INTERNATIONAL RESCUE COMMITTEE
ENVIRONMENTAL HEALTH PROGRAM
NORTH WEST ZONE OF TIGRAY REGION, ADI-HARUSH REFUGEE CAMP

WATER SUPPLY, SANITATION AND HYGIENE KNOWLEDGE, PRACTICE AND COVERAGE (KPC) SURVEY DRAFT REPORT, 2017

Tigray Region
Adi-harush Refugee Camp
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Acknowledgment

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IRC Adi-Harush environmental health department would like to express deepest appreciation to all EH team and other IRC staff who contributed a lot while conducting this survey and for dedicated data collectors and supervisors for their hard work. Furthermore IRC would also like to acknowledge ARRA camp coordinator and protection staffs that helped IRC to accomplish this survey without any problem.

List of Abbreviations:-

ARRA – Administration of Refugee and Returnees Affaires
CI- Confidence Interval
EHAs – Environmental Health Agents
EH – Environmental Health
UNHCR – United Nations Higher Commissioner for Refugee
HH – Household
HDW – Hand dug well
IRC – International rescue committee
SHP-Sanitation and Hygiene Promotion
TS – Tap stand
ECHO- European Commission Directorate-General Humanitarian Aid and Civil Protection
CHW –community health workers

Abstract

Back ground: Adi-Harush Refugee Camp is located in the North West of Tigray regional state of Ethiopia, at about 1170 km north from the capital, Addis Ababa. The camp population is 9766 [UNHCR, July, 2017]. The camp hosts Eritrean refugees having different ethnic groups where the majorities are Tigrigna and Saho and some minorities of Tigre and Belian.

Objective: The main objective of this survey is to collect data and information to evaluate performance implemented on water, sanitation and coverage in Adi-Harush Refugee camp in 2017 and to have base line data for the year 2018 interventions

Method: In this survey a cross sectional study was used. Using systematic random sampling method; the survey was carried out in all Zones of the camp. The total sample size was 174 households. The method of data collection was interview and observation using pre-structured questionnaires.

The study was conducted from December 18-20, 2017. In addition to temporarily hired supervisor, sanitation and hygiene promotion officer was responsible in monitoring and follow up of the overall survey data collection and report drafting activities.

Result: The average water provided was 6.7 liter per person per day, 98.3 % of the interviewed households collect water from an improved/treated source taps stand and 73.6% of the households have at least 10 liter potable water storage materials. 74% of the respondents dissatisfied with the water quantity. 90.2% of the HH used house hold latrines for defecation and 3.4% use shared house latrines with other families but still 24.7% HHs sometimes defecate in open field. 98% of the HHs access to soap and 78.2% of the respondents mentioned at least three of the critical times of hand washing. 9% of the households have at least one person children less than five and adults suffered with diarrheal diseases in the last two week of the survey. 46% of households assess to separate specific hand washing and 45% of households take bath in designated facilities

Conclusion: In general the study revealed that the gravity of the identified problems, which are latrine coverage, safe water management at home level, hand washing practice, and the risk of diarrhea disease.

Recommendations: Amount of water distributed has to be improved, as the amount of water collected is much less than the standard. Hence distribution of enough amount of water as per the standard should be prioritizing and also the time for distribution should be convenient to beneficiaries to be considered. Awareness rising on bad consequences defecating on the open field plus introducing separate hand washing facility is highly recommended. Capacity building for EHAs should be strengthens for good hygiene practice. The result of the

survey showed that access of the house hold latrines and showers great gap. Thus, allocation of enough amount of budget for latrine and shower construction and maintenance need to be focused.

CHAPTER ONE; Background

Adi-Harush Refugee Camp is located in the North West of Tigray regional state of Ethiopia, at about 1170 km north from the capital, Addis Ababa. The camp population is 9766 [UNHCR, July, 2017]. The camp hosts Eritrean refugees having different ethnic groups where the majorities are Tigrigna and Saho and some minorities of Tigre and Belian.

IRC Ethiopia Environmental Health program has core mandate for provision of safe water and basic sanitation services. IRC took full WASH program mandate from UNHCR and ARRA with main objective of providing refugees with safe and adequate water and sanitation facilities and reduce mortality and morbidity from diarrhea and other water-related diseases through integrated hygiene promotion interventions.

IRC is currently providing safe drinking water to 9766 refugees (UNHCR, July, 2017) and host community. The existing water system consists of six boreholes, two Pioneer tank reservoirs of 74 m3 capacity, four fiber glass tankers with capacity of 24m3 and 26 water distribution points(tap stands) with six faucets on each.

To date the sanitation service of the IRC provided 1278 family latrines (private and shared latrines), three public solid waste disposal pits serve to the five zones where its usage is controlled by sanitation facility attendants on daily basis. In addition, there are also 108 rooms of public showers and 90 cloth washing basins serving the refugee community.

CHAPTER TWO; Objectives:

2.1. General objective:

The main objective of this survey is to collect data and information to evaluate performance of IRC implemented in Adi-Harush Refugee camp in 2017 and to have base line data for the year 2018 interventions

2.2. Specific Objectives:

The specific objective of the survey is to gather baseline information regarding;

- To assess the current status in knowledge, practice and coverage of water, sanitation and hygiene practices
- To compare these data with the baseline data to identify the effectiveness and impact of the water, sanitation and hygiene promotion activities.
- To measure achievements of water, sanitation and hygiene promotion interventions of 2017

CHAPTER THREE; Survey Methods

3.1 methods

Cross sectional study was used. Data and information for analysis was collected by combination of standard UNHCR questionnaires and observation at household.

Questionnaires were designed to provide answers to measureable indicators under current grants for core IRC performance indicators.

The study conducted in Adi-Harush refugee camp in which the sample size was determined by systematic random sampling technique and the survey conducted from December 15 – 19, 2017 to assess the knowledge, practice and coverage of the refugee community in relation to water, sanitation and hygiene.

3.2 Sample size

The sampling methodology was **systematic random sampling**. Based on household data collected in the second week of August 2017 there are 1617 about households. The sample size was calculated by using single population proportion formula as follows:

$$n = \frac{(Z)^2 (p)\,(1-p)}{d^2}, \text{ where}$$

p= advance guess of population proportion of the most impact variable, Taking 50% is good estimation of target population demonstrating good KAP on Sanitation and Hygiene Promotion
d= precision required in percentage (margin error)
Z = the value of standard normal variable for desired confidence level.

For this survey we have assumed the following condition to determine sample size that

- 50% of the population practice good hygiene practices
- 93% confidence interval with z value= 1.96
- $\pm$ 7% precision

Therefore $n = z^2 * \frac{p*q}{d^2}$ where, n= sample size, p=prevalence of 50%, q=1-p, d=precision (7%)

z= 1.96 at 95% CI.

Sample size, $n = 1.96^2 * \frac{0.5*0.5}{0.07^2} = 196$

Total House hold =1617

Since n>10% total household correction was used

ns =n/(1+n/N)= 174

3.3 Sampling technique and data collection:

The survey was conducted by systematic random sampling method in which all of the households in the refugee camp have same chance to be selected. Since the camp is divided into five zones and number of samples to be collected per zone determined using sample proportion to population size technique. The sampling interval of a zone was determined using total household of the zone divided by number of samples to be collected from that zone

Table 1 Sample size and sample interval

No	Sample size in each Zones=($\frac{No\ of\ HH\ at\ A}{Total\ HH\ in\ the\ Camp}$ * Total sample size)
1	For zone 1 = $\frac{593}{1617}$*175 = 64
2	For Zone 2 = $\frac{344}{1617}$*175= 37
3	For Zone 3 =$\frac{168}{1617}$*175 =18
4	For Zone 4 =$\frac{267}{1617}$*175 = 29
5	For Zone 5 =$\frac{245}{1617}$*175=27

3.4 Sampling procedure

3.4.1 Stage1. Selecting the House hold

The sample size will be 174 and the sampling interval will be calculated by dividing the total house hold to the sample size.

i.e. K = 1617/ 174 = 9 therefore, every nine hose hold the interview will be done

3.4.2 Stage2. Selecting start point

Rough sketch map of the camp divided by five zones was prepared by the survey team at the end of the training which was prepared in the way that all data collectors and supervisors could easily understood, then the number of samples to be collected was divided to each zones based on sample proportion to size method.

Each survey team had a pre fixed starting route and picks a prefixed sampling by zone. Once they initiated, the teams were count every household in their area and were conduct interview every ninth (9^{th}) household counted similar to the method described above. This systematic random method continued until all houses in the study area covered by the sampling technique.

Table 2 proportion of total household and sample size

Zone	Household size per zone		Sample Size	
	Number of HHs	%	Number	%
1	593	37%	64	37%
2	344	21%	37	21%
3	168	10%	17	10%
4	267	17%	30	17%
5	245	15%	26	15%
Total	1617	100%	174	100%

3.4 Respondents:

The survey was conducted on each Zone in the camp. To get relatively realistic information, household mothers 14 years and above were primarily targets, as they are more responsible group for water, sanitation and hygiene activities in the HH. But if not present, men house hold members 14 years and above were interviewed. In case of failure to get either of the above interviewee, the interviewer proceeded to the next house which had occupants available for the interview.

3.5 Personnel:

There were three group personnel in the survey; interviewers who had direct contact with interviewee, supervisors who supported and monitor interviewers, and S&HP officer for over all follow up. A total of 9 personnel were take part in the survey; 7 interviewers, 1 supervisor and 1 IRC national staff (SHP officer).Participants of the survey were selected from local community who were relatively better level of education and speak the local language in order to minimize respondent and interviewer bias and

avoid inaccurate posing of questions and recording of responses. One supervisor was assigned to check proper data collection and no household was jumped without reason.

Table 3 Summary of Sample size and personnel per each zone:

Zone	Household size per zone		Sample Size		No. of interviewers	No of Supervisors	Remark
	Number of HHs	%	Number	%			
1	593	37%	64	37%	2	1	
2	344	21%	37	21%	2		
3	168	10%	17	10%	1		
4	267	17%	30	17%	1		
5	245	15%	26	15%	1		
Total	1617	100%	174	100%	7	1	

3.6 Data and Information Collection

The basic sampling elements from which required information was ascertained households and the respondents were female, wife, girl and male > 14 years of age and indeed member of the house hold. With the aid of the pre designed questionnaire, data was collected through interview and observation of events or behaviors or seeing obvious signs of practices. Average length of interview per household in average 25-30 minutes and the number of days to collect the data were 3 days.

3.7 Ethical considerations

As a requirement, the IRC was seeking permission from Administrative of Refugee and Return Affairs (ARRA) to conduct the survey. Upon securing permission, the IRC was informed the lower level of the refugee camp representative to make them aware of the data collection exercise and enroll their involvement in informing the community about the survey.

3.8 Limitation

- The questioner was not translated to local language
- Some of questionnaires did not explanatory on the ground

CHAPTER FOUR; Findings of the Study

4.1 Demographic status:

174 individual respondents male and female of 14 years and above were the targeted for the interview during the data collection. 77% respondents were able to read easily, 7% and 16% of the respondents able to read with difficulties and do not read respectively.

4.2 Water related results:

The survey showed that, 98.3% of the respondents collected drinking water from treated/protected source. The study showed that, tap stands were serving as the main source of water for 98% of the refugee community and the rest 2% use hand pumps as their principal source for drinking water. Besides the principal source for drinking water, 75% of the respondents use hand pumps as second source for drinking. Average water consumption of the refugee community is **6.7** liters per person per day. 26 % of respondents satisfied with the current water supply but 74% were not. In Adi-Harush refugee camp the study showed that, the average distance to water point is 400 meter.

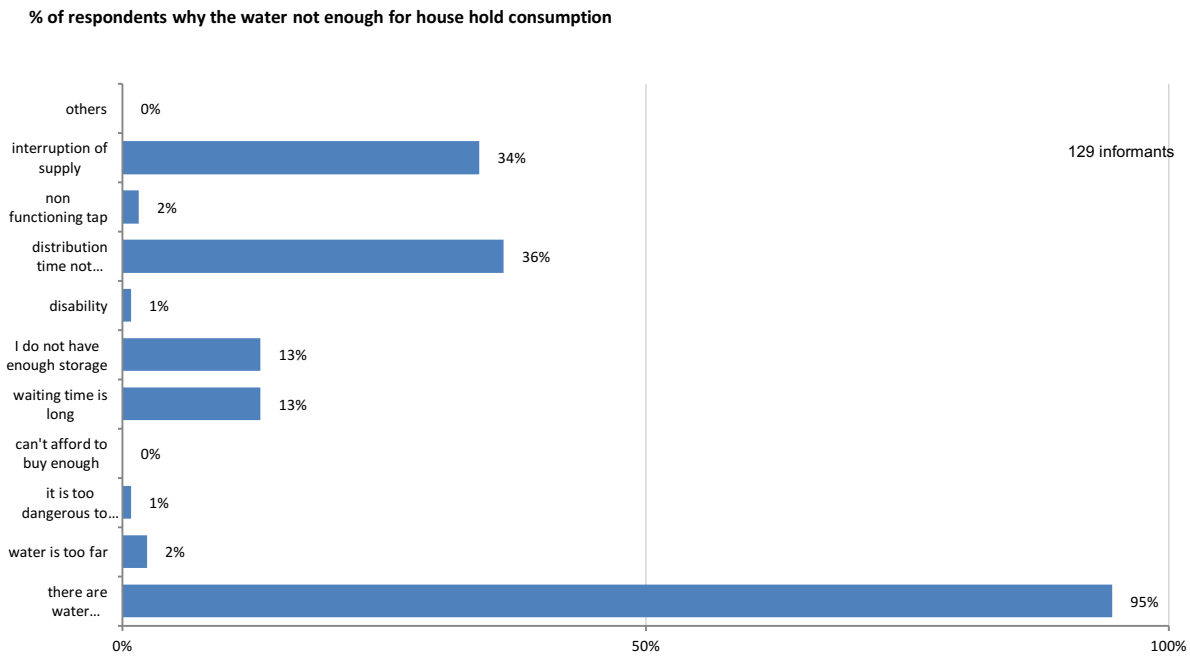

Figure 1 reason why the respondents did not get enough water

From the 74%(129) who were not satisfied with the current water supply, 95%, 36%, 34%, 13%, and 13% of the respondents reported that shortage of water from the supply, distribution time not convenient ,interruption of supply, do not have enough storage and waiting time is too high respectively. 96% of the respondents drew water from containers by pouring in to a cup and 3% by cup dipped and 1% by short hand Jog.
35% of the respondents clean their water storage containers every time they use them and 55% they clean the water containers at least once a week.

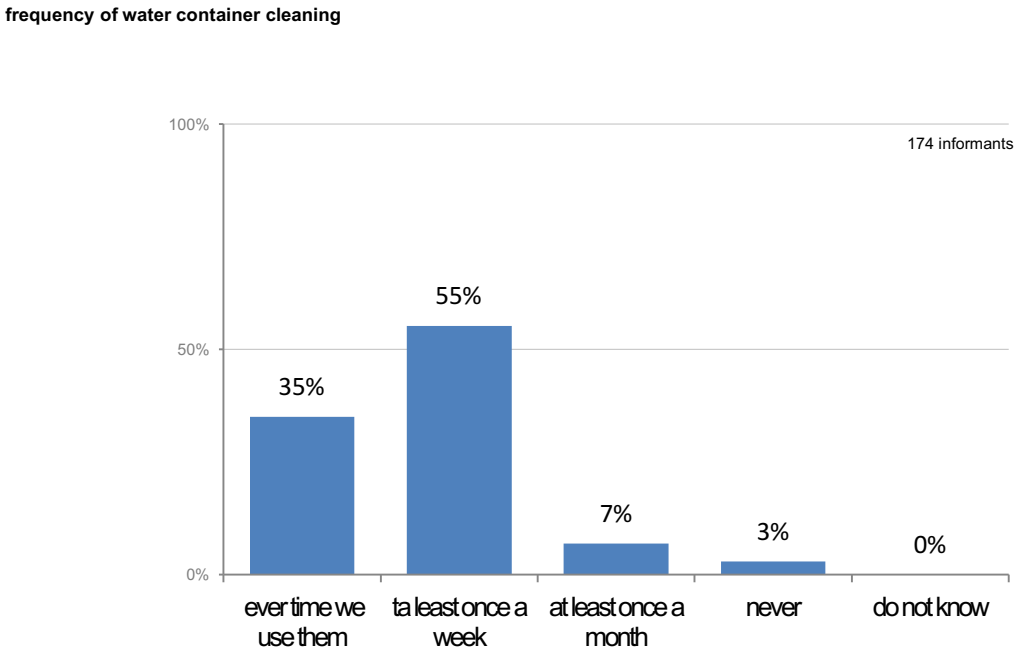

Fig 2 frequency of water container cleaning by respondents

95% of the respondents believed that the water they use them treated by responsible origination. They did not treat by themselves at house hold level and 100% respondents got drinking water for free without any payment.

Even though the survey showed that, the average distance to water is 400 meter but 61% of the respondents took two and bellow minute to reach to the water source/taps and 19% took from two to four minutes. In 98% of respondent's houses soap or other rubbing agent are available during the survey.

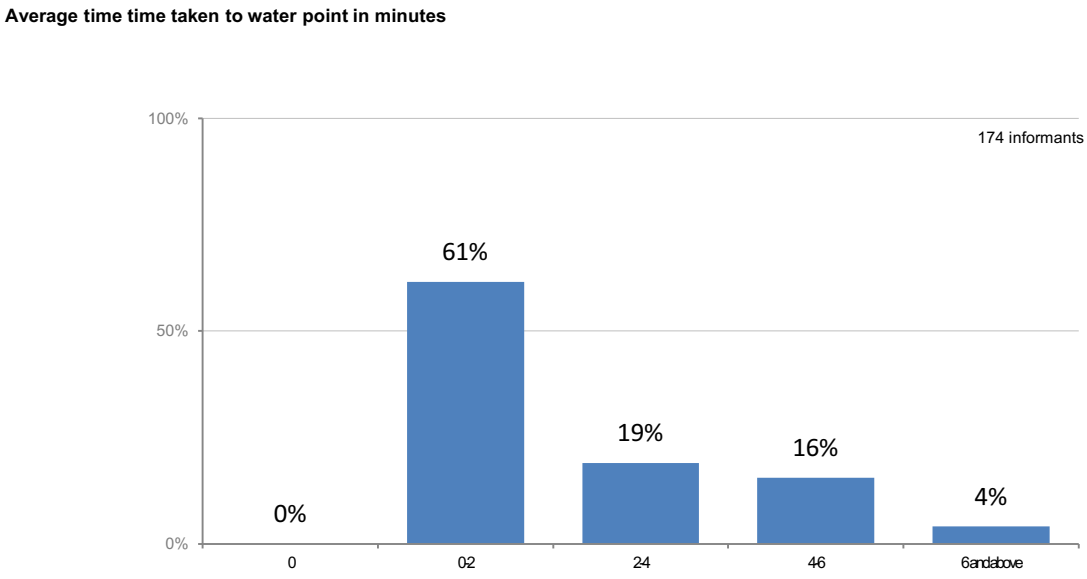

Fig 3 average time taken to water sources/taps in minutes

4.3 Knowledge and practice of critical times of hand washing results:

From the total respondents 98%, 92%, 75%, 9%, 5%, and 3% of the HHs wash their hands before eating, after defection, before cooking, before breast feeding, after handling child's stool and before feeding child respectively but as the question can give a chance of two and more answers, 22% of the respondents did not know more than one to two critical times of hand washing. In 46% of households from the total have specific hand washing places/stations and 54% of them had not. On only 40% of respondents who have specific hand washing stations have soap/rubbing agents on the areas of hand washing stations. 81% of the respondents who have specific hand washing stations were tippy taps and 11% and 8% of the type of hand washings devices were basins and pouring devices respectively.

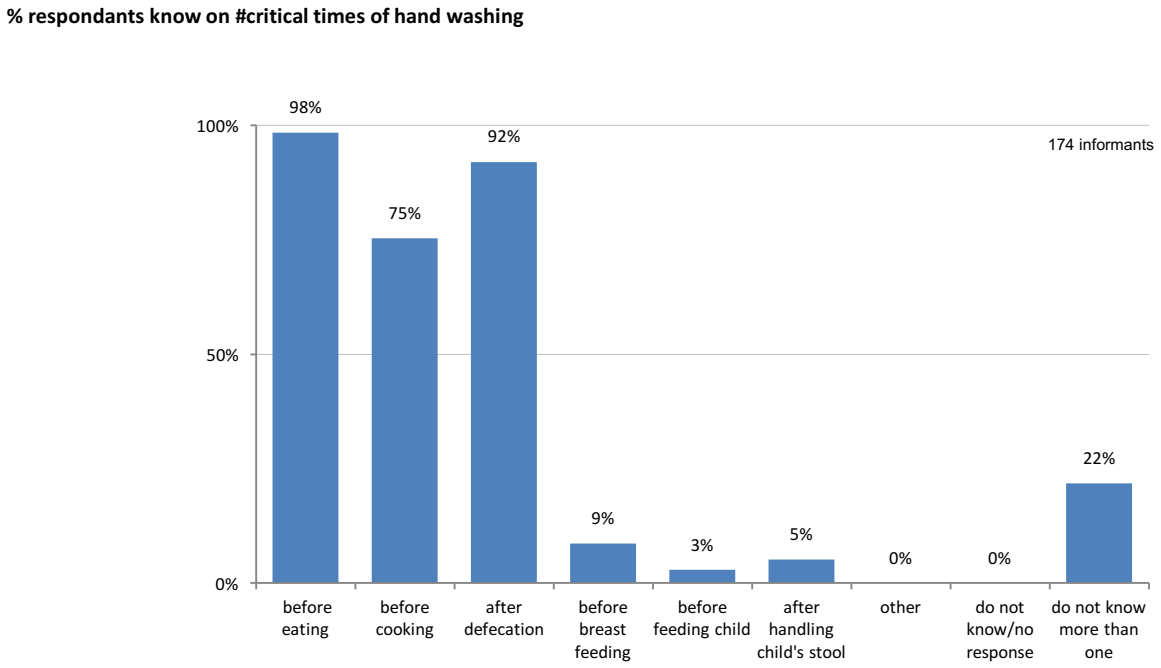

Fig 4 % respondants know atleast thee times critical times of hand washing

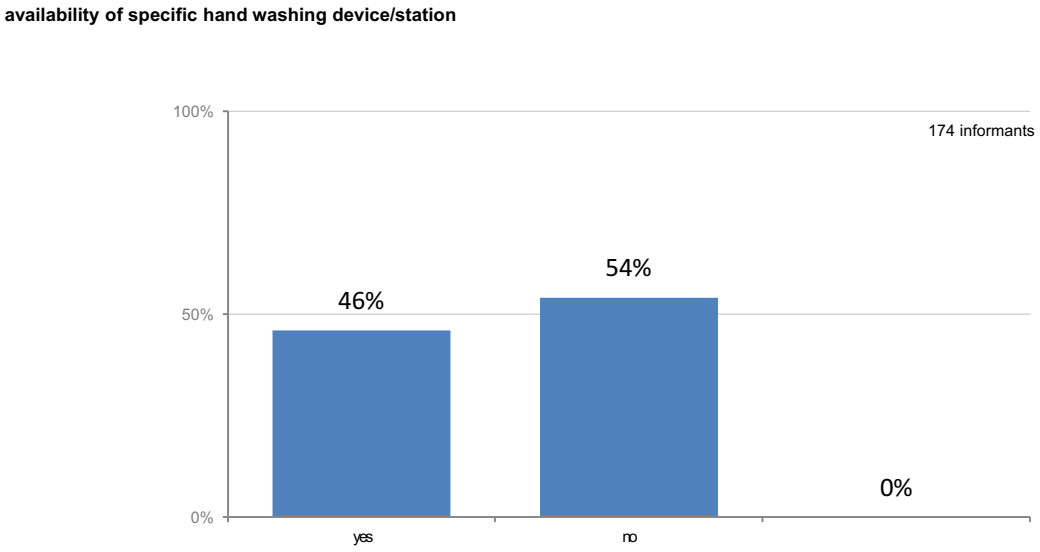

Figure 5. % of population who have specific place for hand washing.

78.2% of the respondents mentioned that they practice hand washing at the three and above of the critical times. In 76% of respondents no water is available on their hand washing stations but in 24% water were available.

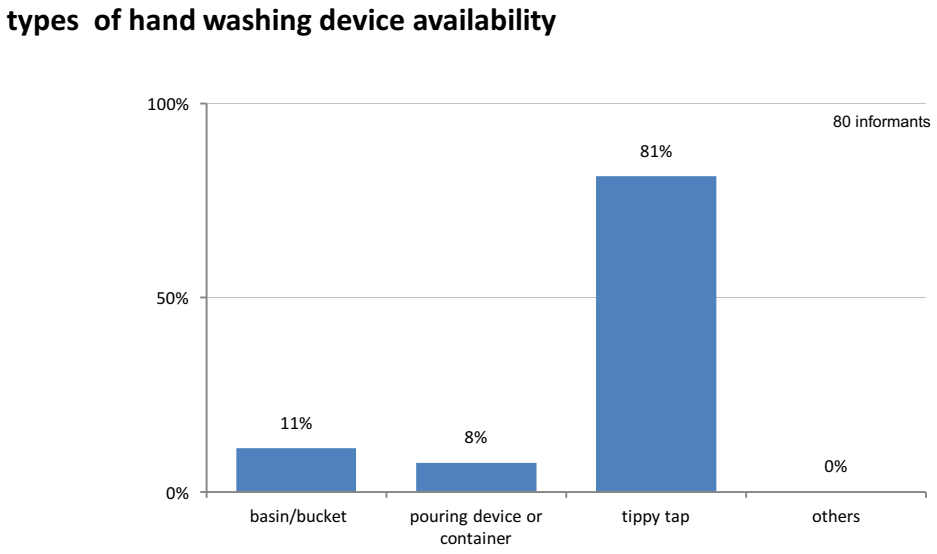

Fig 6 types of hand washing device available

4.4 Food handling:

98% of the respondents use covered food by different materials, 1% of the respondents use their food eating when it is but the remaining 2% did not cover their food during the survey.

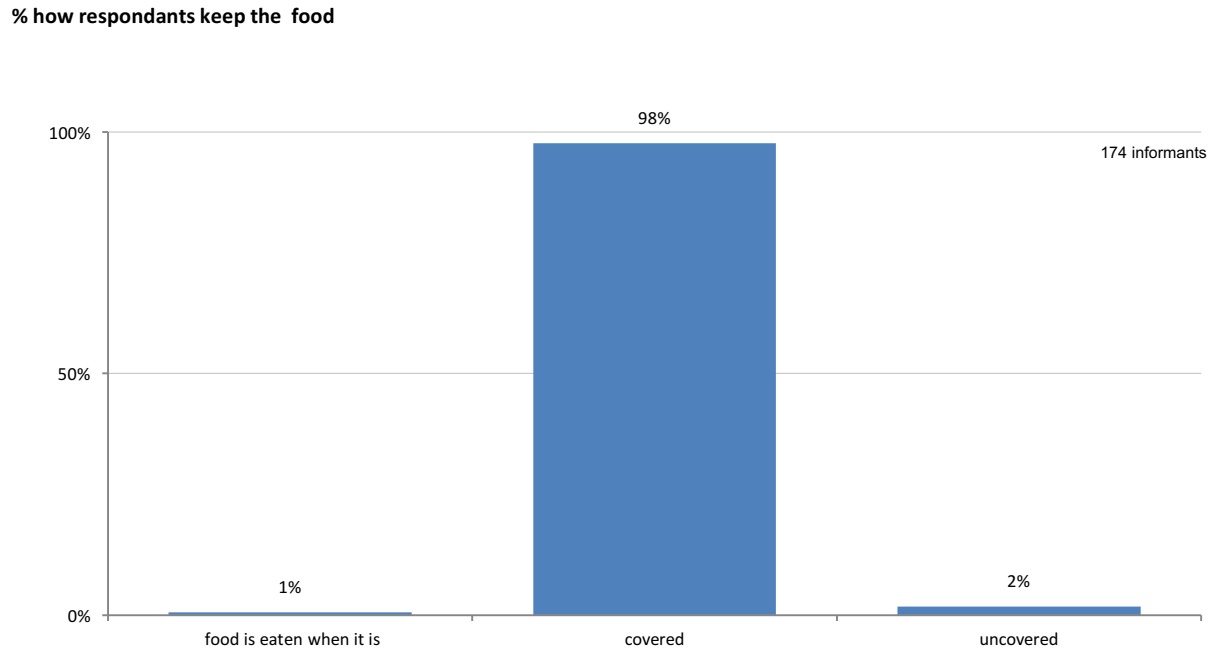

Figure7. % respondents covered their food

4.5 Diarrheal disease related results:

The study showed that 7% of the respondents less than five years old and 1.7% five years and older have complained diarrheal diseases in the last two weeks of the survey. From the respondents of multiple answer questions 87%.71%,42%,22%,5%,2%,1% and2% know the way individuals get diarrhea through contaminated/untreated/unprotected water, contaminated/uncooked food, from unpleasant odors, from flies, from contact someone sick, from swimming/bathing in surface water, others and do not know respectively

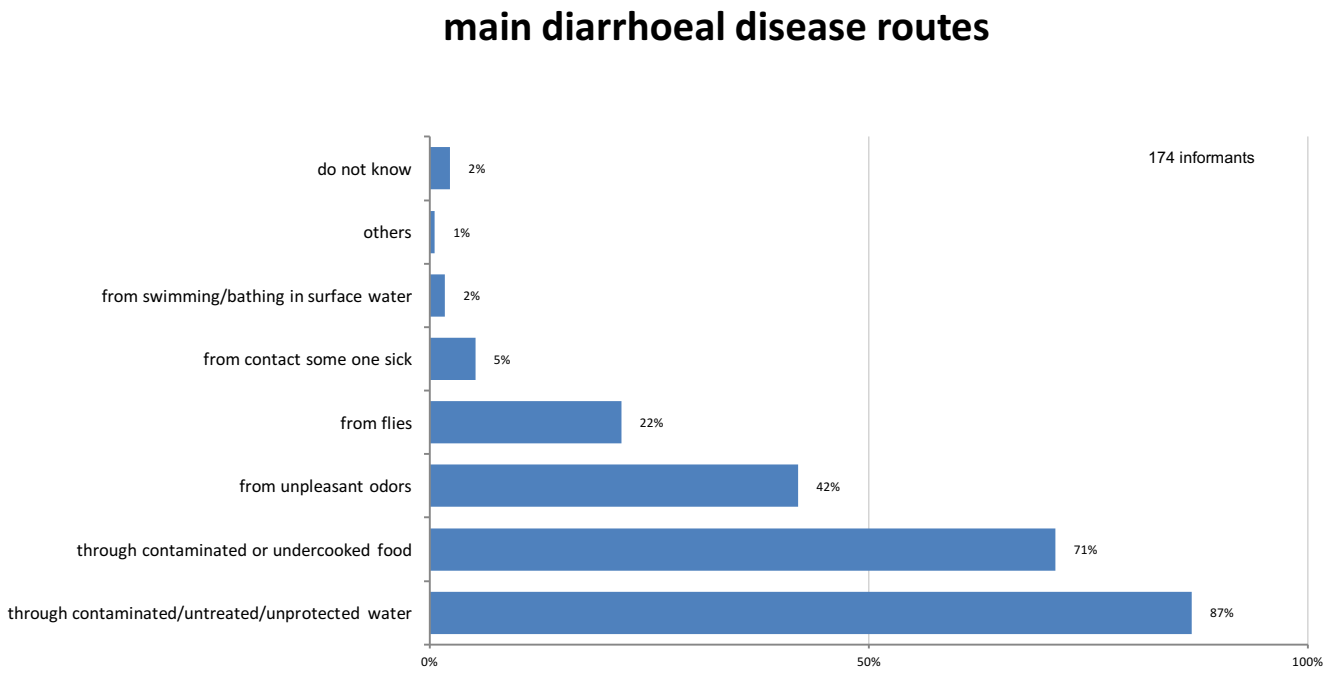

Fig 8 main diarrheal diseases routes

From the respondents of multiple answer questions 92%.45%,%,57%,14%,7%,and 5% know the way individuals can prevent diarrhea through hand washing with soap, boiling/treating water with soap, cooking food well, cleaning food utensils, wash fruits and vegetables & clean home with bleach and use latrines to defecate respectively.

4.6 Excreta disposal related results:

90.2% of the surveyed community who are five years and above were using house hold latrine for defecation, and 5% of the households from the total used open defecation. Besides this, 24.7% of respondents from the total still some times defecate in unprotected open field. 3.4% of the households shared family latrines between two to four households.4.6percent of the households did not feel safe while they were using house hold latrines. Regarding the type of latrines available in the camp, 97% of latrine was VIP latrines. 93% of latrines were in

functional condition during the survey time but still 7% of the households did not. In addition, 82% latrines were not full and 45% of the numbers of latrines were with their lid and 55% of them were not.

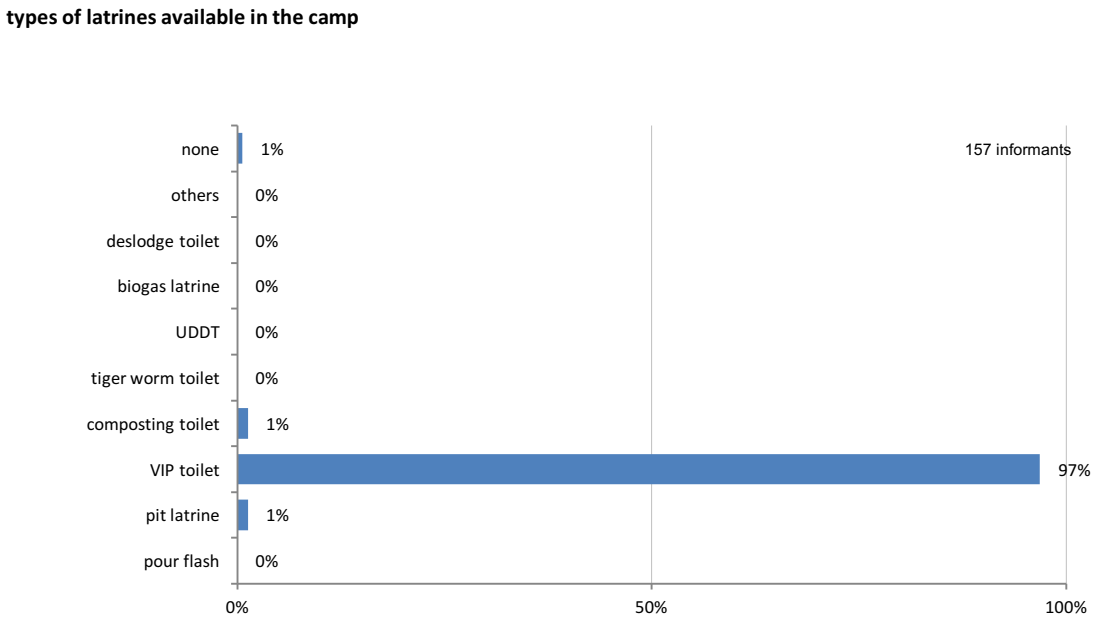

Figure 9 respondents where using for defecation for defecation

From the households who have under five children, 63% of the HHs are using potties for defecation of their children but 11% of the households use open defecation to defecate their children.

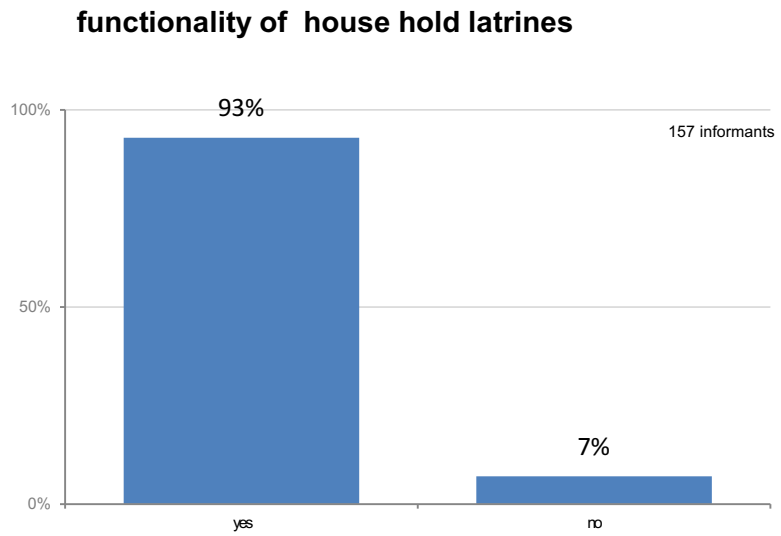

Fig 10% latrine which are function in the refugee camp

4.7 Shower related result:

45 % of the households take bath in designated facility showers, 36% in household latrine, 18% do not have designated facilities for taking bath.

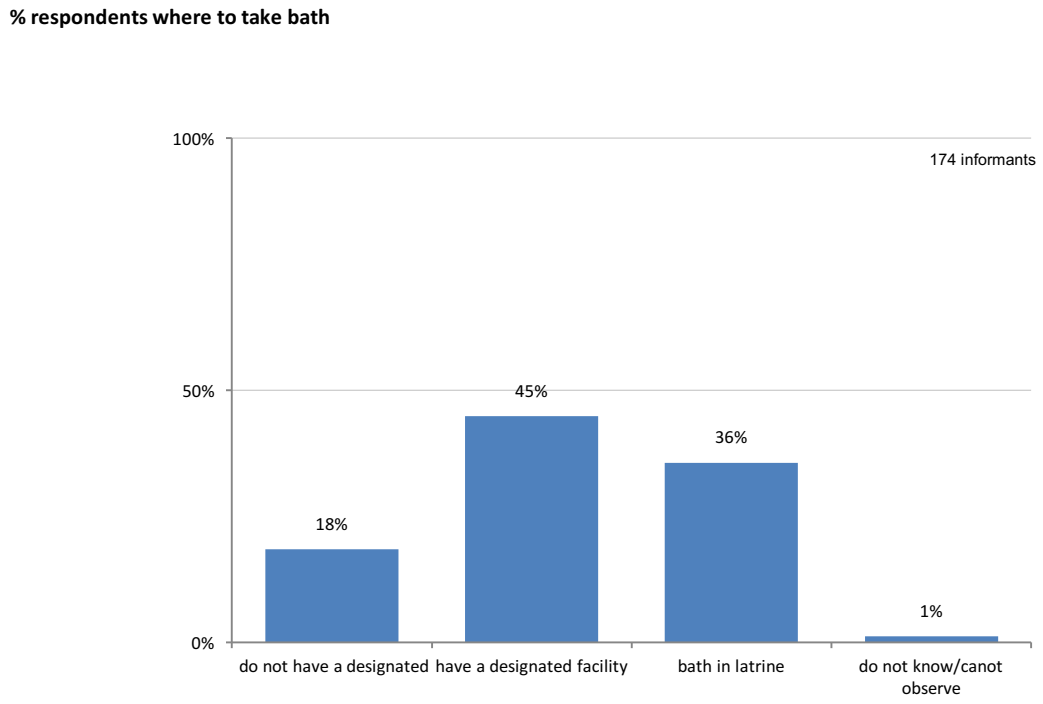

Figure 11Place for taking bath

4.8 Solid waste management related result:

The survey showed that, majority 91% of the refugee community dispose household wastes in communal pit and 3% burn it. 2% households dispose their household wastes in the waste pit available in the compound and also 2% respondents disposes their waste on the street bins.57% household respondents clean their courtyard and 43% were not.

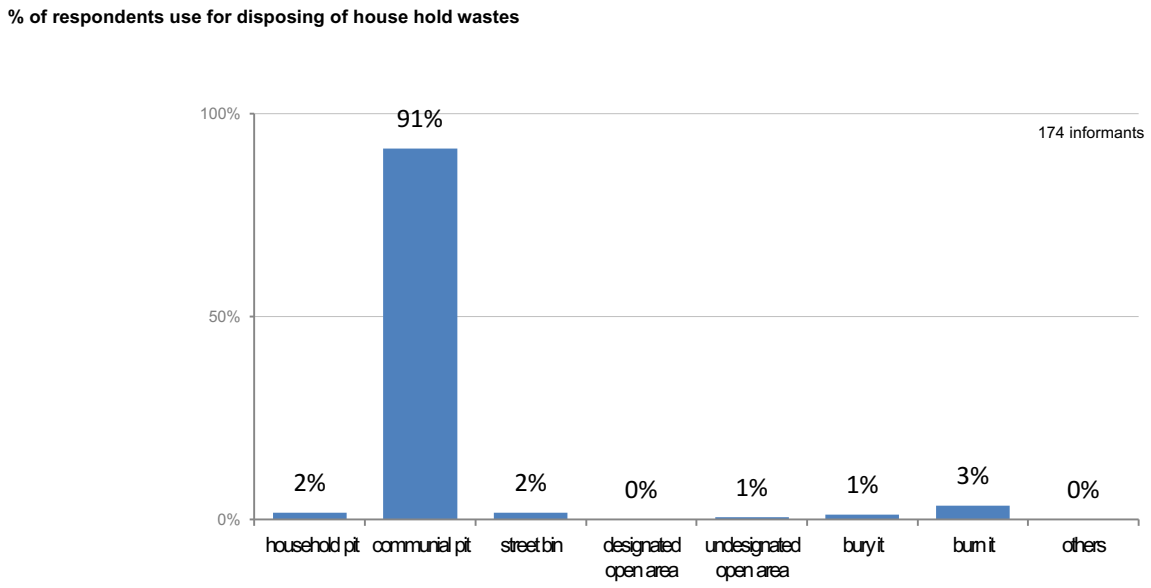

Fig *12 where the household in the camp dispose the household wastes*

4.9 Communication methods and interaction with beneficiaries

72% of the households wanted to receive hygiene messages through home to home visit by community health workers, 13% and 11% of the respondents wanted to get hygiene messages through printing flyers and community meetings respectively.71% interviewed households visited by community health works in the last month to discuss hygiene messages but 29% of the respondents did not.

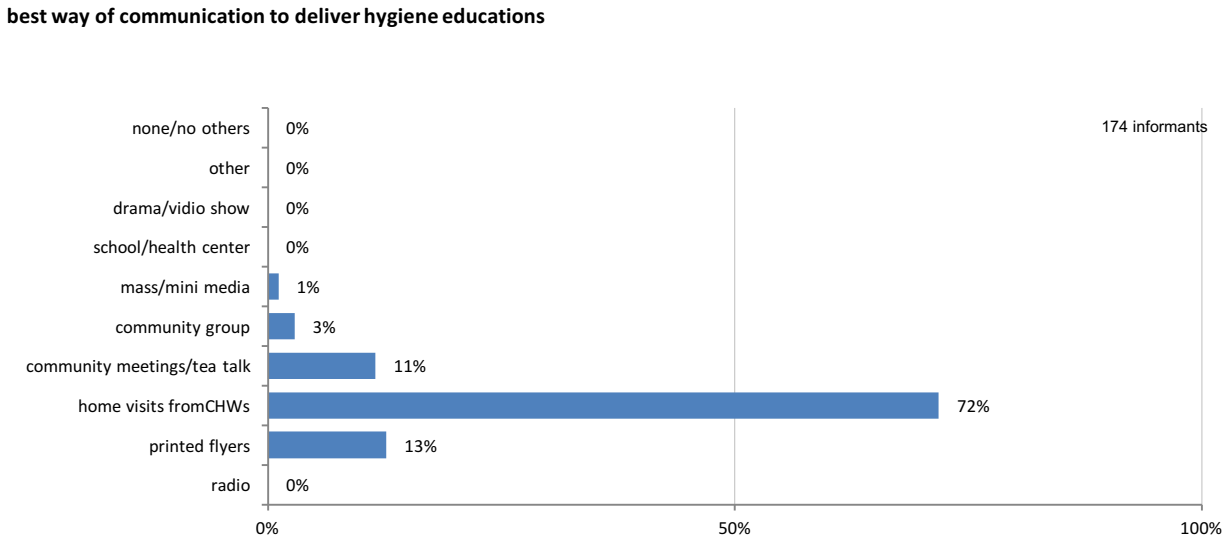

Figure 13 best way of communication for delivering of hygiene messages

68% of members of the households of the respondents have attended community meetings with community health workers in the last month. Only 6% respondents have functional radio and 94% of them did not. In case of distribution of supplies 45% respondents got either Jeri can, soap, ORS, basins, sanitary pads or hygiene kits in the last month.

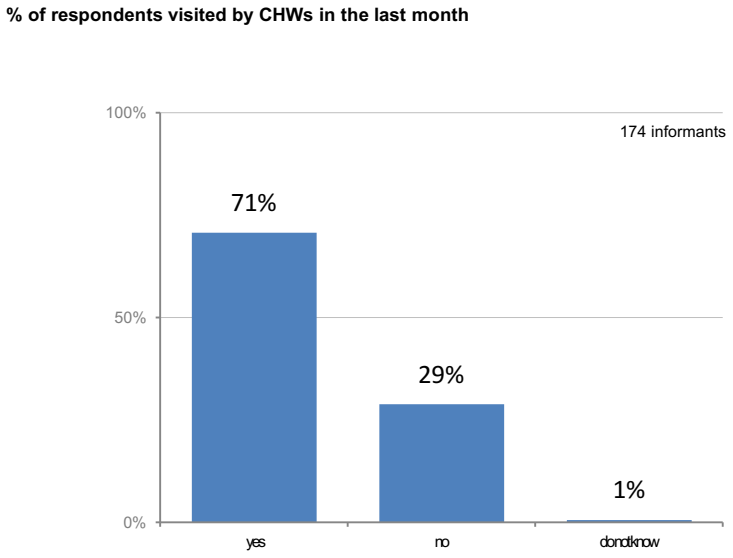

Fig 14 % respondents reached by community health workers in the last month to discuss hygiene message

CHAPTER FIVE; Discussion on major findings

Even though monthly report of December, 2017 water distribution to the camp shows that above 15L/P/D, but the study showed that average water consumption was 6.7L/p/d .This may be due to high need demand of water by the refugees and frustrating no to exacerbating the supply for the next . The previous year KPC Survey shows 14.6l/p/d. The average distance of water taps showed that 400m but the GPS study conducted in December shows 200m. 74% of the households were not satisfied with the current water supply during the survey period. The complains increased in this year survey, as it was 74% of the respondents were dissatisfied with the water supply in this year and 52% of respondents dissatisfied in the previous year survey and special attention is needed to overcome the issue.

The water container handling practice of the camp showed good 55% of the respondents have cleaned their container at least once a week and 35% of them cleaned their containers every time they use them. 98% of the respondent access to soap on their home for different purposes this gives the same result as the previous year.

Even though 90.2% of the respondents five years and above individuals use latrines for defecation, but 5% of the respondents five years and above members still practicing open defecation. Plus 24% of the respondents from the total sometimes defecate on open field. This certainly due to low latrine coverage and need to work hard on behavioral change on good hygiene practices. In addition to the above 3.4% of the respondents use shared family latrines between two and above families.

63% reported that they dispose under five children faces in potties, and still 11% they dispose on open field this shows attention on behavioral change practices as compared from the last year which was 2%. This also need immediate pick and dispose of the children faeces.97% of the respondent's latrines were VIP type and 93% of the latrines were in function condition during the survey time but still 7% of the latrines were not function. This exacerbates the open defecation practice in the camp. On the contrary 82% of the latrine available was not full.50% respondents took shower in house hold latrine on the previous year but 36% of respondents were took shower this year. Even though it has tangible changes on the usage of house hold latrines for showers, but still need attention on new construction of shower blocks and hygiene promotion.

86% respondents were access to communal waste pit in the previous year but this year the 94.8% respondents are disposing their solid waste to horse driven solid waste carts and headed to communal waste pit. This shows great increment and achieve behavioral change and improve practice of the community on safe management of solid wastes.

Other than the other methods used to deliver hygiene massages, 72% of the respondents wanted to receive hygiene messages by visiting community health workers to their home even if majority of the respondents able to read.

On the other hand, the percentage of diarrheal case is 9 %(it was 4% in 2016 survey) is increased. This implies that there is a need to achieve behavioral change and improve practice of the community on hand washing, latrine usage and safe water management

CHAPTER SIX; Conclusion and Recommendation:

6.1 Conclusion

In general the study revealed that the gravity of the identified problems, which are latrine coverage, safe water management at home level, hand washing practice, and the risk of diarrhea disease.

- Water supplied to the community was much less than the UNHCR standard.
- The gaps in sanitation facility coverage is significant in the camp and open defecation was practiced.
- The water distribution were not appropriate and not equitable.
- There is no regular distribution of hygiene related materials like potties, water collection and storage containers.
- Awareness level of the study population on water, sanitation and hygiene was not good enough to prevent them from WASH related diseases.

Recommendations

Based on the result the study IRC Adi-Harush EH program has recommended the following:

- Additional water source and water network system is decisive to minimize the current critical water shortage observed in the camp.
- Construction and maintenance of family and communal sanitation facilities need to be among the main intervention priorities.
- Community based water distribution and management needs great attention.
- Nonfood items like potties and Jericans and hand washing tippy taps should deriver to the camp population so as to prevent water and sanitation related diseases.
- Appropriate design, production and distribution of BCC materials for all segments of should implement to develop positive hygiene practice in the community.
- Capacity building activities for environmental health agents, community representatives and hygiene promotion should strength be habit of good hygiene practice of the camp population

Annex 1

Table 4 Main outcomes of the analysis and comparison the result with previous year result

INDICATORS	Result KPC 2017	Result of KPC 2016
Percentage of households with access to an improved water sources	98.3	98%
Quantity of water consumed per capita per day	6.7	14.6
Percentage population who have functional hand washing facilities	46	-
Percentage of households who designated shower facility	45	30
Percentage of population practicing safe drinking water management	96	98%
Percentage of households dispose of faeces safely	90	89%
Percentage of population who have function hand washing	46	70%
Percentage of households dispose of refuse/solid waste properly	94	86%
Percentage of households where hand washing soap/Ash is present near hand washing place	60	-
Percentage of households access to soap	97.7	97
Percentage of target population who mention at least three critical times of HWs	78.2	100%
Diarrhoea prevalence	9	4%
Motivation for good hygiene (knowledge or practice)	100	100%

Annex -2

Table 5 activity schedule

S.N	Description	Time bound
1	Survey plan preparation	15-24 Augues,2017
2	Hiring data collectors	10-13 December,2017
3	Training data collectors	15-16 December,2017
4	Data collection	18-20 december,2017
5	Data analysis	12-18 January,2018
6	Sharing first draft survey result	18 January,2018
7	Sharing final draft survey result	30 January,2018