

# **Rethinking Sustainable Latrine Use through Human Behaviour Change and Local Capacity Development**

An Assessment of the District Approach in Ethiopia (A Case Study)

By

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## Abstract

Sustainable latrine use is the headline of sanitation discussions. Despite the efforts, progress lags behind its targets in developing countries. The aim of this study focuses on understanding key motivators of sanitation behaviour change, capacity development and intersectoral integration to advance sustainable use of latrines. A mixed methodological approach comprising of survey, interview, focus group discussion and observation is applied to collect evidences. However, research on sanitation behaviour change and capacity development is scanty and at lower stage compared to other health sectors such as on diabetics, HIV/AIDS, obesity or alcoholism.

The existing literature indicates that human behaviour change is a crucial factor in achieving sanitation targets and it is vital to work in interdisciplinary manner to achieve such goals. Sociological and historical approaches to sanitation research can contribute immensely to reflect on social facts and lessons from the past and the current practices.

This case study discovered that social factors that focus on awareness creation and education is a strong reason in motivating sustainable latrine use followed by emotional layers such as cleanliness and decency as important driving forces. As the result of using latrines community members feel confident for getting dignity and convenience in their daily agricultural activities and homestead tasks which in turn motivates them to maintain their toilets. Although the qualities of the latrines in the study communities are poor and its utilization rate is very low, the latrine culture is progressing slowly but with a pressure to be ODF at the expense of sustainability.

Based on such lessons, empowering stakeholders at the household and Kebele levels is crucial. Such capacity development includes enhancing the skills of service providers, facilitating sanitation products and promotion as well as providing supportive supervision and monitoring.

On the other hand, the challenges of integrating intersectoral collaboration are complex and massive. Except for its lack of quality, regular follow up and monitoring, the coordination mechanisms are functioning properly at district level whereas the Kebele coordination can benefit if it mobilizes all the existing structures including political organizations, government civil service structures and social institutions such as religious, self help and other groups. If the current defects get corrected with an emphasis on quality, the evolution of sustainable latrine use in Ethiopia is positive.

**Key words:** sustainable latrine use, behaviour change, capacity development, intersectoral integration, Kebele, district, Ethiopia

## **Dedication**

To my late father, Amado Dube, who enabled my studies possible and

To my mother, Woelame Ayano, who work hard throughout to realize my goals.

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Addise Amado Dube

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## **List of Abbreviations**

AMCOW	African Ministerial Council on Water
BPR	Business Process Re-engineering
BSC	Balanced Score Card
CBO	Community Based Organization
CFT	Community Facilitation Team
CLTS	Community Led Total Sanitation
EKHCDP	Ethiopian Kale Heywet Church Development Program
ETB	Ethiopian Birr
FDRE	Federal Democratic Republic of Ethiopia
FGD	Focus Group Discussion
GTP	Growth and Transformation Program
HSDP	Health Sector Development Program
HEP	Health Extension Program
HEW	Health Extension Worker
HH	House Hold
HIV/AIDS	Human Immune Virus /Acquired Immune Deficiency Syndrome
HSP	Hygiene and Sanitation Promotion
INGO	International Non-Governmental Organization
IWSP	Integrated Water and Sanitation Program
IRC	International Water and Sanitation Research Centre
JMP	Joint Monitoring Program

KABP	Knowledge, Attitude, Beliefs, Practices
KWT	Kebele WASH Team
MDG	Millennium Development Goals
MOU	Memorandum of Understanding
NGO	Non-Governmental Organization
OD	Open Defecation
ODF	Open Defecation Free
PHC	Primary Health Care
SC	Steering Committee
SHTEFIE	Socio-cultural, Health/Hygiene, Technical, Economic, Financial, Institutional, Environmental
SNNPRS	Southern Nations, Nationalities' and Peoples' Regional State
SUSANA	Sustainable Sanitation Alliance
TVET	Technical and Vocational Education and Training
UAP	Universal Access Program
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund
VHP	Volunteer Health Promoter
WASH	Water, Sanitation and Hygiene
WASHCom	Water, Sanitation and Hygiene Committee
WEDC	Water, Engineering and Development Centre
WHO	World Health Organization
WIF	WASH Implementation Framework
WSSCC	Water Supply and Sanitation Collaborative Council
WWT	Woreda WASH Team

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# CHAPTER 1

## Introduction

This research is structured into six sections with chapter 1 focusing on the context, research question and study objectives as well as scope and limitations of the study. This is followed by the literature review in chapter 2 and details of methodology in chapter 3 where data collection tools mainly survey, observation, interview and focus group discussions are outlined.

Data results and analysis are presented in chapter 4 together with the discussions and findings in chapter 5 where the main issues are presented with conceptual and theoretical developments. Chapter 6 culminates the research process by summarizing the main outcomes as conclusions and recommendations for future decision making and further research.

### 1.1. The context

*Our hypothesis establishes that sustainable latrine use is determined by the behaviour change of the house hold members; by the support given to them through local capacity development agents and their integration as well as the quality of the latrine facility itself (including hand washing facilities after latrine use).*

Furthermore the Ethiopian sanitation protocol (2006) states that behaviour changes in latrine use can be measured by the % of households using a properly cleaned toilet facility. However how can one measure a properly cleaned latrine use? What makes households to use latrine properly and sustainably or vice-versa? Do all the household members including infants and disabled people make use of such latrines?

Sustainable latrine use in relation to behaviour change and capacity is one of the critical areas the WASH sector is being challenged in Ethiopia and elsewhere. After a long journey to meet the MDG targets for sanitation, the global community is certain that it is unattainable and the need to urgently accelerate its progress. However 'business as usual' approach should give way to innovative frameworks to make a real progress in sanitation. This is where the rethinking has become decisive since 2.6 billion people are out there without access to sustainable latrine use and "getting people to use, understand and accept sustainable sanitation alternatives has proven to be a big challenge" (Emilia,2005,p.335).

Not only are statistics low for sanitation coverage in the developing world, particularly in Sub-Saharan Africa but quality, appropriate utilization and sustainability have become challenging aspects. As one study noted "ending open defecation is a noble and achievable but ambitious

effort. What is critical, and still unclear, is householder behaviour moving up the sanitation ladder .If a household digs an unimproved pit latrine that does not meet minimum standards, will they progressively move up to better practices, or stop at the first small doable action? ” (WSP, 2012, p.3).The controversial response might be yes and/or no as this research attempts to explore.

From experience we have learnt that much effort is being exerted to improve WASH practices from the global level to the community point. Despite the efforts, however, low quantity and poor quality in latrine use is the trend. Households move one step forward and then another step backward for lack of follow up, supportive supervision and low enabling environment to ensure behaviour change and continuity.

The supply-driven-subsidized approach in the past has also weakened the progress by creating dependency attitude on the user households where “too many programmes focused exclusively on the delivery of hardware without attention to changing behaviours or effectively targeting households who really want a latrine” (Cotton, Webinar-sanitation, 11/6/2011: 2:49pm).As Barnes argued “it is necessary to change the daily habits of people. This, in turn, involves a process of restructuring values, motives, and behaviours” (1972, p.1).

Between 2008 and 2011 a number of global behaviour change initiatives were attempted including the recent CLTS movement and related social marketing approaches –all discovering that sanitation and hygiene progress is lagging behind due to challenges in behaviour change and low capacity. Robert Chambers (2011), the advocate of Participatory Rural Appraisal summarized that behaviour change requires changes in social norm and daily experiences of people. This principle of action and changing norms of personal and social behaviour become an urgent issue for reducing the burden of communicable diseases including sanitation related problems.

As sector authorities remarked, “one of the most important reasons for not having sustained behaviour change in hand washing and the development of a permanent type of latrine technology was because there was no systematic follow-up and supportive supervision rendered by the districts. It has been stated by many prominent CLTS advocates and others that the key for behaviour change is the follow up efforts carried out after community mobilization”(WSP, 2012, p.3).

Moreover , “lack of capacity at the level of local government was cited most often” (Smout, 2010, p.2.22) and a further research discovered “the fact that the major factor underlying poor health services in Ethiopia is the lack of empowerment of households and communities to promote health and prevent disease (Bilal,No date). The most advocated approach of CLTS has recognized the importance of support, continuous follow-up and monitoring of sustainable

latrine use and maintenance of ODF practices (International Institute for Environment and Development, 2010, p.60).

As WHO (2004) noted whatever wishes and targets the international community sets for sanitation success depend on the capacity of the grass roots. This is vital because building capacity means bringing together more resources, having stronger institutions, employing better trained people and improving skills. Unless capacity grows, nothing much will change. Some regions will continue to make slow progress and others will see coverage drop in the coming decade. This is witnessed in Sub Saharan Africa countries and other developing governments are not an exception.

In Ethiopia, the sanitation and hygiene strategy puts the responsibility of on-site sanitation “firmly in the hands of the household with the direct support of the health extension worker [HEW] and other resources at community level” (Federal Democratic Republic of Ethiopia, 2005, p.10). After a decade of the Health Extension Program in Ethiopia, however, questions related to latrine use and sustainability has become a burning issue.

An overview of HEP revealed that lack of capacity and intersectoral coordination was among the challenges frequently mentioned (Sebhatu, 2008, p.5). “Facilitators skilled in participatory methods such as Participatory Sanitation and Hygiene Transformation (PHAST) are not widely available.... Increasing decentralization has exposed skill gaps at Woreda level. Environmental Health (EH) skills are outdated or under-utilized since many extension staff do not travel out to the communities they are charged to serve” (Federal...2005, p.18).

Lack of research on the progress of the most popularized HEP and its scarcity in documenting the evolution also call for the need to conduct study on the area. “Information quality and use remain weak within the health sector, particularly at the peripheral levels of Woreda and facility, which have primary responsibility for operational management under the Woreda decentralization process begun in 2002” (Federal Ministry of Health, 2008,p.ii).

After three successive regimes focusing on an urban-biased and curative- focused health interventions in Ethiopia, it is suggested that “the time-frame to bring about the ‘change in mindset’, the required capacity building and leadership training needs to be revised and adjusted to realistic proportions” (Ethiopia Health Sector,2008,p.xv).

The complexity of sanitation stakeholders involved is another challenge. “Limited institutional clarity of roles and responsibility towards sanitation services has limited the demand for capacity building in this area” as one study revealed from Ethiopia ( Jaleta and Scott,2009.No page) .Moreover “ intersectoral collaboration has traditionally been weak, resources have not reached Woreda or Kebele level, and the private sector has been under-utilized” (Federal...2005, p.18).

Practical competencies such as skill gaps, equipments, workshops, transportation and incentives are lacking in most cases of district WASH experts to respond to community needs (Masahiko, 2010).

“Although robust data are not available, KABP studies reveal a low commitment to latrine construction and use. Reasons are multiple ranging from the poor reputation of Ethiopian latrines (their apparent lack of stability, privacy and safety), the shortage of...durable building materials and the reported resistance of men to 'build a house for faeces” (Federal...2005, p.12).

Field experiences from projects indicate that despite high level of latrine coverage, the usage rate is low, standard and maintenance is weak and continuity is questionable in some cases.

As the Ethiopian sanitation protocol describes (Federal Democratic...2006, p.40) the 'on-site' sanitation behaviour change indicator to be measured is by the “% of households using a properly cleaned toilet facility” for which this study can serve as a learning point. Moreover the HSDP IV for the GTP period (2010/11-2014/15) emphasizes community ownership and empowerment for the continuity and sustainability of health programs.

The research, therefore, assesses the determining factors for ensuring sustainable latrine use and hand washing behaviour change after latrine exercise at household level.

*For this reason our hypothesis states that sustainable latrine use is determined by the action/behaviour change of the house hold members; by the support given to them through local capacity development agents and the quality of the latrine facility.*

*Subsequently the theoretical framework is logically interrelated:*

- (1) Properly cleaned and sustainable latrine use indicates behaviour change of household members.*
- (2) Behaviour change is the result of empowering and building the capacity of individual households and communities for collective action. (In this context empowerment is operationally defined as a process through which people gain greater control over decisions and actions affecting their health. See annex for the definition of terms).*
- (3) Therefore, sustainable latrines use is the result of household empowerment and capacity development by local agents and service providers.*

## **1.2. Major research questions**

- (1) What are the key determining factors for the sustainable use of clean latrine facilities at household level?

- (2) What is the existing relationship between households' sustainable use of latrine facilities and the support given by the local capacity development agents?
- (3) How is inter-sectoral coordination managed to enable the sustainable use of latrines and hand washing behaviour change after latrine use?

### **1.3. Aim/Main objective**

The aim of this study is to assess the key factors determining the sustainable use of clean latrine facilities at household level.

#### **Specific objectives:**

- (1) To establish the key determining factors of behaviour change for the sustainable use of clean latrine facilities ;
- (2) To investigate the relationship between sustainable latrine use and local capacity development ;and
- (3) To examine the existing inter-sectoral coordination mechanisms and the multi-stakeholder approach in supporting sustainable latrine use at the village level.

### **1.4 Expected findings**

Four distinctive findings are expected from this research: understanding the evolution and conditions of the current sanitation progress; recognizing the determining factors for sustainable latrine use; reviewing the existing capacity development efforts at the lower structure and examining the integration of the sanitation actors/stakeholders. Consequently:

- (1) The determining factors for sustainable latrine use and hand washing behaviour change will be investigated.
- (2) Local capacity development in support of household sanitation improvements will be assessed.
- (3) Coordination and interconnectedness among different sectors and stakeholders reviewed.
- (4) Gaps identified for decision making and the way forward recommended for improving the sustainable use of latrines in the future.

### **1.5 Research beneficiaries - WASH stakeholders**

The research significantly contributes to the improvement of sector performance by informing planners, implementers and decision makers at all levels namely:

- (1) Government- federal, regional, zonal ,district, Kebele ,schools
- (2) NGOs- local and international
- (3) Private Sector-artisans ,masons ,consultants ,contractors
- (4) Academia- universities, colleges ,TVET, research institutions
- (5) Households – family heads, individuals , CBO/WASHCOMs-
- (6) Donors – bilateral, multilateral , INGO
- (7) Behaviour Change Communication Specialists and sanitation marketing experts

### **1.6 Scope and Unit of Analysis**

The scope of this study is limited to the sustainable use of latrine at household level as well as hand washing practices after latrine use since these are critical factors in impacting health goals as "... large numbers of behaviours, those that are usually considered to provide the greatest health advantage are hand washing (especially after contact with faeces) and the safe disposal of human excreta" (Shordt and Cairncross, 2003, no page).

**Individual behaviours and capacities** in terms of skills, knowledge, practices, and confidence of individual players at Kebele and district levels will be assessed .At Kebele level these include householders, WASHCom members, private service providers, Health Extension Workers, Development Agents, Community Health Promoters, artisans, caretakers and operators, Water Extension Workers – to effectively carry out their assigned tasks.

**Group/ Organizational behaviour and capacities** at institutional setting and strengthening of the new WASH structures at WWTs, KWTs and WASHCOs as displayed in the table below (WIF, 2011).

**Table 1. 1 Institutional set up at the lower level**

<b>Structural Level</b>	<b>Target groups working to enhance behaviour change and capacity</b>
Rural Communities	Community members (women as well as men); WaSH Committees; Water Point Caretakers and Operators; local artisans and entrepreneurs; Community Health Volunteers,
Kebele	Kebele WaSH Committee ; Kebele administrator & managers; Health Extension Workers; Water Extension Workers; Agriculture Development Agents; Community Facilitators; Head-teachers & teachers; School Parents Committees; Kebele Education and Training Boards; participating NGOs;
Woreda	Woreda WaSH Team; Woreda Procurement Committee; Health Supervisors. Education Inspectors. Woreda Steering Committee. Micro-Finance Institution (Sub- Branches)

Source: WASH Implementation Framework (2011)

### **1.7 Limitation of the study**

The study focuses on specific issues of the sanitation chain namely sustainable latrine use and hand washing after use which implies in-depth analysis of issues not access and coverage aspects. This can challenge key informants like the HEW.

Since behaviour change and capacity development is context and culture specific, the findings of the study region might not be relevant for all places but can be applied in a generic way for other situations.

The complexity of measuring sustainable latrine use and behaviour change remains a challenge where subjective views of informants, enumerators and the researchers require caution.

Time constraint also poses a challenge to fully comprehend sustainable use, behaviour change and capacity development issues in a real time situation.

## **CHAPTER 2**

### **Literature Review**

The introductory part of this literature review presents the source search method followed by the discussion of global WASH scenario to locate the place of behaviour change and capacity development for the sustainable use of sanitation facilities.

In the third part, the role of human behaviour change for the sustainable use of latrines is assessed to indicate its importance in WASH sustainability processes, to synthesize status of behaviour change literature, and to show the challenges. This is linked to the necessity of capacity development for meaningful behaviour change and sustainable use of sanitation facilities in the fourth section. The scope of capacity, its quality, levels and the importance of the overall enabling environment is reviewed.

The evolution and current status of sanitation profile in Ethiopia is briefly reviewed in section five leading to identifying gaps in knowledge and finally concluding the chapter in section six. The literature review then guided the current research in terms of methodological choices, status of the issues, contributing to filling gaps and learning from others.

#### **2.1. The search method**

The literature search is based on Library Catalogue Plus and RefWork tools of Loughborough University Library search engine which allow easy access to available literature on the topic. Search is initiated in different ways ,for instance by starting with the term “behaviour change \* AND “sustainable sanitation” which yielded 1668 items but refined by applying “sustainable use of latrines” and hit around 531 results out of which 61 are more related to the topic.

Exploration on “Capacity development\* AND “sanitation” is exercised separately to display existing literature which helped us to filter relevant materials on about 8952 results and again narrowed down to 636. The key search words, therefore, were “Ethiopia” , “sustainable sanitation”, “behaviour change”, “capacity development” and “empowerment” which is a complex term but operationally defined in relation to health promotion aspects.

The source investigation is further advanced by scanning titles and abstracts. Due to the English and American version of the word “Behaviour/behavior” attempt is made to cross check where sources are sorted out. Then English UK spelling is used throughout for consistency. Likewise, ‘capacity building’ and ‘capacity development’ is checked for synonyms and literature investigation done accordingly.

Other current information is examined by using manual search from Google scholar for major organizations dealing with WASH such as Sustainable Sanitation Alliance/SuSanA, Water, Engineering and Development Centre (WEDC), Stockholm International Water Institute /World Water Week, Water Supply and Sanitation Collaborative Council (WSSCC), International Water and Sanitation Research Centre (IRC), UN Sources (WHO/ UNICEF/UNDP), Water and Sanitation Program/World Bank and other related organizations. Updated information related to books, journals, online materials are considered from these sources and incorporated into the review process. Sources are also checked from main library and WEDC Resource Centre by using subject catalogue index.

## **2.2. The role of WASH to achieve the MDGs**

Water, sanitation and hygiene (WASH) are some of the most basic necessities and rights of mankind .A lack of access to these bring human misery and death to millions particularly children under five. Hence, the MDG goal 10, target 7 aims to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation. The vital contribution that improved drinking water and basic sanitation can make towards meeting all of the other MDG goals is obvious.

It helps to eradicate extreme poverty and hunger (MDG1) because healthy people are productive; it supports universal primary education (MDG2) by improving school attendance to boys and girls; it promotes gender equality and empower women (MDG3) by enabling them to have more productive, leisure and education opportunities.

Moreover improved sanitation and drinking water sources reduce infant and child morbidity and mortality (MDG 4) and decrease labour burdens and health problems resulting from water portage, reducing maternal mortality risks (MDG 5). Safe drinking water and basic sanitation also help prevent water -related diseases, including diarrhoea diseases, shcistosomiasis, filariasis, trachoma and helminthes as well as to combat HIV/AIDS and malaria (MDG 6) (*WHO and UNICEF, 2004; Coates,2007*).

This indicates that water and sanitation services are among the key development pillars that cross-cut all facets of human life. “Given the inter-linkages between water and sanitation, and health, education, hunger, gender, and poverty reduction, failure to achieve Target 10 is likely to hinder progress towards other MDGs” ( Coates and Reed , 2005, p.3).

MDG 7, target 10, the most relevant to water and sanitation which also emphasizes on ensuring environmental sustainability has three targets focusing on sustainable environmental resources, sustainable access to safe drinking water and basic sanitation and improving the lives of slum dwellers.

These three targets are also interwoven by nature as water is the usual recipient of most pollution and it is prerequisite to ensure appropriate sanitation and hygienic practices. For instance, adequate treatment and disposal of human waste and wastewater enhances the availability of freshwater resources vital for daily use. Inadequate access to safe water and insufficient access to sanitation and other infrastructure are the crucial characteristics of a slum. On the other hand when adequate sanitation facilities are unavailable, the surrounding environments, both the surface and aquatic bodies, are used for either direct open defecation or for septic tanks dumping thereby badly polluting these ecosystems (UN Web Services Section .2010.).

After assessing the progress of water supply, energy and sanitation MDGs, the Stockholm Environment Institute cautioned the UN that the majority of developing countries were not in a right direction to achieve Goal 7 targets which are the preconditions to realize other goals (Rockström, et.al.2005, p.5).

However, a positive direction was exceptionally predicted about achieving the targets of drinking water. An in-depth examination on the progress of water supply and sanitation by UN, WHO and UNICEF demonstrated that the coverage of clean drinking water supply has drastically increased and it is one of the most likely achievable goals of the MDGs while sanitation is falling behind (Jensen ed., 2011; WHO and UNICEF, 2010).

The UN clearly stated that the sanitation target is unlikely to be met. "... Unless huge efforts are made, the proportion of people without access to basic sanitation will not be halved by 2015... [and] there will be 2.6 billion people without access to basic sanitation" as WHO and UNICEF anticipated (2010, p.12). This accounts for 40% of the forecasted 7 billion global inhabitants!

This scenario, according to UN, will take the international community until year 2049 to provide 77 per cent of the global population with flush toilets and other forms of improved sanitation which is a big challenge. In a similar way to water supply, rural people and the poor are less likely to benefit from sanitation services compared to the urban population

Attempts to reverse this pessimistic trend are ongoing with a new initiative, better recognized as *Sanitation for all: the drive to 2015* launched by the UN (UN Web Services Section, 2010). Whether this helps the sanitation MDG to achieve its target is a question of further investigation for the UN experts and member states. However the sustainability of WASH facilities and services is questionable from holistic perspectives better abbreviated as SHTEFIE-Socio-cultural, Health/Hygiene, Technical, Economic, Financial, Institutional, Environmental factors as evidenced below.

**Socially**, it is evident that the gap between the poor and the wealthy quintals is unreachable and inequality continues to affect the most vulnerable. The disabled people, vulnerable groups, women and children are still the most affected social segments of society in these processes. There is little or no improvement for these people despite the promises.

**Health wise**, the disease burden due to lack of these basic needs is devastating the poor and marginalized populations particularly children under five and women. And the developing countries are the most affected by these inequalities. Consequently the global community cannot argue that water and sanitation services are sustaining to benefit the health of the poor.

The **economic** situation in terms of water provision and sanitation affordability for households and communities is still hard for people with low income and less GDP. The majority of the developing world will continue being affected by such economic down turn. As unemployment increases at global scale individual and household income decreases forcing millions of poor people to go back to unprotected water sources and undeveloped types of sanitation facilities or/and open defecation practices as poverty has direct relationship to these improved resources.

On the **financial** side, the willingness to pay and ability to pay aspects by users is so low that the sector is highly dependent on subsidy and foreign aid making it difficult to sustain its progress. Large shares of contributions for the WASH sector like other development sectors come from “the commitments by many developed countries to achieve the target of 0.7 per cent of gross national product for official development assistance to developing countries by 2015, as well as a target of 0.15 to 0.20 per cent of gross national product for official development assistance to least developed countries” (UN, 2012).

**Technical and technological** capability of the low income countries indicate weak local capacity for water supply and sanitation services which has contributed to low sustainability of pumps ,pipes , public and private toilets and management systems. WHO/UNICEF (2011) as an example acknowledged that:

Across rural Sub-Saharan Africa, an average of 36% of hand pumps is non-operational at any given time, and in some countries, it is estimated that more than 60% of hand pumps are non-operational... [due to] limited demand, lack of affordability or acceptability among communities, limited sustainability of community management structures, inadequate supply chains for equipment and spare parts, insufficient government support, and environmental issues” (p.54).

These challenges also apply to sanitation. In such a scenario how can one imagine about sustainable water and sanitation development?

**Institutional sustainability** is the other element. Does water supply and sanitation keep going smoothly with institutional arrangements and alignments for coordination? Not as expected because many countries face unstable institutional arrangements particularly lack of an institutional accountability for the sanitation sector. As sanitation roles are being distributed across a number of agencies such as health, water, education, agriculture, urban planning and works, rural development and infrastructure, when none of them are taking a lead responsibility its achievement and sustainability is highly challenged.

Viewed from the environmental angle, open defecation, depletion of water sources, pollution issues at the water supply chain and conflicts on shared water management have become serious **environmental** problems for the WASH sector. WHO/UNICEF (2011) noted that “the impacts of climate change - including changes in temperature, precipitation and sea levels - are expected to have varying consequences” on water supply and sanitation infrastructure (p.54).

As our case for the water and sanitation sector indicates sustainability is far from certainty due to challenges in low local capacity development and slow human behaviour change. Viewed from the holistic approach and intergenerational framework the global community is expected to take extraordinary actions to improve the gaps observed in its commitments as well as practical processes for which there is hope. “After years of failing donor support and lack of priority afforded by governments, the sector now has a relatively high profile....Yet international and national support agencies are finding it more difficult to recruit high calibre staff” ( Coates, 2007,p.1).

While a high level global advocacy is progressing to prioritize water and sanitation in the international agenda including the Rio+20 UN Summit and post 2015 MDGs, the capacity difficulties developing countries are facing and the challenges at local and household level are still immense. This research examines the human behaviour change and local capacity development aspects in sustaining sanitation use at the household level as the end user.

### **2.3. Sustainable latrine use and behaviour change: why is it fundamental?**

Historically, the health sector in general and the WASH sub sector in particular have taken lessons from its successes and failures both methodologically and institutionally. The World Health Organization/WHO noted that the difficulty lies not due to lack of professionalism, medical products or services but due to lack of addressing the human behaviour change appropriately. After attempting all the techniques to date WHO with other stakeholders underlined that “the old view that all we have to do is provide the cure and people would come

automatically to our clinic doors no longer applies.... While increased awareness and education about healthy behaviours are necessary, they are insufficient bases for personal action. The gap between knowing what to do and carrying it out is notorious” (WHO, 2009, p.5).

It is not only WHO that emphasized the decisive role of human behaviour change for sustainable health intervention. The Stockholm International Water Institute (SIWI,2008) ,the patronage organization of the largest World Water Week event in its synthesis report communicated the issue of human behaviour change to the global attention during the *International Year of Sanitation in 2008*.

In an entire workshop devoted to human behaviour change with 20 abstracts Waterkeyn (in SIWI, 2008,p.137) quoting Water and Sanitation Program vividly summarized that behaviour change “remains the most elusive aspect of community development” for over the last 40 years despite the application of different strategies .He further noted that the strategies of the 1960s top down ‘Social Planning’ approach, the ‘Health Belief Model’ of the 1970s ,the ‘Age of Empowerment’ in the 1980s and the participatory methodologies of the 1990s such as PHAST did not sustained behaviour change.

After four decades of development work and counting of physical outputs such as latrines and later discovering unsustainable outcomes, both the developed and developing world began enquiring about intangible factors like human behaviour. As a result of such a new emphasis McKee and others (2000) explained that “many programmes seek to influence the development of behaviour, especially of children and young people, or to change unhealthy behaviour, especially of adults” (p.xviii).

Between 2008 and 2011 a number of global behaviour change initiatives were attempted including the recent CLTS movement and related social marketing approaches –all discovering that sanitation and hygiene progress is lagging behind partly due to challenges in behaviour change. Under the auspices of WSCC the international community again met in October 2011 in Mumbai, India to deliberate the cause of sanitation and hygiene issues. The focus again was behaviour change challenges.

In his blog on this Global Forum on sanitation and hygiene, Robert Chambers, the advocate of Participatory Rural Appraisal skilfully summarized that “for behaviour to change, experiences have to be ‘radical, real, immediate and dramatic’...When frames of mind change, behaviour change is easy.... For behaviour change, social norms must change” (2011.p.7).

This principle of action and changing norms become an urge for reducing the burden of infectious diseases including WASH related problems. Miller (2005) and Mucci-Faina et.al (2009) contributed the role of social norm and intergroup acceptance in shaping practical

behaviour change of individuals and “studies in disease prevention indicate that the most important factor in reducing the transmission of diseases related to WES[Water and Environmental Sanitation] is hygiene improvements resulting from changes in behaviour .Changing human behaviour in relation to WES should therefore be one of the priorities of the WES specialist” as Rottier remarked (2003,p.23).

Barnes (1972) on the other hand argued that “effective preventive measures are available, but control can only be achieved by changing the personal and social behaviours of millions of people. This calls for extensive health education, beyond merely imparting knowledge.... It is necessary to change the daily habits of people. This, in turn, involves a process of restructuring values, motives, and behaviours”(p.1) to sustain practices of people. Therefore, behaviour change is a crucial factor for sanitation sustainability.

### **2.3.1. Is behaviour change achievable to sustain latrine use?**

A meaningful human behaviour change is achievable through multidisciplinary, interdisciplinary and trans-disciplinary approaches rather than “ tribalism of the professions— i.e, the tendency of the various professions to act in isolation from or even in competition with each other” as Frenk and others ironically criticized the failures of disintegrated approaches (Frenk,2010,p.1923; Parkes et.al, 2005, p.258; Nguyen-Viet, 2009).The central idea of trans-disciplinary approach establishes that “a piecemeal approach to disease control is often inadequate, and in some cases can exacerbate the original problem. Thus, the potential of combining, integrating, and transcending disciplinary knowledge as a means to enhance responses to complex societal problems and/or to achieve research and educational innovation ...warrants close examination as an option to improve understanding, prevention and control of future Epidemiological Infectious Diseases (Parkes et.al, 2005,p.261).

Subsequent to Parkes, Santos (2011) underlined that “in the international health community there is growing recognition that most successful interventions depend on behavioural change, and that research is an essential part of the process... [This] requires the collaborative efforts of clinical scientists, epidemiologists, and social scientists. Each discipline offers its unique research perspectives, data-gathering tools, analytic methodologies and conceptualizations of data analysis and inference” (p. 1405).

Bartram and Cairncross (2010, p.7) on the other hand emphasized that “the most effective means of promoting behaviour change is also a fruitful research field. It has only recently become clear to health professionals that emotional levers (“Clean hands feel good”) change people’s health behaviours’ more effectively than cognitive statements (“Dirty hands cause disease”). Advertising agencies have known this for years and the theory of appreciative enquiry supports the idea.

In his critical review of human behaviour and epidemiology, Macpherson (2005, p.1328) paradoxically concluded that “improvements have been made for a number of parasitic zoonoses in many parts of the world but it is likely, with our global demographics and the socioeconomic conditions today that the parasitic zoonoses will not go quietly”. That is due to the challenges we are facing with unchanged human behaviour for simple things like using latrines and washing hands with soap. If human behaviours remain unchanged towards social, economic, leisure, tourism and other issues 60 parasitic species related to demographic issues may have serious health consequences as Macpherson (2005) cautioned. Frenk (2010) likewise noted that demographic movements will pose drastic challenges in the spread of infectious diseases now and then unless tackled in holistic interdisciplinary approaches.

Against the views of ‘professional decolonization’ of the past it is Bibeau (1981) who argued that:

...health and disease problems in less developed countries cannot be solved with bio-medicine alone; cultural and socio-economic variables have been presented as part of the therapeutic scenario health planners and practitioners have just begun to identify, but these variables have been responded to much less seriously so far. The clinician was first the king and the epidemiologist has followed to the throne. It would be pretentious to dethrone them and propose the medical social scientist as a new king. Let social scientists take their place in a council of equals which seats will be allocated to sociologists, economists, demographers, anthropologists, psychologists, epidemiologists, public health specialists, physicians, nurses and, why not, to representatives of the sick and the healthy (p.368).

In a similar scenario Emilia (2005), discussing the psychosocial aspects of sanitation concluded that

a major characteristic of sanitation is that it involves many different scientific disciplines. Technicians, biologists, economists, policy-scientists, sociologists and psychologists are presently interacting and cooperating to develop a sustainable sanitation situation. Like in many other fields of research, psychological research is used to complement the findings and help implement the technical and economical solutions that have been developed to date. It is crucial to understand that the solutions should be designed to fit the needs of the people, rather than people having to be fitted into existing solutions” (p.345).

For this reason “it is now widely accepted, not only by social scientists but also by a substantial number of health professionals that patterns of disease are significantly related to cultural sets of normative beliefs and behaviour” (Heggeshoug, 1986, p.1235).

Behaviour change is best tackled not only in trans-disciplinary approaches but also in historical, time series analysis. A number of studies supported this view: Avvannavar and Mani (2007); Mahler and Barber (in SIWI, 2008, P.117); Barends and Jenkins (1972); and Hackenberg (1970) emphasized the contributions of historical approaches to behaviour change processes. The importance of such longitudinal studies are appreciated for documenting a health history of a community and individuals and the output can be used for administrative, planning, budgeting, decision making and other purposes. This is why the current research also looks into the evolution of latrines in a historical, time-series perspective rather than short term achievements.

According to Barends and Jenkins (1972) “most health programs have been blind to the importance of the “non-cognitive” forces in program acceptance..... The influence of historical events on current attitudes also play a part in the success of a health program, as well as the cultural prejudices which health workers and program recipients bring to their interaction”(P.13).

On the other hand, trans-disciplinary and historical approaches to behaviour change do not underestimate the special place health profession plays within an integrated approach. A study by Pinfold and Horan (1996) on indicators of behaviour and diarrheal diseases is a good source. Focusing on social aspects combined with “a bacteriological indicator (enumerating faecal streptococci using a finger impression technique) to support the evidence ....It is a good example for measuring qualitative ways of changed behaviour and practice as well as laboratory testing to check diarrheal disease reduction” (p.370).

Santos and his team trying to understand the technology choice of individuals in Salvador, Brazil quoted McFadden (2001) establishing that “attitudes of individuals are key drivers underlying behaviour, and affect individuals’ preferences and their decision making process towards different sanitation options. Attitudes reflect individuals’ needs, values, tastes, and capabilities, and are affected by experiences, socio-cultural and historical aspects (which are formed over time) and socio-economic characteristics”(2011,p. 1326).

Therefore, interdisciplinary and historical approaches to behaviour change can yield a good result in sustainable use of latrines.

### **2.3.2. Status of sustainable sanitation behaviour change research.**

The sanitation stakeholders including government, networks, academia, NGOs, the private sector have now recognized that sustainability depends on the holistic approaches to

behaviour change and capacity development. This approach is also similar to the criteria agreed by the majority of sanitation sector actors including SuSanA –Sustainable Sanitation Alliance, an informal coalition of hundreds of organizations.

Despite all the sanitation campaigns and high level efforts over the decades the human behaviour change is not fast moving at community and individual point because “people may be unwilling to invest in household toilets due to institutional, financial, socio-cultural or situational reasons”(SuSanA,2011,P.4).

As the current state-of -the–art indicates the necessity of reinforcing CLTS with social marketing approaches has become significant due to the limitations of CLTS in meeting quality of latrines and also unable to balance the supply side due to focus on the demand approach (SuSanA, 2011, p.4) . “There is a severe lack of skilled staff that can facilitate the CLTS process effectively and efficiently. Insufficient personnel numbers has meant that continuous follow up and monitoring is hampered and this leads to loss of interest” (Saha, 2009, p.670).On the other hand there is a relationship in the use of social marketing approaches and community mobilization tools such as the CLTS:

In practice, there is considerable overlap and borrowing between social marketing and community strategies. For example, Community-Led Total Sanitation (CLTS) often uses social marketing techniques; while social marketing campaigns include community-based and face-to-face communication. In general, it has been observed that, social marketing approaches seem more applicable to the promotion of single practices, such as hand washing with soap. Community approaches and participatory processes are often found to be more appropriate for the promotion of multiple behaviour changes (IRC, 2010, p.3).

CLTS also fail to spot the hygiene aspect at the expense of focusing on sanitation triggering and it is only lately that hygiene is being considered in many regions by renaming it as CLTSH.

Nevertheless, “increasing awareness of the role played by human behaviour in the pathogenesis of disease has provided stronger motives to understand, to predict and ultimately to change it. Much research is now focused on behaviours such as those related to diet, sexual activity and substance abuse in developed countries. However, the literature concerning the behavioural components of the infectious diseases which are the dominant pathologies in developing countries is much less rich” ( Curtis et al., 1995, p.392) and the current research contributes to such gaps.

The limitations of such behaviour change research is lack of a local context as most studies focus on the 'Western individualistic culture' (Manoncourt, in McKee, 2000) and the challenge is how to adopt them or establish new models for pluralistic social realities of the developing world.

Our argument is to see why people are reluctant to build and use a small size latrine and why latrine campaigns over a decade is still an issue .Part of the answer as discussed above is that behaviour change is a time taking process which in some cases like in Europe took 150 years since the 1880s and it is still in an infant stage in many of the developing countries including Ethiopia. The other challenge is gaps in low local research capacities and lack of models of behaviour change attempts.

### **2.3.3. Obstacles to behaviour change**

There are various cultural, methodological, institutional and related obstacles that took the sector a long way and that limited the developing country governments unable to achieve its targets. Tradition and culture influences the whole process in the behaviour change attempt.

Culture can often be slower to change than context because it is based on strong patterns of social beliefs and behaviours from the past. In this respect it is helpful to be aware of the syndrome of 'path dependency' which means that people continue to make decisions based on past or traditional practices or preferences even if apparently better alternatives are available. However, even though they may be slow and difficult to achieve changes in culture-based beliefs are often very important for capacity development (Pearson, 2011.p.13).

Another reason is that inconsistent approaches over the years have misled communities in a trial stage as one size doesn't fit all contexts. As Dr. Uschi Eid Vice Chair of the UN Secretary General's Advisory Board on Water and Sanitation recapitulated, "we have seen over the past years that there are no one-size-fits all approaches for designing sanitation systems for those most in need, for spreading and scaling-up good ideas, and for crafting truly sustainable sanitation solutions, that look at the full sanitation life cycle and cater to human and environmental health alike" (SUSANA, 2011, forward).

The single-sector approach focusing on health aspects of sanitation, the professional bias delineating artificial boundaries among disciplines, the short-sighted project model unable to think beyond time-bound donor prescriptions have all contributed to the malfunction.

Lack of coordinated implementation is challenge in this aspect. "Fragmentation in the approach to sanitation development is thus increasingly regarded as a key obstacle by the international community, which increasingly advocates holistic approaches as a remedy,"

(Tiberghien, 2010, p.458). The complexity of stakeholders involved in sanitation and the lack of defining separate and converging roles and responsibilities among them continues to be a test for the developing countries.

In many cases technology is also an outstanding issue. “So far, sustainable sanitation alternatives have had great trouble being accepted and adopted” according to Emilia (2005, p.335). Reaching consensus on technology options, building the required capacity for the demands of new technologies and achieving the desired sanitation ladder are all complicated processes.

Concerning ecological sanitation it was remarked that “education has a clear role to play, both in acknowledging the paradigm shift in sanitation and in incorporating the interdisciplinary theme of innovative sustainable sanitation systems into teaching curricula. Education on ecosan should enable the people to develop, plan and implement eco-sanitation systems that are hygienically safe, socially acceptable, economically feasible, and environmentally sound and technically appropriate (UNESCO, 2006.p.7). SuSanA further emphasized that “the concept of sustainable sanitation refers to decision-making that considers health, environment, technology, finance, and socio-cultural aspects” (The Sustainable Sanitation Alliance (SuSanA, <http://www.wsscc.org/topics/sanitation/sustainable-sanitation>).

Furthermore the history of the WASH sector is a living example for such gaps where isolated evolutionary processes from an exclusively water supply approach to WATSAN to WASH was a historical process and social fact which implies that sanitation and hygiene are later ‘ads-on’ elements for projects and programs. The behaviours of the hydraulic engineers, sanitarians and social scientists are still far from harmonization to achieve meaningful intersectoral coordination as commented by Coates (2007): “managing for results in health and education must include water, sanitation and hygiene and this requires true inter-sector engagement. Sadly this fact is not readily understood either [by] engineers, doctors or educationalists” (pp.14-15).

Given the low level of sanitation behaviour change research and related challenges for its progress, community empowerment and capacity development is vital to move it forward. Our hypothesis on sustainable latrine use in relation to behaviour change and capacity development further aligns with such current paradigm shifts to improve sector performance.

#### **2.4. Empowerment and capacity development for sustainable latrine use**

In the introduction chapter we have seen that lack of supportive supervision, un-systematized follow up and deficiency in monitoring is one of the major factors determining sustainable use of latrines. This is mainly related to lack of empowerment and capacity building on individual and collective levels in the community. Both terms –empowerment and capacity development

– are in fact complex to define precisely and there are dozens of definitions for both in many of the disciplines. For our purpose we have simplified it to an individual and community stages as WHO defined:

Empowerment may be a social, cultural, psychological or political process through which individuals and social groups are able to express their needs, present their concerns, devise strategies for involvement in decision-making, and achieve political, social and cultural action to meet those needs.... A distinction is made between individual and community empowerment. Individual empowerment refers primarily to the individuals' ability to make decisions and have control over their personal life. Community empowerment involves individuals acting collectively to gain greater influence and control over the *determinants of health* and the *quality of life* in their *community*, and is an important goal in *community action for health* (World Health Organization 1998.pp.7-8).

Consequently, different capacity layers including individuals, households, villages, organizations and the whole social system should be considered in this process. In terms of content this incorporate knowledge, technical skills, experiences and practices at all levels while power relationships governs and defines the process. Social norms and informal relationships are also vital factors to focus.

In a wider context, capacity development concerns the whole international community including the UN system. "In Africa, the New Partnership for Africa's Development (NEPAD) has identified capacity constraints as a major obstacle to sustainable development. All sides acknowledge that, without sufficient country capacity, development efforts in many of the poorest countries are unlikely to succeed, even if they are supported with substantially enhanced funding" (Development Assistance Committee,2006,p.7).

The UK Government Parliamentary Office 'Post-note' (2002) as quoted by Coates (2007) remarked that "sanitation programmes need planners, decision makers, and sector professionals who are trained in evaluating different approaches to providing, operating and maintaining sanitation. However, many point to a severe shortage of engineers and field workers to provide the technical and social scientific skills to develop sanitation programmes. This shortfall could jeopardize effects to meet the sanitation target" (p.7).

The contradiction, however, is that achieving the required WASH goal with an optimum internal capacity has become a critical issue for most of the developing regions. The AfricSan+5 conference, a continental high level sanitation and hygiene meeting in 2008 identified capacity building as one of the issues to be addressed to raise the profile of sanitation in Africa . The three scenarios observed include that some countries have "limited

staff, resources, tools”; while others have “capacity but not across the whole sector”; and yet others “have capacity but wrong skills / profiles / resources” (AMCOW, 2008, p.6).

A sub-regional case is a good example to clarify this challenge. “The lack of capacity is presently considered as a crucial limiting factor for authorities of West Africa countries, to change their vision on sanitation system, as well as for dissemination of sustainable sanitation, especially in developing countries. Therefore, most actions aimed at involving national, regional and local institutions are limited. Awareness can be created and strengthened in authorities through information, education and training” (NETSSAF, 2008, p.3).

What is said about West Africa can be generic to other regions of Africa and other developing countries including Ethiopia in terms of capacity gaps which also impacted behaviour change deficiencies for the sustainable use of latrines on the ground.

Whatever wishes and targets the international community sets for sanitation success depend on the capacity of the grass roots. This is vital because building capacity means bringing together more resources, having stronger institutions, employing better trained people and improving skills. Unless capacity grows, nothing much will change as WHO noted. Some regions will continue to make slow progress and others will see coverage drop in the coming decade (WHO, 2004). This is witnessed in Sub Saharan Africa countries and other developing countries are not an exception.

This indicates that a lasting latrine use and behaviour change cannot be realized in the absence of proper capacity development. Over the last 20 years and most recently since the Paris Declaration on Aid Effectiveness and the Accra Agenda for Action, capacity building has become the focus of donors and national governments as indicated by the Development Assistance Committee (2006, p.3). Thus, four major areas require special attention in the community empowerment and capacity development process:

#### **2.4.1. The concept of capacity development and its application**

As the origin and history of capacity development indicates, it all began with the financial aid of the 1950/60s and then it shifted to the technical assistance and cooperation of the 1970/80s and finally to the capacity development of the late 1980/90s (Pearson, 2011, pp.11-12) but the field as a proper discipline has been shaped over the last 20 years (Umbels, 2010).

History of capacity development is not only short but also limited in its scope as it focused on explicit aspects rather than incorporating implicit social elements. “It is important to go beyond assessing hard capacities such as technical skills, structures, financial systems, work processes and so on to look also at soft capacities. This includes power distribution, incentives and sanctions, leadership, and values and beliefs” (Pearson, 2011b.p.24).

Therefore, “capacity development is about change and transformation through designing and facilitating culturally appropriate local solutions to development issues at a large enough scale to make a real difference for human development....Ownership is a prerequisite for sustainable capacity development, as is having clarity about whose capacities are to be developed and for what purpose” (Pearson, 2011.p.2).

In this context we apply the definition established by UNDP which establishes that capacity development is “the ability of individuals, institutions and societies to perform functions, solve problems, and set and achieve objectives in a sustainable manner” (Pearson, 2011.p.2). A similar working definition by Umbels states that “capacity is the ability of a human system to perform, sustain itself and self renew” (2010, p.4).

Therefore, capacity development should be understood in its historical process incorporating all levels from individual to societal and balancing the explicit-implicit as well as the hardware-software aspects.

#### **2.4.2. The levels and type of capacity to scale up sustainable latrine use.**

Types of capacities for sustainable sanitation also vary “for different reasons, in different combinations and measures... that fit to the context and enable individuals, organizations, networks and broader social systems to carry out their functions and achieve their development objectives”(Pearson, 2011.p.3).

When applied to the sanitation sector, capacities can be usually hard ware – *‘capacities that are generally considered to be technical, functional, tangible and visible’* and software – *‘capacities that are generally considered to be social, relational, intangible and invisible’* (Pearson, 2011.p.4).

For West Africa, for instance, “a central element of capacity building is education and training, for example in methods and skills in data management, sustainable sanitation promotion and planning, and environmental monitoring. Other elements include the building of appropriate national and regional institutional support structures, the strengthening of infrastructure elements, and the development of communication networks for data and information exchange” (NETSSAF,2008,p.17).

For others like Ethiopia, capacity development focuses on human capacity, systems and procedures as well as organizational structure and interrelationships which we will be assessing in this research. According to some studies on Ethiopia ( Cotton and Odhiambo, 2007) “the UAP estimates that there is a national capacity gap of approximately 8000 graduate and 18000 technician posts” in Ethiopia’s WASH sector though the details and composition of

such a gap is not clear (p.9). Ministry of Health is strengthening the health work force through the training of medical doctors and nurses with a skill mix and shift in adding integrated emergency surgery officers. The number of health extension workers is already exceeding 38,000 including the new urban health extension program while upgrading and retention is a concern.

#### **2.4.3. The quality of the capacity and the incentives to sustain it.**

Although capacity building is given much attention, its quality is criticized since change observed in the developing world is insignificant which recognize further analysis. A corrective remedy suggests that capacity development should involve a range of interventions including enhancing the procedures, knowledge and skills of individuals as well as improving quality of the organizations in which individuals work. Creating an enabling environment – the structures of power and influence and the institutions in which they are embedded is also crucial. It is also about incentives and governance (Development Assistance Committee, 2006, p.3).

Most part of capacity development is concerned on imparting theoretical things on tailor-made training settings. As IRC noted “there is disillusionment with one-off didactic training, general refresher courses, and a decisive move toward linking training closely to immediate action. A shift has taken place towards other forms of capacity building involving participatory learning strategies, exchange visits and learning alliances. Learning alliances are a series of connected stakeholder platforms designed to break down barriers to horizontal and vertical information sharing, which in effect, speeds up the process of identification and uptake of innovation” (2011, p.5).

Capacity in advocacy, behaviour change communication and sanitation marketing is also in its low stage in the sanitation sector and requires more activities, tools and materials. That is why capacity development is expected to include skills, procedures, incentives, governance and practical action.

#### **2.4.4. The enabling environment**

The enabling environment can support both the supply and demand side of sanitation progress at all levels-individual, organizational and institutional and inter-sect oral levels. The core stakeholders to get involved are the WASH team –Water, Health and Education; however there are a lot of multi-stakeholders to be considered in due process where some play primary roles and others do secondary functions. Some may be highly influential while others with little power to bring change.

Since capacity development is context specific the Ethiopian Civil Reform applied three thematic frameworks, namely human capacity; systems and procedures; and organizational structure and interrelationships.

Concerning human capacity development the short cut to Health Extension Program and other WASH related interventions was the function of the TVETs which helped to produce the HEW currently deployed to the villages. However, an assessment of the TVETs and a midterm review of the HSDP III revealed that there are challenging issues of capacity to be corrected and improved which we will be discussing shortly. This is also a central point to sustainable use of sanitation facilities and behaviour change processes in Ethiopia for various reasons as discussed in Pearson's conceptual framework of capacity development.

Initially, ownership of the capacity development is vital because the current efforts are mainly driven by external supporters and retention of the existing capacities is challenging as capacity turnover, attrition rate and brain drain aspects are continuous whereas the Ethiopian government's coping mechanism is flooding strategy in training new graduates to replace the leaving ones. But 'flooding' by its very nature has negative consequences in terms of quality and sustainability.

The second challenge is living on the agreements of the Paris Declaration and Accra Agenda concerning capacity development- shifting from supply driven external push to demand responsive, local initiatives. That is why the capacity building structure is not stable in some countries like in Ethiopia as demonstrated in the establishment of a Capacity Building Ministry of its kind in the world and its immediate knock-down as well as the instability of the Civil Service Reform, BPR and BSC processes.

Thirdly, defining and measuring capacities with indicators in its change continuum helps to cope up with the ever changing internal and external adjustments such as political changes and financial crisis. This also fosters learning.

And finally, developing a culture of continuity and building on the existing capacities is a positive direction rather than restarting from the scratch as if things are in a vacuum. This is particularly true to Ethiopia in the events of political changes where new governments attempt to replace existing capacities due to differing political orientation and re-establishing new machinery. However, as Eade summed up capacity development is a continuous process of 'learning to learn' which is in fact a precondition for advancement (1997, p.195).

Therefore we can agree with the Development Assistance Committee (2006) that

the enabling environment influences the behaviour of organizations and individuals in large part by means of the *incentives* it creates.... The context provides incentives to the organization(s), stimulating them to act in certain manners. Some incentives foster productivity, growth and capacity development, others foster passivity, decline or even closure. In turn, organizational and institutional rules influence individuals' capacities

by creating incentive structures that either give or deny them opportunities to make good use of their abilities and skills” ( p.10).

According to WASH Implementation Framework (WIF) in Ethiopia “the aim of capacity building is to ensure the development of skilled and committed WaSH professionals working within effective structures and systems designed to implement the WaSH program on a sustainable basis” (Ministry of Water..., 2011, pp.160-61). This is aimed to meet the skill needs of field implementers including Water Extension Workers, HEWs, DAs, CFTs, local artisans and entrepreneurs, Kebele WASH Teams, teachers, School Parents Committees, inspectors, health supervisors, etc to achieve a common goal.

Among the groups targeted the national and regional Capacity Building Units, TVETCs, Woreda and Town Support Groups and the Community Facilitation Teams focus on capacity building activities. In this study we will attempt to assess the Woreda and community facilitation teams capacities to support households in sustaining behaviour change and sanitation services.

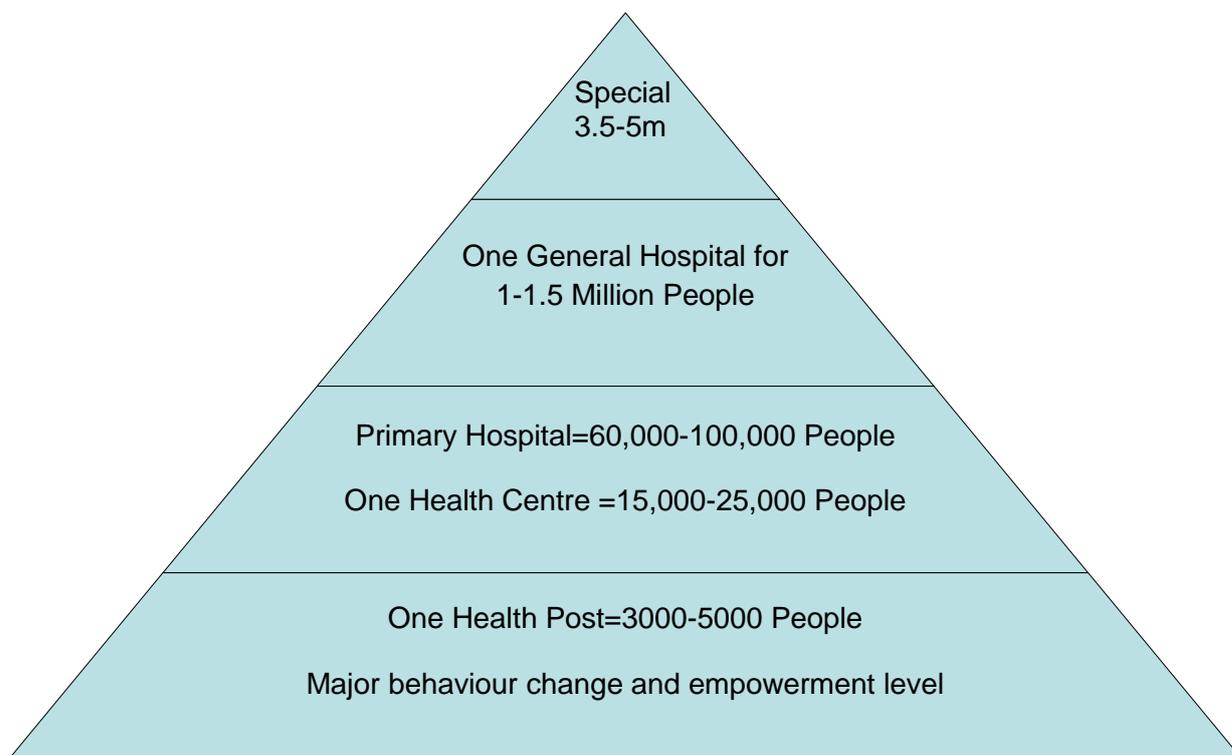
In Ethiopia “an important concern, widely expressed, is the sustainability of the services provided, in particular the need to consider how capacity can be developed and utilized to support operation and maintenance (O&M)... Capacity development is not just about training (enhancing individual skills, knowledge and experience) but also individual and organizational motivation within an enabling environment (Cotton and Odhiambo, 2007, p.7).To have a successful service delivery the sector requires skilled and experienced workforce , an encouraging motivation both at individual and organizational levels and also a conducive working environment. However the challenge remains there in the field as Coates (2007) summarized concisely: “yet despite the literature and lessons learned practitioners still find it difficult to make operational sense of capacity development” (p.1).

## **2.5. The evolution of sanitation in Ethiopia**

The sanitation vocation and its human capacity development process is only 65 years old in Ethiopia being initiated in Gondar Primary Health College and Training Centre in 1947 (Getahun,2001,p.85) but the upheaval in the last 10 years is a rapid process from high level policy formulation to grassroots mobilization at the HH stage.

Like other evolutionary and radical experiences in other sectors –such as literacy campaign in education, reforestation in agriculture, resettlement in public administration ... the sanitation sector is being largely pressurized by external forces like the MDGs, GTP and UAPs and not yet internalized into the culture of Ethiopian society. Rhetoric and good policy papers are not able to change the mindset of the populace easily due to deficiency in financing, resourcing, inter-sectoral collaboration, consistent follow up and support to the communities.

At the base of the current health structure lays the health post and the health extension workers as depicted in the figure below. The primary level includes the health post, the health centre and the primary hospital while the secondary tier focuses on the general hospital climaxing by a tertiary specialized hospital. Here we will look into the details of the base health post and health extension workers, 34,000 rural and 4000 urban workforce (Tesfaye, 2012).



(Source: Adapted from Tesfaye, 2012)

**Figure 2. 1 Ethiopia Health Tier system/pyramid**

As one comparative study of three historical periods in Ethiopia concluded “ultimately, the success of PHC in Ethiopia will depend not only on policy statements, resource allocations and expansion of health infrastructure but also on a fundamental change in attitudes and values. Gish (1979) noted that the real obstacle to successful PHC programs is not lack of resources but “rather social systems that place a low value on the health care needs of the poor” (Kloos, 1998, p.519).

Such changes in attitude and values in Ethiopian context comprise promoting indigenous social systems such as *iddir*, *ekub* ...which can contribute to develop the Ethiopian health system. As Kloos recommended:

Such inter-institutional, preferably intersectoral arrangements may also provide a more holistic approach including health supporting sectors such as clean water,

sanitation, education and food security. But this may require that community mobilized resources be used in the same communities according to community-based decisions and federal adjustment mechanisms implemented with the goal of preventing inequities at the poorer periphery” (Kloos, 1998, p.519).

However, there is an overgeneralization in the sector at least in Ethiopia that service provision is assumed to be done mainly by the HEW and the private sector which is not the way rural communities are getting sanitary products and services in the villages. It is the ‘self-help and communal association’ approach referred by Kloos that works better in reality. Take the example of house construction. It is through self-help and communal skill mix that people build huge infrastructure such as residential houses and the same approach ought to be encouraged for latrine construction, knowledge, skills, products and services where private service providers can get jobs in due process.

As cash is not the affordable priority at the household list of shopping for sanitary products and services, existing/ additional local resources can be fostered to avoid financial excuses. Family labour, neighbourhood support, timber, grass, time and the necessary knowledge, skills and motivation are workable since these resources are already there. Such assumptions can be improved through research and behaviour change at all levels. Although the potential is there for the private sector involvement the journey to achieve this aspect is far beyond the practicality in rural Ethiopia as argued by sector authorities elsewhere:

Evidence from the field... makes it clear that community enthusiasm for keeping water committees functioning, for adopting improved hygiene practices, and continuing the collection of revenue for recurrent expenses, can wane within two or three years of construction. It is essential that the supporting Government or NGO maintains responsibility for such follow-up. This is a long term function, with a need to continue until there is such a ‘critical mass’ of good practice within a district, that there is no going back. This notion of continuing support is in opposition to limited term ‘projectisation’; the fact is however, that water and sanitation provision in developing countries can only work as a long term service managed jointly by community and external support agencies (Carter, 1999.p.10).

The Ethiopian government has made it clear in its policies and health programs that the country’s health burden is complex and requires multifaceted intervention as indicated in the HEP. One aspect of the issue the government has pointed out is to establish a capacity to empower communities and to sustain latrine use behaviours and practices. “Community involvement, in health extension, which comes through empowerment of people, is a necessary skill that is obtained through training and capacities building to enable people participate in decision making in health issues” (Federal Ministry of Health, 2004, p.6).

We will be looking both the HEP and the Sanitary Latrine Construction/ Maintenance packages as they emphasize about the enabling environment and behaviour change. After almost a decade of the HEP implementation how are plans met on the ground and what are the challenges facing households and communities?

“Although robust data are not available, KABP studies reveal a low commitment to latrine construction and use. Reasons are multiple ranging from the poor reputation of Ethiopian latrines (their apparent lack of stability, privacy and safety), the shortage of available, durable building materials, and the reported resistance of men to ‘build a house for faeces’” ( Federal...2005,p.12). Even if some of these reasons are realistic, shortage of building materials is controversial since rural people are able to construct their houses with their own materials except in some areas where wood and grass is scarce.

In 2005 the national average coverage of latrines was estimated 18% with the rural scenario being 9 % and urban 72% where “some of the traditional latrines do not address expressed concerns about smell, rising gas, structural collapse, fear of falling in, flies, privacy and shelter from the elements” ( Federal...2005,p.13). This profile is heightened by current government sanitation figures to 60% while the JMP puts Ethiopia under the 40%, which is an open defecation category in the Eastern Africa region. The 2011 DHS finding states that improved sanitation coverage in Ethiopia is only 8 percent, excluding shared latrines as unimproved.

Despite the significant rise in access to water and improved sanitation, there is no data on the rates of usage of these services. Ethiopia still suffers from a heavy disease burden that is directly related to poor hygiene practices and sanitation services. Each year, the average Ethiopian child has –five to 12 diarrhoea episodes and diarrhoeal illnesses kill between 50,000 to 112,000 children each year. Women and girls are most affected by inadequate sanitation services, as they are forced to spend more time fetching water and caring for the sick than participating in income-generating activities or attending school ( Ethiopian Health Sector ,2008,p. xxix).

The central point of the sanitation strategy states that “while the primary focus is on communities empowering themselves through individual and collective behaviour change to own and lead sanitation improvements, the Woreda will take responsibility for developing the right mix of mobilization, promotion and sanctions to achieve 100% coverage” ( Federal...2005,p.25).

Two regional scenarios are worth mentioning here to substantiate the reality. The Southern Nations, Nationalities and Peoples’ Regional State (SNNPRS) is said to raise the profile of latrines from 13% in 2003 to 88% in 2005/6 due to high consensus building from the top to the bottom political structure. “ In order to achieve a social change of this magnitude, it is widely accepted that five key factors must be in place: well-informed, well-respected, well-connected

leadership; an affordable product; latent demand by a critical mass of early adopters; the right context; and the ‘tipping point’ (WSP, 2007, p.7). A study by Ripple in the SNNPRS concerning the roles of HEW and Community Health Promoters (also called VHP) more over details the experiences of the region (Behailu et.al 2010).

That is how the then Head of Health Bureau for the SNNPRS pictured the high profile of sanitation in this decade similar to a story from Venezuela which was challenged for lack of profound sustainability due to focus on latrine numbers and little attention to community empowerment and capacity development (Holmes, 1995, p.218).

Such gaps in the lack of inner human behaviour change are decisive lessons for the sanitation sector. This is also where the idea of seeking for champions, models and rewards requires careful scrutiny as such figures sometimes use all means including coercion to register latrine results at the expense of sustainability.

A comparable trend is observed in Amhara Regional State with the Doing By Learning Initiative approach where latrine coverage has increased but quality and utilization issues are widely questioned. A survey “ in East and West Amhara showed only 36 percent of available latrines were well-maintained and only 26 percent of squat hole latrines were covered. Moving from open defecation to fixed-point defecation achieves little health impact if the latrine is not used by all families, including children, is not maintained, or is not kept hygienically... While latrine coverage and hand washing facilities increased, many challenges remain. These challenges are mostly related to meeting quality standards, maintaining and sustaining the changes” (WSP, 2012, p.3).

Studies on latrine coverage assessment related to trachoma reduction recommended that “in future studies it will be important to investigate the sustainability of the programme. Promotion activities should include emphasis on rebuilding latrines. The programme may also need to provide additional support for households less able to provide labour/materials” (Ross, 2011, p.257). Another study under the trachoma control program in Amhara region revealed that “high latrine coverage was associated with high use of latrines” which is attributed to political commitment and intensive community empowerment (Ngondi et.al.2010, p.598). However, this also requires additional verifications.

The clear lessons from both regional states is that latrine numbers do not guarantee utilization where the admitted challenge is to see households being experienced and proved in permanent behaviour change . “Ending open defecation is a noble and achievable but ambitious effort. What is critical, and still unclear, is householder behaviour moving up the sanitation ladder; if a household digs an unimproved pit latrine that does not meet minimum standards, will they progressively move up to better practices, or stop at the first small doable action? “(WSP, 2012, p.3).

It is this critical question that the current research attempts to explore. In other words what makes households to construct quality latrines, to utilize it sustainably and properly, to maintain and replace it timely and practice hand washing regularly after use or vice-versa?

To learn from a real time progress, a district is selected from SNNPRS in Ethiopia. Whether latrine use and behaviour change is sustaining will be examined by looking into how household members are functioning with their sanitation practices after nearly a decade since the HEP is initiated in Ethiopia in 2002.

## **2.6. Gaps in literature and contributions of the current research**

Sanitation sustainability and use are globally behind MDG targets and this is a critical situation for developing countries like Ethiopia. The main issues more than meeting the targets is its sustainable use and quality which is not yet examined in global assessments including the MDG except that definitions are used as defining boundaries. The qualitative aspects to answer how households achieve sustainable latrine use are a quest for further investigation. This literature review has noted some of the issues related to the knowledge base on the subject, the existing gaps and the foreseen contributions of the current study.

- (1) The social aspect of sanitation sector requires further investigation as emphasis in the past is given to health and technical dimensions. The real issue now is how to transform individual actions into norms of a community and studying key determinants of sustainable latrine use thereby displaying the necessity for trans-disciplinary approaches and intersectoral collaboration.
- (2) Compared to smoking, HIV/AIDS, cancer, diabetics and others diseases, behaviour change studies in the sanitation field are still low and require further research.
- (3) Lack of continuity and coherence in studying the sanitation evolution in longitudinal- time series method has hindered the learning process as witnessed by a leap-jump from one approach to another. There is little time to reflect on the process, evolution and history of the sanitation enterprise as stakeholders are busy counting latrine numbers. A study on the life cycle of latrines and evolutionary processes is vital.
- (4) The need for empowerment and capacity is acknowledged but its nature, continuity and quality is subject to scrutiny. The gap and the low quality of sanitation capacity is so immense that means of correcting its deficiency is vital at the lower level of the district and village intervention.
- (5) The complexity of the sanitation stakeholders pose an opportunity and a challenge for its implementation .If used in an organized way there is a huge stakeholder resource base but being in a disintegrated range the opportunity is lost and it is turned into being a threat.

A systematic, intersectoral collaboration and research is necessary to ensure the sustainable use of latrines and optimum utilization of scarce resources.

- (6) In terms of methodology, studies such as sustainable latrine use in relation to behaviour change and capacity development require qualitative and observational approaches. Most of the over reporting of 'good' results in sanitation is due to the fact that self-reporting is misleading unless checked by a mix of triangulation instruments mainly focusing on qualitative methods of interview, FGD and observation.

In conclusion, sustainable latrine use through human behaviour change and capacity development has become the central attention of trans-disciplinary research to reduce the global disease burden and to help sustain healthy behaviours for human wellbeing.

In the words of WHO we need *a consumer sensibility which focuses on consumer decision-making and behaviour, applied to healthy behaviours* (WHO, 2009).

We also need integrated trans-disciplinary research methods analyzing the determinants of sustainable latrine use, human behaviour change and capacity development from different perspectives including qualitative and quantitative tools to inform better intervention mechanisms and decision making processes.

## **CHAPTER 3**

### **Methodology**

#### **3.1. Identifying research method and analysis**

Different research approaches are observed in the literature review process. Qualitative information obtained by focus group discussions, open interviews and observations is repeatedly mentioned in behaviour change studies as behaviour is extremely difficult to measure quantitatively (Patton, 1990; Banda, 2007; Fisher, 2011; Avannavar and Mani, 2007).

Structured observations made by continuous monitoring have been successfully applied to interventions involving behaviour modification (Stanton et.al., 1990; Dearing in Haider, 2005). However, this method is time consuming, difficult to standardize and requires a great deal of skill in design to avoid reactivity. Consequently, there is a need to develop simple indicators of behaviour as Stanton and colleagues proposed (1990, p.366).

Longitudinal, time series methods are applied by some of the researchers including Mahler and Barber to measure attitudinal change in the four Pacific Northwest states of USA comprising 33% of the land area (in SIWI, 2008, P.117) . Hackenberg (1970) discussed the methods of population register, vital statistics, and clinical and preventive service records as methods of data collection.

Barens and Jenkins (1972) in their study contributed a rich experience in anthropological and ethnographic methods of story collection where the generic implications can apply for any discipline encountering challenges in development works. Kaivo-oja et.al (2004) focused on continuity and discontinuity issues of health research as Berridge, V., (2000) did the history of public health to take lessons from the past.

Others used combined qualitative and epidemiological testing methods to measure changes both in hygiene behaviour and also changes in infection levels by applying laboratory testing. A case in point is Macpherson who described macro-epidemiological data on population and environmental characteristics and micro-epidemiological tools which uses molecular and diagnostic tools including mathematical models (pp.1319-1320). Kalima (2009, p.537) in his contribution discussed the issues of ethics in public health research in general and the problems of bioethics in particular for which this research has adhered to civil ethical checklist of Loughborough University (See Annex).

“There is an obvious need to study how and why people behave, so as to understand the socio-economic and cultural influences which affect hygiene behaviour” (Boot & Cairncross,

1993). Qualitative information obtained by open interviews and observations is crucial to this process (Patton, 1990), but behaviour is viciously difficult to measure quantitatively. Although questionnaire type interviews may be useful for obtaining information about knowledge, evidence suggests that they lead to over-reporting of 'good' behaviours (Stanton et al., 1987; Curtis et al., 1993). This is where observation method becomes a powerful tool to check and triangulate the results.

Some used a meta- analysis and synthesis of existing research. An example of this methodology is Curtis et.al (2009) who studied 11 country studies on hand washing behaviours to draw lessons and predict trends. Scammell (2010) after analyzing qualitative research from 1991-2008 demonstrated "the potential of qualitative data to improve understanding of complex exposure pathways, including the influence of social factors on environmental health and health outcomes" (p.1146).

On the other hand Parkes et.al (2005) used a synthesis of literature review and applied four case studies where he showed a good lesson on the necessity of trans-disciplinary approaches on SARS and HIV studies while methodologies on Nipah virus and dam studies failed due to underestimating the role of the other disciplines.

This case study is not principally about latrine statistics but on issues of sustainable latrine use; its operations and cleanliness; its maintenance when it collapses or fills and hand washing practices after using it. Therefore, our methodology mainly focuses on qualitative approaches. This allows us to consider an in-depth analysis of the behaviours of households and the driving factors behind these behaviours. Consequently, attempt is made to apply participatory methods with stakeholders on the behavioural and capacity aspects of sustainable latrine use in Ethiopia.

### **3.1.1. Study Design: Instruments**

Since behaviour is related to various components including knowledge, skills, practices and the enabling capacity (Bolt, 2004, p.31) our instruments on collecting data about the sustainable use and maintenance of latrines are focused on case study in order to look the details of behaviour and capacities.

The HSP strategy of Ethiopia also indicates that "measuring behavioural impact can be part of the ongoing monitoring by the community of their own progress and is an integral part of the Hygiene Evaluation Procedure. This approach ('plausible inference') measures something which is clearly measurable, close to the intervention, and is easily understood by the community because they are the ones who set the targets" (Federal Democratic ,2005,p.48).

### **3.1.2. Study Population: Sampling and sample size**

Since “a sample size has to be big enough to allow for scientific analysis ...and it has to be manageable with the resources available” (Bolt, 2004, p.33) we have used different units (households, men and women, community members, HEW, district staff...) purposively and then randomly to consider representative social groups.

A rural community with considerable inputs from government, NGO and other stakeholders in the SNNPRS is selected to understand latrine use patterns. The SNNPRS is one of the pioneer regions in the early stages of the sanitation promotion in Ethiopia and hence ideal to pose behaviour change and capacity development issues.

The research population is purposely selected by considering the above reasons and other different factors including that sanitation implementation is attempted over the last decade, different methodologies are applied during implementation, the researchers can understand the local language or use appropriate translation, and diverse segments of informants can be participated composed of gate keepers, social institutions, women and men of all ages.

### **3.2. Data collection methods**

Document analysis, questionnaire, focus group discussion, interview, observation, and case stories are employed for data collection which facilitated to triangulate the data and enhance quality. In order to address the objectives of the study and to answer the research question, various instruments and diverse informants were considered.

Three enumerators and one assistant were recruited with experience in data collection and local culture namely a graduate statistician, an experienced surveyor, gender specialist and an economist. They were made to read the literature review and methodology chapters of the study to facilitate their understanding and familiarize to the process. Orientation and training was provided to bring into the light the instruments and the nature of the study while supportive supervision is given in person and by mobile phones.

#### **3.2.1. Focus Group Discussion (FGD)**

Small target group discussions with district, *Kebele* and community members were conducted on different themes. The district respondents were contacted after getting consent from the District Administrator and then guided by a staff member from the Water, Mines and Energy Office while the Kebele informants were facilitated by the chairperson and health extension workers. Discussion topics include:

- How latrine construction began and progressed in the Kebele?
- What causes motivation and action/behaviour change to progress or to relapse in latrine use?

- How support to households in promotion and technical aspects is provided? And by whom?
- How integration among different actor was practiced?

According to Hennink (2011, p.167) this method is “particularly useful for exploring new topics, gaining a range of perspectives and understanding social or cultural norms” such as latrine use behaviours. A total of three FGD were conducted in district and Kebele levels with mixed groups.

### **1.2.2. Interview**

An in-depth interview was conducted with some key informants from the relevant categories of the community to understand the evolution of latrines, the drivers of behaviour change and the capacity building support existing in the process. This method helped us to gain in-depth information and personal experiences of individuals and households. It was also “useful for sensitive topics” (Hennink, 2011) like embarrassing elements and taboos in latrine use such as anal cleansing and gender privacy.

The key informants at community level include WASHCOM members, HEW, Kebele managers, and teachers who were found in their work place. The elderly men and women, young people and school aged children were interviewed during village visits.

District staffs from Health, Water, Education, Children and Women Affairs were interviewed in their offices in Homatcho town, the capital of the district. A total of 10 key informants were participated.

Main topics of interview include:

- (1) When and how latrine construction did begin in the household/village?
- (2) Whether latrine use is sustaining /becoming a norm /culture of the house hold members particularly by women and community? How?
- (3) Who get involved in the promotion and construction/maintenance of latrines in the village?
- (4) What are the benefits of using latrine?

The challenge in getting appointment and repeated round follow up from some zonal and regional officials was a discouraging moment which required persistence. Despite the efforts getting some of them was difficult where they were dropped and replaced by others. There was also lack of simplicity in sharing information and data in some offices.

### **1.2.3. Observation**

Applied with the help of structured checklist on latrines and hand washing practices after latrine use this method was useful to complement other data collection instruments. Despite its limitations being uncomfortable in recording field notes, its time taking nature, subjectivity of the observant and difficulty for unskilled observers, it has also strengths. It provides context to

behaviour, familiarity with the cultural milieu, describes unspoken rules of behaviour by providing insight into people's interactions. It also " involves systematically watching and recording peoples' behaviours, expressions ,interactions as situated in the setting or locations" ( Hennenik et.al. 2011,pp. 197-78).This is where the difference lies between mere sight and critical observation as the later "has a purpose ,uses specific techniques ,and involves both the systematic recording of data and the analysis of that data" (Dearing in Haider,2005,p.68).In this research the main focus of observation is the latrine in its location and reaction of the people using the latrine including:

- Latrine construction: pit; cover; floor ; roof; wall; door;
- Effective use of toilets including cleaning: path to latrine, cleaning practices; faeces; urine, flies, smell/odour, slabs,
- Anal cleansing practices and materials used; marks inside toilet
- Maintenance : changes on damaged parts or replacement by a new/better latrine
- Hand washing station and marks for its use: objects used/tippy tap; presence of water, soap/substitute; wet area;
- Social norms –the language of latrine in the community; visual images; shame; embarrassment; respect; disgust....

During self reported survey questionnaire, 10% of the respondents' latrines (98 in total) were observed to discover the reality and to cross check with the self reported information. Enumerators initially complete questionnaire and then get consent to observe the latrine using the checklist. Overall cooperation was good except those who feel embarrassed due to the low quality, un-cleanliness, having a collapsed latrine and non-existence in some cases. Few resisted not showing their latrines which is a sign of not having or latrine being in a bad condition.

#### **1.2.4. Questionnaire**

Four villages of the Kebele were participated in the survey to find out some quantitative and qualitative information including observation checklist.

Proportionally, out of the 975 households, 10 % sample households were selected randomly to collect data and conduct observation on the situation of the latrines and hand washing facilities from each sub-village, 18 households from Boya, 19 from Olawa, 23 from Fooke and 38 from Sattara villages.

#### **1.2.5. Case stories**

Testimonies of randomly selected five households by constructing their sanitation story from past, present and future was planned initially but dropped in the field because the interviews provided sufficient information for such a purpose.

### **3.3. Pre-testing /piloting of the instruments**

The data collection instruments are pretested by applying to non study population but in a similar context where formatting of questionnaires and clarity of guides are edited.

This is done in the district of Lemo ,Dubancho Kebele by taking 10 households into a trial survey and exercising interviews. An analysis is attempted accordingly to understand the coding and result of the data which gave lessons in adjusting the questionnaires and procedures. The time it takes to complete a questionnaire, to observe a latrine and to interact with the respondents was taken into consideration. Questionnaire logical order was adjusted and data collectors get familiarized.

### **3.4. Ethical considerations**

Ethical checklist is assessed by the researcher and checked by Loughborough University Department of Civil and Building Engineering/Water, Engineering and Development Centre for issues related to data collection processes involving informants and related sensitive issues. As Hennink et.al discussed ( 2011) these are mainly concerned about informed consent and anonymity of the participants, confidentiality of data, minimization of any foreseen and unforeseen damage, and balance in analysis by keeping away from subjectivity.

Letter of introduction and the ethical checklist are presented to officials and explained to informants before getting consent and responses. These elements are reflected throughout the research phases as evidenced in each chapter and annexes. To protect informant confidentiality, each informant is given a code and direct quotations are referred using those corresponding codes instead of names.

## CHAPTER 4

### Results

#### 4.1. Background Information

The study area, Gibe district is located in East Africa, in the Federal Democratic Republic of Ethiopia, SNNPRS. It is positioned in the South Central part of Ethiopia 260 kms from Addis Ababa and 30 km from Hossana, the capital of Hadiya zone.

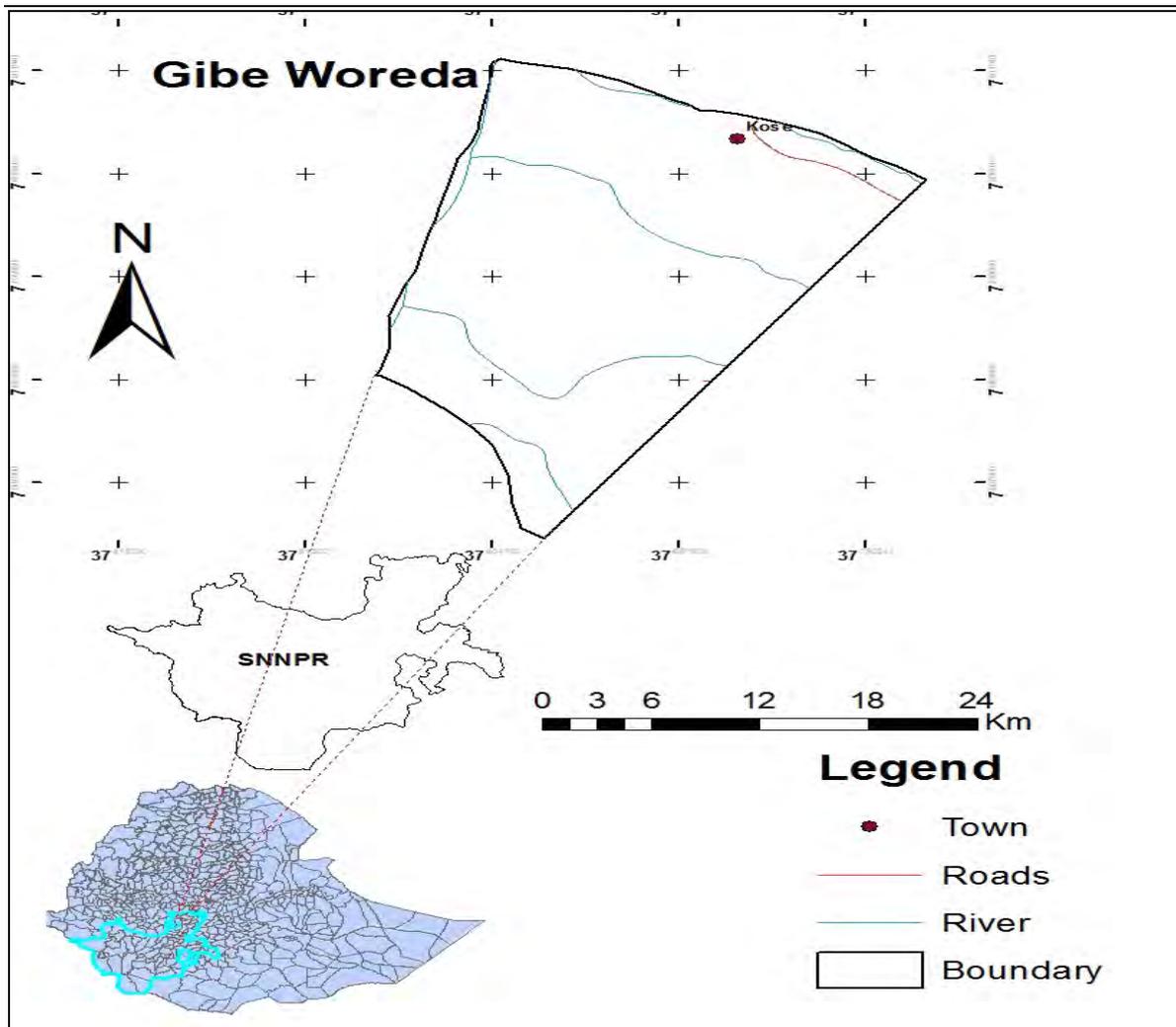


Figure 4. 1 Location map of Gibe district (Kibreab Getachew, 2012)

According to the district office of Finance and Economic Development the geographic profile of Gibe district is positioned in the northern part of the equator having 70.56-70.79 degree longitudes and 37.55-37.76 degree latitudes in the eastern part. The district as its name implies is also situated in the Gibe river basin sharing 2.2 % of its land mass. Administratively

it was part of the former Konteb/current Misha district which used to be a model district in sanitation performance. Until its separation in 2001 from Misha district it administered 25 Kebeles and then losing its three Kebeles in 2005 where another new district, Gomboera maintained three of them. Currently it has 21 rural Kebeles and one town administration where the study Kebele is one of them.

As the district socio-economic profile indicates, 98% of its land is suitable to agriculture with 2% found in the Gibe river basin. The terrain shares 33% low land, 60% mid altitude and 7% high land. The mainstay of the population is agriculture focusing on rain fed subsistence farming with mixed crop production including cereals, fruits, coffee and livestock. In the study sample 88% of the households reported that their income is mainly agriculture (crops and livestock) 9% depending on mixed trade with agriculture and 3% earning their income from salary and related activities.

Demographically, the district has an estimated total population of more than 146 thousand with annual growth rate of 2.9%. The health service coverage includes four health centres one for an approximately 25,000 people and 21 health posts one for an average of 5000 people. There are 45 HEW, two for each Kebele supported by the respective Kebele leaders, four health centres and district health office.

The WASH coordination structure has two levels at district: the WASH Steering Committee and the WASH Technical Team and it has produced a five year integrated strategic WASH plan for the district. The sectors include District Administration, Water, Mines and Energy, Health, Finance and Economic Development, Education, Agriculture, Women and Children's Offices as representatives.

The study Kebele has seven fulltime staff comprising of three Agricultural Development Agents, two Health Extension Workers, one Manager and one Microfinance Agency Representative all accountable to different functions of the Kebele. Institutionally, there are 13 churches, a health post, 2 schools, Kebele office, WASHcom, Farmers' Training Centre, Staff residential houses for HEW and Development Agents, a market, a number of *Iddirs* (self-help traditional associations mainly for managing funeral and related services).

### **Household data**

The study Kebele has a total of 975 registered taxpaying households with a land holding system of 853 male-headed and 122 female-headed families. It is divided into four administrative sub-villages of Boya, Olawa, Fooke and Sattara each consisting of 176,194,225, and 380 households respectively.

Furthermore the Kebele and its four sub-villages are divided into 12 development teams and 152 cells of 1 leader controlling 5 households for administrative and political reasons. The 1 to

5 organs which are the lowest system controlling households include sanitation and hygiene practices.

Three types of household data definitions are adopted by the Kebele administrators:

- (1) Households who are entitled to land holding rights and taxation. These are 767 registered households in the study population, Olawa.
- (2) Households who do not have land holding entitlements and taxation but share family land due to new marriages, settlements or as dependents. Since they are independent households sharing family land they are registered for service provision as a trend in population increases. This type of inclusive registration has produced additional 208 new households making the Kebele to administer 975 households.
- (3) The third type of households registered by the HEW is based on service provision criteria including polygamous families with different housing but managed by the same head. These increased the HH with additional 177 and the total to 1152 households who are not considered by this study as they use shared latrines.

The Central Statistical Agency (2012) defines Household(HH) as a single person or a group of related or unrelated people who live together in the same dwelling unit(s) or in connected premises ,who acknowledge one adult member as head of the household ,and who have common arrangements for cooking or eating (p.13).

### **Data preparation**

For our purpose we have considered the 975 category since the newly formed family system is usually managed by independent householders who provide services to its household members. More over the national WASH Inventory used this category. Out of these total households we have considered 10% sample survey from each village proportionally: 18 households from Boya village; 19 from Olawa; 23 from Fooke and 38 from Sattara villages. The sample size then is 98 households i.e.  $975 \times 10\%$ . The data collection method is using randomization.

The survey result is statistically produced by descriptive analysis as an out put from the SPSS software program after cleaning the data on the 98 Household surveys. It also includes the cross-checking contrast on observation checklist and self reported results on some of the latrine variables.

In addition to the 98 household quantitative surveys and structured observation, an in-depth interview of 18 households and 10 district and Kebele officials/experts is used for the analysis. Focus group discussions with the district WASH Technical Team members, Kebele

WASHcom and women groups are exercised to discuss latrine use issues in more detail and in depth. These are stored in digital voice recorder.

The interviews and FGD are first transcribed as *verbatim* to paper in the original languages (Hadiya and Amharic) and then translated into English as part of the preparation for coding and analysis. Each interview is coded according to the digital voice recorder for anonymity while the list of participants is presented in the annex. Therefore any quotation in the results and discussion section is referred by code to keep anonymity of informants as agreed in the ethical checklist.

The interview and FGD results are summarized into discourse analysis based on the topics of the questionnaires for establishing thematic issues, patterns, associations and sub-levels by grouping codes with similar attributes into categories. This involved weeding out of the redundant materials and concentrating on relevant out puts and qualitative responses for analysis.

## Results

Survey data is collected from 30 male (31%) and 68 female (69%) household respondents. The proportion of male respondents is low due to their absence during the day time home to home visit by the enumerators as they work in the field and farm areas away from home.

46% of the households do not have children under five while 54% have reported having children under five which will give a clue about considering infant faeces handling discussions and observations. This has implications on latrine use practices by household members which include the infants.

The educational background of the study sample include 47% illiterate and 53% literate people at least able to read and write( 43% grade 1-8 and 10% grade 9 and above). The majority (99%) are Protestants with 1% Muslim population in the sample.

**Table 4. 1 Educational background of survey informants**

Educational background	Frequency	Percent	Valid Percent	Cumulative Percent
Illiterate	46	46.9	46.9	46.9
1-8 Grade	42	42.9	42.9	89.8
9-12	9	9.2	9.2	99.0
12+	1	1.0	1.0	100.0
Total	98	100.0	100.0	

## 4.2. Latrine Use: sanitation practices of the study community

Since latrine use is a complex process involving various factors, it is necessary to begin with identifying the information in terms of defecation areas, latrine types and latrine stages as well as patterns in gender preferences. Three types of sanitation practices are identified in the research sample: private latrines, public latrines and open defecation places.

### 4.2.1. Private latrines

The survey result indicated that 70% have at least some sort of latrines (65% private and 5% public/shared latrines) and 30% of the households are using open defecation areas. In terms of strict sanitation definitions and the qualitative analysis, most of these latrines do not meet the criteria of 'improved sanitation' which will be discussed later in more detail in chapter five. Not only is definition a challenge but counting latrines is itself very sensitive issue in some cases.

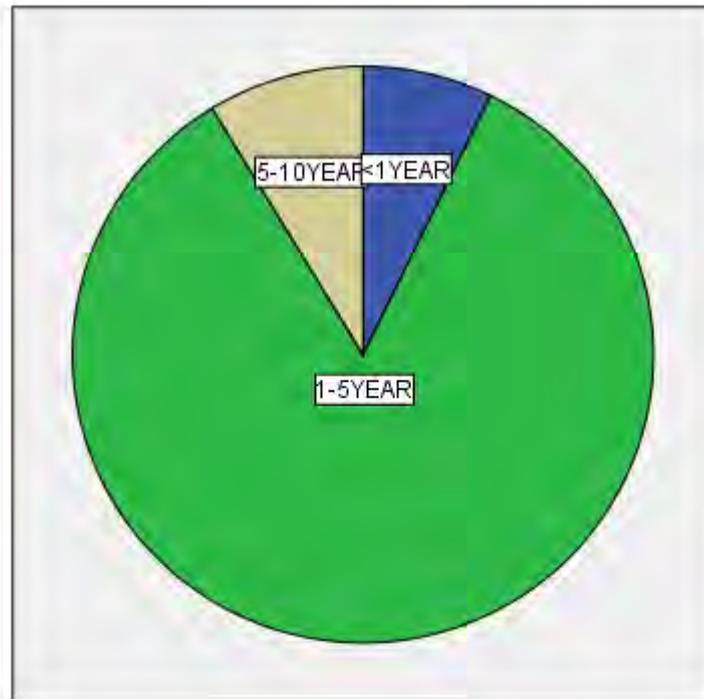
During data collection different figures are quoted for the district latrine coverage: 99% in the past , 93% currently by the Gibe district health office and 69% by the national WASH inventory. This sample signals that it can be less than, more than or equal to 70%. Which source is closer to the reality at ground? Unexpectedly the results between the National WASH Inventory and this sample survey is closer with 1% difference, a much more similar result to make sense.

An observation in the field indicates that fallacy in the latrine facts originate from the respondents as they self report with exaggeration until it is verified by observation. Then reporting bodies like HEW add an error in the next phase unless supervised and verified by an independent entity. Then there is another level of manipulation at the district office to change figures due to unrealistic planning or pressure from political contractual agreements.

**Table 4. 2 Places of Sanitation Practices**

Places of practices	Frequency	Percent	Valid Percent	Cumulative Percent
Open	29	29.6	29.6	29.6
Private Pit	64	65.3	65.3	94.9
Communal	5	5.1	5.1	100.0
Total	98	100.0	100.0	

The survey and qualitative discussions also revealed that (Figure 4.2) the history of latrine introduction into this area is less than a decade as there was no latrine exhibited for more than ten years in use. Most of the latrines (84%) were constructed in recent years i.e. 1-5 years time while 9% were 5-10 years old latrines. Seven percent were less than one year or they are in the process of construction.



**Figure 4. 2 Age of latrine life cycle in stages**

In the last ten years of latrine history in the Kebele since the onset of the HEP, some households changed latrines for the first, second or third time which we can categorize as first generation, second generation and third generation latrines. The time gap and the replacement of latrines in the study area and generally in the country is related to the history of the popular HEP and the deployment of the HEW, an approach since the Alma-Ata declaration on primary health care interventions. When a family is building a latrine three times within ten years period it indicates different implications, either :

- (1) they are self-committed or enforced by external factors to continue using latrines;
- (2) they are repeatedly investing resources and wasting some money, time and labour;

- (3) there will be unavoidable time lapse between the transitions which may force them to go for open defecation;
- (4) the quality of the latrine might be low with poor design and temporary materials which are not durable and exposed to seasonal erosion and flooding, or
- (5) it can be all of the above reasons or the combinations of some these factors.

The typologies in terms of defecation areas (open, private and public) and life stage of latrines ( first generation, second generation and third generation latrines) is related to the background evolution, behaviour of the users and capacity development processes such as the placement of health extension workers in the villages.

#### **4.2.2. Public latrines**

An emerging scenario in the rural villages is the construction of road side public latrines for pedestrians and any-passer-by to make use of it. Five percent of the latrines in this category are related to shared latrines and roadside toilets. The precondition in preparation of such latrines is associated to declaring the Kebele ODF and to celebrate the graduation ceremony as an indication of achievement.

However, issues of quality, utilization and sustainability of these latrines is under question because of lack of ownership as everyone's latrine is no ones latrine and accountability for keeping it clean is still in vain. Another reason is the historical poor reputation in the mismanagement of public toilets in Ethiopia that still signals negative image to public latrines.

A FGD comment on the issue represents the views of other participants: 'road side public latrines are collapsing requiring maintenance and durable materials as well as more awareness creation for the public in funerals, *iddirs*, and churches about its risky consequences if not used properly' (A20-1).



**Figure 4. 3 An example of a road side public latrine with its inside floor of logs**

The District Health Office on the contrary is optimistic about these facilities. ‘Public latrines are effective in the villages because we have checked not only its presence but also utilization. Its’ inside condition and seat will be monitored’ (02/10).

But who owns it and who cleans it regularly is a crucial question to be tackled strategically instead of short term ODF campaign responses. Our observations of these latrines indicate that they are either not used properly or not used at all, perhaps some being very brand new like the above one in figure 4.3.

#### **4.2.3. Open defecation areas and gender preferences**

Almost all household members without a latrine retreat to the bushes and fields with the exception of women (mothers and girls) who largely preferred hiding inside *Enset* plantations in the garden while some men additionally reported to use riversides and forests. This is related to the daily work patterns of the two sexes where women largely stay in the homestead and men in the farms far away from the homes. The other aspect is due to privacy where men are not too much concerned in using open areas while women are sensitive to privacy. A 16

year old tenth grader expressed that 'in the past we hide ourselves inside the *Enset* to defecate but now God helped us to keep our privacy/secrets inside the latrines'(A30).

People using open defecation areas have different awareness levels and they expressed that it creates health problems, lack of privacy and potential fear of risk . Others think that open defecation can cause disease, contaminates the environment while still there are many who think that open defecation is not a problem. "When we speak about latrines they were not willing to accept. 'We have the bush; can't we also use the forest? We do not have a problem. If it is contained; it can smell'" (A17). This was the attitude of the people when the health extension workers began latrine promotion.

Infants under five in these communities are reported to defecate mainly on the floor of the house (63%) and 13% outside the house in the ground. The remaining 25% use containers or leave on their underwear and beds to be managed by family members usually mothers and girls. How and where such faeces are disposed is a matter of concern for health and it is related to the comprehensive use of the latrine facilities by the household members.

Then what happens to those faeces? The responses differ between those who said that they clean and add it to the latrine (51%) and who reported that they throw it to the garden field (30%). Among the remaining respondents, 6% said they either leave it to be scooped by pets and chicken while 13% did not answer but expected to be either they leave it or throw to the garden. These actions are embarrassing to some households to answer because it is commented as a distinguishing mark between the industrious and lazy mothers.

Before we sum up this discussion, one of the HEW of the Kebele summarized the sanitation profile in the survey communities as follow:

The type of latrines is a traditional one with wood and local material. Some have complete and good latrines with thatched roofs and mud walls; others have incomplete latrines without shelter and some even did not have one at all. It is a mixed situation. The reason for having mixed types of latrines is due to awareness differences. Others construct for the sake of obeying instructions without awareness. Some do it by understanding the benefits and necessity of latrines. A few of them pay for artisans to dig the pit and construct the superstructure (A17).

The main challenge in this process is to improve the quality of these low quality latrines and its proper utilization as well as arranging a responsible body for the management of public latrines.

### 4.3. Motivation and behavioural factors determining latrine use

After a decade of latrine promotion in Ethiopia what factors are determining people to construct and use latrines? Based on the results of the data analysis five categories of factors are discussed: education and awareness creation; cleanliness and decency; dignity and convenience; change in culture and quality of the latrine itself.

#### 4.3.1. Education and Awareness creation

Survey result indicated that the education and pressure by HEW (41%) are the driving forces in motivating people for latrine construction and use followed by fear of flies ,disease, bad odour and dirt contaminating the environment (12%). Dignity, safety, and convenience are mentioned in some cases (9%) as incentives for having a latrine. The remaining 38% listed different factors including church and NGO promotion, Kebele support, the need to see better health and decent life and the diminishing of bushes to hide.

**Table 4. 3 Motivating Factors for Latrine Culture**

Factors	Frequency	Percent	Valid Percent	Cumulative Percent
Dignity	2	2.0	2.9	2.9
Convenience	2	2.0	2.9	5.8
Avoid Flies	8	8.2	11.6	17.4
Safety	2	2.0	2.9	20.3
HEW	28	28.6	40.6	60.9
Other	27	27.6	39.1	100.0
Total	69	70.4	100.0	
Open area	29	29.6		
Total	98	100.0		

The majority of interviews and focus group discussions emphasised the role of awareness creation and education in changing latrine use behaviours. This is true to both latrine construction, latrine use and latrine quality improvements.

On the other hand the discouraging factors for not having and using an improved latrine is discussed by households. Top on the list is negligence and low traditional attitude that is

attributed for lack of latrines by the householders. Lack of knowledge and skills, shortage of money , unavailability of construction materials and other reasons such as being a widow, husband and son leaving family in search of jobs cause for not having a latrine. The use of a public latrine nearby or a shared latrine as well as the availability of bushes make some households not to build their own latrine. Time constraint and economic problems are also described as excuses.

#### **4.3.2. Cleanliness and decent environment to avoid flies**

The need to see a clean and decent environment free from flies is the second most desired aspiration of households to have a latrine culture. Farmers mentioned that having a latrine avoids faeces and thereby facilitates cutting grass for animals, cutting of trees, weeding fields and doing other farm activities while women cited it eases *Enset* food processing as the work place will be free from bad smell and disgusting site.

‘When we attempt to cut grass the faeces is a disgusting thing and flies are distracting us. A village that has cleaned its field is good and the one unclean is bad’ village elders commented. Another farmer remarked that ‘it [the latrine] avoids dirt and good for the cleanliness of the environment. The cleanliness is pleasing to cut grass and does other activities’ (A18).

#### **4.3.3. Dignity, convenience and safety**

“Since latrine keeps privacy and all the personal secrets, it should be handled better than the residential house because faeces are filthy matter to be buried like we wear clothes to cover our private parts” (A16). These remarks from one of the informants indicate that privacy and convenience can motivate people to construct latrines particularly for women and girls.

Convenience in relation to the latrine design such as a very short latrine, a latrine without roof during rain or a very narrow hole are not suitable for the user and hence discourages. A collapsing latrine causes fear of fall, a latrine constructed far away from the home is not appropriate to be used in darkness and a latrine with a very wide hole is nuisance to the user.

#### **4.3.4. Quality of latrine as a motivating factor for proper use.**

Households who self-reported that their latrine is improving (34%) attributed the reason for a strong education and awareness creation which enabled them to have the proper knowledge and skills. The availability of construction materials such as wood, grass and straw (33%) played a greater role to improve their latrines while affordability, the need to have safety, convenience and privacy (15%) also motivated them to upgrade their latrine infrastructure.

Making it closer to the house to avoid fear of darkness and animals( which is also a safety factor), fear of collapse and filling up of the old latrine and government enforcement has contributed to quality improvements .

Beauty, aesthetic value, comfort for agriculture activities such as grass cutting and *Enset* food processing played a role in the improvisation process. It was the desire to see a clean, decent and pleasing environment by avoiding dirt, flies and faeces those most motivated households.

Avoiding bad smell is mentioned by some but it is still controversial as other community member's perception is that containing faeces in one place aggravates bad odour which is a characteristics of poorly constructed and mismanaged latrines. Few households who are satisfied by their current low quality latrines assume that there is no need to improve it.

**Table 4. 4 Factors Attributed for Latrine Quality Improvement**

Factors	Frequency	Percent	Valid Percent	Cumulative Percent
Affordability	5	5.1	15.2	15.2
Availability	10	10.2	30.3	45.5
Knowledge	11	11.2	33.3	78.8
Safety	4	4.1	12.1	90.9
Other	3	3.1	9.1	100.0
Total	33	33.7	100.0	Improving
Open/ Unimproved	65	66.3		29+36
Total	98	100.0		

However, the situation as discovered by an observation checklist is much less than self reported by the families. Structurally analyzed, 83% of the latrines lack doors, 59% lack walls/shelter, 36% do not have roofs and 13% have a collapsing pit and floor exposing to fear of fall. Physically observed, 7% are abandoned, 16% repaired, 35% old and 44% newly constructed. Hygienically discussing, 61% are not cleaned, 49% have flies; 42% with faeces spillage on the floor and 51% with bad odour. A more closer look at the use of anal cleansing materials indicated that the majority use leaves, grass and old papers from exercise books and any used papers.

This indicates that there is a long way to go in improving the quality of the latrines, its utilization and sustainability as commented by the informants from the technical team members.

The people are realizing that the little pit is filling up soon and wasting their labour, time and material again. The wooden log is being decayed immediately by termites. That is wasting their resources and labour. How are the people responding to such challenges? They have begun lining with stone after finishing the pit in order to prevent from the termites though it is not a standard one. They are preparing materials resisting termites. Otherwise they do not reach quality standards (A02-4).

A similar comment from the women's point of view confirms the challenges of quality and utilization as people are not using latrines with hygiene while termites, seasonal strong sun and rain is destroying temporary latrines.

Given the observation results and the opinions of informants' , the quality of latrines is so low that it cannot meet improved sanitation definitions. In this respect the DHS and JMP figures show the reality than government reports which do not seriously show the quality and usage.

#### **4.3.5. Reasons for lack of latrines and its poor quality**

We have seen that knowledge and awareness is the main reason for having a latrine and also for improving its quality when backed up with a strong follow up, monitoring and positive enforcements. Having a latrine of any type is one step forward in the sanitation ladder but it is ensuring an improved latrine and its use that matters most.

The study revealed that the latrines in Olawa Kebele are with low quality. Perceptions of the household members also confirmed this as self reported in the survey with 52% saying that their latrine quality is not improving due to various reasons ( Figure 4.4.).

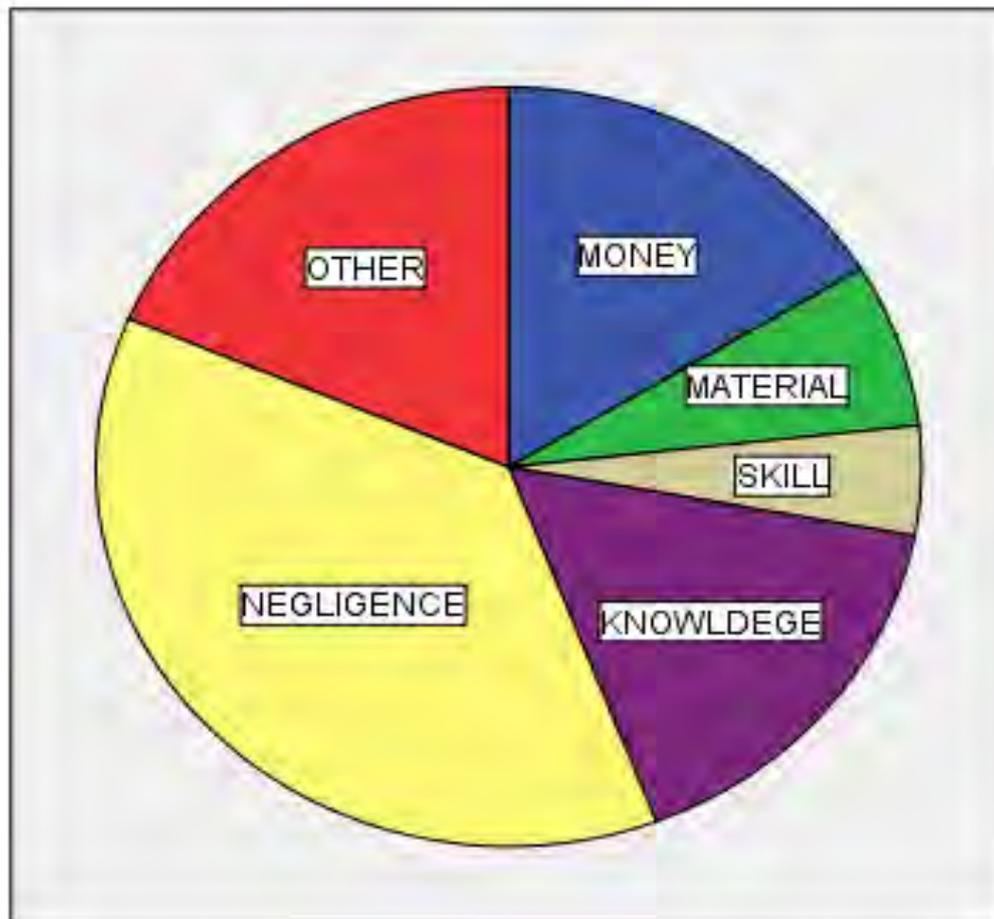


**Figure 4. 4 latrines in different stages as an example ( see the ladder at annex)**

Here we have treated having a latrine and improving a latrine separately because both are different stages and attitudes.

Those who did not construct their own latrine reported various reasons (Figure 4.5) including negligence (37%), lack of knowledge and skills (21%), lack of money (16%), shortage of

construction materials (7%), as well as other reasons (19%) such as being a widow, living without a husband and/or son, time constraint ,use of shared latrines and open field.



**Figure 4. 5 Factors Inhibiting Latrine Construction in the Study Area ( Opinions)**

On the other hand lack of money (25%), time constraints (22%), shortage of materials (19%) and lack of skill and knowledge (11%) are ascribed as reasons for not improving latrines together with other attributes such as lack of follow up and termites causing frequent collapse.

**Table 4. 5 Reasons for not improving latrine quality**

Reasons	Frequency	Percent	Valid Percent	Cumulative Percent
Money	9	9.2	25.0	25.0
Material	7	7.1	19.4	44.4
Skill	1	1.0	2.8	47.2
Knowledge	3	3.1	8.3	55.6
Time constraint	8	8.2	22.2	77.8
Other	8	8.2	22.2	100.0
Total	36	36.7	100.0	
OD, Unimproved	62	63.3		29+33
Total	98	100.0		

One key informant stated that latrine quality of some people is low because there is shortage of grass to cover the roofs as the cost of grass is increasing and due to lack of wood as small land holding system do not allow them to grow trees (A14).

Such low quality and utilization rate as explained by respondents is due to some people being negligent while others due to lacking awareness and materials. There are other groups who built latrines for the sake of obeying government orders and fearing fine. Such people, no doubt, use bushes. The other problem is related to misuse by children unless parents show to a younger child who in fact applies to adults as well because there is lack of skill in appropriately using latrine seats/holes by adults.

On the other hand there is a progress in due process in latrine quality and utilization as described by district health staffs who gets involved in monitoring villages:

Initially when people are mobilized to prepare private latrines, they constructed unreliable, temporary latrines because they were only told to do so. Then many of them get destroyed immediately. After that experience, our main tool is changing human behaviour and attitude. Our best achievement is not the activities and outputs but understanding people's beliefs and we have seen change and improvements compared to the beginning. In the past they do what they were told to do for the sake

of accomplishing instructions. But currently they discuss among themselves and decide to free their villages from open defecation-identifying the risks and benefits. This is not due to instructions or expert lectures but the inner motivation of the people themselves. So we do not expect them to retreat back (A02-3).

Yes things are not like a decade ago in terms of the latrine evolution but the right question to ask time and again is crucial: is this sufficient? A high level district official critically assessed that latrine quality and utilization is far from the reality.

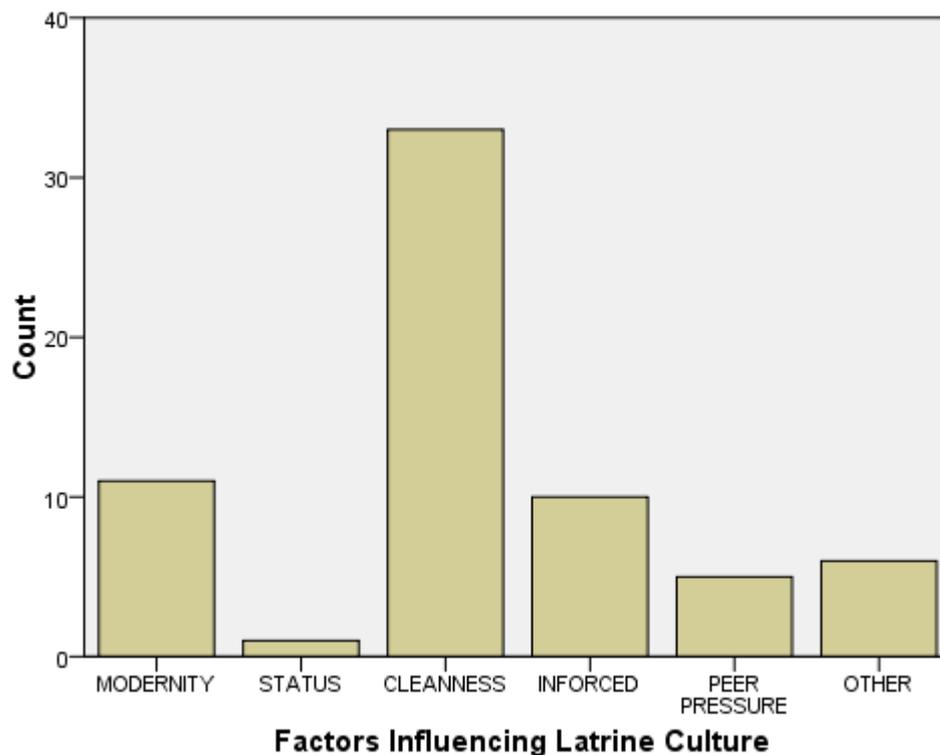
Most of the house holds did not constructed quality latrines: they dig 2—3 meter deep, it fills soon, flies go- in and go-out.... If flies are not controlled and they access latrines, it means that they will reach home and pose a risk. So it is necessary to raise the awareness of the people to construct a better latrine.

If we strictly evaluate the current latrine coverage which reached 99% in rural areas and apply quality criteria it can get down to 30-40% or even down to 20%. So we should revisit it again to see quality latrines and also ask the users to get an answer from their perspective (A02-2).

This indicates that people have begun to be serious about the reality and there is a need to upgrade the awareness and education program and monitoring activities. This logically leads for the need to internalize quality and utilization issues and to move to another height of latrine culture side by side with the revolutionary campaigns.

#### **4.3.6. 'Latrinization' - an emerging culture and social phenomena**

Despite the push and pull factors on latrine practices the community members strongly stated that the need to see a clean environment accounts the main reason for developing a latrine culture. Other factors for a growing tradition in latrine use is attributed to modernity, enforcement, peer pressure and the need to have a better status. Education , awareness creation and follow up which leads people to seek a clean environment is a strong point most discussed in other sections.



**Figure 4. 6 Factors Influencing Latrine Culture**

Enforcement is applied despite its controversial nature as some arguing that force is not used during ODF campaigns and other promotion methods. The Kebele council at Olawa ,however, has passed a decision to impose punishment measures as explained by one of the officials.

We have decided that a farmer who do not dig, construct and use a latrine will be fined 50 ETB (2.94 USD). We have also reminded for the second time to prepare road side latrines in each village and we hope it will continue improving. If anyone refuses to prepare a latrine in the village we have ordered the militia to arrest him/her because we have a plan to declare our Kebele as an ODF (A16).

The District Health Office on the contrary explained that force is not used during latrine promotion. ‘Those farmers who do not construct a latrine will be advised. If convinced, they will construct .Punishment do not result in change. If it is by punishment they will construct it today and leave it tomorrow. So we do not use punishment but we work to convince people (02/10).

There is a background to the use of force and fines in the Ethiopian Public Health Proclamation of the 2007 and the sanitation protocol of the 2006 which in the later case suggests that ‘where householders refuse to construct and use latrines evidenced by scattered faeces, on-the-spot fines can be administered, but preferably deferred to a

community service order where the offender has to construct his own latrine or help a relative' (Federal, 2006, p.29). But this is not backed up by directives and guidelines from the Council of Ministers although awaiting ratifications.

In fact culture and custom can not be improved easily and overnight but taking lessons in making latrines as part of a culture is necessary. An observation from the health office explains that:

The main issue is not what is accomplished but the behaviour change observed in society. We are in a moment when people are ashamed to untie their trousers to defecate in open area. Children are aware at school; parents educated at Kebele; all members of a community getting repeated education in various ways to make it a culture. We do not give up by being satisfied with our achievements and we do not say there will be no problem afterwards. It is a continuous process with supportive supervision and follow-up. The current status compared to the past indicates where the people can reach in the future (A02-3).

So what will be the hope for the future? Some households can achieve quality, make proper use of the latrines and sustain their latrines while some may take more decades to step up into the top of the ladder. Behaviour change by itself as an outcome of education and knowledge cannot be overstated here in the absence of economic development to achieve quality latrines.

#### **4.3.7. Water supply as motivating factor**

The role of water supply is mentioned as a motivating factor in the latrine use processes. This is mentioned both by the householders in the study Kebele and district staff as a general trend and related to the NGO water supply and sanitation project both in hardware and software promotion that contributed to the behaviour change in latrine use. However, the slab demonstration is wrongly interpreted as a subsidy and misled public attitude.

#### **4.4. Hygiene Practices: Hand washing after latrine use**

Hand washing practices after later use is an related factor in the chain of sustainable latrine use discussions. Both in the household survey, in-depth interview and the FGD, the issue was raised together with the handling practices of infant faeces.

Most respondents (56%) openly reported that they do not wash their hands after latrine use. Among those who self reported to wash their hands after latrine use 21% do so with water only, 16% with soap, 3% with ash and 4% with other methods. One respondent said that 'we have hanged jerry can and soap on a pole to wash our hands after latrine use as they educated us' (A13) while others do not wash at all.

**Table 4. 6 Hand Washing Practices**

Hand washing Practices	Frequency	Percent	Valid Percent	Cumulative Percent
Not Washing	55	56.1	56.1	56.1
With Water	20	20.4	20.4	76.5
With Soap	16	16.3	16.3	92.9
Ash	3	3.1	3.1	95.9
Other	4	4.1	4.1	100.0
Total	98	100.0	100.0	

Observation checklist in contrast to self reported results revealed that 75% of the observed latrines do not have a tippy-tap or substitute near the latrine, 96% do not have water in the containers with tippy tap, and there was no soap in 94% of the latrines and no ash visible in 99%. The district health office positively noted that they “monitor hand washing practices and observe that people are putting water in jerry cans and ‘high land bottles’ [plastic bottles] or other things. The water is finished during the day time which indicates their usage. Farmers are also attempting to use ash and soap” (02/10).

However our observation is usually done on day time beginning in the morning and the health office claim is arguably controversial and contrary to our findings. Although the physical presence or absence of hand washing devices, water and soap/substitute is not a definite indication of the actual hand washing practices, self reported result for not washing and observation findings indicate a very low hand washing habits. Devices are only proxy indicators and they cannot be taken as a guarantee unless verified by other methods like observation or genuine reports.

#### **4.5. Diarrhoea occurrences and treatment**

Since diarrhoea occurrence is largely related to sanitation and hygiene practices a question is asked about its prevalence in the households. In the survey, 80% reported non-occurrence while 20% reported incidents of diarrhoea.

Yet, this is only an alternative indicator and cannot be taken as reliable information on its prevalence rate due to lack of clinical data in the Kebele which is not also the scope of the study. The finding though leads to further study on the issue.

Asked about the diarrhoea treatment options 80% of the respondents said that they did nothing while 14% went to the clinic and others (6%) said they either prayed or gave traditional treatment such as herbs. This calls for a need to conduct WASH impact studies in relation to outputs, outcomes and achievement of goals.

#### 4.6. Empowerment and Capacity Development

Other than behaviour change factors, the importance of empowerment, capacity development and inter-sectoral integration are discussed in the research process. Access to technical skills and services; availability of materials and products; follow up and monitoring and the quality of the capacity and the motivation factors are examined in this section.

##### 4.6.1. Access to skills and services

Households' access to skills and services on latrine hardware and software aspects is coming from various sources. Most reported that they get such services by their own efforts (58%) while others get from the government mainly from HEW, VHP and Kebele leaders (22%) and 9% from NGO. The remaining (11%) depends on their neighbours, relatives, artisans and observation from other areas. Few mentioned that they have got the information from the towns and relatives in the urban areas.

**Table 4. 7 Access to technical skills and services**

Access to technical skill and services from:	Frequency	Percent	Valid Percent	Cumulative Percent
Artisan	1	1.0	1.4	1.4
Neighbours	2	2.0	2.9	4.3
HEW	15	15.3	21.7	26.1
NGO	6	6.1	8.7	34.8
Self	40	40.8	58.0	92.8
Other	5	5.1	7.2	100.0
Total	69	70.4	100.0	
Open Defecation	29	29.6		
Total	98	100.0		

For communities like Olawa which emerge from an open defecation practices, the change in the mind set as well as the techniques of constructing a latrine is challenging. Who technically support them in the mechanics of latrine building where collapse and termites are reported problems?

The majority, 58% of the households described that they are preparing latrines by their own perception. This aspect of technical support is related to the quality of latrines and empowerment of households to ensure sustainable latrines in communities which will be discussed in more details in chapter five.

Technical support in terms of technologies and model latrines is inhibited by the CLTS approach although the sanitation protocol of Ethiopia allows such learning provisions. Kaml Kar in his analysis emphasized that “prescribing models either during or after inhibits the emergence of local innovation of latrine design, and thereby also the development of innovations regarding many other local-level hygiene and non-hygiene issues .The practice also inhibits using no-cost or low-cost appropriate technology and local materials, increases dependence on external inputs and risks creating inappropriate and unwanted supply” (Kar and Milward, 2011, p.49).

Although one agrees with the ban of hardware subsidies, however such approaches of discouraging latrine technologies and models do not help householders to step-up into the improved sanitation facilities. Since people best learn by seeing and demonstrating, CLTS’s policy contradicts learning principles and also is against sanitation protocol of Ethiopia.

#### **4.6.2. Availability of materials and products**

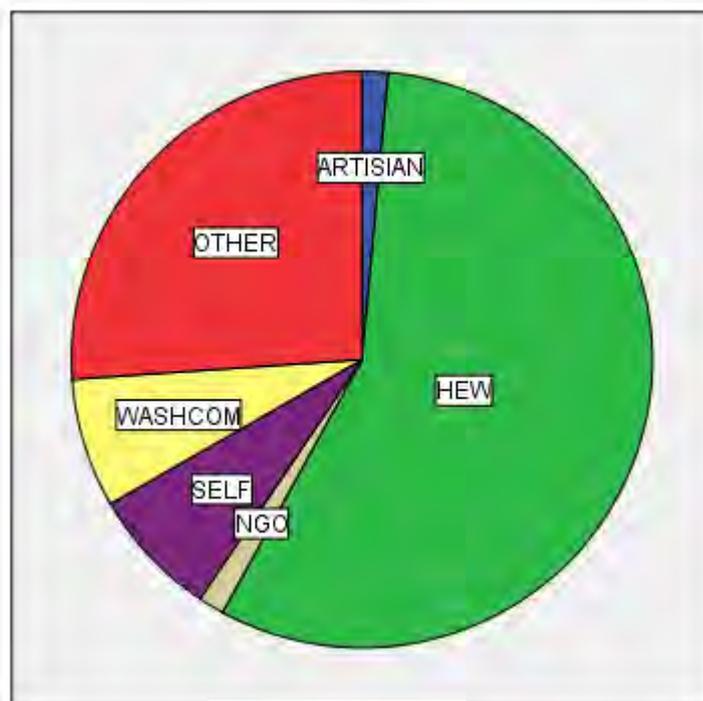
Latrine construction materials and products such as wood, grass, straw, slabs, roofs, and door materials are predominantly supplied by the families themselves (in 97% cases) either from their own resources or purchased. The other supplementary provisions come from the NGOs (2%) and other sources like neighbours and relatives (1%). There are issues over the 3% material provisions in the form of slabs for latrine seat, jerry cans as water containers for tippy tap and soap for hand washing because households who did not receive these benefits are still wrongly waiting for that provision as their right.

Though done in a positive motive to reward best performing households to stimulate competitions and demonstrate technology options, such incentives are instead causing division among communities and creating dependency syndrome which is the major problem in the development sector in general and in the sanitation sector in particular. An expectation from one household describes the situation: ‘we built a temporary one [latrine] because they said they will give some sand and stones’ which is a reference to slab distribution.

The household hierarchical selection of construction materials nonetheless puts latrines at the last part of residential houses, kitchen, animal enclosure, and store for animal feed. There is still unchanged tendency not to spare good construction items for latrine structures and the ever increasing cost of wood and grass is posing additional challenge.

#### 4.6.3. Follow up and monitoring

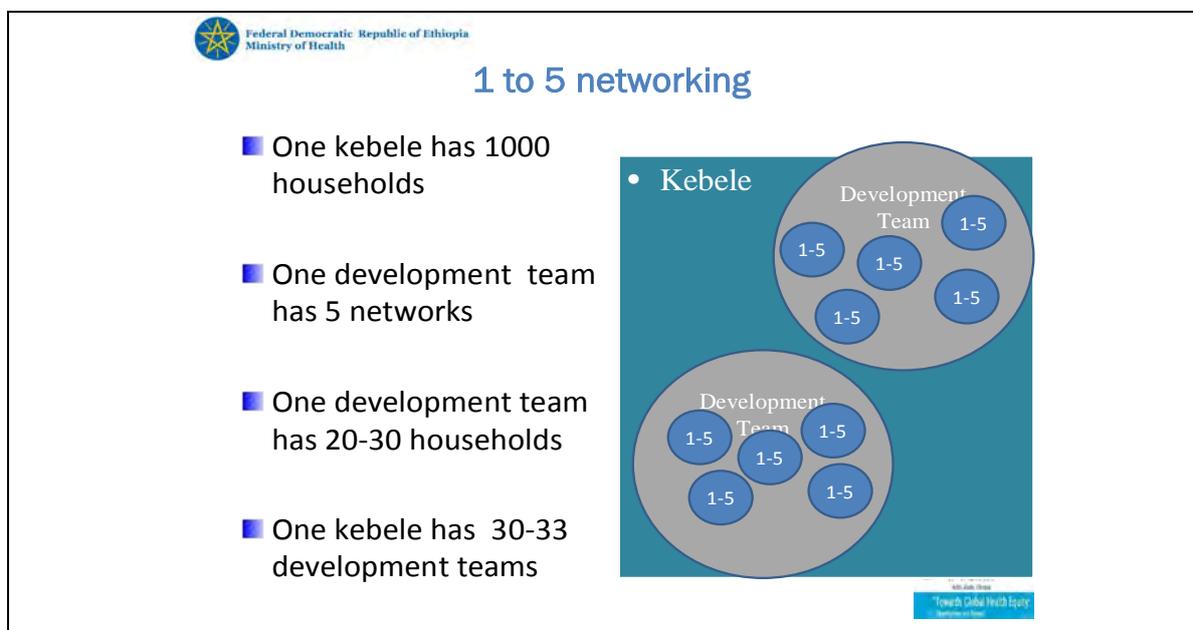
Follow up and monitoring of households and latrine operations is mainly done by the HEW (in 57% cases), by WASHCom (7%), self-monitoring which is argumentative (7%), NGO (2%) and support by artisans (1%). The remaining 26% reported that they did not receive supportive supervision and follow up. These categories of households require special focus because they can stay in an unbreakable behaviour change situation being in a resentful status. Or they might have been monitored but they refute it and use lack of support and follow up as an excuse.



**Figure 4. 7.Follow up and Monitoring**

However the existing follow-up and supportive monitoring to families is limited and irregular due to time pressure on those who do the follow up. As one of the Kebele officers commented “it is difficult for HEW to reach each and every household because there are too many houses and they have also other tasks in office [health post]”(A16).

The volunteer health promoters (VHP) who support the HEW are no more supporting the process because they are not motivated for lack of incentives as explained by the health extension workers. Instead they are now being replaced by health development cadre of 1 for 5 organizational structures as it is schematically indicated below in figure 4.8.



**Figure 4. 8. An Example of the Health Development Army (Source: Tesfaye, 2012)**

Qualified as the ‘backbone’, ‘bloodline’ and ‘flagship’ of the Ethiopian health sector, the health extension program is now being restructured at Kebele level with the 1 to 5 networking health development army as depicted in the figure above. Such structural changes may work for better but highly depend on volunteerism as the VHP were in a similar position before being worn out and replaced by this new cadre.

#### **4.6.4. Quality of the capacity and the motivation**

The staffing level and work force both in the Kebele and district seems sufficient but the quality and the motivation has limitations in terms of initial qualifications, in-service training, remunerations and incentives. Among the challenges mentioned by HEW the complexity of the HEP, the work load and low pay are shared by others as well.

Too many packages are impossible to remember all and some delicate packages like delivery services which require additional training; the work load is increasing...; remuneration and promotion is not motivating and equivalent to services; career

development structure and further education opportunity is far from hope because of its insufficient uptake annually- only 2 per year! (A17).

The district health office is however positive about the existing capacity and its quality despite gaps.

Our human resource is sufficient as we have two HEW in each of the 22 Kebeles. The district health office has seven work processes resourced with 22 staff. It is sufficient through in-service trainings and supportive supervision to fill capacity gaps. The challenge now is the workload for people working in the Kebele, village teams and 1 to 5 cell groups. The 1 to 5 approach is helpful as one leader facilitates five households and discusses health issues before reporting any challenges to the HEW (02/10).

The crucial controversy over the capacity building training is that staffs are arguing for lack of quality training to cope up with the ever-increasing HEP complexity now incorporating some clinical procedures like delivery and under five infant medical services in the health post. The health office on the contrary explains that they have recently introduced an integrated HEW training approach to correct the gaps.

There is a lot of training opportunities for HEW. We have introduced a refresher training for 10 days on the 16 HEP covering all the health posts and HEW. It focuses on problem solving because there was a complaint that too much training to HEW has affected their daily presence and performance on the job. The comment further noted that HEWs are moving from one training to another without realizing its value and application on the job. That is why we have introduced an integrated HEW training recently (02/10).

The remedy in further education and career development includes providing a short term integrated refresher training and upgrading the HEW from level 3 certificates to level 4, a diploma program in a health science college. Promotion and career development though promised is not implemented yet.

Other incentives mentioned by officials include the construction of residential houses for the HEW to motivate and make them to live closer to the communities.

#### **4.7. Intersectoral coordination and integration**

##### **4.7.1. The horizontal integration**

The current sectors having undertakings in the WASH structure and sanitation roles with MoU include the three major WASH offices- Water, Health and Education from the top federal level to the lowest Kebele structures. The office of the Finance and Economic Development has later joined the MoU though. This is a lesson from the past drawbacks as this office controls all

the finances and resources. At district level other stakeholders are being considered including the offices of District Administration, Agriculture and Rural Development, Finance and Economic Development and Women and Children's Affairs.

Not only does the involvement of relevant number of sectors that matter for sanitation achievements but also the levels, efficiency and depth of involvement is crucial.

At district level the two coordination levels are the WASH Steering Committee (9 members by including Office of the Youth Affairs and Administration Office Secretary) and the WASH Technical Team composed of the above seven sectors where the SC is political level composed of the heads of each offices chaired by the district administrator. The WASH Technical Team consists of technical experts from the same offices chaired by the Finance and Economic Development Office Deputy Head and exercises detail and technical issues including the preparation of a district WASH strategic plan, budget and reporting.

The SC are expected to meet once every month to review the progress of WASH activities in the district while the Technical Team are to meet fortnightly to exercise follow up on the operations of the WASH sector and related stakeholders. Sadly, both are not materialized.

A district strategic WASH plan prepared by the WASH Technical Team and approved by the WASH SC is the guiding aligned document. This is reported as a good progress at district level as each sector contributes for the plan and aligns to the implementation process. It is also said to be a participatory process involving Kebeles and the public on selected cases to get ownership and in-kind contributions from the communities.

However, the follow up on its execution, reporting, monitoring and evaluation is not happening regularly as it was promised to have one plan, one budget and one report. The reasons vary for the frequency of such big gaps including turn over of officials, work load by each sector, lack of expertise and leadership by the administration are mentioned frequently. This is furthermore criticized by the technical team members.

We have been trained in harmonized WASH approaches and get motivated but the change in officials has hampered its implementation. The administrators and office heads are changing from time to time without implementing while the new leaders start from zero with out understanding and documentation. They only think of it when visitors come to ask.

Although the foundation is established for integration with a common WASH strategic plan and budget its implementation is not effective due to lack of professional leaders and high turnover of the leadership and experts. Lack of logistics, budget and transport facilities have also limited monitoring and follow up of operations' (A01).

This concern is shared by the WASH Technical Team members as one of the major constraints affecting WASH performance efficiency. “We are expected to meet 1-2 times monthly to deliberate on problems and report to the administrator. But we are not able to conduct meetings monthly due to work load on the sectors and the staff” one of the members noted.

This WASH Coordination mechanism, moreover, did not include associations, NGO and private sector at the moment which is its defect but necessary to be corrected because NGOs and the private sector are valuable WASH stakeholders for now and for the future.

Consequently, the challenge with horizontal integration is both within a specific sector office, for example within health office to integrate its own various units/work processes and then at the intersectoral level to bring all sectors for a *one-plan-one budget-one report* concept and its application. Currently it is only the one-plan that is attempted at district level.

#### **4.7.2. The vertical approach**

The vertical tier from Kebele to national level is a long process of five structures with a counterpart in each of the horizontal integration with other sectors which we have discussed above.

At the lowest Kebele level, the system is organized into sub-villages, development teams and 1 to 5 household clusters which replace the VHP who were selected to support and monitor an average of 30-33 HH. The new 1 to 5 health development army includes a tightly knit and trained people mainly women whose responsibility is training the five households under their control. The district health tier is then connected to the Kebele structure through its health centre serving a cluster of five or more Kebeles which in turn supports the health posts and Kebeles in its domain.

The Kebele cabinet where the HEW is a member and the ‘common post’ with the agriculture extension workers are some of the coordination mechanisms where common decisions are made and integration of activities attempted. Schools cooperate with HEW in teaching students about sanitation and hygiene which is another way of reaching parents and communities.

Other stakeholders requiring a systematic coordination for sanitation mobilization include NGOs, religious institutions (13 churches in this Kebele), *iddirs*, Anti-harmful Traditional Practices Committees and other institutions. The HEW collaborates with these and other stakeholders as witnessed by one of the HEWs:

We go to schools to teach students with the support from the principal and teachers during parade. The purpose is to aware students and also to reach parents through

them. Churches teach occasionally on issues related to latrines, HIV/AIDS and disease transmission. *Iddirs*, self-help associations, give awareness to their members.

We collaborate with Development Agents in the Farmers' Training Centre because of a new structure called 'common post' for coordination where they support us in health promotion and we also support them in agriculture extension work (A17).

If these social institutions are mobilized in a proper manner, they can accelerate the behaviour change and the empowerment process drastically.

#### **4.7.3. Levels and phases of integration**

Historically the WASH MoU ends up at the federal and regional levels although it has reached the districts at this point in time. The other challenge now is that the district WASH strategic plan, the budget and reporting is on paper lacking implementation with a regular supervision, reporting, monitoring and evaluation as well as feedback for the re-planning cycle.

This is one of the draw backs the WASH sector is being challenged which is in turn affecting the quality of the end outputs- the latrine quality, its utilization and continuity as reflected in the study.

#### **4.7.4. Quality and continuity of the coordination**

Does the WASH coordination and alignment continue without interruption from top to the bottom vertically and at the horizontal levels?

The answer is to wait and see the progress but the current practice at the district level signal for a correction in reviewing the strategic plan, regular reporting on its implementation and evaluation. Its out comes can be evaluated after five years which can serve as a feed back for the planning cycle. If the WASH SC and the WASH Technical Team suspend at preparing a strategic plan without the follow up, reporting and monitoring, its continuity and quality will be jeopardized. Participation is not all inclusive as stated in the sanitation protocol of the 2006 where ' all Woredas will have an inter-sectoral co-coordinating committee with the participation of Government officials, NGOs,CBOs, Women's associations, private sector and religious leaders'( Federal.2006, p.17).

Both the horizontal and vertical levels should verify the quality of the operations and the outcomes instead of being satisfied with the high number of unused and unsustainable latrines as the evidence reveals. A check-and-balance system is also necessary to independently regulate and evaluate the achievements.

## CHAPTER 5

### Discussion

The case study indicates that the Ethiopian HEP is the tool in promoting awareness creation and latrine culture over the last decade since its inception in 2002. It has positively contributed in increasing latrine coverage and promotion through political will and commitment, resource allocation and human resource development for household empowerment. The progress on capacity building and intersectoral integration is also positive.

Despite all the investments and achievements in the sanitation sector, however, the quality of latrines, its utilization rate and sustainability remains a long way to be advanced.

*Three major factors are discussed in this research to discover the determining factors for sustainable latrine use: factors related to human behaviour change, issues with regard to community empowerment and capacity development as well as inter-sectoral integration roles. Each of them are discussed below.*

#### **5.1. Key determining factors for sustainable latrine use**

Before discussing the findings on the main issues of the research it is necessary to briefly outline the latrine coverage status in the study area in particular and the country in general.

Sanitation coverage figures pertaining to the country vary widely and are controversial. These remained to be verified by the results of the National WASH Inventory results, a country wide census of WASH facilities and services. The district sanitation profile as presented by the Gibe Health Office is also controversial as it has decreased from 99% in the past to 93% at current estimates.

The latest national sanitation coverage and usage figures according to the National Hygiene and Sanitation Strategic Action Plan (2011,p.8) are posed with caution by comparing JMP estimates and Ethiopian government sources claiming 60%. It is not yet known what the National WASH Inventory results will come up with but preliminary results for the Kebele and our own sample survey indicates a 70% crude coverage but much less than 40% if quality, utilization and sustainability factors are applied.

In relation to the sanitation strategy and the Health Sector Development Program IV which aims to reach 100% coverage and 84% usage of improved sanitation in 2015, the current situation is gloomy to policy makers, planners and implementers.

The story from the sample case study Kebele informs that coverage is 70% without any comments on its quality and utilization which will be discussed in detail afterwards. The National WASH Inventory result for the same Kebele indicates 69% sanitation coverage for the 975 households we have taken a sample and officials are getting preparations for the ODF status. More over the 2011 DHS result (2011, p.13) puts Ethiopia's sanitation coverage only at 8 percent improved toilet facility, not shared with other households.

This is a matter for further discussions and a lesson for stakeholders to seriously consider the ground reality into account. How can such a big data disparity appear within a short interval between the DHS (8%) and government report (60%)?

It is contradictory to our finding that the National WASH Inventory result estimated 'evidence of latrine use' at 89% rate despite the current status of low quality and high prevalence of unused latrines. This is a serious issue for further investigation as the status of the latrines in the observation result indicates very low quality and usage.

Whatever the correct figure will be discovered in due process, but the latrine evolution is getting its momentum with all its defects in quality, utilization and sustainability. For this reason, the correct definition of sanitation should be applied in latrine statistics as an evidence for ODF status although the CLTS policy contradicts the definition by accepting any type of latrine.

*In this study we have discovered that the main behaviour change factors for sustainable latrine use are awareness and education; cleanliness and decency; dignity and convenience; technical quality of the toilet facility and a progress in latrine culture that contribute for the change.*

The first key determining factor in motivating households to construct and use a latrine is attributed to awareness creation and education provided by stakeholders mainly by health extension workers. More than 41% of the families attributed their behaviour change due to the education they have received in various forms. HEW awareness creation, Church and NGO promotion, Kebele support, the need to see better health and decent life and the diminishing trend of bushes to hide themselves has caused households to build and use a latrine.

Consequently , a continuous education program in various participatory methods including CLTS, PHAST and other approaches can facilitate sustainable behaviour change and accelerate the utilization rates of latrines through quality improvements.



**Figure 5. 1 Latrine with tippy-tap**

From theoretical perspective this is so because ‘a popular entry point among the many alternatives is the creation of awareness among the people whose behaviour has been identified for change(Yoon in McKee, 2000,p.43).

The second most important driving force is the need to see clean and decent environment free from flies and filth which can be related to an outcome of the education and sensitization programs. The repeatedly mentioned desire by farmers is to see their grasses, trees and farms not to be troubled by the filth of faeces and flies distracting their farm operations. This is a good incentive for health education promoters to consider as it catches audience interest rather than lecturing on abstract concepts of germs and disease difficult to explain and complicated to understand.

Keeping the environment and self from dirt and flies as a decent way of life is one of the most expressed motivation of the informants compared to preventing from disease. Analogically, what Bartram and Cairncross(2010) has emphasized is true in this case. They remarked that emotional levers change people’s health behaviour more effectively than cognitive statements as demonstrated in this community.



**Figure 5. 2.Latrine lacking walls/privacy**

Third in the household latrine motivation factor is a combination of dignity, convenience and safety aspects of the latrine use and quality. Among the survey respondents, 9% have cumulatively reported the benefits of quality latrines in promoting their dignity, convenience and safety which is also supported by qualitative opinions as people are now getting ashamed of (being in an inconvenient situation) to untie their trousers in the open.

But compared to telephones, toilets did not yet get the prestige they deserve in rural villages not due to constraints of affordability but for lack of strong persuasion and continuous promotion. There are also issues related to dignity because latrine quality compared to residential housing quality, animal enclosures, fencing and stores is far from the reality even though latrine construction takes much less wood and grass than the others.



**Figure 5. 3. Creative slab but potential collapse can cause fear of fall!**

Quality of the latrine has an effect on its use. We have taken this as a fourth factor because most of the latrines we have observed are not used or do not have an evidence of being used due to low quality and inconvenience for users.

Examples include a latrine built far away from a house has less opportunity to be used as justified by the respondents because they fear darkness, animals, rain, and the time factor if preoccupied with kitchen activities like cooking. A latrine without shelter and roof particularly in front of the house and roadside lacks privacy and unlikely used. Fear of fall in old, collapsing and decaying latrines by termites (as shown in figure 5.3) is abandoned in our observation checklist. In another scenario, latrines which are unclean, filthy and full of flies are far from regular use. Our photos visualize this clearly.

On the other hand the recent National WASH Inventory (NWI) in its preliminary result for the Kebele indicates 69% coverage and 89% evidence of use which is controversial compared to our findings, less than 30% proper use.



**Figure 5. 4 Used but abandoned latrine.**

Subsequently, there are many anecdotes of unused latrines due to low quality where future health education and supportive follow up should consider seriously. Table 5.1 displays the overall situation from a structured observation result where ‘no’ indicates absence of the latrine feature and ‘yes’ implies presence of a latrine aspect. Percentages add up horizontally in all cases because it is either ‘yes’ or ‘no’ for the latrine variable in question.

**Table 5. 1 Status of Latrines in the Study Communities (Observation results)**

S.N	Latrine structure	No (%)	Yes (%)	Remark
Pit and superstructure condition	Latrine pit	13	87	No indicates collapsing pits
	Latrine cover	10	90	No means without cover
	Floor	10	90	No means without sealed floor
	Roof	64	36	64% lack any roof
	Wall	59	41	59% lack walls/privacy issues
	Door	83	17	83% without doors/privacy issues

S.N	Latrine structure	No (%)	Yes (%)	Remark
Operations	Path to latrine	15	85	Can be reached by alternative way
	Cleanliness	61	39	61% not clean
	Flies visible on floor	51	49	Flies seen during visit
	Faeces visible on floor	58	42	In 42% faeces observed
	Smell	49	51	51% has bad smell
Anal cleansing materials	Paper	54	46	Old papers / exercise books
	Leaves	36	64	In 64% leaves observed
	Grass	75	25	In 25% grass observed
	Combs/corn straws	100	0	Not seen at all, seasonal material
	Stone and related	100	0	Not seen at all, wrong assumption
Hand washing marks	With tippy-tap	75	25	25% have tippy taps
	Having water	96	4	96% do not have water
	Soap available	94	6	94% without soap
	Ash/substitute available	99	1	99% no ash seen
	Sign of wet/mud	100	0	No wet mark observed during visit

*Note:* this observation check list result though subjective is recorded carefully to bring the reality in to a picture and indicate the status of latrine infrastructure and its utilization operations.

And finally in this category of discussion, creating a latrine culture and a model peer pressure can motivate villagers to construct best latrines as exemplified by one farmer (figure 5.5.) where he constructed a gender segregated private latrine for men and women sections by looking from schools and towns. This is an exceptional story to learn from because people have the ability to replicate technologies if guided and motivated in a right direction.



**Figure 5. 5 Household latrine with gender disaggregated rooms**

Such progress in latrine improvement indicates the potential of households to step up from one sanitation ladder to another or leap immediately if supported properly in skill and service facilitations.

### **5.2. Role of empowerment and capacity development for sustainable latrine use**

There is a chain of empowerment and capacity development activities arranged at *Woreda* and Kebele levels- one level supporting the other for enabling households to deliver qualified, utilized and sustainable latrines.

Awareness creation and education is indeed offered by the stakeholders at all levels with a committed political will and too much pressure at moments of campaign such as ODF. *Four main themes are discussed in this regard: access to skills and services; availability of materials and products; follow up and monitoring and the quality of the capacity along with the incentives offered.*

Access to skills and technical support in latrine building is mainly based on the trial and error of the households themselves as reported by the informants. Though the promotion is to large

extent supported by the government structure at all levels, NGOs and other partners, the skill development and technical support by these groups is not strong and sufficient.



**Figure 5. 6. Wastage of wood due to lack of technical guidance**

The low quality of the current latrines is partly due to lack of such skill and technical design gaps and partly due to the fact that CLTS approach do not recommend design options as it assumes that the villagers are engineers by their own feeling. However, as McKee (2000) commented if people do not have the required skills to apply the knowledge they acquired, the future of latrine quality can not improve easily and efforts might remain unproductive.

Availability of latrine construction materials and products such as wood, grass, straw, doors, roofs, slabs, jerry cans is mainly supplied by the householders themselves (97%) either from their land or purchase. Some of the issues raised in relation to materials are shortage, termites, design and subsidy as discussed below:

1. Shortage of material is not a universal problem for all households but applies to some with lack of land to grow trees and get the necessary grass/straw. For such people purchasing these products is a challenge yet they can get from neighbours and relatives as they do so for their residential house construction.
2. Termites largely decayed the logs covering the pit and the straw put on the roofs. This problem is mentioned time and again by the respondents making their latrines to collapse and

be short-lived without giving the expected service. Technical support in designing and pit lining with stones is a suggested option.

3. Due to flaws in design and construction skills some households are building big latrines and wasting their scarce resources for logging, superstructure and roofing (compare with figure 5.6). Some are digging latrines eight meters deep which exposes to straightforward collapse in the absence of lining while others are laying too many logs on the pit and erecting too many wall structures that can be used for another purpose. This can be corrected by education and technical follow up.

4. Subsidy is controversial in this community as it is a global problem in decision making. Concrete slabs provided by NGO as a motivating factor for creating competition and introducing technology is wrongly interpreted as a rule by other householders who are waiting for it. Hand washing jerry cans and soap supplied by government as an incentive to some families has become an issue for other villagers to expect it to be distributed to them as well.



**Figure 5. 7 Subsidies might not sustain.**

Thus, any incentive despite its good motives is taken as a subsidy across communities to wait for it and to develop dependency attitude. They also exercise it as an excuse for not building the facility or to blame the providers for their partiality as long as subsidies are concerned.

Once awareness creation and education is given to the people it is important to ensure that follow up and monitoring continues as new information and skills need supportive supervision

and significant reminders. This aspect is one of the challenging functions where more than a quarter of the households reported for not receiving supportive follow up. It is also admitted that the HEW who daily attempt to visit households are unable to reach the 975 houses at least once in a year to check their progress because of the workload with other issues.

Efforts by the Kebele leaders, VHP, WASHcom, NGOs, HEW and the new 1 to 5 cell group support to households is still crucial to guide and facilitate them on the techniques of latrine construction. Equally important is the monitoring by the district offices to health centres and Kebele in order to verify that things are moving in a right direction before it becomes controversial at the end. A lot of current household withdrawal from the momentum is due to the prevailing gaps in the education programs and follow up mechanisms.

After all the efforts are made, it is necessary to evaluate whether the capacity development is sufficient for carrying out the expected outputs and services. Training offered to the HEW has become already controversial for its lack of depth and standard on the one hand and its application by the trainees on the other. Both the basic training at the TVET and the in-service training on the job should strike the balance of quality and quantity. Otherwise it cannot meet the expectation as one informant remarked:

There is capacity building training in the district but not so much in the Kebele which has a gap and needs more empowerment. Budget shortage, dependency attitude and waiting for support from the district are constraints. They are not able to be self-sufficient unless someone goes from here. A 20 minutes or an hour's training is not enough and all trainees might not show up in some cases which are big challenges (A20-2).

This indicates that Kebele level training is not with full participation, quality and continuity due to some of the reasons mentioned above including budget, trainers, lack of enthusiasm and time constraints. If the enabling environment does not empower employees as observed from their unspoken situations and from the fear factor to comment on such issues, sanitation sustainability can take more decades than expected short-cuts.

### **5.3. Intersectoral coordination and integration**

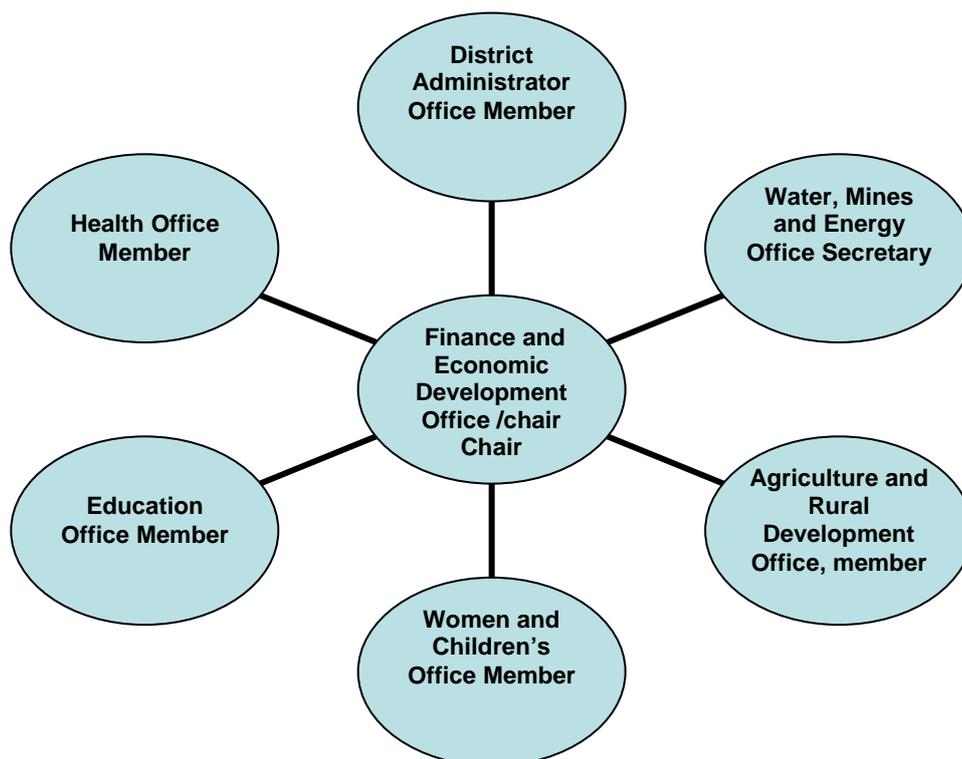
Since the actors are many in the sanitation sector, the coordination mechanism is crucial to mobilize limited resources for efficient utilization. The seven member sectoral coordination arrangement with two levels of decision making process at WASH SC and WASH Technical Team level is a commendable initiative. Such an inter-sectoral collaboration not only helps for the efficient utilization of resources but also avoids professional ill-feelings, sectoral disintegration and working in a solitary confinement out of the context.

This opportunity is however limited to a problem solving role on need basis and constrained to the planning stage assignment only. The reasons for such shortcomings is reported to include work overload, high staff turn over, gaps in expertise and leadership as well as low motivation.

At Kebele level the interaction among the health extension workers, the VHP, and the Kebele leaders to support the operations seems to be progressing. However the workload is so burdensome that they are not able to address the real challenges of the households in keeping latrine quality, coverage and its utilization.

The change in the structure of the coordination mechanism with the introduction of Health Development Cadre to reach 1 to 5 household approaches is being advocated to replace the VHP of the past. Its effect cannot be anticipated yet.

The existence of social institutions like *iddir*, the self help associations, religious establishments, schools, WASHComs are all supportive mechanisms if mobilized properly as it is mentioned by the informants.



**Figure 5. 8.The District WASH Technical Team Coordination Structure**

## CHAPTER 6

### Conclusions and Recommendations

#### 6.1. Conclusions

In quest of analysing the research question and addressing the study objectives which states that sustainable latrine use is related to household behaviour change, community empowerment and local capacity building as well as intersectoral coordination arrangements we have applied a case study comprising of a survey, interview, focus group discussions and observation methods. The conclusions and recommendations are therefore based on the findings of these results, the literature review, and existing national sanitation situation. These summaries are structured under four main headings including data sources and reliability, behaviour change, capacity development and intersectoral integration.

##### A. Data sources and reliability

In relation to our case study and the Ethiopian Health Sector Development Program IV which aims to reach 100% coverage and 84% usage of improved sanitation in 2015 the current situation informs a serious signal to policy makers, planners and implementers.

Since the latrine figures as defined in the sanitation protocol associates coverage to proper use of the toilet facility, we can logically reach the following conclusions based on the results:

- (1) Given the current situation and latrine conditions in the district's sample Kebele it can fairly be possible to recapitulate that whilst **coverage is increasing; quality, utilization and sustainability is low, much lower than 30% in our observation results.**

Irrespective of quality and utilization, the composition of sanitation practices indicates that 30% of the people are still using open defecation areas with 5% using public/shared latrines and 65% private pit latrines. All categories require follow up and improvements but the public latrines are far from the accountability domain because there is no clear cut responsibility about such latrines in terms of cleaning and operations as well as providing water and soap/substitute for hand washing practices.

There is a strong necessity to verify reliable coverage data based on the appropriate definitions, at least by applying the definition set by the national sanitation protocol, Demographic and Household Survey results and international standards as set by JMP for example.

- (2) The big **data disparity** between the district health office figures and that of the National WASH Inventory preliminary results and our sample survey findings indicates that either definitions are not considered seriously in coverage or there are flaws in data collection methods at least by the meaning of 'evidence of use' and the subjective judgment of the observant. This is illustrated by the National WASH Inventory results concerning evidence of use (89%) and our observation results (less than 30%).

Which is closer to the reality continues to be a question for future investigation and the Ethiopian sanitation sector still requires independent data verification. Although there is much advocacy to depend on the forthcoming 2011/12 national WASH Inventory results, our case study, JMP estimates and 2011 DHS outcomes indicate that this claim is subject to further scrutiny because of a big gap in recording evidence of latrine use and lack of quality latrines according to the accepted definition of sanitation.

- (3) More than ever, it is now relevant to study the **process and evolution** of the new latrine culture in Ethiopia in its life cycle stages, in depth and longitudinal, time series perspective which can display the lessons and historical accounts of the sector that the stakeholders need to learn and reflect.

## **B. Key behaviour change factors**

### **Objective 1: in terms of establishing the key determining factors of behaviour change for the sustainable use of clean latrine facilities ;**

- (1) According to the results, the key determining factors for household latrine construction and sustainable use is related to **continuous awareness creation and education** given by stakeholders in general and the Health Extension Workers in particular.

But one should not be impressed by such an emphasis because there is still a huge gap between knowledge and action of householders. The prevalence of open defecation, the poor quality of latrines and its lack of proper utilization is evidence in this case. As in other health promotion and education sectors, the sanitation sector is also challenged by the lack of individual and collective action despite the awareness and knowledge.

Practices are far lower than knowledge which is a depressing outcome as expressed by the health extension workers. As Barnes argued (1972) imparting knowledge is not sufficient but changing the habits of people is crucial which requires restructuring of daily values and norms and that is the task of developing a latrine culture more than project goals and Open Defecation Free declarations.

This will be further discussed in the follow up and monitoring section.

- (2) Social motivators such as **cleanliness, decent environment, dignity and convenience** are highly valued by farmers. Such values are worthy studying for health promotion and education purposes because it can boost villagers' self-esteem and speeds up the behaviour change process. This is also supported by current literature on behaviour change studies (Bartram and Cairncross 2010; McFadden, 2001) because emotional layers and attitudes can positively change health behaviours more effectively than abstract hypothesis such as germ theories and disease transmission models like the F-Diagram.
- (3) **Quality of latrines** which is related to education and technical support play a great role in the utilization rate because defective latrines are the most unused ones or abandoned in some cases. This reciprocally indicates that too much emphasis on low quality latrines to meet targets and ODF status is waste of time and energy because such latrines are out of the definition and practically not used.

As the Ethiopian saying goes, *'if your farm is of superficial quality you will be back again with the hardship of weeding!'* This is an acknowledged fact in the field because the lack of toilet models has constrained households not to improve latrines due to lack of technical guidance.

Compared to house construction priorities and qualities, latrine construction requires conviction on its importance and then technical design afterwards.

- (4) As there are motivators on the positive side of latrine promotion, discouraging factors are also noted including **negligence, time constraints, shortage of materials and low economic status** which can easily be resolved by educational programs and commitment except the low economic situation which can constraint upgrading of latrine quality with respect to lining, concrete slabs and iron roofs as seasonal weather proof materials.
- (5) The relapse in latrine quality and use or non-conformity of some households in latrine construction has resulted in discouraging Health Extension Workers and the Kebele council thereby to seek **enforcement mechanisms**. Both fines and penalties are in application in the Kebele but there is no strong legal and regulatory backup except a citation in the Public Health Proclamation (2007) related to waste disposal and guidelines in the sanitation protocol (2006). Though positive enforcement is useful, it should be backed up by promotion, education and legislative guidelines.

### **Hand washing after latrine use**

- (1) Hygiene practice in terms of **hand washing after latrine use** is admittedly at the lowest stage and confirmed by observation findings where only 16% wash with soap. The remedy is intensifying participatory educational programs and continuous monitoring until people

gain the habit. Infant faeces handling practices is so unhygienic in most cases which requires special attention.

- (2) At least 20% of the respondents reported the **occurrences of diarrhoea** in their households and 80% of these category did not take clinical action which gives a clue about the sanitation and hygiene situation of the area, status of public awareness and calls for further impact studies.

### **C. Empowerment and capacity development**

#### **Objective 2: with regard to investigating the relationship between sustainable latrine use and local capacity development ;**

- (1) **Empowerment and capacity development arrangements** are optimum both at the district and Kebele levels as positions are filled and in-service trainings are ongoing to narrow skill and expertise gaps. Two Health Extension Workers are assigned to the Kebele to implement the Health Extension Program supported by volunteers, the Kebele leaders and health centre staff.

However, there is a silent grievance over the motivation factor and low pay rates in some health staff where turnover, lack of enthusiasm and giving up of hope is obviously observed. This is an important indication to be focused because it is not only filling positions that matters but the quality, motivation and the enabling process that brings real inspiration, retention and change.

Since such silent and intrinsic factors play greater roles in capacity development processes as observed in the literature, the enabling environment should consider motivational factors seriously.

- (2) **Training quality and capacity** development structure is controversial where the Health Extension Workers are not satisfied by its quality to cope with the complexity of the health extension program involving 16 packages and the current addition of clinical activities such as delivery and under five infant medical services. This calls for a quality assurance and standards of the training programs rather than the 'flooding' approach which focuses on numbers to fill gaps.
- (3) **Access to technical skills** on latrine **technologies** and services is so low that the households are struggling by their own trial and error. This aspect requires an attention because it overshadows latrine quality and usage. In a challenging situation such as the problem of termites and shortage of materials, technical support is vital to minimize frequent collapse and wastage of resources.

When latrine structures are contrasted with hay/straw stores, the stores are much better than latrines because of the value farmers give to it while in reality it should have been the reverse. But this is a value system and should be treated as such to restructure the norm of society as emphasized by sector authorities (Chambers in WSSCC.2011).

- (4) **Latrine products and service providers such** as artisans are available locally but affordability is a challenge. Households are not ready to pay for the artisans except in few cases and in-kind exchanges for artisan labour and skill. Shortage of wood and grass account for low latrine quality in some cases and termites is the major cause of collapse.

Hardware remains one of the challenges for this villages as the affordability for industrial products like timber, steel, cement, iron sheet, ceramics and related products will be constrained unless the economy progresses.

- (5) **Lack of follow up and monitoring** calls for a **corrective** measure as Health Extension Workers are overloaded to reach households once in a year while other volunteers such as the Volunteer Health Promoters and the new 1 to 5 arrangement need motivation.

Since promotion and knowledge by itself is not sufficient to see a quality latrine and its appropriate utilization, as we have seen in high coverage and low utilization rate, a supportive supervision and rigorous monitoring is necessary.

- (6) **The roles of NGO/CSO** in capacity building and **community** empowerment is immense as witnessed by the households, extension workers and the WASH SC. However ,incentives in the form of slabs in latrine technology is interpreted as a **subsidy** thereby creating dependency attitudes and unrealistic expectations. Such household incentives should suspend and focus on latrine software and technical support.

#### **D. Integration and alignment**

##### **Objective 3: in terms of examining the existing inter-sectoral coordination mechanisms and the multi-stakeholder approach in supporting sustainable latrine use.**

- (1) Intersectoral integration and coordination **at district level** is commendable at least at the planning stage but lacks continuity and quality after planning. This is its serious draw back to be maintained in reporting, monitoring and evaluation phases as well as feed back and re-planning cycles. Corrective measures are necessary in reducing turn over rates and expertise gaps due to favouritism of political loyalty.

It also lacks full participation from associations, NGOs ,CBOs ,religious organizations and social institutions which requires correction.

(2) **At Kebele level**, the existence of political and state layers such as the 1 to 5 networking and health development army as well as the opportunities of social institutions requires a sound mobilization and follow up. If mobilized in a right direction and equipped with the necessary capacity building aspects both government and social organizations such as religious institutions like churches and self help associations including *Iddirs* can play an immense role.

To sum up the original hypothesis, sustainable latrine use is related to human behaviour change factors which are in turn affected by the capacity development and intersectoral integration of the WASH stakeholders. Individual and household latrine use behaviours are guided by the education and awareness creation and subsequent follow up by health extension workers and other stakeholders. Emotional layers such as cleanliness and decent environment play significant roles in motivating house holds to build and maintain latrines.

Capacity development is in a positive direction with the exception of controversy in the low quality of training and lack of motivational factors like salary increment, promotion and further education opportunities.

Intersectoral integration is limited to the planning stage and requires corrective measures to include all stages of the program and harmony in horizontal and vertical coordination with relevant stakeholder participation.

## 6.2. Recommendations

Based on our literature review, research findings and conclusions the major issues stakeholders need to improve concerning the sustainable use of latrines include the following points:

- (1) **Coverage data** should be revisited and evaluated according to the accepted definitions of sanitation as an evidence of clean and appropriately used toilet facility, not its mere presence or unqualified use. The current National WASH Inventory data is one step improvement but it cannot be a reliable source once and for all.

Independent studies such as the DHS should continue annually and other studies should also be conducted by **higher educational institutions** like universities and **research organizations** to cross-check realities and inform stakeholders.

- (2) **Behaviour change factors** are mainly dependent on the motivational factors of awareness creation and education as well as explicit emotional forces such as cleanliness and convenience as evidenced by the informants.

As an environment free from faeces is decent for grass cutting, wood collection, food processing, farming, and weeding which are concrete motivators for community members, **educational programs should focus on such promotional methods** to break barriers of behaviour change.

- (3) **Availability and affordability** of sanitation and hygiene products should be flexible with an appropriate technical support by empowerment agents. Some of the latrine construction materials such as stones, wood, grass, straw, are locally available and affordable while manufactured products like slabs, steel, and corrugated iron sheet cannot be found easily and unaffordable for most households.

Hygiene products including jerry cans, bottles, soap, brushes, papers and tissue papers cannot be available and not affordable easily while ash, leaves, combs, grass can be alternatively used for hygienic purposes due to their availability but unqualified in most cases.

**Promotion and education** should focus on the use of quality local materials meeting minimum requirements and services like safe water supply for hygiene improvements in hand washing and anal cleansing.

- (4) **Skills and facilitation services** by artisans, masons, facilitators and promoters are available from health extension workers and Kebele labour force as well as on voluntary basis from community members but time taking skills such as construction cannot be

affordable easily. Even the 1 to 5 facilitation team leaders, WASHCOM and VHP are not as easy as planned because of the demanding nature of the task and lack of incentives. **Mobilization of voluntary members and full time government staff** should be reinforced and balanced.

- (5) **Continuity in follow up and monitoring** helps to ensure sustainability as behaviour change is a life long process. Supportive supervision and education programs should be a long chain of process rather than a one time project task and should be done at Kebele and Woreda stakeholders-**one level accounting to the other**.
- (6) **Empowerment and capacity development** for health extension workers and volunteers should focus on quality assurance and continuity but transferred to individual households and communities in due process as part of the multiplication effect and scaling up target. The private sector can emerge when the demand increases.
- (7) **Positive enforcement** has its role and should be encouraged as a step by step process with education rather than an imposition and capital punishment like fines and imprisonment but as accountability to other community members in contaminating the common environment.

Since the Public Health Proclamation and sanitation protocol recommends enforcement in the form of fines and penalties side by side with promotion, it is necessary to have a planned regulatory and enforcement procedures. Ministry of Health at all its structures can enforce this with guidelines and directives.

- (8) The positive progress of **interdisciplinary and intersectoral integration** at district level should be enhanced by taking corrective measures at all stages of the program cycle and involving private sector, NGOs and other stakeholders rather than a one stage task during strategic planning phase. Both the **WASH SC and WASH Technical Team** is responsible to improve such limitations.
- (9) **Kebele level coordination** should consider the layers of organizational arrangements: the political layer, the state function, and social institutions such as religious establishments and self help associations. If used appropriately, all can contribute for the success.
- (10) **Methodologically**, we have learnt that a wide gap exists between results of self reported survey data and critical observation checklist on latrine quality and use as well as hand washing practices. Self reported data is exaggerated while observation results indicate lower values. Future studies should consider this aspect seriously and triangulate with mixed qualitative and quantitative methods.

- (11) The existing good **political will and commitment** at all levels which is disillusioned in due process by a counterfeit drive to achieve ODF status by over reporting low quality and poorly utilized latrines should be corrected. Officials at all levels have to be bold enough to say no to reports on low quality and poor utilization evidences which ultimately contradicts the national sanitation protocol approved by the government and international standards.
- (12) **Further research** is necessary in data verification by independent bodies; on factors affecting quality and usage of latrines; quality of capacity development and its intrinsic elements as well as the horizontal-vertical integration mechanisms.

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## Annexes

### Annex 1. List of Informants

List of Key Informants Participated in Interview and FGD (41 participants; 28 interviews; 3 FGD)

A. Household Members					
S.N	Name	Age	Sex	Occupation (Position)	Remark
1	Tadelech Degele,	16	Female	Student	Grade 7
2	Anonymous	56	Male	Farmer	
3	Birkinesh Watero	53	Female	Farmer	
4	Meretech Masebo	37	Female	Farmer	Grade 8
5	Belaynesh Alemu	62	Female	Agriculture	Illiterate
6	Mulu Bekele	39	Female	Farmer	Illiterate
7	Aseffa Beyore	38	Male	Barber	
8	Chakiso Horago	70	Male	Farmer	
9	Baasha Sugebo	61	Male	Farmer	6
10	Tadelech Mengesha	30	Female	Farmer	Housewife;
11	Takelegn Lamore	21	Male	Mason	Church Secretary
12	Tariku Handino	30	Male	Farmer	
13	Aseffa Sumoro	36	Male	Farmer	Village Head /Water Attendant
14	Amaaye Handino;	28	Female	Farmer	
15	Landaaye Mengesha	15	Female	Farming	6 Grade;
16	Belaynesh Lopiso	16	Female	Farming	10 <sup>th</sup> Grade;
17	Ermias Aseffa	35	Male	Farmer	Church Chairperson.
18	Anonymous /elders	70	Male	Farmers	Commenting

<b>B. Kebele and Woreda Key Informant Interview</b>					
<b>S.N</b>	<b>Name</b>	<b>Age</b>	<b>Sex</b>	<b>Occupation (Position)</b>	<b>Remark</b>
1	Tegese Lire	40	Male	Head	Gibe District Water Office
2	Tsegaye Getahun	38	Male	Officer	Drinking Water Supply
3	Melaku Baashu	37	Male	Officer	Development Planning, Monitoring and Evaluation
4	Anshebo Lintiso	45	Male	Farmer	Party Affairs Organizer
5	Tarekegn Tumdado	49	Male	Farmer	Kebele chairperson
6	Tesfaye Abate	46	Male	Farmer	Kebele manager
7	Hirut Ketchene	23	Female	HEW	since 2000 E.C.
8	Wondimu Tumdado	48	Male	Administrator	District Office
9	Sr Zenebech Erbetto	29	Female	Head	District health office
10	Temane Gebre	39	Male	Head	Education office
<b>FGD with WASH Technical Team Members</b>					
1	Abebe Sedamo	46	Male	Head	District Administration Office
2	Tamrat Abate	43	Male	Chair	FED Office
3	Daniel Jefero	53	Male	Member	Health Office
4	Yonas Abebe	56	Male	Member	Women and Children's Affairs Office
5	Belayneh Melese	29	Male	Member	Agriculture Development Office
6	Solomon Anito	54	Male	Member	Education Office
7	Tegese Lire	39	Male	Secretary	Water , Mines and Energy Office Head
<b>FGD with WASHcom Members</b>					
1	Tareken Tumdado	43	Male	Chairperson	Olawa
2	Ermias Aseffa	45	Male	Secretary	Olawa
3	Argew Abiyo	38	Male	Controller	Olawa
4	Abebech Daapore	47	Female	Member	Olawa
<b>FGD with Women and Children's Affairs</b>					
1	Tirunesh Abegaz	40	Female	Head	Women and Children's Affairs
2	Almaz Hasiso	38	Female	Deputy	Women and Children's Affairs
3	Apologies				3 members

## **Annex 2. Glossary and Operational Definitions of Terms**

### **Behaviour /Behavioural determinants**

Behaviour is an observable act technically used to refer to a composite of discrete actions....Behavioural determinants are factors that either influence or cause an action to occur, or not to occur. Although behaviour includes social, cultural, psychological and other factors knowledge and attitude are the major determinants of behaviour where attitudes are related to feelings, opinions or values that an individual holds about a particular issue, problem or concern. Knowledge is internalized learning based on scientific act, experience and/or traditional beliefs (McKee, 2000, p.4).

### **Capacity building/Capacity Development:**

In general capacity building was in use before capacity development. One of the primary reasons for the change in terminology is that capacity building is now seen to imply starting at a zero point with the use of external expertise to create something that did not previously exist, and that this concept neither acknowledges nor respects the inherent capacity and organic development processes that exist everywhere.

Capacity development, on the other hand, emphasizes the inherent existence of endogenous development processes in all countries and communities, and addresses the need to support and or facilitate processes that are already underway. However, a point that links both these ideas together is the concept of '*building on existing capacities*'. So there is yet to be universal agreement about which is the most appropriate term and as a result both are still in common usage, though many organizations have moved away from capacity building in favour of capacity development (Pearson, 2011.p.8).

**District:** also referred as *Woreda* in Ethiopian context, is the fourth administrative layer and a decentralized institutional structure closer to clusters of communities known as Kebeles. It regulates a number of Kebeles in our case Gibe district manages 22 Kebeles under its jurisdiction and authority.

### **Empowering /Empowerment:**

In health promotion, empowerment is a process through which people gain greater control over decisions and actions affecting their health....Empowerment may be a social, cultural, psychological or political process through which individuals and social groups are able to express their needs, present their concerns, devise strategies for involvement in decision-making, and achieve political, social and cultural action to meet those needs.

A distinction is made between individual and community empowerment. Individual empowerment refers primarily to the individuals' ability to make decisions and have control over their personal life. Community empowerment involves individuals acting collectively to gain greater influence and control over the *determinants of health* and the *quality of life* in their *community*, and is an important goal in *community action for health* (World Health Organization, 1998).

**Ensete:** 'a giant single-stemmed herbaceous tree which may grow up to 13m high and a diameter of 2m or more .The leaves are conspicuously large ( 2.5 x 1.0 or more ) with broad midribs and long leave sheaths that overlap to form a psedeostem. The true stem is a short, compact and fleshy underground stem or 'corm'....Enset is native to Ethiopia, the centre of its domestication and diversity' (Tesfaye, 2008, p.1359).Also known as Ethiopian banana, all of its parts are used as food for human beings and animals and for various purposes.

**ETB-** Ethiopian Birr is the national currency of Ethiopia with different denominations of Birr and Cents. 'Notes are 100, 50,10,5, and 1. Currently the new 1 Birr coin is also in circulation' (Selamta, 2012, p75). 1 ETB= 17 USD in the period of data collection, June 2012.

**Ethiopian Calendar, E.C.:** system of date chart where 'Ethiopia is in the GMT+3 time zones. It follows the Julian calendar , which consists of 12 months of 30 days each , and a 13<sup>th</sup> month of five or six days (on a leap year) ( Ethiopian Airlines, 2012,p75). The E.C. is 7 years behind the G.C.

**Equb:** 'Ethiopian traditional ways of association for saving money within members of the communities who knew and trust each other where each contribution is divided into equal shares and the participants collect money based on a draw system or special request' (Gebremariam,2011,p.xviii).

**Household(HH):** a single person or a group of related or unrelated people who live together in the same dwelling unit(s) or in connected premises ,who acknowledge one adult member as head of the household ,and who have common arrangements for cooking or eating (Central Statistical Agency,2012,p.13).

**Iddir:** a voluntary self-help association established to render funeral services and related activities. It is a strong cooperative system and social insurance mechanism in Ethiopian society. According to Gebremariam (2011, p.xviii) Edir is an 'Ethiopian traditional ways of associations established within a group of communities or neighbours mainly targeted for helping each other during mourning (over the death of member's family or close relatives) . Representatives are elected by members; equal monthly contributions of money among the members – (something like life insurance)'

**Kebele:** is the smallest governmental administrative unit, and on average has a population of 5000 people (Health Extension and Education Centre, 2007, p.4). It has different organizational arrangements and various institutions such as schools, health post, farmers training centres and other service providers under its constituency.

**Pit latrine:** a structure which has a squat slab cover to stop and avoid contact with excreta by humans, animals and insects; a shelter around it for privacy and protection, and a gauze-covered vent pipe to stop smells and prevent flies from entering. The hole may be lined to prevent it collapsing. Regularly adding ash to the pit speeds up the process of decomposition kills off fly larvae and keeps off odors at bay. The pit latrine is cheap and easy to build and maintain but the pit must be moved or emptied regularly (International Institute for Environment and Development.2010.p.11)

**Traditional pit latrine:** the Ethiopian national hygiene and sanitation strategy defines ‘...a traditional pit latrine comprising of a stable pit, secure platform and robust private superstructure (including weatherproof roof). Each latrine will have a hand washing facility made from local materials. Those wishing to expand on the basic traditional design must buy components from the local service provider or sani-outlet.....Key features will include:

- Secure, stable pit – round, conical and not too deep.
- Solid, sealed (tight lid) platform – with termite resistant logs and smooth plastered finish to ease cleaning and ensure that children or animals cannot fall in.
- Secure, stable (preferably moveable) superstructure which ensures privacy and a sense of security. It should be strong enough to resist rain, wind and animals.
- Ventilation with locally available materials”.

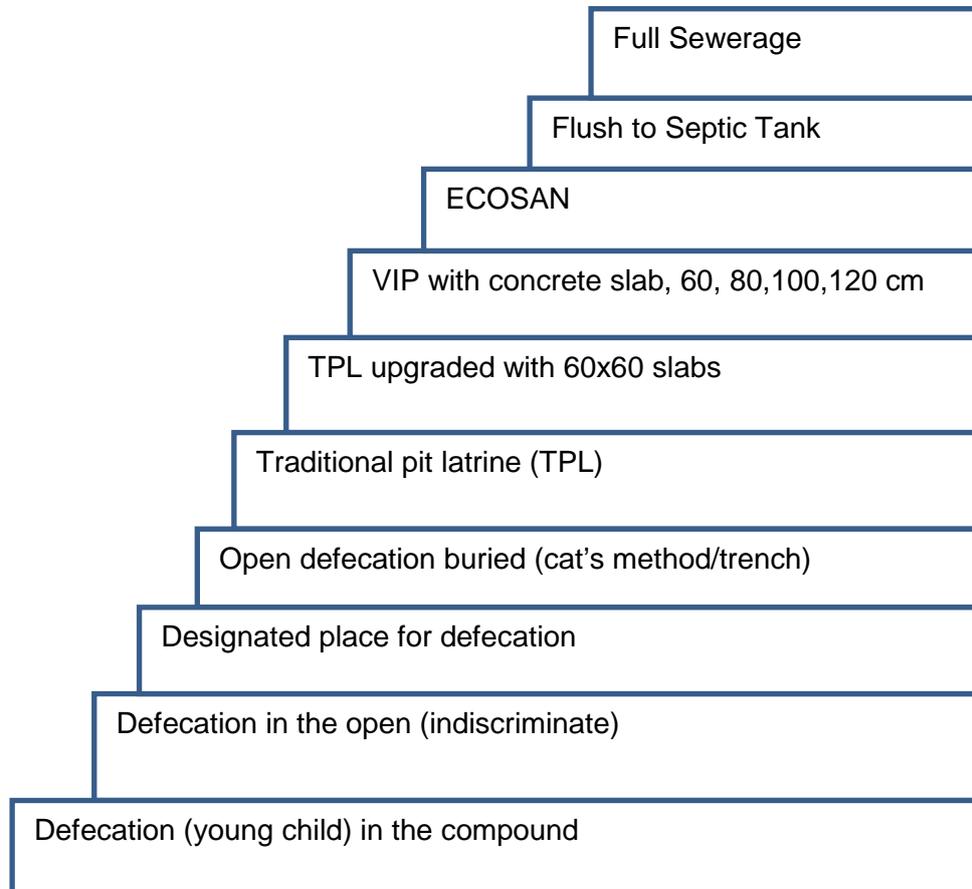
Sustainable use should also include the use of the latrine for infant faeces disposal; use by all ages and sexes without any barrier (Federal Democratic Republic of Ethiopia, 2005, p.53).

**Sustainable Sanitation use:** as sanitation is a complex subject a working definition in this research focuses on latrines yet the exclusion of environmental sanitation in its wider scope to address homestead/compound sanitation; domestic/house sanitation and waste both in its solid and liquid forms as part of environmental sanitation.

### Annex 3: Pictorial Demonstration of Latrine Ladder from Olwa Kebele, samples

	Gender disaggregated family latrine
	Latrine with hand washing device
	With roof but no walls
	With wall but no roofs
	Log covered on the pit
	Pit under preparation
	Open field defecation

#### Annex 4. Sanitation Ladder



**Source:** Adapted from Federal Democratic Republic of Ethiopia. Ministry of Health. 2005. National Hygiene and Sanitation Strategy)

Note: the ladder is from high risk to low risk as one step up the ladder. Hand washing practices are expected at each ladder.

## Annex 5. Household Latrine Use Survey Questionnaire

The purpose of this survey is to assess the sustainable use of latrines by households and communities thereby to inform planners, implementers and decision makers to improve sector performance. You have been selected randomly and the information remains confidential unless otherwise agreed. Thank you for your cooperation in sharing information.

### Part-1: Background Information:

<ul style="list-style-type: none"> <li><b>Data collector information</b></li> </ul>	<b>2. Location data</b>				
	1.1 Interviewer name:	2.1 Region:	2.2 Zone:		
	1.2 Date of interview/observations:	2.3 Woreda:	2.4 Kebele :		
		2.5 Village (name, GPS)			
	2.6 Terrain (tick box)	Lowland	Mid-alt	Highland	

<b>3. Household data</b>				
3.1 Household name/optional:				3.4.Education:
3.2 Age and gender distribution	Age 0-5	Age 6-15	Age >15	3.5.Religion:
Number of males				
Number of females				
3.3 Source of household income (tick all which apply)	Crops	Livestock	Trade	Salary
	Other			

### Part-2: Latrine Use

<b>4. Where does your family defecate?</b>	Open field	Private pit	communal latrine	other
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If you have a latrine, age of latrine

A-Age<1;	B-Age1-5;	C-Age5-10;	D-Age>10
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7. If open defecation, where do members of your household defecate?	<b>Men</b>	<b>Women</b>	<b>Boys</b>	<b>Girls</b>	F - fields, B - bush, E - Enset, R - near river, C - compound, O - other
7.1. What problems arise from open defecation?	<b>Men</b>	<b>Women</b>	<b>Boys</b>	<b>Girls</b>	H - health, P - lack of privacy, A - risk of attack, S - snakes, O - other
7.2. Where do infants defecate in this household?					F - on floor of house, G - on the outside ground, P - potty or dedicated container , O- other place

<b>5.Latrine Use</b>					
a. What motivates you to use a latrine?	D-Dignity	C -Convenience	F-avoids flies	P- Privacy	S-Safety
	E-Extension worker pressure		O-Other		

5.2. What inhibits you not to improve latrines?	M-Money	C-construction material	S-lack of skill	K-Lack knowledge	N-Negligence	O-Other reason
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**6. If latrine use is becoming part of your culture/custom what is the reason/factor?**

M-Modern	S-Status	C-Clean village	E-Enforced	S-Safety	P-peer pressure	O-Other
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6.2. Is your latrine quality improving?	<table border="1"> <tr> <td data-bbox="571 237 692 300">Yes</td> <td data-bbox="699 237 820 300">No</td> </tr> </table>		Yes	No						
Yes	No									
If yes, give reason?	<table border="1"> <tr> <td data-bbox="577 389 746 510">M-Modern</td> <td data-bbox="753 389 874 510">S-Status</td> <td data-bbox="880 389 1082 510">C-Clean village</td> <td data-bbox="1088 389 1241 510">E-Enforced</td> <td data-bbox="1248 389 1458 510">S-Safety</td> </tr> </table> <p data-bbox="571 519 746 546">Other reason:</p>					M-Modern	S-Status	C-Clean village	E-Enforced	S-Safety
M-Modern	S-Status	C-Clean village	E-Enforced	S-Safety						
If no, give reason?	<table border="1"> <tr> <td data-bbox="571 819 692 940">M-money</td> <td data-bbox="699 819 852 940">R-resource</td> <td data-bbox="858 819 1011 940">S-Skill</td> <td data-bbox="1018 819 1187 940">K-Knowledge</td> <td data-bbox="1193 819 1315 940">T-Time</td> </tr> </table> <p data-bbox="558 949 734 976">Other reason:</p>					M-money	R-resource	S-Skill	K-Knowledge	T-Time
M-money	R-resource	S-Skill	K-Knowledge	T-Time						

**Part-3: Hygiene Practice**

<b>8. Hygiene practices</b>						
8.1 Tell us the times members of your household wash hands after defecation? Tick all mentioned.	NO	WW	WS	WA	O	N-No, W-With water only; S-With soap; A-With ash/soil; O - other
8.2 Tell us what you use to wash hands after cleaning child's faeces? Tick any which apply.	NO	WO	Soap	Ash	Other	WO - water only
8.3 How many occasions of diarrhoea have occurred in the last two weeks?						
8.4 How do you treat diarrhoea?	Record responses here.					

#### Part-4: Skill and Capacity Development

<b>9. From where did you get access to skills and services?</b>	A- Artisan	N- Neighbor	E- HEW	G- NGO	S- Self/family	W- WASH com	O- Other reason
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<b>10. Who provides latrine construction materials/ products/slabs, roofs, doors...</b>	A- Artisan	N- Neighbor	E- HEW	G- NGO	Self/ family	W- WASHcom	O- Other
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<b>11. Who technically support you?</b>	A- Artisan	N- Neighbor	E- HEW	G- NGO	S-Self/ family	W- WASHcom	O-Other

<b>12. Who is doing follow up and monitoring?</b>	A- Artisan	N- Neighbor	E- HEW	G- NGO	S- Self/family	W- WASHcom	O- Other

#### Part 5: Observation Check List: observe and give marks for each.

<b>13.1. Structure</b>	P-pit	C-Cover	F-Floor	R-Roof	W-Wall	D-Door
<b>13.2. Operation and cleanliness</b>	P-path	C-clean	I- Insect/fly	F- Faeces	S- Smell	O-Other
<b>13.3. Anal cleansing mark</b>	P-Paper	L-leaves	G-Grass	C-combs	S- stone	O-Other
<b>13.4. Maintenance/repair marks</b>	N-New	O-Old	R-Repair	A- abandon	O- other	
<b>13.5. Child faeces</b>	C- compound	F-Field	L-Latrine	O-other		
<b>13.6. Hand washing marks</b>	T-tippy tap	W-Water	S-soap	A-ash	M-mud	O-other

#### Part 6: Other remarks:

Thank you for taking time to respond to the questions.  
Addise Amado, saraelon@yahoo.com. , 0911 866128, P.O.Box 11945 Addis Ababa

## Annex 6: Interview Questions /for Household Members

Purpose: to assess the sustainable use of latrines through human behaviour change and capacity development

1. Data collection				2. Location data	
1.1 Interviewer name				2.1 Region	
1.2 Date of interview/observations				2.2 Zone	
3. Interviewee data				2.3 Woreda	
3.1.Occupation /position	3.2.Sex		3.3.Age	2.4 Keble	
3.4. Source of income (tick all which apply)	Crops	Livestock	Trade	Salary	Other
4. Do you have a latrine?	Yes	No			

If no, where do family members defecate?

What are the reasons for not having a latrine?

### 5.Latrine Use

5.1. What motivates you to use a latrine continuously?

5.2. What inhibits you not to improve latrines?

### 6. Is latrine use becoming part of your culture/custom? (Y/N)

6.1. Give reason?

6.2. Is your latrine quality improving? Yes/No

Give reason?

## **7. Describe the condition of your latrine**

7.1. Use and cleanliness

7.2. Anal cleansing /sensitive

7.3. Child faeces/how is it managed?

7.4. Hand washing after latrine use

(7) Access to latrine building skills and services

(8) Access to latrine construction products/slabs, roofs,  
doors

(9) Who technically support you? How frequently?

11. Who is doing follow up and monitoring? How?

## Annex 7: Interview Questions /for Keble and Woreda Informants

Purpose: to assess the determining factors for sustainable use of latrines

<b>1. Moderator /assistant data</b>
1.1 Interviewer name
1.2 Date of interview/observations

<b>3. Interviewee data</b>
3.1 Name/optional
3.2 Age
3.3.Sex
3.4.Occupation /position
3.3 Source of income (tick all which apply)
<b>4. Do you have a latrine?</b>

If yes ,age of latrine

If no, where do family members defecate?

What are the reasons for not having a latrine?

### **5.Latrine Use**

5.1. What motivates households to use a latrine continuously?

5.2. What inhibits households not to improve latrines?

### **6. Is latrine use and quality improving or declining? (Y/N)**

6.1. Give reasons?

6.2. Child faeces/how is it managed?

6.3.Hand washing after latrine use

7. Explain the capacity building/empowerment activities given to households?

**Probe:** do you have sufficient skilled and experienced staff? How is the motivation?

8. Explain how latrine construction skills, services and products are provided for households?

**Probe:** who are the main service providers?

9. Who technically support households and communities? How frequently?

**Probe:** do you have sufficient skilled and experienced staff? How is the motivation?

10. Who is doing follow up and monitoring? How frequently?

**Probe:** is there documented evidence?

11. If there is intersect oral coordination, what happens and when is the last meeting held?

**Probe:** what were the main decisions?

12. Other remarks :

## **Annex 8: Ethical Mini-Checklist**

Loughborough University

School of Civil and Building Engineering

### **Ethical Mini-Checklist**

#### **What is this checklist for?**

This checklist asks you to consider the consequences of your proposed study on any human affected by it; by participating in your work or otherwise. It is a precursor to a formal submission to the University's Ethical Advisory Committee where required by the University. The University's ethical process is there to support and protect you. If ethical problems were to arise and you have followed the full University procedure, the University will fully support you.

This checklist has been produced to help investigators consider the often amorphous issue of "ethics." It should assist in the development of high-quality research protocols that stand a better chance of being successful. Or, at least, not failing to secure funding or approval for any ethical oversight.

#### **What does this checklist signify?**

That, where your study will engage with or otherwise influence human subjects, the potential consequences of that interaction upon: the participants; you; your colleagues; your department and institution; and your funders has been considered in your research design insofar as is possible at this initial stage.

Completion, submission and acknowledgement of this document does not validate or otherwise approve the ethical considerations of your proposed research design. It merely signifies that, where relevant, you have initially considered these issues.

Careful consideration of the questions below will help you develop a proposal that contains an appropriate ethical treatment of human subjects. This reduces the likelihood of its rejection on that basis.

#### **Do I have to complete this checklist?**

Yes. All RX2 forms will only be signed by the Head of Department and PhD progressions approved if a completed Ethical Mini-Checklist is provided. Completion of this checklist is not optional. It is good practice and, thus, should not create additional work.

#### **Why am I being asked to complete this checklist?**

Everyone has to. Even if your study doesn't involve people in any way.

#### **Questions**

Q. 1a. Does your proposed study involve people? YES / NO

If YES, consider Q. 1b. If NO, please complete Q. 7 and Q. 8 only.

**Q. 2. Obligations to society.**

Have you ensured the proposed research design:

a. carries an appropriate degree of risk for the advances it aims to make? YES / NO

b. appropriately balances any conflicts of interest? YES / NO

c. will be conducted objectively? YES / NO

**Q. 3. Obligations to your subjects** (i.e. the individuals participating in or affected by your study).

Have you ensured the proposed research design?

a. is not unduly intrusive and respects subjects' privacy, feelings and sensitivities? YES/NO

b. will obtain consent (either informed or by assent) from all subjects? YES / NO

c. adopts appropriate protocols to protect subjects from harm if obtaining informed consent is not possible? YES / NO

d. protects the interests of subjects? YES / NO

e. prevents the disclosure of subjects' identities where required or requested? YES / NO

**Q.4. Obligations to your colleagues.**

Have you ensured the proposed research design?

a. will be conducted impartially? YES / NO

b. will present its findings honestly and accurately? YES / NO

c. will not expose you or your colleagues to the risk of physical or mental harm? YES / NO

**Q. 5. Obligations to your host institution and funders.**

Have you ensured the proposed research design:

a. clearly defines the roles and responsibilities of those involved? YES / NO

b. is appropriate, and was selected after careful consideration of alternative approaches? YES / NO

c. does not pre-empt its outcomes? YES / NO

d. will protect the gathered data appropriately? YES / NO

**Q. 6. The research team.**

Have you ensured the proposed research design?

a. identifies the investigators and explains their experience? YES / NO

b. establishes the competence of the investigators to identify and address ethical issues (with appropriate external support if necessary)? YES / NO

Please consider the above issues carefully. They are significant and, if not fully considered, may have harmful consequences, potentially including the rejection of your application by a funding body.

If you have answered NO to any part of Q. 2 to Q. 6, please further consider those responses. If you are not completely convinced that answering NO is justified by the nature of your work, then revise your study design until you are able to answer YES.

Q. 7. Proposal Title: Rethinking Sustainable Latrine Use through Human Behaviour Change and Local Capacity Development

Q. 8a. Student (Name & signature where applicable): Addise Amado Dube

\_\_\_\_\_

Q. 8b. Principal Investigator / Supervisor

(Name & signature): Dr Andrew Cotton \_\_\_\_\_

Date: \_\_\_\_\_

This document is derived from The Social Research Association's Ethical Guidelines. These are available from [www.the-sra.org.uk](http://www.the-sra.org.uk)