollution. Therefore it's important that the ministry of health have to make special organizational, financial and human resource arrangement to enhance research, learning and sharing through collaboration with higher teaching institutes, and research centers, for new findings, innovative ideas and solutions for the adverse environmental outcomes.

2. Program coordination and planning

Hygiene and environmental health is a cross cutting program with public health disciplines such as nutrition, maternal and child health, HIV/AIDES etc.; education, water, agriculture, industry, tourism, and other development issues are somehow interrelated with environment and health. Coordination, aligned planning and information exchange, is essential to avoid duplication of work, enhancement of learning and for efficient fund management for a successful and sustained result.

The Hygiene and Environmental Health Strategy (HEHS) advocates strengthening the hygiene and environmental health program coordination in the federal, regions, zones and woredas through capacity building, use of CLTSH, and development of WaSH plans identify priority problems, providing strategic solutions and monitoring implementation of the solutions.

3. Resources

3.1. FUNDING REQUIREMENT

The Government of Ethiopia expends immense budget for salary and operational costs. However, funding is needed for capacity building of sectors from federal to grass root levels.

The total budget that requires for the implementation of hygiene and environmental health activities at all levels of the health system and sectors that have input for the achievement of these strategy is estimated to be 12,533,000,000.00 (Twelve billion five hundred thirty three million ETB).

3.2. Budget by each Strategic Initiatives

Strategic Objectives	Targets	Strategic Initiatives	Estimated Budget
SO1: By 2020 achieve access to adequate and equitable sanitation for all.	Target 1: Increase proportion of households with access to improved latrines and hand washing facilities from 28% to 82%.	Increase access to improved latrines and hand washing facilities	1,517,000,000.00
	Target 2: Increase proportion of latrine utilization from 71% to 100%	Increase latrine utilization	20,000,000.00
	Target 3: Increase proportion of Open Defecation Free (ODF) and verified Kebeles from 18% to 82%	Increase Open Defecation Free (ODF) verified Kebeles	350,000,000.00
	Target 4: Proportion of households with integrated solid waste management service from 22% to 82%	Increase integrated solid waste management service	70,000,000.00
	Target 5: Proportion of households with integrated liquid waste management service from 50% to 80%	Increase integrated liquid waste management service	1,000,000.00
	Target 6: Proportion of household latrines emptied and properly disposed from baseline to 100%	Increase latrines emptied and properly disposal services	20,000,000.00
SO2: By 2020 promote basic hygiene behavior in order to control related communicable diseases.	Target 1: Increase the number of households practicing hand washing with soap/substitute at all critical moments from the present 1% to 82%	Increase hand washing practice with soap/substitute at all critical moments	10,000,000.00
	Target 2: Increase the number of people practicing face, oral and body hygiene from 58.3% to 100%.	Increase face, oral and body hygiene practice	10,000,000.00
	Target 3: Increase the number of women practicing menstrual hygiene from 46% to 100%.	Increase menstrual hygiene management practices	26,000,000.00
SO3: By 2020 ensure safe water from the point of source to consumption	Target 1: Increase number of households using drinking water from protected source from the baseline 57% to 100%	Increase using drinking water from protected source	11,000,000.00
	Target 2: Increase effective correct and consistence use of household water treatment options from baseline 10% to 35%	Increase effective correct and consistence use of household water treatment	17,000,000.00
	Target 3: Increase regulation of household water treatment products from the baseline to 100%	Increase household water treatment products regulation	51,000,000.00

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	Target 4: Increase proportion of improved water scheme implementing water safety plan from the baseline to 100%.	Increase implementation in improved water scheme	15,000,000.00
	Target 5: Increase water supply system quality surveillance and regulation from the baseline to 100%	Increase water supply system quality surveillance and regulation	2,565,000,000.00
SO4: By 2020 ensure basic WASH in all institutions	Target 1: Increase proportion of institutions with gender and disable sensitive complete improved WASH package from 20% to 60%.	Increase institutions with gender and disable sensitive complete improved WASH package	2,505,000,000.00
	Target 2: Increase institutional WASH surveillance and regulation from the baseline to 100%	Increase institutional WASH surveillance and regulation	10,000,000.00
	Target 3: Increase proportion of health facilities implementing CASH (risk based WASH) and national health facility standards from the baseline to 100%.	Increase health facilities implementing CASH (risk based WASH) and national health facility standards	50,000,000.00
SO5: By 2020 ensure food safety from farm to fork	Target 1: Increase number of households implementing GHP from the baseline to 100%	Increase Good Hygienic Practice implementation at household level	21,000,000.00
	Target 2: Increase institutional food safety surveillance and regulation from the baseline to 100%	Increase institutional food safety surveillance and regulation	71,000,000.00
	Target 3: Increase number of institutions implementing Good Manufacturing Practice and other food safety management systems and Good Hygienic Practice from the baseline to 100%	Increase institutions implementing Good Manufacturing Practice and other food safety management systems	10,000,000.00
	Target 4: Increase surveillance and regulation of food products from the baseline to 100%.	Increase surveillance and regulation of food products	12,000,000.00
SO6: By 2020 reduce vector borne diseases.	Target 1: Increase environmental management for vector control by mobilizing communities from the baseline to 100%	Increase environmental management for vector control	8000000
	Target 2: Increase household hygiene by creating awareness at household level from the current baseline to 100%	Increase household hygiene	5,000,000.00
	Target 3: Increase biological vector control from the baseline to 43%.	Increase biological vector control	30,000,000.00
SO7: By 2020 ensure safe and conducive working environment in all institutions.	Target 1: Increase number of institutions implementing occupational health and safety standards from the baseline to 100%.	Increase institutions implementing occupational health and safety standards	17,000,000.00

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SO8: By 2020 enable abatement of generation and exposure to sources of pollution.	Target 1: Increase the number of institutions that are emitting environmental pollutants (air, water, land and noises) below the limiting standard from the baseline to 100%.	Increase the number of institutions emitting environmental pollutants (air, water, land and noises) below the limiting standard	19,000,000.00
	Target 2: Increase institutional surveillance and regulation from the baseline to 100%	Increase institutional surveillance and regulation	4,000,000.00
SO9: By 2020 ensure empowered community through organized and promotional interventions.	Target 1: Increase awareness, attitude and behavior of the people towards targeted behavioral indicators of hygiene and environmental health from the baseline to 90%.	Increase awareness, attitude and behavior on hygiene and environmental health	21,000,000.00
SO10: By 2020 create reliable and enabling environment for hygiene and environmental health activities	Target 1: Develop and implement hygiene and environmental health viable structure from federal to kebele level.	Develop and implement hygiene and environmental health viable structure	1,000,000.00
	Target 2: Strength sector wide coordination, integration, networking and partnership.	Strength sector wide coordination, integration, networking and partnership.	4,000,000.00
	Target 3: Develop and put in action implementation guidelines for each domains of the strategy	Develop and put in action implementation guidelines for each domains of the strategy	13,000,000.00
	Target 4: Human resource development and capacity building	Human resource development and capacity building	1,023,000,000.00
	Target 5: Ensure adequate Finance for the implementation of the strategic objectives.	Ensure adequate Finance	2,000,000.00
	Target 6: Create adequate and strengthen public and environmental Laboratories.	Create adequate and strengthen public and environmental Laboratories.	4,000,000,000.00
	Target 7: Ensure ongoing and continuous learning and research.	Ensure ongoing and continuous learning and research.	13,000,000.00
	Target 8: Strengthen Monitoring and evaluation.	Strengthen Monitoring and evaluation.	11,000,000.00
Total Budget			12,533,000,000.00

3.3. SOURCE OF FUND

The principal funding sources are:

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- Government allocation: Salary of staff, production of communication materials, capacity building support
- NGOs, CWA, Partner working on HEH: Water Supply, Study and design, capacity building and management support, Sanitation and urban environmental improvements will include dislodging equipment and facilities, latrine sludge/septage treatment plant and public toilets construction, and development of wastewater management systems in selected locations, Institutional WaSH support to improving water supply and sanitation facilities and hygiene practices at health institutions as well as Water Quality Monitoring

4. ROLES and Responsibilities of Government and Partner Organizations

Each health sector division will play a leadership role in coordinating partners to strengthen capacity and drive for coordinated hygiene and environmental health responses.

4.1. Role and Responsibilities of Federal Ministry of Health (FMOH)

Ministry of Health with leadership and coordination role of Hygiene and Environmental Health program would have the following roles and responsibilities:

- Create awareness, enhance knowledge and create the enabling environment for the advancement of Environmental health
- develops strategies, guidelines, protocols, manuals, print/electronic, tools, strategies, IEC, job aids
- Ensure the proper utilization of the strategy by all stakeholders who are engaged on hygiene and environmental health interventions
- Support Regional Health Bureaus and other Sector Offices to establish a viable H&EH program, adopt the strategy and avail the necessary resources (human, material, financial).
- Establish and follow a robust H&EH monitoring and evaluation system in collaboration with key stakeholders.
- Provide special support for emerging regions to implement the strategy in the context of pastoralist and agro-pastoralist context

4.2. Role and Responsibilities of Regional Health Bureaus

Regional Health Bureaus with leadership and coordination of respective Hygiene and Environmental Health section will have the following roles and responsibilities:

- Create awareness on how to utilize the strategy in collaboration with regional partners using available communication strategies

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- Employ the strategy to develop any materials such as print/electronic, tools, strategies, IEC, job aids, etc. Ensure proper utilization of the strategies by all stakeholders who have engaged on hygiene and environmental health intervention in their respective regions and
- Support zonal/Woreda Health Department/ Offices and other sector offices who work hygiene and environmental health to adopt/adapt the strategy in availing resources including manpower and financial support

4.3. Role and Responsibilities of Zonal/ Woreda Health Department/ Offices

- Familiarize the strategy with health programmers and health communicators
- Collaborate with local partners to develop culturally-relevant hygiene and environmental health
- Make use of the strategy to develop promotional materials such as print/ electronic, tools, strategies, IEC, job aids, etc.
- Provide support to guide utilization of the strategy for those involved in hygiene and environmental Health
- Provide support to Woreda Health Offices, PHCU and other sector offices to adopt and adapt the strategy and in availing resources – human resource and financial

4.4. Role and Responsibilities of Primary Health Care Units

All actors in primary health care units, such as health centers, Health Extension Posts (with HEWs) and Health Development Army (HDA) and kebele health committees would use this strategy to conduct hygiene and environmental health at community and household level, along with the following roles and responsibilities:

- Make use of the strategy to follow and develop culturally-relevant promotional materials
- Provide support in understanding and implementing the strategy
- Ensure that the strategy links and guides HEWs in their day to day hygiene and environmental health efforts

As shown in the following table the roles and responsibilities of each agency in each category are indicated. The local actors however, have to also be supported from sectors at federal, regional and woreda level stakeholders. Thus the roles and responsibilities of the key actors in Water, Hygiene and Environmental health programs are shown in the following table.

Table 2: Stakeholders Analysis for hygiene and environmental health strategy

Sectors	Roles and Responsibly	Coordinating mechanism
Agencies accountable to FMOH		<ul style="list-style-type: none"> ➤By involving in H& EH Task force Member ➤By being membership of emergency task force To incorporate WaSH activities
FMHACA	<ul style="list-style-type: none"> • Prepare and endorse national food safety policy, proclamation, regulation, guidelines, standards in collaboration with other sectors • Identify and register all food producers and food service providers including street vendors • Audit food and drinking producers, vendors and food service providers • Ensure the safety of food and water products by using continual testing and conformation throughout the value chain 	<ul style="list-style-type: none"> ➤By joint planning, implementation ➤and monitoring of Wash activities ➤By involving in review of WaSH Programme ➤By encouraging to participate and lead WaSH related researches ➤By supporting the dissemination and documentation of research findings ➤By sponsoring WaSH related researches
PFSA	<ul style="list-style-type: none"> • Purchase materials for the proper implementation of WaSH activity 	
EPHI	<ul style="list-style-type: none"> ➤Conduct study and research in the area of hygiene and environmental health ➤Conduct pre emergency WaSH infrastructures assessment ➤Provide support on emergency situation 	
MOWIE	<ul style="list-style-type: none"> ➤Provide adequate and potable drinking water supply ➤Conducting water quality monitoring on regular basis ➤Plan and Strengthen implementation of integrated liquid waste 	<ul style="list-style-type: none"> ➤By involving in H& EH Task force ➤By joint planning, implementation and monitoring of WaSH activities

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	<p>management system</p> <ul style="list-style-type: none"> ➤ prepare policy, strategy guidelines and regulations as well as initiate the implementation of waste water management ➤ promote appropriate waste water management systems and technologies ➤ monitor and evaluate implementation of waste water management ➤ capacity building on waste water management 	<ul style="list-style-type: none"> ➤ By involving in review meeting of hygiene and environment health ➤ By conducting joint supervision ➤ By Sharing sanitary assessment and water quality test results ➤ WQMS ➤ In the construction of water supply systems in the health facilities ➤ Working in coordination for WaSH facilities access, utilization and sustainability issues
<p>MOE</p>	<ul style="list-style-type: none"> ➤ fulfill WaSH facility demand for schools ➤ establish and strengthen WaSH club at schools ➤ Provide hygiene education to school community ➤ establish WaSH demonstration site in primary and secondary schools ➤ conducting Joint supervision with MOH ➤ Conducting operational research and assessment in relation WaSH Programme ➤ Providing capacity building on new sanitation technologies and new approaches of WaSH promotion ➤ Producing skilled and competent environmental health professionals 	<ul style="list-style-type: none"> ➤ By involving in H& EH Task force Member ➤ By being membership of task force that involve WaSH activities ➤ By joint planning, implementation and monitoring of Wash activities ➤ In review of Wash activities ➤ Encourage Universities to involve in conducting researches regarding to WaSH ➤ Financing the documentation and dissemination of WaSH related researches

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<p>MOLSA</p>	<ul style="list-style-type: none"> ➤ Sensitizing workers and employers about occupational safety ➤ establish safety standards for manufacturing enterprises and institutions ➤ Inspecting working environment in institutions and enterprises for complying with safety standards ➤ promoting hygiene and sanitation for homeless citizens and orphanage 	<ul style="list-style-type: none"> ➤ By involving in H& EH Task force Member ➤ By being membership of task force that involve Environmental health activities ➤ By joint planning, implementation and monitoring of WaSH facilities in institutions and enterprises ➤ By involving In review of Wash activities ➤ By cooperating in data collection ,documentation and dissemination about safety of workers
<p>MOANR</p>	<ul style="list-style-type: none"> ➤ controlling and monitoring the application of pesticides and herbicides in to farms to protect environmental pollution (water, food and soil) with toxic chemicals ➤ promoting biogas and composting to reduce indoor air pollution and solid wastes respectively 	<ul style="list-style-type: none"> ➤ By joint planning, implementation and monitoring of Environmental health activities ➤ By involving in review of hygiene and environmental health activities ➤ By conducting joint supervision in emergency preparedness and mitigation activities
<p>MEFCC</p>	<ul style="list-style-type: none"> ➤ Coordinate measures to ensure that the environmental objectives provided under the Constitution are realized. ➤ Establish a system for environmental impact assessment of public and private projects, as well as social and economic development policies, strategies, laws, and programmers ➤ In cooperation with competent agencies, carry out studies to combat desertification and /or mitigate the , effects of drought and prepare corrective measures and create favorable conditions for their 	<ul style="list-style-type: none"> ➤ By involving in H& EH Task force Member ➤ By being membership of task force Related to environment ➤ By joint planning, implementation and monitoring of Wash activities ➤ By involving in review of hygiene and environmental health Programme

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	<p>implementation</p> <ul style="list-style-type: none"> ➤ Set environmental standards and ensure compliance with those standards ➤ Formulate environmental safety policies and laws on the production, importation, management and utilization of hazardous substances or wastes as well as on the development of genetically modified organisms and the importation, handling and utilization of genetically modified and alien species, and upon approval, ensure their implementation ➤ Establish an environmental information system that promotes efficiency in environmental data collection, management and use ➤ Promote and provide non-formal environmental education programs, and cooperate with the competent agencies with a view to integrating environmental concerns in the regular educational curricula ➤ Promote best available and environmental friendly technologies to protect the environmental pollution. ➤ Collaborate sectors to control environmental pollution 	<ul style="list-style-type: none"> ➤ By conducting joint operational research and assessment on environmental health and environmental pollutions ➤ In data collection ,documentation and dissemination
<p>Ethiopian Standardization Agency</p>	<ul style="list-style-type: none"> ➤ establishing and revising health related standards together with health sector (Water, food and air) 	<ul style="list-style-type: none"> ➤ By involving in H& EH Task force Member ➤ By being membership of task force of WaSH related standard setting ➤ By involving in review of Wash activities ➤ by sharing WaSH related operational research

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		findings
MOI	<ul style="list-style-type: none"> ➤ complying with environmental health standards while establishing manufacturing enterprises ➤ monitoring manufacturing enterprises to comply with sanitation, hygiene and safety standards 	<ul style="list-style-type: none"> ➤ By involving in H& EH Task force Member ➤ By being membership of task force involving WaSH activities ➤ By joint planning, implementation and monitoring of WaSH activities ➤ By involving in review of Wash activities ➤ In the area of study, research undertaking and dissimulation of new research findings ➤ by sharing WaSH related operational research findings
MOT	<ul style="list-style-type: none"> ➤ ensuring compliance of health standards before issuing license of trading ➤ monitoring trade enterprises in collaboration with relevant stakeholders including health sector 	<ul style="list-style-type: none"> ➤ By involving in H& EH Task force Member ➤ By being membership of task force that set standards of food and drinking establishments ➤ involving WaSH activities ➤ By joint planning, implementation ➤ and monitoring of Wash activities ➤ By involving in review of Wash activities ➤ By involving operational researches rated to premises. ➤ By sharing WaSH related operational research

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		findings
MO transport	<ul style="list-style-type: none"> ➤Promoting ODF by sensitizing and controlling transporters not to let clients for open defecation ➤Fulfilling WaSH facilities to Bus stations 	<ul style="list-style-type: none"> ➤By involving in review of Wash activities ➤By sharing WaSH related operational research findings
MO Industry	<ul style="list-style-type: none"> ➤Collaborate to monitor and control environmental pollutions related with industrial waste ➤Strengthening environmental, social impact assessment and environmental management plan ➤monitoring and evaluation of the implementation of environmental, social impact assessment and environmental management plan ➤mainstreaming environmental team/representative expert at all industries ➤enforce laws regarding industrial related environmental and social issues 	<ul style="list-style-type: none"> ➤By joint planning, implementation and monitoring of Wash activities ➤By involving in review of Wash activities ➤By involving in WaSH related case studies ➤By sharing WaSH related operational research findings
MOWCA	<ul style="list-style-type: none"> ➤creating awareness on WaSH to women ➤organizing women into WDA (Women Development Army) to promote and utilize WaSH services 	<ul style="list-style-type: none"> ➤By joint planning, implementation and monitoring of Wash activities ➤By involving in review of Wash activities ➤By involving in WaSH related operational researches and assessments ➤By involving in supervision of In emergency preparedness and that require WaSH intervention

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<p>MoUDH</p>	<ul style="list-style-type: none"> ➤Developing master plans of towns and cities that take into consideration solid waste management ➤encourage private sectors engagement in integrated solid waste management ➤provide capacity building related with integrated solid waste management ➤prepare laws and regulation, strategies, standards, and implementation manuals on integrated solid waste management ➤monitoring and strengthen the implementation of legal frameworks related with integrated solid waste management ➤promote appropriate integrated solid waste management systems and technologies 	<ul style="list-style-type: none"> ➤By involving in H& EH Task force Member ➤By being membership of task force that incorporate WaSH activities ➤By joint planning, implementation and monitoring of Wash activities ➤By involving in review of Wash activities ➤By involving in operational researches related to urban setting ➤By sharing WaSH related operational research findings by involving in operational researches related to urban setting ➤Cooperating In data collection ,documentation and dissemination
<p>MOCT</p>	<ul style="list-style-type: none"> ➤Conducting inspection and supervision at service providing facilities (hotels, motels, loges, cultural halls, restaurants) ➤Awareness creation on hygiene and environmental health associated with communicable diseases ➤Conduct research and interventions on harmful waste management ➤Promoting hygiene and sanitation activities of tourism sites ➤Provide sustainable and adequate water, sanitation and hygiene for tourist sites, heritages and conservation sites 	<ul style="list-style-type: none"> ➤By involving in H& EH Task force Member ➤By joint planning, implementation and monitoring of Wash activities ➤By involving in review of Wash activities ➤By involving in WaSH related operational researches, assessments and survey ➤By sharing WaSH related operational research findings

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	<ul style="list-style-type: none"> ➤ Building effective waste management systems for tourist sites, heritages and conservation sites 	<ul style="list-style-type: none"> ➤ Cooperating in data collection ,documentation and dissemination
Development partner	<ul style="list-style-type: none"> ➤ Providing technical and financial support to WaSH programme ➤ Introducing new sanitation technologies and approaches of WaSH promotion ➤ Sharing best experiences of WaSH of other countries success ➤ Providing capacity building on WaSH to professionals at all levels 	<ul style="list-style-type: none"> ➤ By involving in H& EH Task force Member ➤ By joint planning, implementation and monitoring of Wash activities ➤ By involving in review of Wash activities ➤ By involving in WaSH related operational researches, assessments and survey ➤ By sharing WaSH related operational research findings ➤ Cooperating in data collection ,documentation and dissemination
NGOs working in WaSH	<ul style="list-style-type: none"> ➤ Providing technical and financial support to WaSH programme ➤ Introducing new sanitation technologies and approaches of WaSH promotion ➤ Implementing WaSH strategy in project areas ➤ Sharing best experiences of other countries WaSH success ➤ Providing capacity building on WaSH to professionals at all levels 	<ul style="list-style-type: none"> ➤ By involving in H& EH Task force Member ➤ By joint planning, implementation and monitoring of Wash activities ➤ By involving in review of Wash activities ➤ By involving in WaSH related operational researches, assessments and survey by sharing WaSH related operational research finding ➤ By cooperating in data collection ,documentation and dissemination

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<p>Faith based organization</p>	<ul style="list-style-type: none"> ➤mobilizing communities to keep personal and environmental hygiene ➤supporting health extension workers in educating households to fulfill health extension packages ➤arranging meetings to mobilize communities at religious institutions 	<ul style="list-style-type: none"> ➤By joint planning, implementation and monitoring of Wash activities ➤By involving in review of Wash activities ➤By sharing WaSH related operational research findings
<p>Administration (Region, zone, woreda and kebele)</p>	<ul style="list-style-type: none"> ➤Mobilizing executives to meet SDG including WaSH related targets ➤support and involve in implementation of Health Extension Programme ➤Support health sector to implement Woreda transformation plan 	<ul style="list-style-type: none"> ➤By involving in review of Wash activities ➤By sharing WaSH related operational research findings joint supervision in emergencies that require WaSH interventions

5. MONITORING AND EVALUATION

All organizations who have a designed goal and a set program process will want to know if they are on the right track in achieving their goals within the set time period. The target set for Hygiene and environmental Health program is to achieve 100 % improvement on HEH domains in the strategy.

Table 3: Monitoring and Evaluation Indicators

Parameters	Indicators	Source
Access to adequate and equitable sanitation for all	% of households with access to improved latrine	HMIS
	Number of sanitation marketing centers established	Survey
	% of open defecation free kebeles	HMIS
	% of households properly utilizing latrine facilities	HMIS
	% of households practicing proper handling and storage of solid waste	HMIS
	% of households practicing proper handling and disposing of liquid waste	Report
	% of household latrines emptied and properly disposed	Report
Promote basic hygiene behavior	% of population practicing hand washing with soap/substitute at critical moments	Survey
	% of population practicing face washing with soap at least once a day	Survey
	% of population practicing oral hygiene during morning and evening time	Survey
	% of women practicing menstrual hygiene	Survey
	% population with basic knowledge personal hygiene	Survey
Ensure safe water from point of source to consumption	% of households with access to safe water supply.	HMIS
	% of households using safe narrow necked water storage container	Survey
	% of households use water treatment options	HMIS
	Number of household water treatment product granted market authorization	Report
	% of water improved schemes implementing water safety plan	Survey
	% of water supply facilities regulated	report
Ensure basic WASH in all institutions	% of schools with adequate gender and differently abled friendly latrines	Survey
	% schools with access to improved water supply system	HMIS
	% of health facilities with adequate and gender friendly latrine facilities	Survey
	% of health facilities with adequate water supply system	HMIS

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	Proportion of other institutions with adequate gender and differently abled friendly latrines	HMIS
	Proportion of other institutions with access to safe water supply facilities	Report
	Proportion of other institutions with solid and liquid waste management	Report
Ensure food safety from farm to fork	% of households implementing GHP	Survey
	% of institutions regulated to implement food hygiene and safety	Survey
	% of institutions implementing good manufacturing practice and other food safety management system and GHP	Survey
	Number of food products granted market authorization	Report
Reduce vector born disease	% of communities mobilized for environmental management of vector breeding sites	Report
	% of households implementing basic hygiene	Survey
	Number of institutions developing biological vector controls	report
	Number of regions implementing biological vector control	Survey
Ensure safe and conducive working environment	% of institutions Implementing occupational health and safety standards.	Survey
	% of institutions regulated on occupational health and safety.	Report
Enable abatement generation and exposure to pollution	% of institutions implementing environmental management plan.	Report
	% of institutions regulated	Report
	Proportion of industries/factories applying Environment friendly production	Survey
	% of institutions regulated and monitored for hazardous waste management	Report
	Developed early warning system in place for release of hazardous and toxic substances	Document
Empowering community through organized promotional interventions	Number of community development groups strengthened	Report
Create reliable and enabling environment for hygiene and environmental health program	Created hygiene and environmental health directorate	Document
	Number of sectoral working group organized and functional	Report
	Number of implementation guide lines developed	Document
	Number of professionals trained	Report
	Number of researches and evidence generated on hygiene and environmental health	Document

6. ANNEX

6.1. Annex 1: Strategic Result framework

A result is a describable or measurable developmental change. The logical framework below indicates the process, outcome and impact of community centered HYGIENE AND ENVIRONMENTAL HEALTH program in Ethiopia.

Program Process		Program results	
Output	Activity indicators	Outcome	Impacts
1. Households practice safe water transport, storage, handling and safe use is practiced	Households will be advised on the merits of making water safe for drinking and food preparation through: <ul style="list-style-type: none"> • Transporting water in a closed container. • Store water in a narrow necked, screw cupped container • Wash water transport and storage container thoroughly at least once in every 3rd. day • Use chlorine product to disinfect water in storage • Water drinking utensils such as cups are kept off the ground surface, washed and stored on shelves rim down wards. 	All household will use clean water transport and water storage with a screw cup and use chlorine bleach for maximum safety.	Disease related to contaminated water such as diarrhea, giardiasis , amoeba etc are controlled
2. Household construct an improved latrine, with cleanable floor, well plastered superstructure and tight squat hole cover	Household will be made aware on the relationship of human feces to disease transmission not only to the household but to the whole community. Household will also be advised on: <ul style="list-style-type: none"> • Sitting and construction of a functional latrine which would resist collapse during rainy season and termites • Households will also be explained the importance of each part of a latrine such as the latrine (cleanable or washable), squat hole cover, walls, roofs and doors which are necessary for disease prevention, comfort, dignity etc., 	All households in a community have clean, safe and dignified improved sanitation facility utilized by everyone in the family and open defecation is made history.	Fecal oral disease such as helminthes, giardiasis, typhoid etc and soil based parasitic infection such as hook worm transmission is eliminated

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	<p>When the source of water is protected and available at homestead level or at short distance from the house water consumption is increased, hygiene enhanced and water contamination is also reduced. Therefore:</p> <ul style="list-style-type: none"> • Communities will be mobilized to plan in participating the development for a safe water supply • Conduct periodic water quality monitoring program to safe guard communities from using contaminated water and to maintain safety standards. • Disinfect water sources with chlorine solution whenever necessary or advised by water quality test result. 		
<p>3. Households practice hand washing with soap or a substitute at all critical moments</p>	<ul style="list-style-type: none"> • To place a hand washing device near latrines or kitchens to remind them the practice • Use soap or ash or sand to rub the hands to remove dirt • Filling the hand washing device with water 		
<p>4. Solid and Liquid waste properly managed and waste recycling and reuse practiced</p>	<p>Households are advised on the benefits and harm of solid and liquid waste products generated at household level. The proper management will be on:</p> <ul style="list-style-type: none"> • The benefits of solid and liquid waste if used as natural product for soil conditioning, energy (fire) use, biogas generation and watering plants. • The importance of managing solid and liquid waste at point of generation in order to avoid community environmental pollution • Demonstrate how waste is segregated into compostable and non-compostable items and how composting processed • Advise households on how to manage liquid waste in a simple seepage pit with local grass grease filters. 	<p>All households in a community practice safe solid and liquid waste handling, process for use and dispose properly.</p>	<p>Diseases transmitted through wasted and environmental pollution problem is eliminated</p>

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	<ul style="list-style-type: none"> • Encourage households to clean the compound from any debris and use the waste as compost mix or spread in the backyard farm. 		
<p>5. Households practice proper food protection</p>	<p>Households should be able to understand that food contamination is eminent with poor handling and storage.</p> <ul style="list-style-type: none"> • People should know where the food is coming from. If the source is contaminated then it will also contaminate surfaces other than being a health hazard. • Cooks in the household should keep all food contact surfaces such as cutting board, <i>moseb</i>, or food eating utensils such as plates, spoons and forks; water drinking utensils such as glasses, tin can etc. • Household members should also know on how to store and heat leftover food. • Household have to be encouraged the cultural food preservation methods of drying meat, washing and smoking milk storage, adding ash in to grain storage to control grain bugs, raising grain storage from the ground to control rats etc. • Household should be advised again and again to wash their hands with soap or ash before touching any food for preparation, eating or feeding. • Household should be encouraged to have a storage shelf made from wood and plastered with mud as introduced by HEWs in Kebeles for food, food utensils storage. 	<p>All households in the community practice proper food protection and storage to Safeguard household members especially children from having health problem and prevent food wastage</p>	<p>The household members and the community at large are protected from Food borne diseases and outbreaks.</p>
<p>6. Domestic Hygiene including ventilation and lighting improved</p>	<p>The housing condition in Ethiopia especially in the rural and poor neighborhoods in urban areas is poor. Overcrowding due to space problem; lack of separate kitchen, food storage and in some rural communities co habiting with animals, lack of ventilation and lighting, exasperate the situations. Therefore household should be encouraged and mobilized:</p>	<p>All community members live in a comfortable and sanitary house.</p>	<p>Communicable disease transmission as a result of overcrowded condition such as respiratory disease,</p>

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	<ul style="list-style-type: none"> • To add more rooms when constructing a new house or modify existing house so that overcrowding is minimized. • Households will also be motivated to have a separate barn for their animals and break the cultural belief that animals need human warmth and vice versa. • Household will be encouraged to open windows of appropriate size or open several holes at the eve of the house to let fresh air in the house and also provide more natural light. • Households will also be advised to smoothly plaster and paint their house with available resources such as mud or dung and painted with wood ash paste, calcium carbonate (<i>nora</i>) to discourage breeding and hiding of bedbugs and other insects. 		<p>scabies and other zoonotic diseases are eliminated.</p>
<p>7. Rats, insects and other vermin of public health importance are controlled</p>	<p>Traditional housing have no windows for ventilation, hence, the houses are dark, smell bad, and encourage rats and other vermin to breed and hide. Overcrowded condition increase heat and humidity conducive for insects such as body louse, bed bugs, and rats. Evidences from local survey indicate that rats are heartfelt problems to the extent that community members thought that they are unavoidable. “Rats and death are unavoidable phenomena” Rats are abundant so is infestation with fleas. Since beliefs such as this are exposing the general public a sanitary measure will be needed to:</p> <ul style="list-style-type: none"> • All food storage especially grains must be kept at least 20 cm off the floor. • Mobilize communities improve the housing conditions especially unorganized storage. • Rats should be denied food and watery product and a shelter to nest. • Lighting the house through windows and providing sky light using transparent sheet will be encouraged • Unnecessary growth of bushes, water ponds near houses should be cleared or filled 	<p>All households discourage rat and insect breeding and live in a sanitary house.</p>	<p>No disease transmission such as trachoma, malaria, etc and people living in dignity is enhanced</p>

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	<p>with earth to avoid the breeding of insects and mosquitoes.</p> <ul style="list-style-type: none"> • Households are mobilized to control flies through eliminating breeding areas such as removing compostable waste product, cow dung and covering pit latrines 		
<p>8. Indoor air pollution is controlled</p>	<p>The cause of ARI in children, eye sight problem of mothers is suspected to be a result of indoor air pollution and heat exposure. The pollution problem resulted from using unprocessed biomass fuel such as wood and dung in the households. This problem will be tackled through</p> <ul style="list-style-type: none"> • Mobilization of households to build a local energy saving/smokeless stove with chimney or those who can afford to buy cement stove. • Households cook in separate kitchens to minimize exposure to other members of the households. • Raise the smokeless/energy saving stove above ground to prevent burn of toddlers • Kitchen or any cooking area to be well ventilated through windows or opening at the eve. 	<p>All households in the community use smokeless energy saving stove in a well ventilated kitchen</p>	<p>ARI problem and eye inflammation as a result of indoor air pollution and heat is eliminated.</p>
<p>9. Health, education and detention institutions HYGIENE AND ENVIRONMENTAL HEALTH conditions improved with basic services</p>	<p>Schools, health facilities and prisons are organizations are part of communities. All represent large population segment and deserve optimum Water, sanitation and hygiene services will have to be enhanced Therefore:</p> <ul style="list-style-type: none"> • Communities will form a parent and teacher student committee to change things which are within their abilities and capacities. • The student and prison population will also be mobilized using CLTSH triggering tool to improve the sanitation and hygiene conditions • Advocacy with Government will be enhanced to provide adequate water and sanitation services in the institutions. 	<p>WaSHproportion of Schools with functional WaSH services proportion of Health Services with functional WaSH services proportion of detention centers with functional WaSH services</p>	<p>Safe behavior and practice result in improved health and wellbeing.</p>

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<p>10. Emergency preparedness at community level enhanced</p>	<p>Community may be exposed to emergencies such as disease epidemics, earth quake, fire etc where in this case communities and government entities have some preparedness. Community resource People, students, HEWs, WaSHCOs, PHCU staff etc will be trained on:</p> <ul style="list-style-type: none"> • Site selection for emergency camps • Preparations of solid waste pit, trench latrines and hand washing stations • Arrangement of water supply complete with disinfection facility • Preparation and arrangement of cloth lines to expose bedding materials and clothes to the sun • Establishment of first aid station, ambulatory service 	<p>proportion of well managed disaster incidences incidence of injury in a given community due to disaster</p>	<p>Disease outbreaks, injuries and death eliminated.</p>
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6.2. ANNEX 2: Key Critical Barrier Analysis

Existing/Current H and EH Behavior	Feasible or do-able-behavior	Ideal behavior
1. Sanitation		
1.1. Excreta Disposal		
1.1.1. Many people still defecate in the open	◆ People can use simple methods (cat method) and cover their feces to prevent any access by flies and animals	Everyone in a community use an improved latrine which is cleanable and that which lasts longer, protect the users from disease and that which all household family are comfortable and proud to have and use This ultimately lead us to have open defecation free (ODF) communities.
1.1.2. Most of the existing Latrines are unimproved, not providing adequate privacy	◆ Even if people can't construct improved latrine with slabs of concrete available latrines can be transformed to have the features of an improved type with local materials	
1.1.3. People in urban and rural communities don't dispose child feces properly	◆ People can help child defecate on leaves, paper, and broken clay and dispose it in latrine or cover it with soil to deny fly access.	
1.1.4. Those who own and use latrine don't keep their latrine clean, cover squat holes and maintain it regularly	<ul style="list-style-type: none"> • Latrine floors can be made with dung or mud to make it smooth and cleanable • latrine squat holes can be covered with any available discarded household materials • Pot makers in the community can easily shape clay cover for squat holes 	
1.1.5. Significant households constructed their own latrine but not use it consistently.	<ul style="list-style-type: none"> • Converting the existing latrines to improved latrines • Make more accessible by locating the latrine within a yard • Upgrade the superstructure of latrine to enable privacy 	Everyone own water courage latrine inside of a house
1.1.6. Latrine is not considered part of the living house	<ul style="list-style-type: none"> • Households can use their house building skill to also construct proper latrine • Households can make the latrine floor, walls etc cleanable and comfortable using local materials that will not cost them money but only their time. 	Latrine floor and walls can be constructed from durable materials such as cement, brick or blocks and covered with tin sheet

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1.2. Solid and Liquid Waste Management		
1.2.1. The immediate housing environment in communities are littered with animal waste (dung and urine), farm (crop chaffs) and other solid waste	<ul style="list-style-type: none"> • People has to be encouraged to do daily cleaning, • Practice proper storage that discourage fly breeding or other animals harborage Use the organic wastes such as house sweepings and dung waste for composting, land reclamation, soil conditioning or plastering of walls and floors. 	Use cow dung together with human feces for biogas production Compost all organic waste and use it for soil conditioning.
1.2.2. Liquid waste from cloth washing, food utensil washing, bathing, animal urine are indiscriminately thrown outside the house	<ul style="list-style-type: none"> • People should be made aware of the health effects of such wastes and encouraged to dispose in a seepage pit or use the waste water to water plants 	
2. Personal hygiene		
2.1. Hand washing practice		
2.1.1. People who own latrines have no hand washing facility arrangement by the latrine and if they have it has no water and if there is water there is no soap or substitute.	<ul style="list-style-type: none"> • Building latrine is a huge task for people who are starting to use latrines but hand washing arrangement is so simple to be motivated and once the arrangement is made adding water and soap or substitute such as ash for hand cleansing is simple. 	Hand washing facility with running water and soap or soap substitute or soap dispenser available ideally by the toilet and kitchen
2.1.2. People don't practice proper hand washing even if they have the facility and water	<ul style="list-style-type: none"> • People can be made aware about the critical moments and encouraged to wash their hand with soap or substitute such as ash 	
2.2. face and personal hygiene		
2.2.1. People don't take bath regularly and whenever they do they don't use	<ul style="list-style-type: none"> • Regular bathing with soap in the rivers or at homes is affordable. Behavior change is the key in adopting such practice regularly. 	People wear clean and suitable cloth, take bath every day with soap.

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soap as a cleansing agent		
2.2.2. Parents don't wash their child eyes and faces regularly	<ul style="list-style-type: none"> • Regularly washing child face with soap 	
2.2.3. People's working cloth is old and dirty	<ul style="list-style-type: none"> • Awareness creation for people to wear clean working cloth 	
3. Water quality		
3.1. HWTS		
3.1.1. People are still using an unprotected water source	<ul style="list-style-type: none"> • Water boiling is a simple and cheap method of making water safe for drinking • Use water guard which is simple to use, accessible and affordable 	All people rural/urban use improved water source in at least at intermediate access level
3.1.2. Water transport, storage containers and water drawing utensils are largely unclean	Water container should be cleaned every time when water is fetched or whenever water is finished from storage	
3.1.3. People don't practice Point of Use treatment for water	<ul style="list-style-type: none"> • Use locally available water treatment and filtering materials • Chlorine solutions such as wuha agar which is available in local pharmacies and affordable can be used for disinfection 	
4. Food Hygiene		
4.1. People don't properly and hygienically store cooked and uncooked food; store food efficiently covered	<ul style="list-style-type: none"> • Food can be stored above ground in covered utensils. • Use local preservatives methods such as drying, salting meat. 	Storing food according to temperature requirement (cold or hot) and stored in covered containers.
4.2. People use food items intoxicated by chemicals such as fertilizers, pesticides and insecticides	<ul style="list-style-type: none"> • Encourage farmers to use natural fertilizers • Maximizing labor intensive agriculture practice 	Producing organic food items

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4.3. Food producers and venders adulterate food products	<ul style="list-style-type: none"> Strengthen food inspection and community whispering system Creating awareness on food adulteration and its effect 	Delivering genuine food products
5. Housing and Institutional health		
5.1. House environment in urban and rural areas are poorly managed	<ul style="list-style-type: none"> Storage of goods in the house, cleanliness of compound, arranging compost hip in the compound, 	People in urban or rural communities should live in:
5.2. Housing in rural and urban slum areas are largely poorly ventilated and small to accommodate the family members	<ul style="list-style-type: none"> Having windows for cross or through ventilation should be encouraged to improve air circulation and add light into the house 	<ul style="list-style-type: none"> a comfortable and well ventilated rooms Have separate bedrooms, Use separate kitchen clean compound
5.3. People in the rural communities largely cohabit with farm, chicken and pack animals	<ul style="list-style-type: none"> People should be encouraged to construct separate animal pens and chicken coops with local materials 	
6. Vector control		
6.1. Vectors of Public Health Importance management		
6.1.1. The fact that malaria relapsing fever, typhus is still reporting indicate that communities are not motivated to be part of the solution	<ul style="list-style-type: none"> Households and the community could be mobilized to drain mosquito breeding sites using hand tools. People must be mobilized to wash clothes with soap or local indod and practice personal hygiene 	A well-drained community with no ponds, open drainage; floors made from easily washable cement or ceramic floors; Walls with no cracks painted, lighted and well ventilated houses will keep away rats, bugs, fleas and malaria mosquitoes.
6.1.2. Using chemicals such as DDT, malathion and other chemicals is contaminating the environment and is accident hazards	<ul style="list-style-type: none"> People should be aware on how to safely and properly use and store chemicals and poisons such as malathion and different types of rat poisons, 	
6.1.3. The present housing conditions in rural and urban areas is not discouraging from having shelter, food	<ul style="list-style-type: none"> Denying foods for rats, shelter and keeping the house well ventilated and illuminated with natural light will keep rats 	

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etc. which are very important for their propagation	away. Storing food above floor surface also helps to avoid rats.	
6.1.4. Bed bugs and fleas were problems making all family members irritated and losing sleep	<ul style="list-style-type: none"> • Plastering walls and floors, ventilation and lighting will also control bedbugs and fleas. 	
7. Pollution		
7.1. Indoor Air Pollution		
7.1.1. Over 90% of Households in Ethiopia use biomass fuel.	<ul style="list-style-type: none"> • Indoor air pollutant especially from biomass smoke can be expelled through windows. Opening air inlet and outlet in the house is an easy task for the households. • Constructing smokeless and energy saving stoves using local materials such as stone and mud can be made by housewives. 	Using electricity or using dung and other organic waste for biogas production can be an ideal arrangement
7.1.2. ARI and eye diseases are rampant especially in the rural areas.		
7.2. Water Pollution		
7.2.1. Defecation in the open is polluting surface water source	<ul style="list-style-type: none"> • Avoid open defecation, rather use private, communal or public laterine • Surface water sources can be protected either by a zoning the water course-the upper end being for drinking, the middle for bathing and washing and the lower end for animals. • Communities could easily fence water service centers, dig diversion ditch very easily and even learn to maintain pumps and cement walls. 	Train communities on aspects of waste management, source protection and maintenance to sustain the services.
7.2.2. People washing inside, animals drinking and wading through contaminate the water source.		
7.2.3. People don't take care of the protected water sources such as springs and well water. No fencing, no diversion ditches, poor maintenance and management		
7.3. Land Pollution		
7.3.1. Plastic bags are observed in all towns and even rural communities	<ul style="list-style-type: none"> • Enforcing law on the proper use of plastics for any purposes • Municipalities and or kebele administrations should be able 	Applying stringent rules for citizens to abide by in disposing wastes generated at

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<p>7.3.2. Dead animals, offal's from slaughtering of animals are also polluting the environment</p> <p>7.3.3. Open defecation is very visible especially in cities and towns</p>	<p>to arrange for dead animal pick up.</p> <ul style="list-style-type: none"> • Individuals should contain any waste products from animal slaughtering and take to the nearest dumpster. • People should have latrines and if they have no space to build latrines, they have to be able to use public toilets. 	<p>home.</p> <p>Municipalities having an efficient waste collection, recycling and disposal methods.</p>
<p>8. Occupational Health and Safety</p>		

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