



Help For A drop of water!  
Ethiopian University students  
Initiative ””

# 1. Help for a drop of water (HFDW)

## 1.1 Overview

- HFDW is an initiative established by former seven volunteer young female Mekelle University students in 2009 with special focus on provision of clean and potable water to the needy community.
- The seven volunteer young female students were inspired
  - after seeing the consistent efforts of REST (Relief society of Tigray)
  - the challenges of the rural community when the Hollywood top movie star Matt Damon visited REST's project on the 22<sup>nd</sup> of April 2009.

## **1.2 Vision**

HfDW vision is of a country where everyone has access to clean water, safe sanitation and good hygiene.

## **1.3 Mission**

HFDW'S mission is to support the effort of individuals and families in the poorest communities of Ethiopia and in higher educational institutions with their basic development needs.







## *1.4 Strategies*

HFDW employed and will employ the following strategies to meet its vision and mission

- Promotion and campaign with in universities
- Networking and information sharing among university students
- Making partnership with different NGO's and governmental offices
- Participating in different water related and other developmental issues
- Promoting sustainable community based development





USEPA

AFWA

CHIEF GUEST



Improving Service Delivery and Protecting Public Health.  
Organized by WHO, International Water Association (IWA) in  
collaboration with National Water and Sewerage Corporation  
Kampala, Uganda, 12-15 Nov 2012



## 2. WHY WSP ?

World widely, water supply utilities and small community water supplies are currently faced with a challenge of providing adequate SAFE drinking water for their client/communities . Reasons for this ,

- Increased pollution
- Population growth
- contamination from human waste excreta and others
- climate change

Additionally safety of improved water are neglected due to lack of awareness among those managing and operating water utilities and small community water supply .

- Common Consumers Mentality
- -Once the water source is improved = the water is safe in developing countries

## WHY WSP Cont

- WHO recognized these challenge came up with solution during the revision of the WHO Guidelines for Drinking-water Quality leading to the 3rd edition in 2004, the value of the Water Safety Plan (WSP) approach.
- Water Safety Plans are a comprehensive risk assessment and risk management approach from catchment to consumer, with the aim of **CONSISTENTLY** ensuring the safety and acceptability of a drinking-water supply as part of ongoing drinking water supply operation and maintenance.

## 2.1 WSP Implementation in Hentalo Wajirate Woreda by HFDW & REST

### Objective

- To understand the existing water supply system and the KAP of the target community with respect to WSP and implementation
- To develop & implement WSP in SCWS in Hentalo Wajirate Woreda of the Tigray Regional State
- To develop and document lessons in a systematic and scientific method that can be utilized for scale-up in the country.

# 3. Baseline Report

## 3.1 Introduction

- Ethiopia to meet the safe water and improved hygiene and sanitation related targets of Millennium development goal (MDG), had given priority for the sector and set ambitious goals in its Growth and transformation plan (GTP).
- Emphases for involvement and contribution of Different actors including local and international organizations .
- not only as an institutional arrangement but also to foster integrated behavior among community members in which safe use of water, healthy hygiene practices and regular use of improved sanitation facilities.

# Cont

- HFDW, to contribute its part for the effort to achieve the pre described goals in WASH sector had been engaged in implementation of different projects in Tigray region.
- The organization has been found in piloting of water safety plan (WSP) project( Funded by WHO & NCA) in Hentalo Wajirate Woreda of Tigray region.
- Woreda water resource & Health Bureau , women affairs offices and REST.
- WSP baseline survey -As part of standard project planning and outcome measurement procedure .

## **3.2 Scope of the survey**

- assessing the household characteristics, assessing of the hazards and risks of three water points, assessing of the water supply access, sanitation & hygiene practices of the user community and to conduct laboratory test of the water quality.
- Based on the survey result, it tries to develop standard outcome indicator base line figures.

## **3.3 Objectives of the survey**

- to collect basic data from the three water supply sources and user communities in order to establish/estimate base line figures for standard WSP/WASH outcomes and impact indicators .

Baseline information collected is to serve the understanding of:

- To determine the quality of household water at the point of collection and at the point of consumption
- To determine the water collection and storage practices adopted by the community in relation with WSP,
- To describe water use and treatment practices at the household level and perceptions on water quality by consumers
- To estimate water quality related variables that are potentially related with WSP
- To determine the potential hazards and risks of the water sources
- To examine households practices and behaviors in regard to hygiene and sanitation facilities

## 3.4 The project area

### Hintalo wajirat woreda

- is one of the 36 rural woredas in Tigray region having total land area coverage of 2864.79 km<sup>2</sup> .
- is found in the Southern zone of Tigray region at distance of 35 km South of Mekelle town.
- Topographically, the woreda consist few lowlands areas with altitude between 1200-1700m above sea level while majority of the areas have a range of elevation 1700-2500 m above sea level.
- is the second most populous with 20 “tabias”. and amongst the most drought prone and food insecure districts of the region. The total population of the woreda is 176,527 out of which 89,217 are female.

# 4. Methodology of the survey

## 4.1 Survey design

- Considering the purpose of the survey and consultations between client and the study firm has led to the selection of an “adequacy” evaluative model in which outcome and other data are collected before the program or during this baseline survey to be compared with the data to be collected after the program during the end line survey.

## 4.2 Sampling

- sampling strategy is mixed in which the preselected three water points and three primary user communities were selected. primary data were collected from 120 households out of total 136 households

## 4.3 Indicator and questioner Design

- questionnaires capture all main WSP and WASH related indicators and other informative variables that substantiate the survey result and inform the program.
- questionnaire and indicators were designed mainly using WHO WASH Standard Indicators methodology Guide (WHO 2011) and Access and Behavioral Outcome indicators for Water, Sanitation and Hygiene document (USAID 2010).

The main components of the questioner are:

- Household characteristics variables
- water access variables
- Hygiene and sanitation variables
- Water treatment variables
- Water storage & Water quality variables

## 4.4 Data collection

four types of data collection methods employed were

- household structured survey, key informant interview, observations and water sampling and laboratory test. Household survey questionnaire and key informant interview checklists were used to collect the required data.

## 4.5 Data entry and analysis

- The raw data was entered into a computerized database system using the CSPro 4.0 program specifically designed for the same survey in 2012
- SPSS (v20.0) statistical software was used for data analysis purpose.
- The lab test focused to identify water quality indicators like PH, turbidity & microbiological factors.

## • 5. Results of the Baseline study

### 5.1 Sample characteristics

- The majority of the respondents are women (82.5%) and only 17.5% of the male head of household have participated on the interview.
- In the total population of the surveyed community are 633 out of which the male compositions are 47% and Female compositions are 53%. The average family size was 5.2 persons, and the total number of children under age five was 11.8% of the sample population.
- The majority of the household head in the surveyed community (85%) have never attended any level of education. While 13.3% and 1.7% are respectively attended primary and secondary school education.

## **5.2 Access, Collection, Storage and quality of household water use**

- This section describes the different aspects of water access and overall management and utilization practices of the sampled community

### **5.2.1 Water Supply Access**

- WAI percent of households that use an improved drinking water source was measured as an aggregate result of other three sub indicators captured through three questions. I.e source of drinking water, normal availability of water from the sources and unavailability of water for one or more days in last two weeks.

## Cont

- In the study area the dominant source of water is protected dug well, about 59 % of the sampled households use from this source. Protected gravity spring to piped public tap is the second source about 40 percent of them use from this source.
- The result indicates all households use water source out of their dwelling through periodic fetching. Thus households have limited control over on quality and safety of water which was totally dependent on the effectiveness of the communal water source management system.
- Sampled household were asked for availability of water throughout the day normally. Only five HH's (4 %) responded yes and 115 (96 %) responded no. only 4 percent of household use an improved drinking water source in the community.

- The second WA indicator percent of households spending up to 30 minutes to collect water from an improved source was measured.
- the largest number of HH's 71.7 percent travel less than half of the minimum travel time. i.e Majority of the community access water within the generally acceptable time.
- Other water access indicators like average waiting time at water point was measured. Out of this 96% of households on average wait less than 30 minute to collect water from the available identified sources.
- By measuring the amount of water collection and used per day, On average a household collects 29 L/day in which 96% of household responded as the amount collected is too enough for the family.

## 5.2.2 Household Water Treatment

- General and specific water access indicators related with quality and treatment practices and behaviors were measured
- First access indicator percent of households practicing correct use of recommended household water treatment technologies was measured. According to the result only 2% of households (2) currently treat water before drinking at home.
- The first technology Chlorination (Water Guard) was used by only one household from the two HHs that treat water.
- The 2<sup>nd</sup> technology used was solar disinfection by one HH. The survey confirmed that boiling is not applicable in the area. only 0.8% of HHs practice correct use of recommended household water treatment .

## 5.2.3 Water Storage

- Water storage and handling indicators was captured and measured using five sub indicators. The main indicator is percent of households storing water in safe storage containers.
- About 68% and 28% of sampled respondents clean their water container daily and weekly respectively.

## 5.3 Hygiene, sanitation and diarrheal disease

### 5.3.1 Hygiene

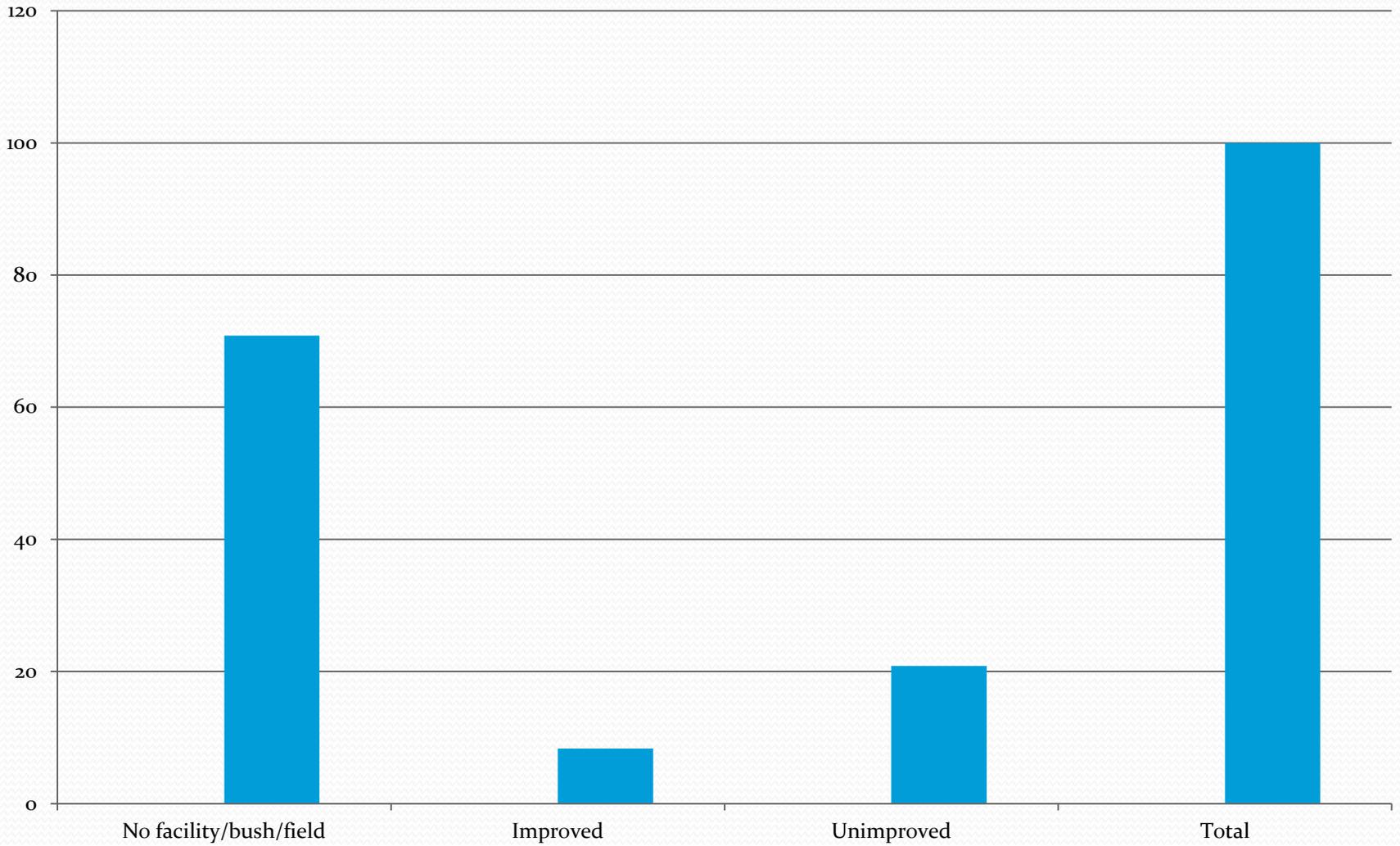
Assumption ~ knowledge of the critical moments for hand washing with soap to prevent diarrheal disease is an internal determinant of the practice. The five critical moments include: 1) after defecation, 2) after cleaning a child, 3) before preparing food, 4) before feeding a child, and 5) before eating.

## Critical moments of washing hands

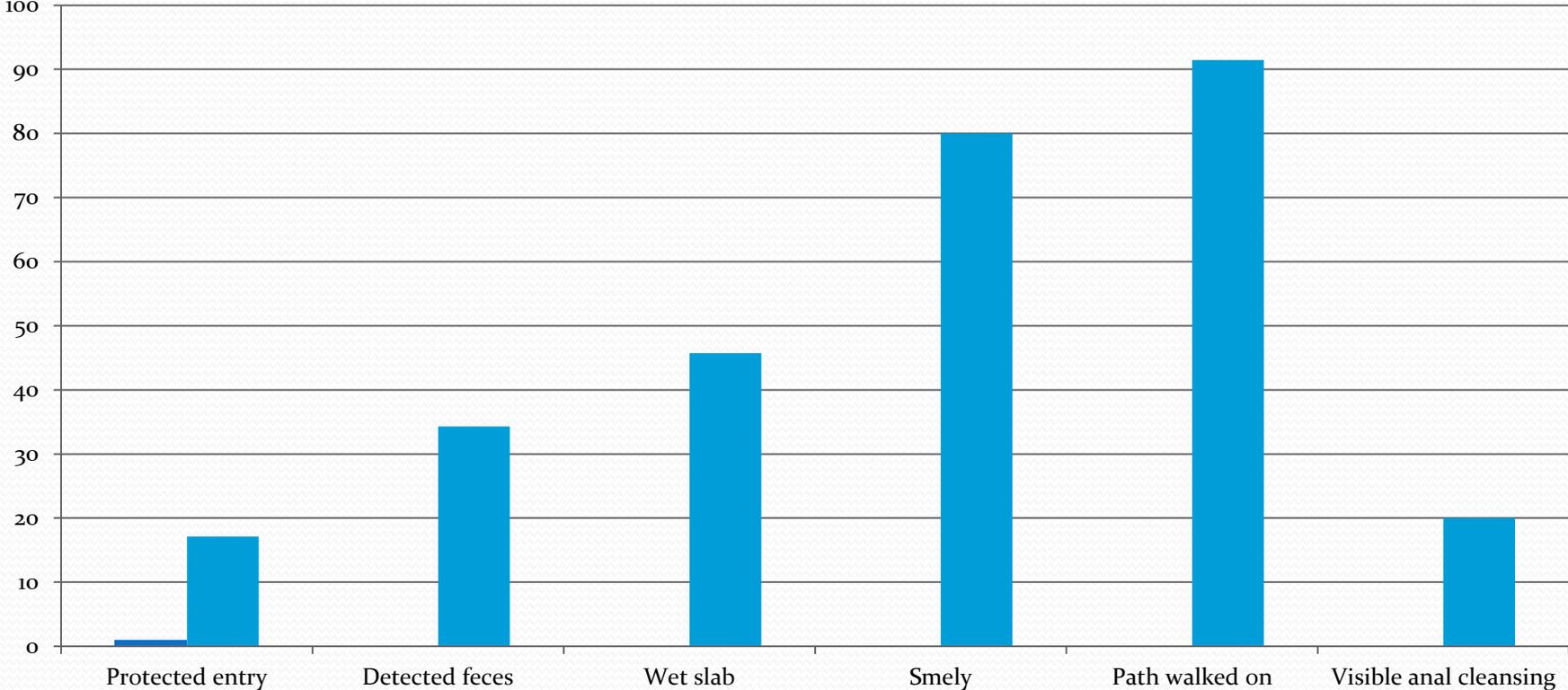
- whenever they look/feel dirty - 7.5%
- before preparing food -43.3%
- After defecation -36.7%
- Before eating food -10.0%
- After eating food -2.5 %

The majority of the respondents 62.5% have also indicated that they use only water during they wash their hands at critical times. 81.6 % of them do not have soap or detergents in places.

# Graph 1 percentage of households by types of sanitation facilities



Graph 2: Sign of latrine use



The combined analysis of both improved and unimproved sanitation facility showed that 86% of them are having a clean surrounding. While only 14% of the facility have deficiency on cleanness.

# Diarrhea

- Diarrhea was defined as having 3 or more loose or watery stools in a 24-hour period. 7.5% of the children living in the surveyed household are experienced a diarrheal cases on the past two weeks preceding the survey date.

## 5.4 Hazards and risks of water sources

- Schemes surrounded by the grazing lands. Open defecation is also a common practice in the area that can be witnessed by droppings of human in the surrounding of the schemes.
- None of the catchments of the schemes are having a diversion canal from possible risks of floods and runoffs.

### 5.4.1 Risk identification( contamination and pollution)

The common risk points observed under the three water schemes are:

- Exposure to the accumulation of water in the surrounding of the source water (See photo 1)
- There is some signs of erosion puts potential risks
- No diversion ditches around the source water
- There Is human excreta on the ground within 10m radius of the source water and distribution points

**Figure 1** Picture showing evidences of the existence of human and animal faces inside the distribution point fence

**Figure 2** the spring head area showing exposed for runoff and seepage of wastes



## 5.5 Water Quality Test and Analysis

### 5.5.1 Turbidity and PH

- The laboratory analysis showed that out of the nine households in which the water sample has been collected eight of them have water with less than 5 turbidity units which is below the recommended concentration limits.
- It is only one (11%) of household was having 6.68 turbidity units (above the recommended unit) in its sampled water sample . But in contrast all (100%)the three water sources have unacceptable level of turbidity ranging from 9.61 to 12.60 .

### PH

- PH Recommended range is between 6.5 and 8.5.The PH laboratory result for the three water sources ranges from 6.01 to 6.12 which is in the acceptable limit.

## 6. Recommendations

- To educate the public in collaboration with local primary health units on the proper methods of home water treatment and storage techniques to reduce the reintroduction of pathogens and decrease the concentration level of turbidity observed in their source water.
- Improved Hygiene and sanitation practices would both help to decrease potential contamination of source waters and isolate pathogens from consumers. Therefore, hygiene and sanitation should be considered an important component of the Water Safety Plan.
- recommended to re-test water samples from both sources and household level in collaboration with the locally available laboratories to identify the possible contaminants routes and plan for the control measures.

*THANK YOU*

