WATER, SANITATION AND HYGIENE ASSESSMENT – MONSOON FOLLOW-UP

COX'S BAZAR – ROHINGYA REFUGEE RESPONSE

REPORT

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WASH Sector
Cox's Bazar

IN COLLABORATION WITH:

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TRANSLATORS WITHOUT BORDERS

About REACH

REACH is a joint initiative of two international non-governmental organizations - ACTED and IMPACT Initiatives - and the UN Operational Satellite Applications Programme (UNOSAT). REACH's mission is to strengthen evidence-based decision making by aid actors through efficient data collection, management and analysis before, during and after an emergency. By doing so, REACH contributes to ensuring that communities affected by emergencies receive the support they need. All REACH activities are conducted in support to and within the framework of inter-agency aid coordination mechanisms. For more information please visit our website: www.reach-initiative.org.
You can contact us directly at: geneva@reach-initiative.org and follow us on Twitter @REACH_info.

SUMMARY

Since August 2017, an estimated 727,000 Rohingya refugees have arrived in Bangladesh's Cox's Bazar District from Myanmar, bringing the total number residing in Bangladesh to approximately 907,000.[1] The quick influx of refugees coupled with the unplanned and spontaneous construction of the camps produced a fast-growing crisis characterised by acute water, sanitation and hygiene (WASH) needs.

In April 2018 REACH undertook a WASH household assessment on behalf of the WASH Sector and funded by UNICEF, which established a baseline for WASH conditions and perceptions amongst Rohingya refugee communities in Cox's Bazar District. Between August and October 2018,[2] REACH undertook this follow-up assessment on behalf of the Cox's Bazar WASH sector, to understand changing WASH conditions and perceptions since April 2018. The survey took the form of a household survey covering 33 out of the 34 Inter Sector Coordination Group/Refugee Relief and Repatriation Commission-recognised camps, with Kutupalong registered camp the only exception due to security concerns. The questionnaire included some questions used in the baseline, enabling comparison in WASH conditions and perceptions between the dry season in April and the monsoon season in August to October. Only statistically significant comparisons between April and October are reported on.[3]

The survey was completed with a 95% confidence level and 10% margin of error for each of the 33 assessed camps. The sample was also designed to ensure that data could be aggregated to a weighted average for camps in Ukhia, camps in Teknaf, and all assessed camps at a 95% confidence level and 5% margin of error.

Water

Overall, indicators related to water access demonstrated substantial improvements between April and October. In October, almost all households reported having access to improved water sources, with shorter travel times to/from and waiting time at water sources also reported. Rates of households reporting treating water before drinking were significantly higher, with households generally able to access enough drinking water (3 litres/person/day) to meet survival needs according to SPHERE standards.[4] However, many households were not currently collecting the 15 litres/person/day recommended by SPHERE for domestic water consumption at the time of data collection. Further, while water access conditions in water-scarce southern Teknaf camps have improved, some issues remain: refugees in these camps are still more likely to rely on dangerous, unimproved water sources and spend longer times waiting at water sources relative to their counterparts in the Kutupalong-Balukhali extension site.

- Reliance on unprotected water sources was generally concentrated in Teknaf, where just under 5% of households reported using them as a primary or secondary drinking water source. By contrast, a small fraction (less than 1%) of households in Kutupalong reported using unprotected sources for any purpose.
- Almost all households (99%) have access to improved water sources, with the most commonly accessed water sources being tubewells and tapstands. However this differed between north and south – in Kutupalong tubewells were by far the most common water source followed by tapstands, however data for Teknaf shows the opposite with tapstands more common than tubewells there.
- A significant positive change reflected across almost all camps relates to a lower proportion of households facing problems accessing water in October (38%) compared with April (56%).
- As in the baseline, almost all households possessed an aluminium pitcher, while possession of plastic buckets was observed at triple the rate of the baseline (at 63%).

[1] Inter-Sector Coordination Group (ISCG) Situation Report Rohingya Refugee Crisis: Cox's Bazar (29 November, 2018), p.2. See: https://reliefweb.int/sites/reliefweb.int/files/resources/iscg_situation_report_29_nov.pdf

[2] Due to issues surrounding access, enumerators were able to access some of the camps only intermittently between 12 and 26 September 2018.

[3] For Kutupalong/Teknaf, margin of error is +/-5%, meaning that findings need to be beyond +/-10% of each other to be significant. For camp-level strata, margin of error is +/-10% and weighted average is +/-5%, meaning a camp statistic needs to be more than +/- 15% from the weighted average to be reported on: outside of the margin of error for +/-10% for camps and +/-5% for weighted average.

[4] SPHERE Handbook: Water Supply. See: http://handbook.spherestandards.orgen/water-supply/?string=en/water-supply/

- Around one fifth of households reported combined travel and waiting time of more than 30 minutes to access water. This was far more common in Teknaf compared with Kutupalong. Overall, households reported spending more time waiting at water points than travelling to them.
- 38% of households reported using water treatment before drinking – more than double the rate in the baseline, with aquatabs by far the most common type of treatment.
- Across all households, the average amount of drinking water storage volume was found to be 4 litres.
- A large majority (91%) of households reported collecting the recommended SPHERE threshold for survival water intake of at least 3 litres/person/day of drinking water.
- However, a much smaller majority (56%) reported collecting the SPHERE minimum threshold of 15 litres/person/day for drinking and domestic hygiene purposes (i.e. cooking and cleaning).

Sanitation

An overall positive trend can also be observed in terms of sanitation. This includes a decrease in the proportion of households reporting adults and children practicing open defecation (although it remains the most commonly defecation practice for children under five, at 53%). This practice along with high rates of households using self-made latrines (especially Camp 1W and Camp 6) poses a significant risk of disease transmission across the camps, partly offsetting positive results. Another positive development was that nearly one in two households reported disposal of household waste in designated areas—around double the rate of the baseline.

- For household members five and above (males and females), the most commonly reported place of defecation was communal and public latrines – with almost none practicing open defecation overall, including in Camps 17 and 27 where concerningly high rates of the practice were recorded in the baseline.
- In terms of children under five, the most commonly reported practice was open defecation (53%).
- Concerningly, around a fifth of households reported at least one household member using self-made latrines – which was particularly problematic in Camp 1W (46%) and Camp 6 (38%).
- A high rate of women reported women facing problems accessing latrines overall, particularly in Kutupalong (notably Camp 8E and Camp 1W) compared with Teknaf, with the main problems being a lack of gender-segregated latrines and a lack of cleanliness.
- Around a quarter of households reported men facing problems accessing latrines, with the main issue being too many people at facilities.
- Around one in three households reported employing safe methods to dispose of child faeces, by collecting and disposing in latrine.
- Households using safe options for household waste disposal - designated areas or communal pits - were recorded at double the recorded rate in the baseline, at 46% and 37% - meaning there remains significant room for improvement despite these gains.

Hygiene

Follow-up survey findings suggest that while some hygiene conditions improved between April and October, significant gaps remain. Almost all households reported possession of soap, households generally demonstrated low levels of hygiene-related knowledge of handwashing times, and women were reportedly more likely than men to face problems accessing bathing facilities. Separately, participation in hygiene trainings/demonstrations and reports of receiving hygiene kits varied greatly across the camps – with worse-off camps warranting attention from the WASH Sector, given the importance of these critical services in reducing hygiene-related risks across the camps.

- Nearly all households across all camps possessed soap for handwashing, signifying a significant increase from the baseline. Around a quarter of households reported problems accessing soap - half the rate of the baseline. The most commonly reported problems related to insufficient soap being provided in distributions and soap being too expensive.
- Almost half the surveyed respondents were able to name at least three critical handwashing times. Men were more likely than women to identify critical times when people should wash their hands – including, strikingly, before breastfeeding.

- Households reported women and men using types of bathing facilities at different rates: communal/public bathing facilities (43% of households reported females use them; 23% of households reported males use them), tubewell platforms (3% females, 63% males), and makeshift space in the shelter (52% females, 9% males).
- Households reported women facing problems with accessing bathing facilities more than men. Around a fifth of households reported women facing problems accessing bathing facilities, with the most common problem being that facilities are too crowded.
- 9% of households reported at least one family member feeling unsafe using bathing facilities – with no household members falling over 10%.
- In terms of menstrual hygiene materials normally used, 57% of women reported reusable pads, 41% piece of cloth, and 35% disposable pads.
- Interestingly, the most common response on accessing menstrual hygiene materials was "someone else provides them",[5] followed by accessing them in markets and hygiene distributions.
- Just over half of the surveyed women reported disposing of menstrual hygiene materials by burying them, with disposal in latrines or household pits reported to a lesser extent.
- Around half of the surveyed households reported having participated in at least one hygiene training or demonstration in the two weeks prior to data collection. The most common types of training in which households reported participation were food hygiene, handwashing with soap, and safe water chain management – however this differed greatly across the camps.
- When asked how diarrhoea can be prevented, households most commonly reported washing hands with soap, drinking only clean water, and eating only safe food. On the question of what causes diarrhoea, households most often named dirty food and dirty water. When asked to identify signs of cholera, households most commonly reported rice watery stools, stomach pain/cramps, and vomiting. These findings demonstrate that households have a good understanding of the causes and symptoms of cholera.

Overall, these findings show significant improvements in WASH conditions and perceptions across the camps between April and October 2018. This is particularly the case in southern Teknaf on indicators across the three sub-sectors (water, sanitation and hygiene). However despite these improvements, follow-up findings also point to gaps in the provision of WASH services across the response. In terms of water, use of unprotected water sources is far more common in southern Teknaf – whereas overcrowding remains a major issue in the more densely-populated Kutupalong-Balukhali extension site. In terms of sanitation, overcrowding at latrines persisted as a major problem in the Kutupalong-Balukhali site, and high rates of households using self-made latrines in some camps warrant attention. Regarding hygiene, overall soap possession was higher in October than in April it was significant lower in some camps – while rates of participation in hygiene training and demonstrations varies greatly across the camps.

As the response continues to stabilise, monitoring the improvements and shortfalls in WASH service provision across the camps will be critical in ensuring men, women and children can live with dignity throughout their second year of residing in the Cox's Bazar camps.

Links to resources related to this assessment (click on titles)

- **Terms of Reference**
- **Dataset**[6]
- **All camp summary & camp-level factsheets (combined)**

[5] "Someone else provides them" was an option for this question in the Kobo form.
[6] The dataset includes the Kobo tool used for the survey, which is complete with Rohingya translations

CONTENTS

List of Acronyms

DPHE	Department of Public Health Engineering
FGD	Focus group discussion
IM	Infrastructure mapping
IOM	International Organization for Migration
ISCG	Inter-Sector Coordination Group
NPM	Needs and Population Monitoring
PSEA	Prevention of sexual exploitation and abuse
RC	Registered Camp
WASH	Water, sanitation and hygiene
ODK	Open Data Kit
UNHCR	The United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund

Geographical Classifications

District	Third tier of administration in Bangladesh, forming sub-units of divisions
Upazila	Fourth tier of administration in Bangladesh, forming sub-units of districts

List of Figures, Tables and Maps

INTRODUCTION

Rohingya refugees first fled into Bangladesh's southern Cox's Bazar District from Myanmar in 1978, with additional influxes in 1991-1992 and 2016. Following a military crackdown on communities in Rakhine state in Myanmar in August 2017, approximately 728,000 Rohingya refugees arrived to Kutupalong and Teknaf – bringing the total number residing in Bangladesh to an estimated 915,000.[7] As of 24 September 2018, 720,000 refugees reside in the Kutupalong-Balukhali Extension Site in Ukhia Upazila, with an additional 172,000 individuals living in smaller camps in Teknaf Upazila.[8] Most refugees continue to rely on humanitarian assistance, having fled with few possessions and exhausted their financial resources during the journey to the Cox's Bazar camps.

The rapid influx in late 2017 and a rush in humanitarian actors providing emergency assistance made for a challenging response with especially water, sanitation and hygiene (WASH) needs. Thousands of sub-standard WASH facilities including waterpoints, latrines and bathing facilities constructed in late 2017 represented a serious public health threat to a vulnerable population already affected by high endemic rates of malnutrition.[9]

In the framework of the Inter-Sector Coordination Group (ISCG) and under the leadership of the Bangladeshi Department of Public Health Engineering (DPHE), the Cox's Bazar WASH Sector – co-chaired by UNICEF and Action Against Hunger – is tasked with the coordination, monitoring and strategic planning for WASH-related aspects across the humanitarian response. With the situation stabilising by early 2018, the WASH Sector began to transition toward a medium-term WASH strategy emphasising quality over quantity of infrastructure, complemented with stronger operational management and community engagement.

With substantial preparation and mitigation measures taking place across all sectors and relatively low levels of rainfall, the overall impact of the 2018 monsoon on life in the camps was less severe than anticipated.[10] Nevertheless, operation and maintenance of WASH infrastructure and fecal sludge management networks remained significant challenges throughout the rains. Moving into the latter half of 2018, the WASH Sector has identified a number of ongoing gaps in the response, including lack of space for enough appropriately-sited latrines to meet standards; limited use of evidence-driven behaviour change approaches in hygiene promotion; and lack of community accountability and feedback mechanisms.[11]

In April 2018, REACH conducted a household survey in support of the Cox's Bazar WASH Sector to establish a baseline of WASH needs and vulnerabilities among the Rohingya refugee population at the start of the WASH Sector's March-December strategic plan. This aimed to fill information gaps related to WASH conditions and perceptions in the early stages of the response. As a follow-up to this initial assessment, REACH implemented a second survey in August-October 2018 in support of the Cox's Bazar WASH Sector, to provide an update on April's data, and highlight how needs have evolved over the course of the critical monsoon period. It should be noted that this survey did not collect the requisite data to understand drivers of trends or changes observed compared to the baseline, including the impact of the monsoon season. Positive changes are likely attributable to a combination of WASH programming throughout 2018 and positive behaviour change taking place at the community level across the camps.

Conducted in 33 out of 34 Inter Sector Coordination Group (ISCG)-recognised camps[12] and supported once again by UNICEF, the assessment provides household-level data that is generalisable to the population of each camp,

[7] United Nation Human Rights Office of the High Commissioner: Mission report of OHCHR rapid response mission to Cox's Bazar, Bangladesh, Cox's Bazar, 24 September 2017

[8] All population figures: United Nations Refugee Agency (UNHCR). Population data and key demographical indicators, Cox's Bazar, 30 September 2018.

[9] Action Against Hunger. "Preliminary Report: SMART Nutrition Survey, Maungdaw and Buthidaung Townships, Maungdaw District, Rakhine State." http://themimu.info/sites/themimu.info/files/documents/Preliminary_Report_SMART_Survey_Rakhine_ACF_2015.pdf (accessed 7 July 2018).

[10] Strategic Executive Group (SEG). Joint Response Plan for Rohingya Humanitarian Crisis, March-December 2018 – Mid-Term Review, September 2018, p. 18.

[11] SEG, Joint Response Plan Mid-Term Review, p. 78-79.

[12] Kutupalong registered camp (RC) was not assessed due to high levels of community hostility toward aid providers at the time of assessment.

as well as providing headline figures for the response as a whole. Research questions and relevant indicators were selected in close collaboration with Cox's Bazar WASH Sector partners, with additional input from the Global WASH Cluster. Indicators have been matched with the original April assessment wherever appropriate, with tools updated to reflect additional information requests from sector partners—most notably concerning increased gender disaggregation.

The remainder of this report is structured as follows. First, the assessment methodology and limitations are explained. Second, the assessment's findings are presented. These begin with household demographics before moving on to cover water, sanitation, and hygiene related indicators, and finishing with data on household exposure to WASH-related trainings and demonstrations. Finally, the conclusion synthesises key issues and outlines suggestions for further data collection initiatives.

Following data collection the NPM-ACAPS Analysis Hub in Cox's Bazar undertook secondary analysis, resulting in the severity index displayed at the end of the water, sanitation, hygiene and overall sections of this report. The severity index results represent an effective tool to understand severity of needs between sub sectors (water, sanitation and hygiene) and between camps. The severity index results can also assist in informing evidence-based decision making related to WASH across the Rohingya refugee response. See Methodology section for more details on the technical approach employed in developing the severity index.

METHODOLOGY

Overview

The assessment was implemented using a quantitative approach in the form of a household survey, stratified by camp. Primary data collection took place between 14 August and 3 October 2018, comprising a total of 3,563 household interviews across 33 ISCG-recognised camps, with Kutupalong RC the only exception due to ongoing security concerns. A table detailing the numbers of interviews conducted per assessed camp is available in Annex 1. A link to the Terms of Reference for this assessment is available **here**.

Indicators and tool design

Indicators for inclusion in the assessment were developed in the framework of the Cox's Bazar WASH Sector, with support from the Global WASH Cluster in Geneva and UNICEF in Cox's Bazar. The initial tool and indicators from the April 2018 assessment were shared with WASH Sector partners for review and feedback. Based on this review, the tool was updated to reflect requests for additional information, focusing mainly on increased gender disaggregation of findings and additional data around knowledge, attitudes and behaviours. Following review and validation by the Global WASH Cluster and REACH technical staff in Geneva, the updated tool was translated into Rohingya with support from Translators Without Borders (TWB).

Sampling

The survey consisted of a simple random sample of households stratified by camp, aiming to ensure that every household in each camp had an equal chance of being selected for interview. Sample size for each camp was derived from a sample frame based on the most recent UNHCR Family Counting population figures for each camp, aiming to produce data generalisable with a 95% confidence level and 10% margin of error for each of the 33 assessed camps. The sample was also designed to ensure that data could be aggregated to a weighted average for camps in Ukhia, camps in Teknaf, and all assessed camps at a 95% confidence level and 5% margin of error.[13] An estimated 25% non-response/non-eligibility rate was factored into all sample size calculations.

In the absence of a household list for each camp, REACH used the following procedure to select households for inclusion in the sample. First, ISCG camp boundaries were overlaid onto Open Street Map shelter footprint data so that all shelters existing in the camps could be identified. From there, a random distribution of GPS points corresponding to the required sample size for each camp was generated, with each GPS point indicating a shelter to be interviewed. If no eligible individuals were available at the GPS point, or the point was not a household (e.g. latrine, mosque, or other camp facilities), then the point was marked as "not eligible" and the enumerator moved on to the next point. At the end of the initial round of data collection, REACH allocated additional randomised GPS points to camps that had not achieved the minimum sample size per camp.

In order to ensure that the experiences and perspectives of female refugees were adequately represented in the assessment, and to allow for comparison of results by gender of respondent, the following procedure was followed for selecting individuals to interview within each household: enumerators were instructed to ask to interview the member of the household of their own gender, and over the age of 18, who was most knowledgeable about the affairs of the household (self-defined by the household). With the enumerator team split equally between men and women, and with all enumerators completing a similar average number of interviews per day, this ensured that respondents in the final sample were split almost equally between men and women.

[13] UNHCR. Bangladesh Refugee Emergency Population factsheet, Cox's Bazar, 15 July 2018. UNHCR population counts use the terminology of "families" instead of households. For the purposes of this assessment, these terms were assumed to be equivalent.

Data Collection

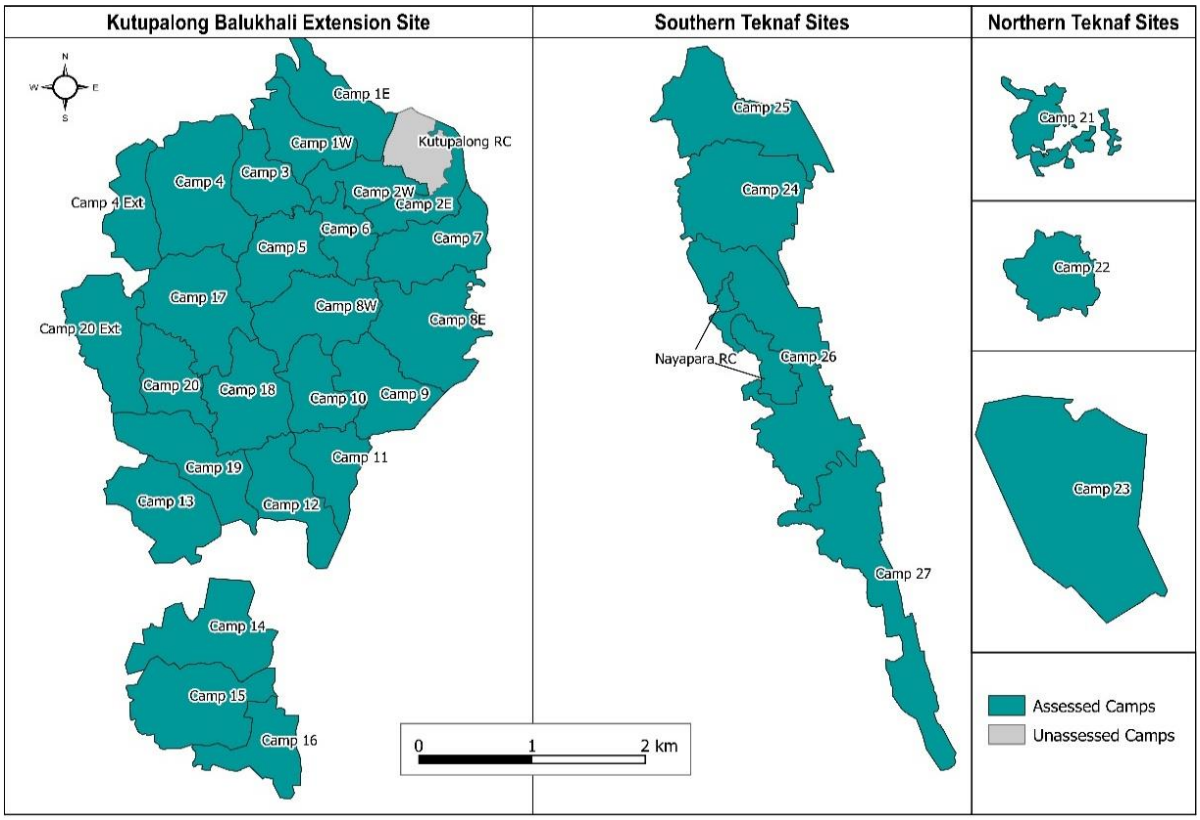
Data collection was conducted by four teams of eight Bangladeshi enumerators (total 32) overseen by team leaders. Team leaders were in turn overseen by a Field Coordinator. Prior to data collection, enumerators underwent a two-day training to familiarise them with the tool and with field protocols. TWB provided additional support to clarify language issues in the form. Training was followed by a two-day pilot to identify and troubleshoot issues with tools and protocols. During data collection, GPS points and a map of each camp were then uploaded to enumerator phones using the Maps.Me app. Each day, enumerators were assigned a list of GPS points by their team leaders, and instructed to navigate to each point and select the nearest household for interview. Informed consent was sought, received, and documented at the start of each interview. Enumerators were instructed to ask respondents to conduct the interview in a private place in order to minimise the possibility of influence by other household members. However, given the congested nature of the camps this was not always feasible. During interviews, data was entered directly onto smartphones using the Kobo app. In total, 3,562 households were interviewed.

Box 1: Measurement of drinking water container volume

During the initial WASH baseline assessment, enumerators asked household members to estimate the volume of each of their storage containers, and report on how many times each had been filled, in order to calculate the availability of drinking water at the household level in terms of litres/person/day. However, based on a review of the data in comparison to the known volumes of containers being distributed as part of hygiene kits by WASH sector partners and available in the market, it appeared that household members were substantially underestimating the volume of containers.

In order to address this issue and improve data quality, REACH enumerators working on the follow-up assessment were trained to use tape measures to directly measure the dimensions of different types of containers. Based on these measurements, "best estimate" volumes were then calculated for the idealized geometrical shape (sphere, cylinder, cuboid) for each container type, and reduced by 10% to account for the fact that containers are not filled to the brim during water collection. Using this measurement process, household water storage volumes were found to be significantly higher when compared to the baseline (see Water section).

Map 1: Assessed Camps



Data cleaning and checking

Data checking and cleaning was conducted on a daily basis according to a set of pre-established standard operating procedures. Data cleaning included removal of identifying data, outlier checks, correct categorisation of "other" responses where appropriate, and the identification and removal/replacement of incomplete or inaccurate records.[14] A daily report of identified issues was compiled and reviewed with assessment teams at the start of each subsequent day of data collection. All changes to the dataset were documented in a data cleaning log included in the clean, anonymised dataset published on Humanitarian Data Exchange.[15]

Data Analysis

Following the finalisation of tools, a data analysis plan was drafted, providing a roadmap outlining stratification, weightings, statistical functions required, etc. Following the completion of data collection, preliminary analysis was conducted according to the **analysis plan**, with an analysis syntax created in R software. Further analysis was undertaken based on outcomes of a joint analysis workshop attended by WASH Sector partners in October 2018. Triangulation of findings with secondary sources were also made, including REACH WASH Infrastructure Mapping (IM) Round 9, International Organization for Migration (IOM) Needs and Population Monitoring (NPM) Site Profiling Assessment, and a Joint Agency Research Report (JARR): Rohingya Refugee Response Gender Analysis conducted by Oxfam, Save the Children, and Action Against Hunger.

ACAPS Severity Analysis

In addition to the core analysis conducted by REACH, the NPM-ACAPS[16] Analysis Hub developed a WASH severity index using data from the WASH Assessment - Monsoon Follow-up. This can be used to understand where the most severe needs exist within sub-sectors (water, sanitation and hygiene) across camps, to inform humanitarian programming that is responsive to the areas of highest need. This severity index used the Betti Verma method,[17] based on 24 indicators across the three domains of water, sanitation and hygiene (See Annex 2: Indicators used in WASH severity index). Indicators were selected based on their level of correlation, ensuring that indicators reflected coinciding problems. The stronger the relationship between indicators, the less weight the individual indicator points should have, to prevent double counting of severity. Results from this analysis, including severity rankings, are included at the end of each of the water, sanitation and hygiene sections in this report. A combined severity ranking is included at the end of this report.

A five-point severity scale was used to plot the frequency of the overall WASH index, as well as the three sub-indices that it is comprised of (water, sanitation and hygiene sub-indices). The five levels of need were categorized as: 1. Very low severity, 2. Low severity, 3. Moderate severity, 4. High severity, and 5. Very high severity. The index was calculated at the household level before being categorized by severity of need. Based on this system, the number of individuals falling into each category was estimated for each camp. The assessment sampling reference population with camp-level sampling weight was used to calculate the estimated population in need for each of the five severity levels. At the end of each section (water, sanitation, hygiene and overall) chloropleth maps are presented, showing the mean needs severity index ranking for each camp. The Jenks natural breaks method was used to determine equal breaks between intervals for each of the maps.[18]

Importantly, as all the Rohingya population in the ISCG camps rely on humanitarian assistance the severity of need displayed in the WASH Severity Index represents the degree of current need, considering assistance is currently being provided. "Very low severity of need" at a camp level does not reflect an absence of need for humanitarian

[14] During data cleaning, 151 suspect values for water container volume were identified (too large or too small to be logical). Households where these containers were found were excluded from the analysis of all indicators related to volumes of water collected and stored.
[15] For all REACH datasets on HDX, see: https://data.humdata.org/search?groups=bgd&q=reach+initiative&ext_page_size=25&sort=score+desc%2C+metadata_modified+desc
[16] The NPM-ACAPS Analysis Hub is based in Cox's Bazar, Bangladesh
[17] For more information on Bette Verma method and severity ranking, see the following resources: Severity measures in humanitarian need assessments. https://www.acaps.org/library/assessment#resource-767; Composite measures of local disaster impact - Lessons from Typhoon Yolanda, Philippines : https://www.acaps.org/library/assessment#resource-534; Stata Module for Multiple Deprivation:
[18] For more information on the Jenks natural breaks method, see: Abboud, A., Samet, H., and Adelfio, M. 'Equal-area Breaks: A Classification Scheme for Data to Obtain an Evenly-colored Choropleth Map': https://www.cs.umd.edu/sites/default/files/scholarly_papers/Abboud.pdf. Accessed 28 February, 2019

assistance - rather it means that needs according to this measurement are largely covered in this camp, which has reduced the severity of current need.

It is important to note that the severity index has not been validated by the Cox's Bazar WASH Sector or the Global WASH Cluster. It is presented here as a pilot approach to inform future discussions on how severity ranking methodologies could be developed and included in future WASH Sector assessment and analysis processes.

Challenges and Limitations

- Due to issues related to securing access permissions from camp authorities, data collection was partly suspended between 12 and 26 September. The consequent prolonged period of data collection—encompassing both the height of the monsoon and its milder final period—may mean that conditions in the camps changed slightly over the course of the assessment, potentially affecting certain indicators depending on the date of data collection.
- Kutupalong Registered Camp (RC) was not covered by this assessment due to persistent concerns around security of enumerator teams related to community hostility toward aid providers in this camp. Aggregate findings do not represent the population of this camp.
- The lack of a household list means that the sample frame of Open Street Map (OSM) shelters used to identify households for interview did not align fully with the family figures used to calculate required sample sizes. This is likely to have slightly skewed the probability of some households being selected for interview relative to others (in some cases OSM shelter footprints are outdated, with a small number of households having moved or been relocated without corresponding updates to the dataset).
- Biases due to self-reporting of household level indicators may exist. Certain indicators may be under-reported or over-reported, due to the subjectivity and perceptions of respondents (especially "social desirability bias"—the documented tendency of people to provide what they perceive to be the "right" answers to certain questions).[19] The possibility of such biases should be taken into consideration when interpreting findings.
- Findings based on the responses of a subset of the sample population have a lower confidence level and wider margin of error. For example, questions regarding menstrual hygiene management that were only asked to female household members yielded results with a lower precision at the camp level.

[19] For example, recent studies on experiences around complaints mechanisms in Myanmar have identified significant social and cultural barriers to people providing negative or assertive feedback. See 3MDG. Case Study: How effective are community feedback and response mechanisms in improving access to better health for all? Yangon, July 2016, p. 21-22.

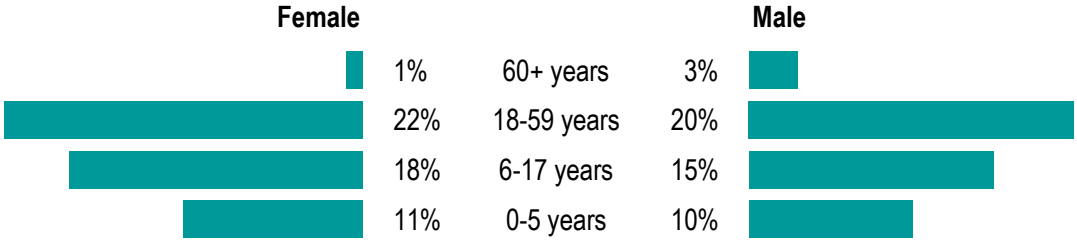
FINDINGS

This section presents the main findings of the WASH household follow-up assessment. It begins with an overview of demographics and surveyed households across assessed camps. Next, it outlines key findings across the domains of WASH (water, sanitation and hygiene), including a comparative analysis of findings with the baseline assessment. Wherever possible, findings are triangulated with secondary data sources, particularly REACH's WASH Infrastructure Mapping Round 9,[20] which took place at the same time as this assessment, as well as NPM's Round 11 Site Profiling assessment.[21]

Demographics

Overall, 3,562 households were interviewed for this assessment. In the April 2018 baseline, the method of identifying heads of households as primary respondents in the baseline survey resulted in a low proportion of female respondents. To address this limitation, this follow-up survey required the team of enumerators comprising 16 females and 16 males to interview the household members of the same gender on.[22] As a result, 44% of respondents were female, compared with 37% in the baseline survey. Overall, 29% of heads of household were reported as female, while 57% of households reported having at least one child under five years old. A population pyramid of the age/gender breakdown of surveyed households is provided in Figure 1 below.

Figure 1: Household composition by gender and age



Water

This water section begins by presenting findings in relation to water, including water sources; water collection; problems and coping strategies; and water treatment practices. The second part of the section presents findings related to household water collection and storage, and residual chlorine testing results.[23]

Data from this assessment shows that almost the entire population uses improved water sources as their primary drinking water source, demonstrating that similarly high coverage reported in the baseline has been sustained across the rainy season. In the second half of 2018 the Sector directed efforts towards decommissioning and replacement of unsafe water sources, particularly in the southern Teknaf camps. Distributions of aquatabs were also scaled up across the response. Follow-up data represents significant improvements across these key indicators, despite the onset of heavy rain between April and October.

Water sources

Monitoring camps where refugees rely on unimproved water sources is critical to the WASH Sector's daily operations. Minimising households' reliance on unimproved water sources – such as surface water or unprotected

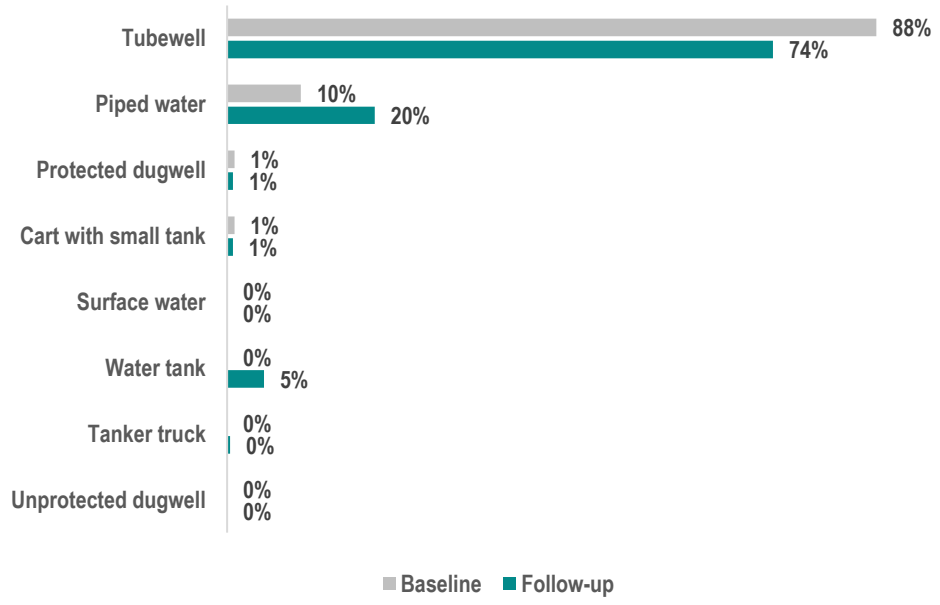
[20] REACH. "WASH Site Profile – All Camps, Ukhia/Teknaf, Cox's Bazar, Bangladesh," October 2018. http://www.reachresourcecentre.info/system/files/resource-documents/reach_bgd_factsheet_wash_site_profile_all_camps_october2018_0.pdf (accessed 1 December 2018).
[21] IOM. "Needs and Population Monitoring, Round 11," October 2018. https://reliefweb.int/report/bangladesh/bangladesh-needs-and-population-monitoring-npm-site-assessment-sa-round-12-site
[22] All respondents were also required to be at least 18 years old.
[23] Respondents were asked by enumerators to present all water containers used to collect water the day prior to the survey being undertaken. Respondents then identified which containers were used for drinking water, non-drinking water, or both. If respondents consented, enumerators then tested for chlorine in any containers used for drinking water.

springs or dugwells – is critical to reduce risks of disease transmission across the camps. The majority of households reported using improved water sources.

Overall, 99% of households reporting using improved[24] sources for both their primary and secondary sources of drinking water. The most commonly reported primary sources for drinking water were tubewells, reported by 73% of households, down from 87% in the baseline. This was followed by tapstands, reported by 20% of households, up from 10% in the baseline – likely a result of the WASH Sector's large-scale implementation of tapstands throughout 2018. In addition, 5% of households reported using water tanks,[25] with less than 1% reporting use of protected dugwells and carts with small tanks. Unprotected water sources—mainly unprotected dugwells—were reported as primary sources of drinking water by less than 1% of households. Overall, 16% of households reported using a secondary source for drinking water, with the most commonly used types tubewells (11%), followed by tapstands (4%). Additionally, households generally reported using the same water sources for other domestic purposes such as cooking and cleaning as they did for drinking, with 84% of households reporting using tubewells, and 21% using tapstands.

These data are triangulated by October 2018 REACH infrastructure mapping (IM) and NPM assessments. Tubewells were the most common waterpoint in REACH Infrastructure Mapping (IM) Round 9, comprising 70% of all assessed waterpoints.[26] Similarly, NPM's Site Assessment Round 12 conducted in October 2018 highlighted tubewells as the most common type of water source across the camps, reported by key informants in 68% of Mahjee blocks.[27]

Figure 2: Proportion of households reporting using primary sources for drinking water, April vs. October



[24] Cox's Bazar WASH Sector considers "improved" sources as follows: piped water into settlement site; public tap/tapstand; tubewell/borehole/handpump; protected dugwell; protected spring; rainwater collection; bottled water; and cart with small tank/drum. 'Unimproved' water sources include unprotected dugwells, unprotected springs, and surface water.
[25] Water tank was not included as an option in the baseline questionnaire
[26] REACH. "WASH Site Profile – All Camps, Ukhia/Teknaf, Cox's Bazar, Bangladesh," October 2018. http://www.reachresourcecentre.info/system/files/resource-documents/reach_bgd_factsheet_wash_site_profile_all_camps_october2018_0.pdf (accessed 1 December 2018).
[27] IOM Bangladesh Needs and Population Monitoring. "Site Assessment (SA) Round 12," September/October 2018. https://www.humanitarianresponse.info/en/operations/bangladesh/infographic/npm-bangladesh-site-assessment-round-12-site-profiles (accessed 1 December 2018). A Mahjee block is an arbitrary unit of approximately 100 households overseen by a government-appointed block leader known as a Mahjee. Mahjees form the NPM's key informant network and the Mahjee block is the NPM's main unit of analysis.

Consistent with the baseline, findings from October show significant differences in primary drinking water sources in the Kutupalong-Balukhali extension site compared to camps in Teknaf. In Kutupalong, 84% of households reported using tubewells, considerably higher than 33% in Teknaf. Conversely, where only 13% of households reported using tapstands in Kutupalong, 48% reported using this water source in Teknaf. In addition, use of water tanks was reported by only 2% households in Kutupalong compared with 17% in Teknaf, most notably in Shamlapur where nearly one third (28%) of households reported them as a primary drinking source. Compared to April, the proportion of households in southern Teknaf who reported using tubewells decreased, in favour of tapstands and water tanks. households in southern Teknaf reported decreased use of tubewells in favour of tapstands and water tanks (with the exception of Camp 25/Ali Khali). These changes align with the Cox's Bazar WASH Sector's strategic priority of decommissioning unsafe water infrastructure throughout 2018.[28]

The use of unprotected water sources was generally concentrated in Teknaf, where just over 2% of households reported them as a primary drinking water source, 5% reported them as a secondary drinking water source, and 10% reported them as a source for other domestic purposes such as cooking and cleaning. By contrast, well under 1% of households in the Kutupalong-Balukhali extension site reported using unprotected sources for any purpose.

In general however, the use of unprotected sources as primary drinking water sources observed in certain camps during the April baseline had declined significantly by October. In Camp 20, where 27% of households reported using unprotected water sources in April, 0% of households reported doing so by October. Similarly, in Camp 27 (Jadimura), the use of unprotected water sources fell from 17% in April to 6% in October—although 4% of households in this camp continue to rely on surface water for drinking or non-drinking water. The one exception was in Camp 25/Ali Khal, where 8% of households reported using unimproved sources in October, and 3% relying on surface water—roughly comparable to the 4% reporting unimproved sources in April.[29] Use of unimproved sources—almost exclusively surface water—as a secondary drinking water source was most commonly reported in Camp 22/Unchiprang, Camp 27/Jadimura, and Nayapara RC at 8%, and Camps 24/Leda and 26/Nayapara at 3%.

Water collection

Examining water collection practices across the camps can assist in informing priority areas for water programming interventions, to ensure access barriers to securing enough safe drinking water are minimised. Like the baseline, the follow-up survey found that households generally spend more time waiting at water sources than walking to them. Wait times typically take longer in the more populated Kutupalong-Balukhali site, while travel times tend to take longer in the southern Teknaf camps.

On issues related to water collection, households were first asked who normally collects water for the household. Overall, households reported women (48%) as the most common family member to collect water, followed by girls (11%), men (7%), and boys (3%). This gendered division of labour aligns with findings from the baseline, as well as the Joint Agency Research Report (JARR) Gender Analysis study[30] conducted in the same period, in which the majority of respondents reported women (59%) as responsible for water collection, followed by girls (22%), men (8%) and boys (5%).

As per the baseline survey, households were asked to estimate the length of time normally spent traveling to/from as well as waiting time at the water source normally used.[31] [32] Overall, 21% of households reported a combined

[28] See Cox's Bazar WASH Sector Strategy for Rohingya Influx (March – December 2018) here: https://www.humanitarianresponse.info/en/operations/bangladesh/document/wash-sector-cxb-2018-strategy

[29] Data from April are not directly comparable in the case of Camp 25 due to shifting boundaries. However, data from the old Leda B camp—which overlapped most directly with the new boundaries of Camp 24—have been used as a proxy.

[30] Oxfam, Save the Children, and Action Against Hunger (August, 2018). 'Joint Agency Research Report (JARR): Rohingya Refugee Response Gender Analysis: Recognizing and responding to gender inequalities': https://policy-practice.oxfam.org.uk/publications/rohingya-refugee-response-gender-analysis-recognizing-and-responding-to-gender-620528 p.45 (accessed 15 November, 2018).

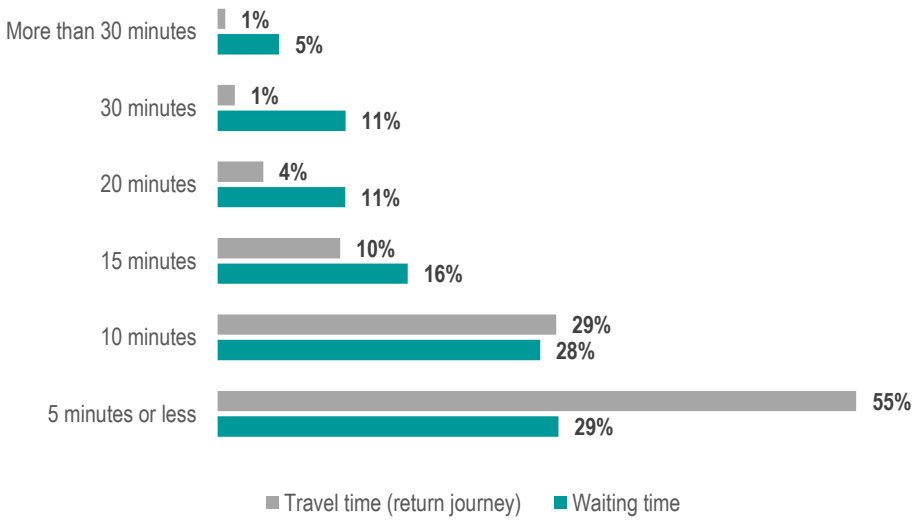
[31] Questions on travel time to/from and waiting time at the water source were asked, yielding results reportable against the key Global WASH Cluster and Strategic Development Goals Joint Monitoring Program threshold of <30 minutes combined travel. See Global WASH Cluster threshold here: https://washcluster.net/resources/imtk See SDG JMP threshold here: https://washdata.org/. The follow-up questionnaire also used static time approximations (i.e. 10 minutes, 15 minutes, etc.) rather than intervals, to strengthen reporting capacity against the Global WASH Cluster and JMP thresholds.

[32] Households were asked how long it takes to collect water, including waiting/queueing time at the water source.

travel and waiting time of more than 30 minutes.[33] Reported travel/wait times of more than 30 minutes was almost twice as common in Teknaf (reported by 30% of households) compared to the Kutupalong-Balukhali extension site (reported by 18% of households). Camps with significantly higher proportions of the population reporting travel/wait times over 30 minutes included Camp 24/Leda (42%), Camp 3, Camp 22/Unchiprang (39%), and Camp 27/Jadimura (36%). Like in the baseline, Shamlapur had the lowest proportion of households with travel/wait times over 30 minutes (2%).

Overall, households reported spending more time waiting at water points compared to travelling to them (see Figure 3 below). Fifty-five percent (55%) of households reported spending less than five minutes travelling to/from water points—up significantly from 32% at baseline. This compares to only 29% reporting waiting times of less than five minutes, broadly comparable with 35% reporting this at baseline. Wait times were significantly higher in Teknaf, with only 46% of households reporting wait times of 10 minutes or less compared to 60% in Kutupalong.

Figure 3: Proportion of households reporting travel time to/from and waiting time at water source (in minutes)



As with April 2018 data, these findings contrast with the fact that according to October REACH IM data almost all (>99%) shelters have a functional improved water source within 200m.[34] Further research is therefore needed to understand what factors apart from distance are leading to high travel/collection times for some households. Possible explanations could include household-factors such as household size or age and disability status of household members primarily responsible for water collection, as well as flow-rate or other characteristics of water points themselves.

Water containers

Understanding the types of containers and their different uses across the camps is a starting point to determine household water consumption, as well as practices related to the safe storage of water.

Enumerators requested to see all containers used for collecting and storing drinking and/or non-drinking water within the household. They then collected information for each one: i) type of container;[35] ii) type of water being stored (drinking, non-drinking, both); iii) measurements to determine water volume;[36] iv) whether or not the container was clean; v) whether or not the container was covered; vi) number of times the household used the container to collect water the day prior to the survey (if any); vii) residual chlorine (c/r) test results if the container

[33] These findings are broadly triangulated with JARR data, where 66% of respondents reported taking less that 30 minutes to collect water. However, it is important to note this data, in addition to being non-representative, included responses from both camps and host communities, limiting triangulation with REACH data collected only in camps.
[34] REACH. "WASH site profiles."
[35] Images of six common types of containers used for collecting and/or storing water were inserted into the Kobo form, allowing enumerators to select the appropriate type for each container that was measured and tested for chlorine. The five types included aluminium pitcher, plastic bucket, plastic bottle, plastic jerrycan, and plastic jug. Enumerators could select "other" if none of the images applied.
[36] Refer to page 9 for details on methodology used to determine water container volume.

was used for drinking.[37] Information was recorded for 8,087 containers, of which 4,898 (61%) were tested for chlorine. Empty containers were not tested for chlorine.

Overall, the most common type of water storage container was aluminum pitchers (present in 96% of households, up from 85% in the baseline)—readily accessible in markets surrounding camps and included in "full" hygiene kits.[38] This was followed by 62% of households storing water in plastic buckets (up substantially from 19% in the baseline), 10% in plastic containers, and 6% in plastic jerry cans—both similar proportions to baseline findings. Types of containers possessed did not vary significantly across camps, or between the Kutupalong and Teknaf areas. Based on enumerator observation, 95% of containers were recorded as clean,[39] 96% were covered, and 93% were recorded as both covered as well as clean, again with no significant differences across camps – consistent with baseline findings. However, despite matching baseline findings, the suggestion of such high numbers of covered containers differ from on-the-ground accounts of household water hygiene practices across the camps.

Water quantity

As outlined in the methodology section above, REACH introduced a water measurement exercise when implementing this survey. Determining household-level water quantity for drinking and non-drinking water is critical in understanding the quality of refugees' lives within the camps.

REACH enumerators directly measured container dimensions, and "best estimate" volumes were calculated for idealized geometrical shape (sphere, cylinder, or cuboid).[40] This approach was implemented instead of asking respondents to estimate container volume—as implemented during the April baseline—over concerns that respondents were systematically under-estimating container volume. Across all households, the average amount of drinking water storage volume was found to be 4 litres/person, around 25% higher than the 2.99 litres/person reported in the April baseline. However, due to differing measurement strategies, container volume figures from April and October are not directly comparable, and without additional cross-checking it is not possible to say whether this increase is due to improved measurement, or an actual increased volume of storage.

Overall, available water storage capacity falls well short of standards: only 26% of households had more than 10 litres of water storage capacity per person as recommended by UNHCR's emergency water standard,[41] while a similarly low 23% of households had at least two drinking water containers of at least 10 litres volume each, as recommended by Cox's Bazar WASH Sector guidance.[42] In both cases, around 10% fewer households in Kutupalong met these standards when compared to Teknaf.

After the volume of each container was calculated, households were asked how many times each container had been used to collect water in the previous day, and whether each container was used for drinking water, non-drinking water, or both. From this the amount of drinking and non-drinking water collected per person, per day was calculated for each household. A large majority (91%) of households reported collecting the recommended SPHERE threshold for survival water intake of at least 3 litres/person/day of drinking water, with no significant differences observed across camps.[43] However, a much smaller majority (56%) reported collecting the SPHERE minimum threshold of 15 litres/person/day for drinking and domestic hygiene purposes. This latter statistic may be explained by the fact that the majority of household members (especially males) are reported to use public bathing facilities and therefore do not require as much water for personal hygiene purposes (see hygiene section).

[37] Enumerators requested permission to test for residual chlorine (c/r) in containers used to collect drinking water.
[38] See page 34 for more information on hygiene kits distributions across the camps
[39] Enumerators were trained to record containers as 'clean' if they were free of dirt.
[40] For each container in the container loop in the Kobo form, enumerators selected from a range of images the type of container presented by the respondent. Spherical containers (aluminium pitchers) were measured at the circumference; cylinder-like containers (buckets, containers, jugs and buckets) were measured at height and diameter; and cuboids (jerrycans) were measured at height, width and length.
[41] UNHCR, "Emergency Water Standard." https://emergency.unhcr.org/entry/248763/emergency-water-standard (accessed 2 December 2018).
[42] See: Cox's Bazar WASH Sector Strategy (March – December 2018), p19.
[43] While findings are not directly comparable for reasons stated above, it is important to note that this figure far exceeds the 42% of households reporting collecting 3 or more litres/person/day in the April baseline.

While no significant differences were observed between Kutupalong and Teknaf, significantly higher proportions of households in Camp 4 Extension and Camp 8E (71%) reported collecting more than 15 litres/person/day, while significantly fewer households in Camp 5 (38%), Camp 9 (37%), Camp 23 (Shamlapur) (36%), and Camp 14 (24%) did so. As in the baseline, Shamlapur is an outlier in reporting minimal problems with access to water while also reporting among the lowest volumes of daily household water collection. This may be due to Shamlapur having the highest rates of households using water tanks which are at times nearby households, meaning people would not need to access tubewells or tapstands where access problems such as overcrowding tend to occur. Overall, no relationship was observed between households' reported primary drinking water source, and the volume of water they collected.

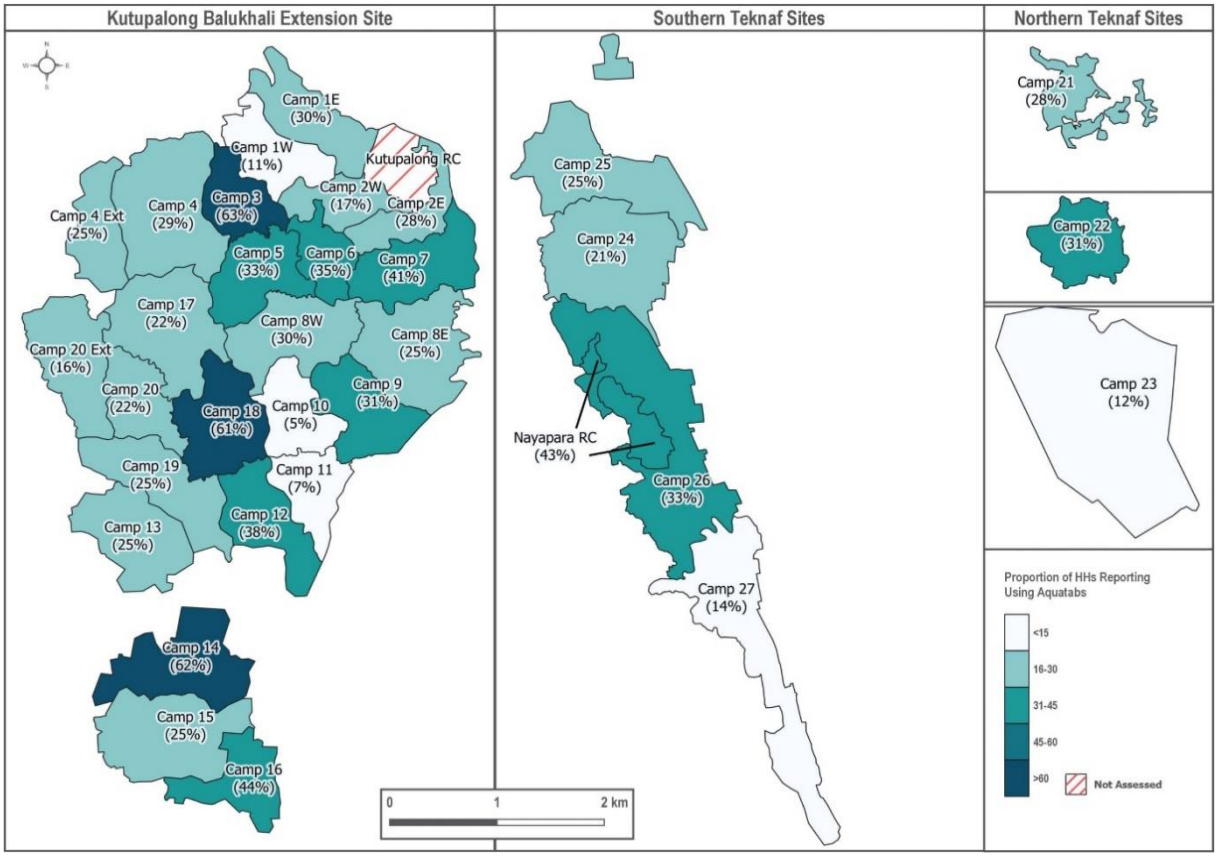
Households were also asked how long they stored water after collecting it, since a tendency to store water for long periods would reduce the amount collected the previous day, and hence give the false impression of lower household-level water consumption. Overall, a large majority of households (84%) reported storing water for less than one day, with the remainder (15%) storing it for between one and two days.

Water treatment

A significant improvement of the WASH Sector in 2018 was the substantial increase in the proportion of households treating water, specifically with aquatabs – a key distribution item that chlorinates water, thereby reducing risks of contamination across the camps.

Overall, 38% of households reported using some form of treatment before drinking, more than double the rate of 17% found in the baseline. This positive change applied to almost all camps, with a substantially higher proportion of households using them in Camp 3 (63% up from 12% in April), Camp 14 (62% up from 15%), and Camp 14 (62% up from 2%). Of the households who reported treating their water in some form, the majority reported always treating it (54%), with 14% of households reporting often treating it, and 32% reporting only sometimes treating it.

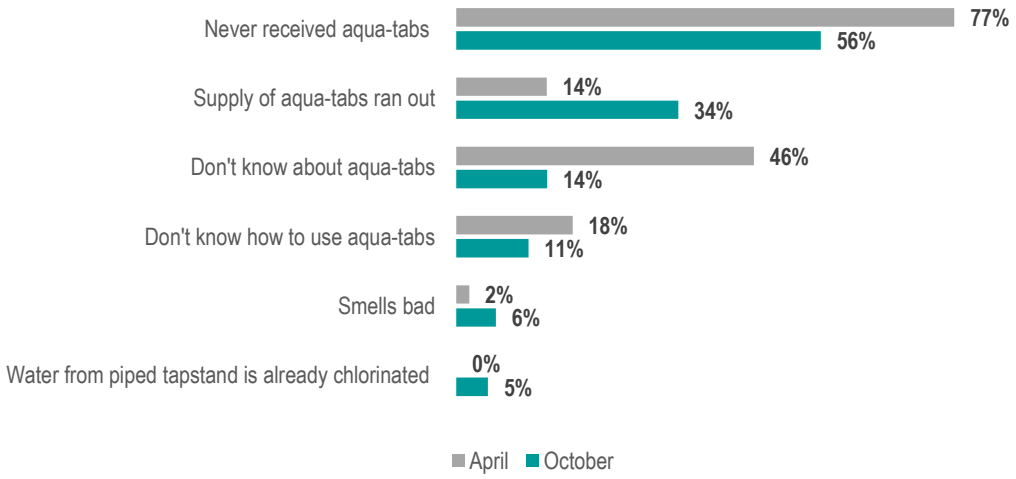
Map 2: Proportion of households reporting use of aquatabs



The most commonly reported type of water treatment being used was aquatabs, reported by 30% of households overall, up from 13% in the baseline. The proportion of households reporting aquatab use varied widely by camp (see Map 2), ranging from highs of over 60% in Camps 3, 14 and 18, compared to lows of less than 10% in Camps 10 and 11. The only other commonly reported treatment method was using cloth material as a water filter, reported by 10% of households overall, with a range of 35% in Camp 24 to only 2% in Camp 15.

Households that reported not using aquatabs were then asked why they were not using them (see Figure 6). By far, the most commonly reported reason was never receiving them (56%). This was followed by issues with aquatab supply (34%) and not knowing about aquatabs (14%). The fact that a smaller proportion of households reported a lack of awareness regarding aquatabs compared to baseline, while a higher proportion of households reported running out, suggests that even if aquatab use is relatively low, households' exposure to aquatabs in general is substantially higher in October compared to April. However, the fact that 39% of households overall reported never having received aquatabs, while only a further 30% reported "normally" using them suggests that WASH actors are falling short of meeting the WASH Sector target of providing sufficient water treatment supplies for 20 litres/day/household for a period of two months.[44]

Figure 4: Proportion of households not using aquatabs reporting reasons for non-use, April vs October[45]



Residual chlorine testing results

The Cox's Bazar WASH Sector Strategy (March – October 2018) outlines that free residual chlorine will be monitored in representative samples at the household level. This is linked to the significant health benefits made possible by chlorine, which disinfects water sources, thereby killing bacteria and viruses that often grow in water supply reservoirs.

In the baseline survey, households reporting using aquatabs on the day of assessment were asked permission to conduct residual chlorine tests with pool testers. Due to a low response rate on this indicator (4% of households overall), only 182 tests were conducted, meaning chlorine test results from April were indicative only. The follow-up survey sought to address this limitation by enumerators seeking permission to test for chlorine in all water containers used for collecting and/or storing drinking water within households, irrespective of households reporting having treated drinking water.[46] [47] As a result, a total of 4,898 containers were tested for residual chlorine throughout the follow-up survey. It is important to note that although enumerators undertaking the tests did participate in a

[44] See Cox's Bazar WASH Sector Strategy for Rohingya Influx (March – December 2018) here: https://www.humanitarianresponse.info/en/operations/bangladesh/document/wash-sector-cxb-2018-strategy

[45] Respondents could select more than one option.

[46] Enumerators asked whether each container presented is used for drinking water, non-drinking water, or both. A constraint in the Kobo form then prompted enumerators to seek permission to test any container used for drinking water or both for residual chlorine with pool testers.

[47] Enumerators were trained on how to test for residual chlorine prior to the survey taking place. The training session was run by the Centre for Disease Control. All pool testers were provided by UNICEF Cox's Bazar.

basic training run by the Center for Disease Control, they are not water quality monitoring specialists. Results should therefore be interpreted with a degree of caution for this indicator.

Cox's Bazar WASH Sector standards for residual chlorine reflect those set by the Bangladeshi Department of Public Health Engineering (DPHE), outlining 0.2 - 0.5 mg/l as safe. This range also matches SPHERE standard for residual chlorine in household water.[48] Overall, of all water containers tested, 87% returned no trace of residual chlorine; 10% of containers returned 0.1 mg/l; 2% of containers returned 0.3 mg/l; and 1% of containers returned 1 mg/l. Therefore, overall only 2% of containers contained returns of residual chlorine falling within the target range set by the Cox's Bazar WASH Sector. Additionally, the presence of chlorine in water containers varied widely across camps. For example, 51% of tested containers within Camp 1W contained 0.1 mg/l of residual chlorine, and as many as 7% of containers contained 1.5 mg/l in Camp 5. By contrast, 100% of containers tested in Camp 6, Camp 9 and Camp 14 contained zero returns of residual chlorine.

Presence of "chlorinators" at waterpoints

Throughout 2018, some WASH agencies have been delivering a "chorinator" initiative, whereby volunteers or paid staff treat refugees' water containers with chlorine at waterpoints. To understand the reach of this initiative, households were asked whether someone treated water with chlorine the last time they were at the waterpoint normally used. Overall, 19% of households reported this was the case. However, responses varied significantly across the camps, with chlorinators reported more frequently by households in Kutupalong (22%) compared to Teknaf (8%). Chlorinators were most commonly observed in Camp 3 (48%) and Camp 16 (44%). However, only a small proportion of households reported witnessing a chlorinator in Camp 24/Leda and Camp 27/Jadimura (both at 4%). There was no correlation observed between households reporting witnessing a waterpoint and possessing water containers with high returns of residual chlorine (see below).

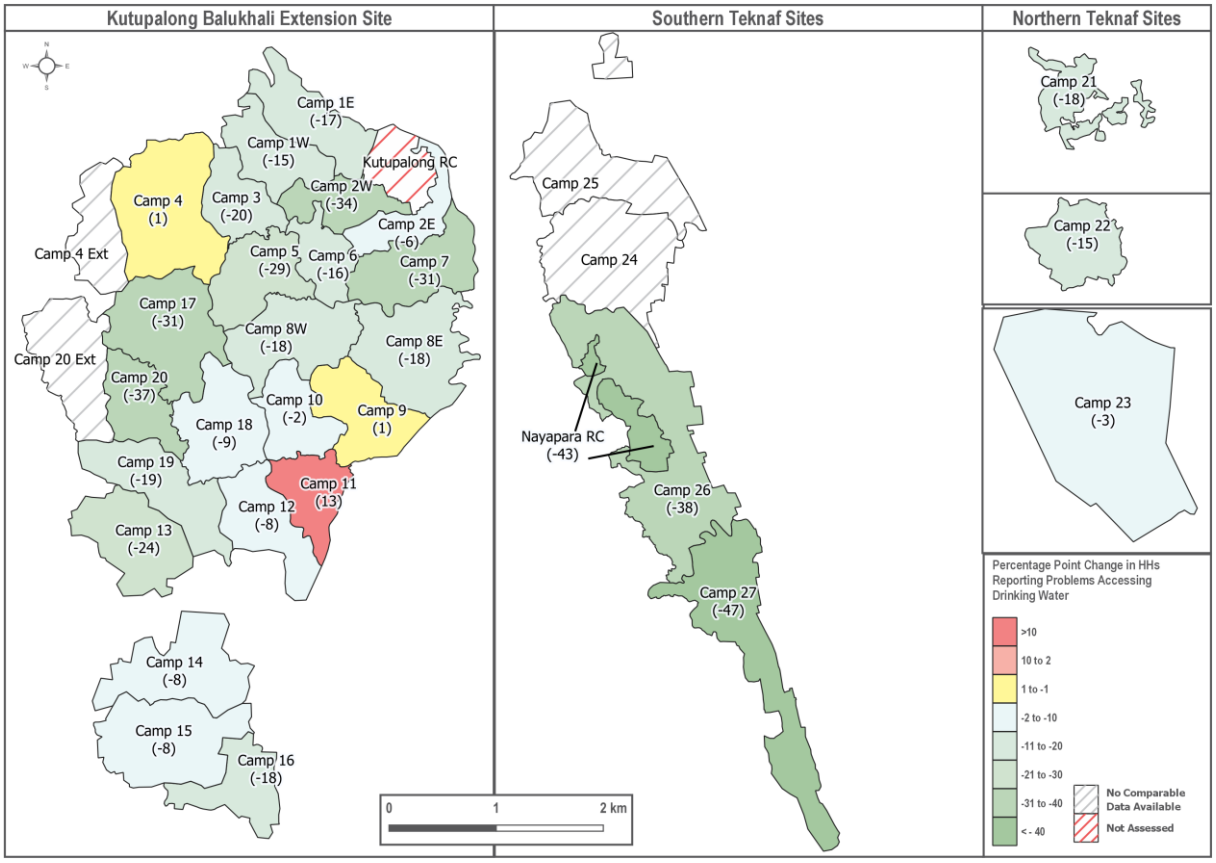
Problems and coping strategies

The baseline survey found that high proportions of households faced problems accessing water, with many also resorting to negative coping strategies such as drinking less water. Conditions on these measures improved between April and October. However, challenges remain in some camps.

In the baseline survey households were asked if they faced problems accessing water, and if so what types of problems they faced. The follow-up survey included the same questions. Across all assessed camps, 38% of households reported facing problems accessing water, compared with 56% in the baseline. This positive change was reflected across almost all camps, with Camp 11 the only exception where 55% of households reported facing problems, up from 42% in the baseline. At camp level, significantly higher proportions of households reported problems in Camp 21/Chakmarkul (61%), Camp 11 (55%), and Camp 22/Unchiprang (54%). Despite the discrepancies in use of unimproved water sources and in water collection times discussed above, there were no significant differences overall in the proportion of households reporting problems in Kutupalong compared to Teknaf. Responses also did not differ significantly based on gender of respondents.

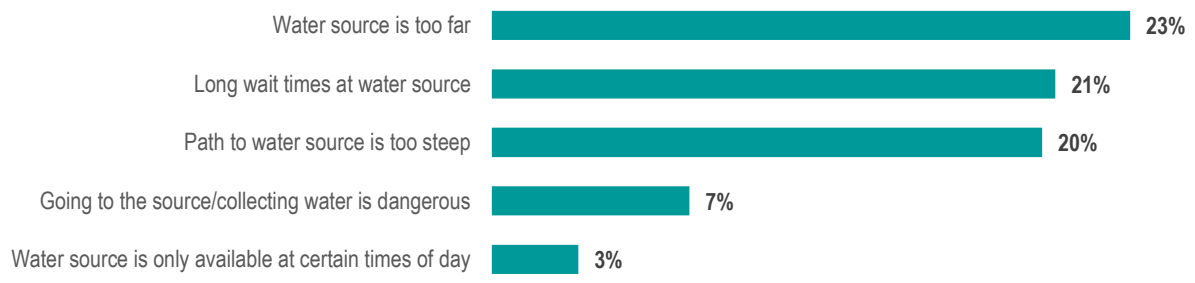
[48] For more information on SPHERE standards for household water, see: http://www.spherehandbook.org/en/water-supply-sanitation-and-hygiene-promotion-wash/

Map 3: Change in proportion of households reporting problems with accessing water, April vs. October



The most commonly reported problems were the source being too far (reported by 23% of all households, down from 43% at baseline), followed by long wait times (21%, down from 41% at baseline). Another significant issue was steep paths/hilly terrain, reported by 20% of households (not asked at baseline). This issue was reported by significantly more households in the hilly Kutupalong (23%) compared to flatter Teknaf (5%). Inconsistent supply was reported by 3% of households (compared to 3% at baseline), reflecting long-standing issues of water scarcity in southern Teknaf in particular – this issue was reported by 13% of households in Teknaf compared to less than 1% in Kutupalong.

Figure 5: Proportion of households reporting problems when collecting water[49]



Overall, 7% of households reported that going to the source/collecting water is dangerous, as a problem, with no significant difference in the proportion of male and female respondents reporting safety concerns as an issue. This small proportion of households reporting members feeling unsafe at waterpoints contrasts somewhat with findings from the UNHCR-REACH Multi-Sector Needs Assessment (MSNA) conducted in July 2018.[50] When asked which areas of the camp were unsafe for different family members, respondents reported water points as unsafe at lower

[49] Respondents could pick more than one option.
[50] REACH. "Multi-Sector Needs Assessment Report: Rohingya Refugee Response," July 2018.

rates compared to latrines and bathing facilities. However, respondents generally reported water points as unsafe for women (24%) and girls (31%) at much higher rates than for men (3%) and boys (10%).

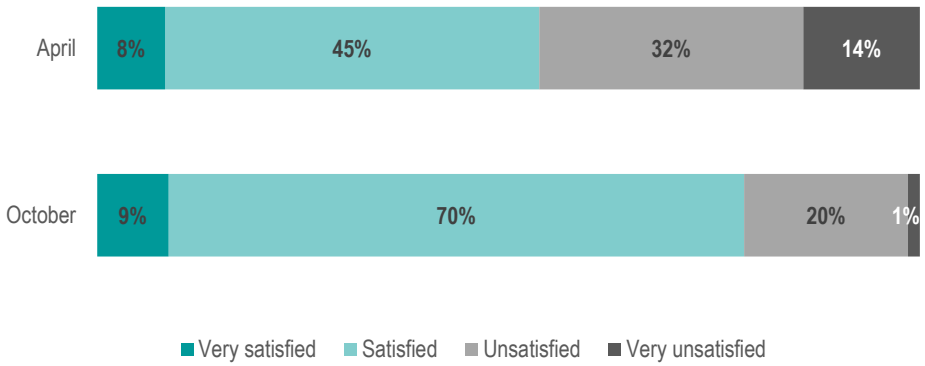
Despite these reported problems, only 5% of households reported that there were times during the previous month when they could not access enough drinking water.[51] Slightly fewer households in Kutupalong (4%) than in Teknaf (9%) reported facing problems in the month prior to data collection, with highest rates found in Camp 24/Leda (13%) and Nayapara RC (11%). The most commonly used coping strategy, reported by 4% of households overall, was using a water source further away than the one normally used. Other coping strategies, such as using untreated drinking water or using surface water, were reported by less than 1% of households.

Satisfaction and perceived change to water access since before the monsoon season

A likert scale was used in the April and October assessments to understand changes in refugees' satisfaction with access to water from before the monsoon season started to during it. Although this cannot capture the complexities of water issues across the camps, data reflects the broader positive shift in access to water that took place between April and October.

Like in the baseline, households were asked about levels of satisfaction with access to water. Overall, 9% of households reported being very satisfied, 70% satisfied, 20% unsatisfied, and 1% very unsatisfied. Compared to April, a significantly higher proportion of households reported being satisfied or very satisfied (79% versus 53%). Notably, households in Kutupalong and Teknaf reported being satisfied or very satisfied at similar rates (78% and 82% respectively). This stands in contrast to the baseline, where households in the majority of camps in Teknaf reported significantly lower levels of satisfaction compared to Kutupalong.

Figure 6: Proportion of households reporting different levels of satisfaction with water access, April vs. October



In terms of households' perceptions of changes in access to water since before the monsoon season, 2% reported much better, 41% reported better, 51% no change, 5% worse, and less than 1% much worse. Response rates did not vary significantly across camps or between the Kutupalong and Teknaf areas, or by gender of respondent.

ACAPS severity analysis: water findings

According to the Water Severity Sub-Index, across 33 camps, 3.10% of households, or 27,523 people, fall into Category 5 (very high severity) for water needs. Additionally, 34.90% of households, accounting for 299,819 people, fall into Category 4 (high severity) for water needs, with 15.39% of households, accounting for 134,034 people, falling into Category 3 (moderate severity). Those in Categories 3, 4 or 5 for water needs severity face longer travel times to collect water, do not have containers to collect or store water, reported using unimproved water sources, as well as water shortages over the previous month, and are less likely to treat water before drinking.

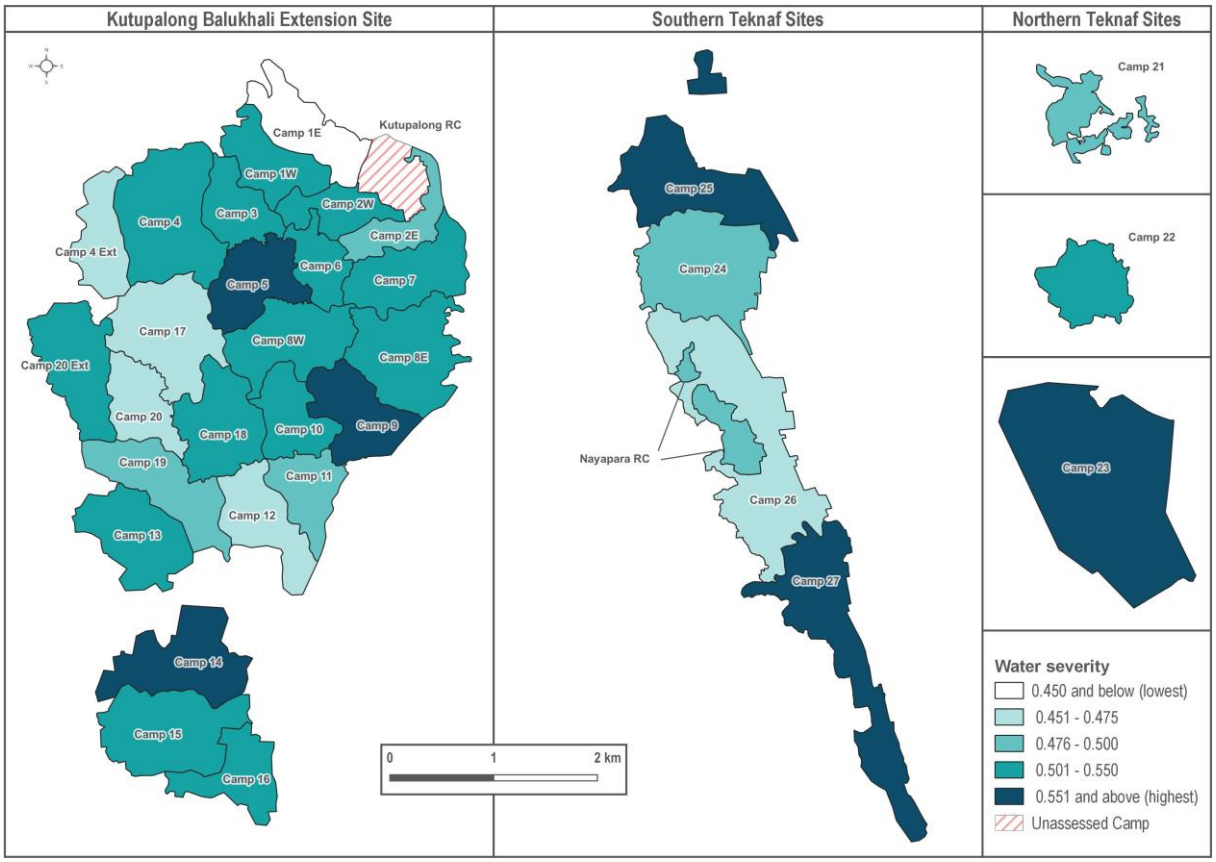
[51] In April, households were asked, "What are your coping strategies if there is not enough safe drinking water?" In October, they were asked "In the past month, have there been times when your household could not access enough drinking water?"

Table 1: Water needs severity ranking

Category	Water severity ranking	% households per category	# households per category	# people per category
1 – Very low severity	% of households with water access index value less than 0.2	3.89%	8,050	34,859
2 – Low severity	% of households with water access index value between 0.2 and <0.4	42.73%	85,355	369,614
3 – Moderate severity	% of households with water access index value between 0.4 and <0.6	15.39%	30,952	134,034
4 – High severity	% of households with water access index value between 0.6 and <0.8	34.90%	69,237	299,819
5 – Very high severity	% of households with water access index value greater than or equal to 0.8	3.10%	6,356	27,523

The following water needs severity map includes five intervals, showing camps with the highest (in dark blue) to lowest (in white) mean needs severity index ranking for water. A Jenks natural breaks method was employed and adapted based on the spread of mean index rankings, allocating values into the five different classes.[52] As displayed, camps with the highest mean needs severity rankings included Camp 23 (with a mean needs severity ranking of .6033), Camp 27 (.5723), Camp 5 (.5696), Camp 14 (.5668), Camp 9 (.5575), and Camp 25 (.5539).

Map 4: Water needs severity



[52] For more information on the Jenks natural breaks method, see: Abboud, A., Samet, H., and Adelfio, M. 'Equal-area Breaks: A Classification Scheme for Data to Obtain an Evenly-colored Choropleth Map': https://www.cs.umd.edu/sites/default/files/scholarly_papers/Abboud.pdf. Accessed 28 February, 2019.

Sanitation

This section begins by examining defecation practices and latrines, before summarising environmental sanitation findings.

Understanding sanitation conditions within camps is key for the WASH Sector, particularly throughout the rainy season when the risk of disease transmission is greater, with stagnant water a common breeding ground for communicable disease-carrying bacteria. Sanitation conditions improved considerably between April and October, demonstrated by a significantly higher proportion of households reporting members practicing open defecation, and more households employing safe methods for disposing of waste. However, several camps were found to have high rates of households using self-made latrines, potentially allowing disease-causing microbes or other contaminants to leach into groundwater, posing risks of diarrheal diseases – especially for children. Additionally, reported protection issues at latrines—especially for women—remain common, particularly in the more densely populated Kutupalong-Balukhali extension site.

Defecation practices and latrines

Understanding different defecation practices of refugees—men, women and children—can assist in informing humanitarian programming, ensuring that access problems are addressed and risky practices such as open defecation and use of self-made latrines are minimised. The follow-up survey yielded findings pointing to an overall decrease in open defecation, particularly amongst children under five, while the inclusion of new questions on use of self-made latrines produced results highlighting where they are being used.

In the baseline survey households were asked where members aged under five and five and above go to defecate. In the follow-up survey households were also asked where children under five go to defecate,[53] with separate questions included on where female and male members over five go to defecate. Additionally, on request from the Cox's Bazar WASH Sector, the follow-up questionnaire included several extra choices for these questions, to account for known places of defecation across the camps not incorporated into the baseline survey.[54]

There were no major differences in households' responses in terms of defecation practices employed by males and females. For household members five and above, overall the most commonly reported place of defecation was communal/public latrines (63% females, 64% males), followed by shared household latrines (23% females, 22% males), and single household latrines (14% females, 13% males). Open defecation was seldom reported (0% females, 1% males).[55] Notably, camps where the highest proportions of households reported members over five practiced open defecation in April — Camp 17 (17%) and Camp 27 (12%) — showed a substantial improvement, with less than 1% of households in these camps reporting this practice by October.[56]

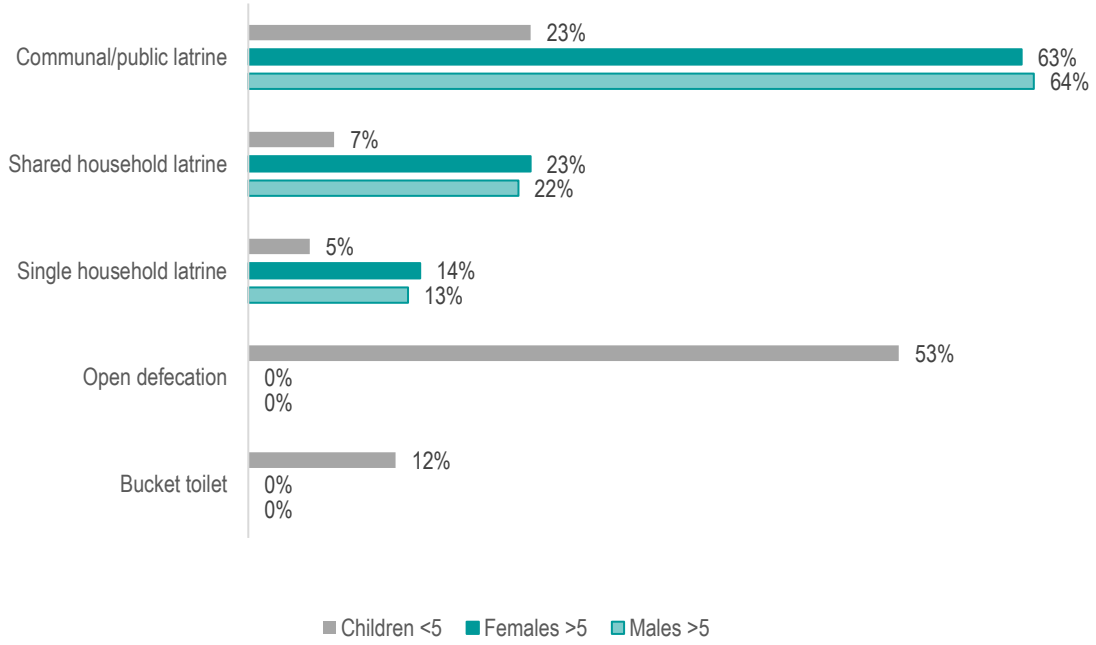
There were differences across camps in terms of places of defecation. A significantly higher proportion of households in Nayapara RC reported men and women using communal/public latrines, at 90% and 88% respectively. Above-average proportions of households reported use of single household latrines in Camp 10 (27% males, 49% females) and Camp 17 (30% males, 60% females). Additionally, using shared household latrines was most commonly reported in Camp 2W (41% men, 54% women), Camp 23 (39% men, 57% women), and Camp 2W (41% men, 54% women).

In terms of children under five, overall the most commonly reported practice (reported by households) by far was open defecation, at 53%, down from 65% in the baseline. This was followed by communal/public latrines (23%) and buckets (12%). There were significant variations in these practices between camps. Significantly higher proportions of households reported under-five members practicing open defecation in Camp 10 (70%) and Camp

[53] This indicator only applies to households that reported having at least one child under 5.
[54] New choices for this questions on where household members go to defecate included single household latrine (self-made and non-self-made), and shared household latrine (self-made and non-self-made).
[55] Findings related to over-five members practicing open defecation are not compared, due to the baseline asking '*Do adults from your household sometimes defecate in the open?*' whereas the follow-up included 'open defecation' as an option to the questions about defecation practices of household members.
[56] Less than 1% of households (female and male respondents combined) reported members five and above practicing open defecation

26 (68%).[57] In addition, significantly higher proportions of households reported under-five members using shared household latrines in Camp 6 (21%), Camp 23 (20%) and Camp 2W (19%).

Figure 7: Proportion of households reporting family members defecating in different spaces



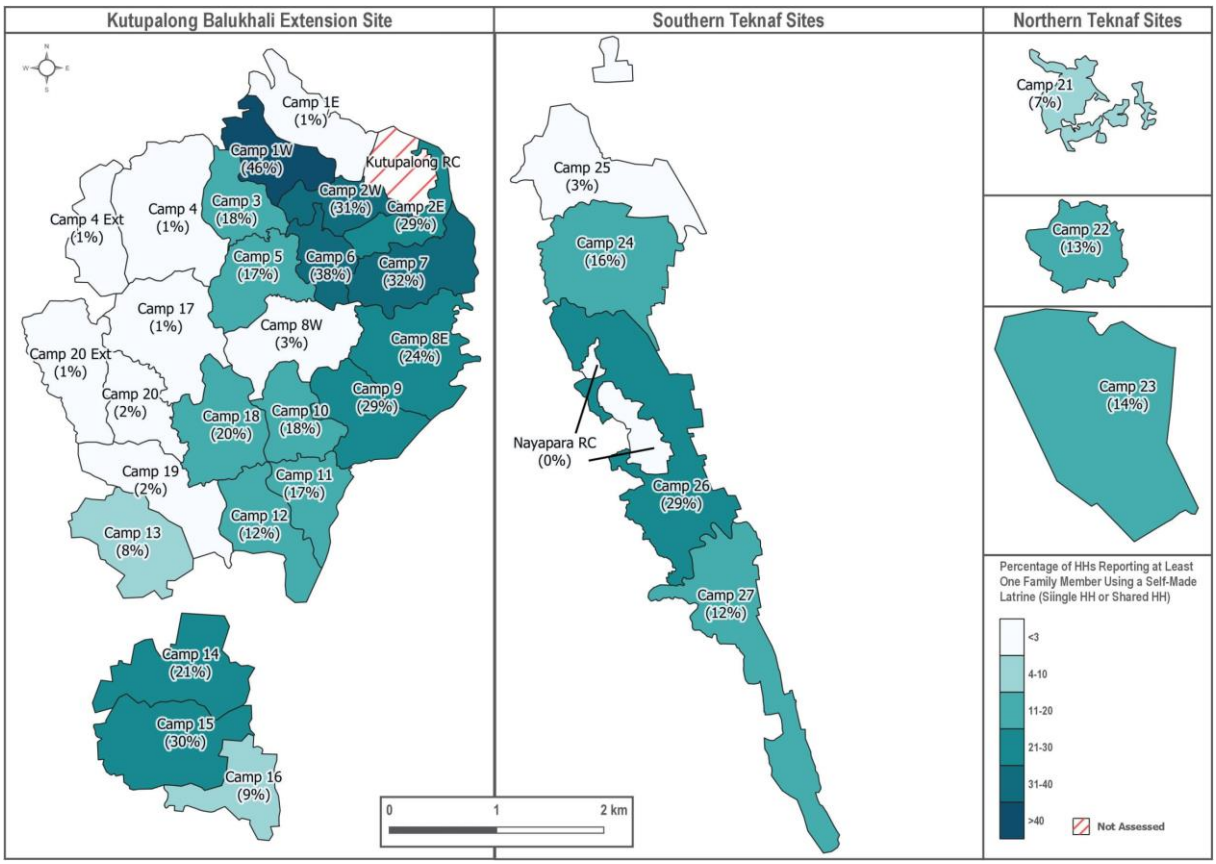
Households were also asked an extra question related to places of defecation. When households reported members defecating in either single household latrines (self-made or non-self made) or shared household latrines (self-made or non-self made), they were then asked whether the space is attached to or inside the household. Overall, 98% of those households reported these spaces are attached to household, with generally little variation between household members to which the questions applied (members under five or five and above), type of latrine, across camps, or between Kutupalong and Teknaf.[58]

A significant concern of the Cox's Bazar WASH Sector in 2018 has been the proliferation of self-made latrines across the camps, which due to being constructed outside the faecal sludge management system pose significant risks of faecal contamination and disease transmission across the response. As outlined above, households reported different household members using self-made latrines (single or shared) to varying degrees across the camps. Overall, 17% of households reported at least one family member using self-made latrines (either single household or shared household). As shown in Map 4, this varied across the camps, with the highest rates in Camp 1W and Camp 6, at 46% and 38% respectively. There was no significant difference between Kutupalong and Teknaf for this indicator. Overall the most common type of latrine that households reported were "self-made" were household latrines, at 12% – with high rates in Camp 6 (reported by 37% of households), Camp 2E (28%), and Camp 1W (27%).[59]

[57] The following camps included at least 60% of households that have children under 5 practicing open defecation: Camp 1E (64%) and Camp 4 (63%),

[58] Although a higher proportion of households reported children under 5 defecating inside the household in Camp 11 (16%), Camp 1W (27%), and Camp 9 (33%), this data relates to the proportion of households that selected single household or shared household latrines, which as outlined above were reported by very few households

Map 5: Proportion of households reporting at least one family member using a self-made latrine (single household or shared household)



Distance to latrines

Understanding the time it takes to reach latrines from households can assist in understanding refugees' experiences in accessing essential services across the camps. Analysed in conjunction with findings on latrine access problems, results can strengthen the knowledge base on WASH challenges faced by refugees on a daily basis.

Enumerators asked how long it takes to walk to and from the latrine normally used by respondents. The Cox's Bazar WASH Sector targets all households to be within 50 metres of a latrine.[60] The majority of households (74%) reported normally taking five minutes or less to walk to and from the latrine, suggesting the same proportion of households are likely to be meeting this target. Twenty-two (22%) of households reported the journey taking 10 minutes, and the remaining 4% reported taking 15 minutes or more. Camps with the highest proportion of households reporting long travel times to latrines included Camp 2E and Camp 3, with 8% of households in both camps reporting taking 20 minutes or more. Notably, the two newly developed extension sites in the Kutupalong-Balukhali extension site—Camp 4 and Camp 20 Extension— had significantly higher proportions of households reporting travel times to latrines of only five minutes or less, at 86% and 80% respectively. No significant differences were observed between Kutupalong and Teknaf in terms of travel times to and from latrines or between gender of respondents.

Respondents were then asked whether the latrine normally used had soap the last time they used it. Over two thirds of households overall (71%) reported this was the case. The worst performing camp on this indicator was Camp 20 Extension (47%). The best performing camps on this indicator included Camp 4 and Camp 13, both at 87%. Only minor differences were recorded between Kutupalong and Teknaf.

[60] See: Cox's Bazar WASH Sector Strategy (March – December 2018), p.22.

Problems and safety issues regarding latrines

In the baseline survey respondents were asked if they faced problems accessing latrines. In the follow-up survey respondents were asked separate questions on whether women and men within the household faced problems accessing latrines. Therefore, baseline and follow-up data are not directly comparable for these indicators.

Women were reported to face problems in accessing latrines at higher rates than men. Overall, 39% of households reported women facing problems accessing latrines compared to 24% reporting men facing problems. Problems for women were reported most frequently in Camp 8E (62%) and Camp 1W (55%), while problems for men were reported most frequently in Camp 9 (41%) and Camp 8W (40%). The most commonly reported problem faced by women overall was too many people (30%) — a particularly significant issue in Camp 8E (51%), Camp 10 (48%) and Camp 1W (45%). Other commonly reported problems faced by women overall included a lack of gender-segregated latrines (17%) — possibly related to risks of gender-based violence and a general lack of privacy — as well as latrines being unclean (15%). By far, the most common problem faced by men was too many people (27%). For both men and women, a higher proportion of households reported members facing problems in Kutupalong (40% for women and 27% for men) compared with Teknaf (28% for women and 15% for men).

The baseline survey included a question on which household members felt unsafe using latrines at night. To better understand the prevalence of safety issues across the camps, the follow-up survey asked whether anyone from the household felt unsafe using latrines (irrespective of time of day). Overall, 26% of households reported at least one household member feeling unsafe using latrines – with 29% in Kutupalong versus 17% in Teknaf saying this was the case. Responses varied significantly across the camps, with as many as 47% in Camp 1W and 45% in Camp 10 reporting at least one family member feeling unsafe using latrines. Notably, no households reported family members feeling unsafe in Camp 4 Extension — adding to the case that considered planning might have resulted in better access to WASH facilities in this camp.

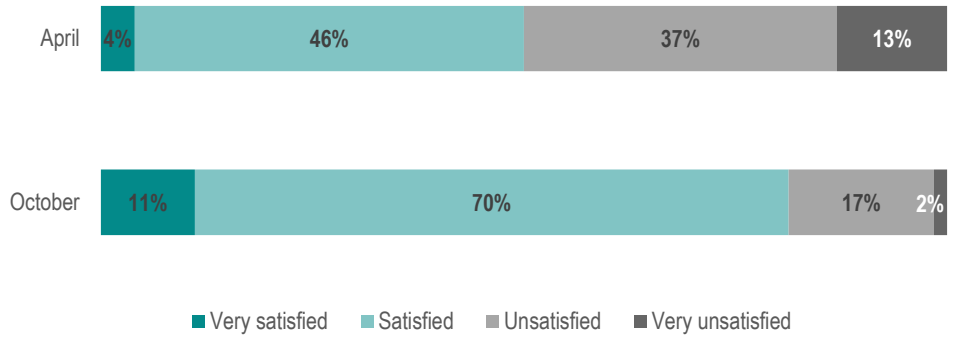
Households were then asked which members feel unsafe using latrines. Overall, households reported adult females feeling unsafe (15%), followed by adult males (9%), child females (8%), elderly females (7%), elderly males (4%) and child males (6%). While there were only minor differences between camps, significantly higher proportions of households in Camp 10, Camp 11 and Camp 1W reported each member feeling unsafe. These three camps also included amongst the highest proportions of households reporting women and men facing problems accessing latrines. Response rates did not vary significantly for this indicator between gender or age of respondents, or between Kutupalong and Teknaf.

Satisfaction and perceived change to latrine access since before the monsoon season

As in the water section, a likert scale was used to understand changes in refugees' satisfaction levels with regards to latrine access between April and October. Overall, there was a substantial increase in satisfaction levels, which is in line with the above reduction in reported problems around latrines compared to baseline.

As with the baseline, households were asked about levels of satisfaction with latrine access. Overall, 11% of households reported being very satisfied, 70% satisfied, 17% unsatisfied, and 2% very unsatisfied. Compared with April, a significantly higher proportion of households reported being very satisfied or satisfied (81% up from 50%). Households in Kutupalong and Teknaf reported being satisfied or very satisfied at similar rates in the follow-up survey (80% and 76% respectively).

Figure 8: Proportion of households reporting different levels of satisfaction with latrine access, April vs October



Households were also asked to share their perceptions of changes in latrine access since before the monsoon season. Overall, 1% of households reported latrine access is much better, 39% better, 49% no change, 9% worse, and less than 1% reported it being much worse. Response rates for questions on monsoon-related changes to sanitation did not vary significantly across camps or between the Kutupalong and Teknaf areas, or by gender of respondent.

Environmental sanitation

An environment free of unsafe substances and materials reduces the risk of communicable diseases spreading. While households across the camps sometimes dispose of child faeces or household waste safely, unsafe methods such as disposing of these potentially dangerous substances in open areas could be addressed through the provision of basic hygiene training.

Disposal of child faeces

Households with children under five were asked how they dispose of children's faeces, with the objective of understanding whether they opt to dispose of it in latrines or whether less-safe options such as disposing in open areas are employed. Overall, 36% of households reported employing safe methods to dispose of child faeces, versus 24% employing unsafe methods, as displayed in Table 2.[61]

Table 2: Proportion of households employing safe vs. unsafe methods for disposal of child faeces

Methods	
✓ Safe methods	36%
Collected and disposed in latrine (not rinsed)	29%
Collected and rinsed in latrine	7%
X Unsafe methods	24%
Collected and disposed in an open area	21%
Disposed with other garbage	3%

There was substantial variation between camps on this indicator. Significantly lower proportions of households reported disposing of child faeces in a safe manner in Camp 8E (2%) and Camp 3 (7%). Conversely, several camps included significantly higher proportion of households report safe disposal practices in Camp 22 (61%), Nayapara RC (59%), Camp 14 (58%), Camp 9 (55%), Camp 19 (54%), Camp 4 Extension (51%) and Camp 20 Extension (51%). Findings also differed significantly between Kutupalong and Teknaf, with 33% and 50% of households respectively reporting safe disposal practices.

[61] Only households with at least one child under five were asked where they dispose of children's faeces. Answers therefore do not equal 100%. Global WASH Cluster standard: collecting, and disposing of children's faeces in a latrine (rinsed and non-rinsed) is considered safe. See: https://washcluster.net/resources/imtk

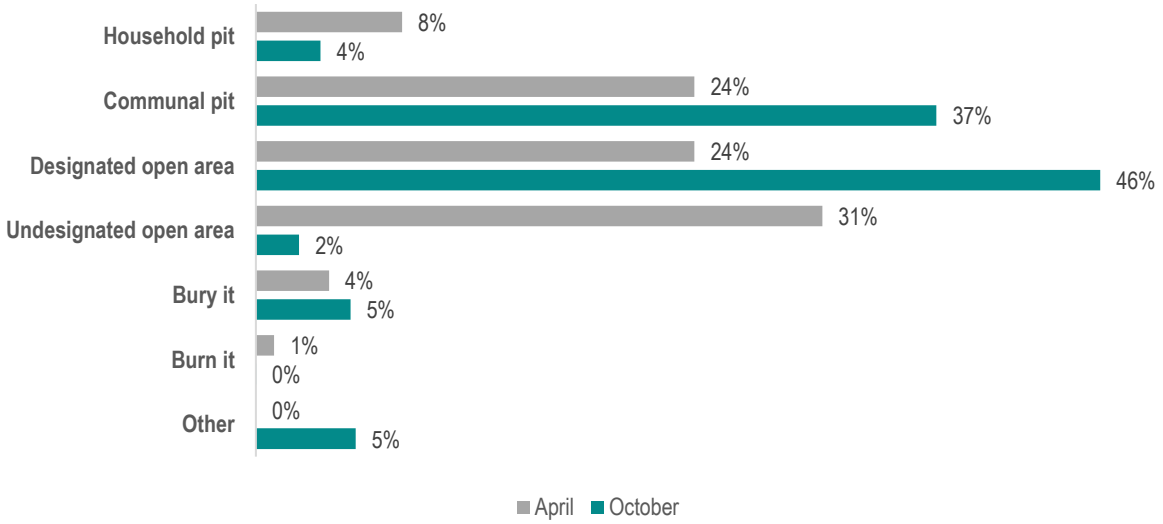
Presence of faeces in the vicinity of the household

As with the baseline, households were asked to estimate how frequently they saw faeces within the vicinity of the household (30 metres or less). Findings from the April and October surveys align closely. Overall, 70% of households reported that they "sometimes" see faeces, 18% "never", 7% "often", and 5% "always." Outliers for this indicator included an above-average proportion of households reporting "never" seeing faeces in Camp 4 Extension (37%) and Nayapara RC (33%). Aside from this, findings were generally consistent across camps and between Kutupalong and Teknaf.

Household waste

Similar to indicators linked to faecal contamination, asking refugees about their waste management practices is critical in understanding the geographical areas where risks of chemical exposure are greater. In the baseline survey households were asked where they normally dispose of household waste.[62] The same question was asked in the follow-up survey. Overall, a majority of households reported using either designated open areas, at 46% up from 24% in the baseline, or communal pits, at 37% up from 24%. This increase in the proportion of households employing safer methods to dispose of household waste aligns with the Cox's Bazar WASH Sector objective of introducing durable waste management systems throughout 2018, to reduce risks of disease outbreaks across the camps.[63] Overall, these changes represent a significant positive shift in household waste management between April and October, as displayed in Figure 9. There were only minor differences between Kutupalong and Teknaf, although the WASH Sector Strategy emphasizes the need to improve waste management systems especially in the more densely populated Kutupalong-Balukhali Expansion site.

Figure 9: Proportion of households reporting disposing of household waste in different spaces, April vs. October



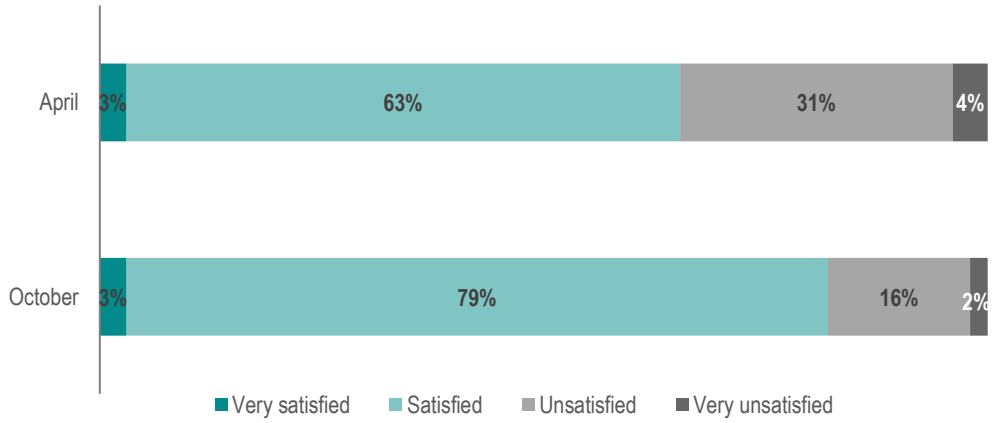
Households were also asked how often they see household waste within the vicinity of the household (30 metres or less). Overall, the majority of households (70%) reported seeing it "sometimes", followed by 12% "always" and 11% "often" seeing it – relatively similar to results for the same question asked in the baseline. Significantly above-average rates of households seeing household waste "always" or "often" were reported in Camp 11 (41%), Camp 9 (38%) and Camp 14% (37%). There were no significant differences between Kutupalong and Teknaf for this indicator.

[62] Household waste was referred to as 'solid waste' in the baseline analysis report. In the follow-up survey, a mistake with the form resulted in domestic waste and solid waste being used interchangeably. However, as 'solid waste' and 'domestic waste' were both translated to 'household waste' in the baseline and follow-up surveys, associated indicators in this section use the term 'household waste.'
[63] See: Cox's Bazar Wash Sector Strategy (March – December 2018), p4.

Households were also asked who is normally responsible for disposing of household waste. Overall, by far the most commonly reported member responsible for disposing of waste was adult women (59%), followed by girl children (24%), adult men (22%), and boy children (15%). Notably, a third of households reported elderly females as responsible for disposing of waste in Camp 1W (Camp 35%), Camp 10 (28%), and Camp 6 (27%) — significantly higher than the overall average (11%). Similarly, a high proportion of households reported child females in Camp 13 (35%) normally doing this task - higher than the average (24%). No major differences were observed between Kutupalong and Teknaf, or between gender of respondents.

To understand refugee perceptions, households were finally asked about levels of satisfaction with the waste management system in their block. Since April there has been a significant improvement in terms of household satisfaction (satisfied or very satisfied) with solid waste management, at 82% up from 66%.[64] Overall, the majority of households reported being satisfied (79%) or very satisfied (3%). The remaining households reported being unsatisfied (16%) or very unsatisfied (2%). A considerably high proportion of households reported being unsatisfied or very unsatisfied in Camp 1W (55%), Camp 10 (47%), and Camp 11 (39%). Conversely, very high rates of households reported being very satisfied or satisfied in Camp 20 (100%), Camp 12 (97%), Nayapara RC (97%), and Camp 26/Nayapara Extension (97%).

Figure 10: Proportion of households reporting different levels of satisfaction with the solid waste management system nearby the household, April vs October



Stagnant water

Households were then asked whether water gathers around the household following heavy rain. Overall, 21% of households reported this was the case. It was reported most commonly in Camp 1W (48%), Camp 17 (39%) and Camp 4 (38%) — posing a significant public health risk throughout the monsoon season, given risks of water-borne diseases during this period. Despite the difference in terrain between Kutupalong and Teknaf, there were no significant differences in findings between the two areas.

ACAPS severity analysis: sanitation findings

According to the Sanitation Severity Sub-Index, across 33 camps, 0.63% of households (6,347 people), fall into Category 5 (very high severity) for sanitation. Additionally, 3.74% of households (37,196 people), fall into Category 4 (high severity), with 12.12% (115,269), falling into Category 3 (moderate severity). Those camps in Categories 3, 4 and 5 face problems accessing latrines for both women and men, long travel times to reach latrines, reported feeling unsafe using latrines, and are more likely to have domestic waste in close proximity to their shelters.

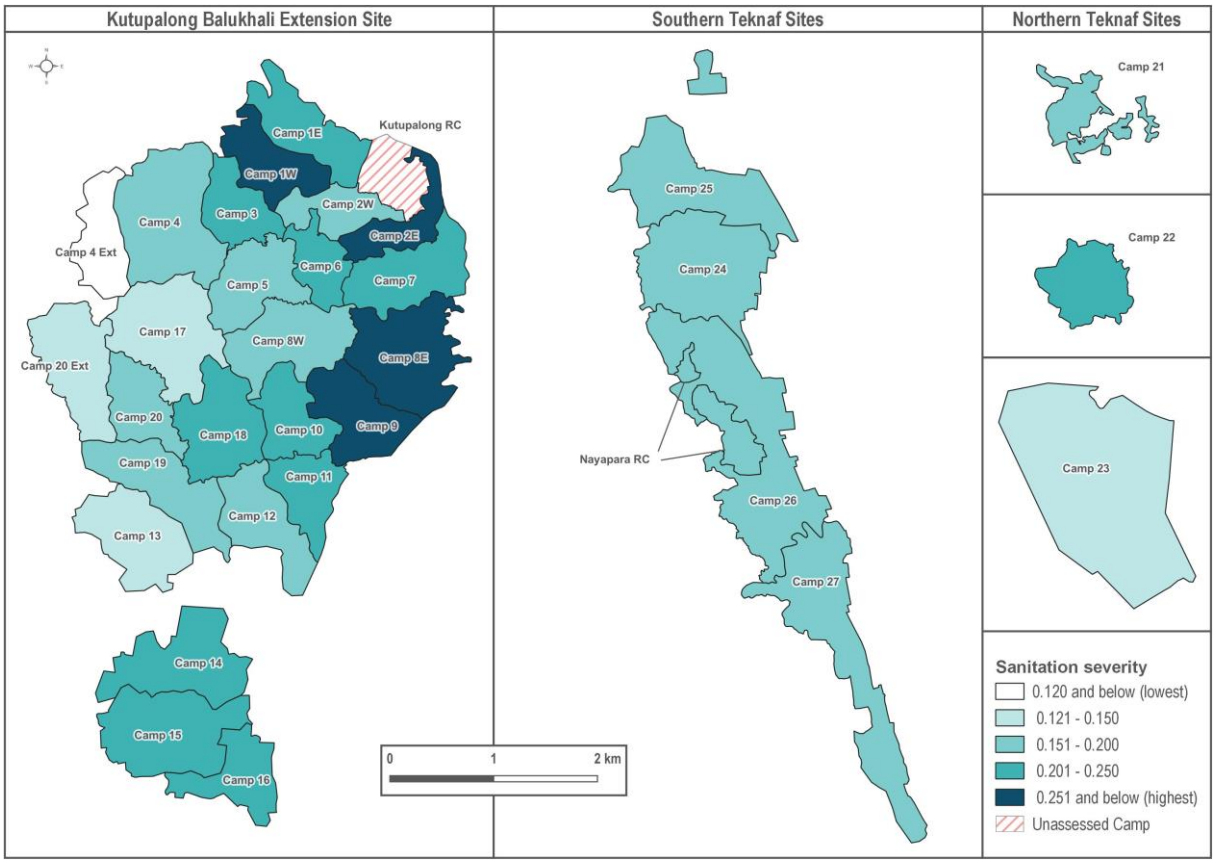
[64] This data is the sum of 'very satisfied' and 'satisfied' responses in the baseline and follow-up surveys

Table 3: Sanitation needs severity ranking

Category	Sanitation needs severity ranking	% households per category	# households per category	# people per category
1 – Very low severity	% of households with sanitation index value less than 0.2	57.74%	111,899	484,559
2 – Low severity	% of households with sanitation index value between 0.2 and <0.4	25.77%	51,377	222,477
3 – Moderate severity	% of households with sanitation index value between 0.4 and <0.6	12.12%	26,619	115,269
4 – High severity	% of households with sanitation index value between 0.6 and <0.8	3.74%	8,590	37,196
5 – Very high severity	% of households with sanitation index value greater than or equal to 0.8	0.63%	1,466	6,347

The following sanitation needs severity map includes five intervals, showing camps with the highest (in dark blue) to lowest (in white) mean needs severity index ranking for sanitation. A Jenks natural breaks method was employed and adapted based on the spread of mean index rankings, allocating values into the five different classes. As displayed, camps with the highest mean severity rankings include Camp 1W (with a mean needs severity ranking of .2956), Camp 9 (.2853), Camp 8E (.2515), and Camp 2E (.2512).

Map 6: Sanitation needs severity



Hygiene

This section provides an overview of handwashing and soap-related findings, before presenting data relating to bathing and laundry practices. It then examines issues around menstrual hygiene management. Next, it analyses

findings on hygiene distribution and hygiene trainings, before ending with an overview of cholera and diarrhoea data.

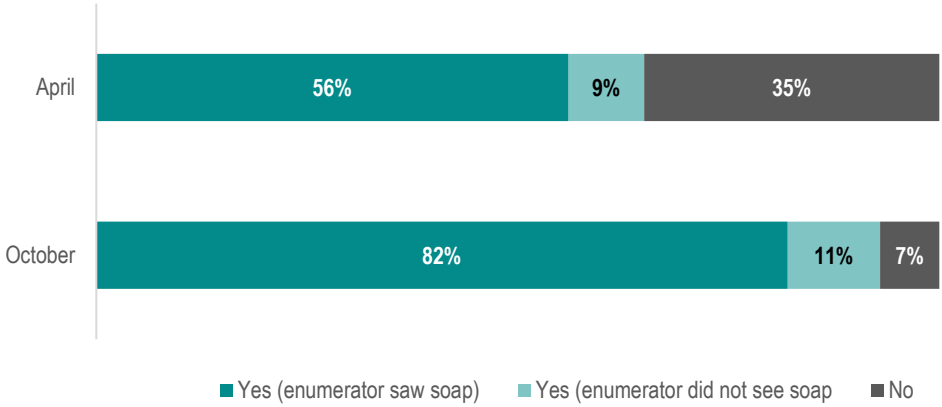
The hygiene section of the follow-up survey was revised substantially to fill information gaps, particularly gendered differences in handwashing knowledge/practices, access to bathing facilities, and participation in hygiene trainings and demonstrations. Male respondents were able to identify handwashing times more often than females – including, strikingly, the need to do so before breastfeeding - possibly explained by the fact men are more likely than women to participate in hygiene training or demonstrations. Separately, women are far more likely than men to bathe inside the household, with men instead typically using tubewells.

Handwashing and soap

Information related to handwashing and soap across the response is central to the WASH Sector's strategic planning, given the importance of refugees employing timely handwashing practices to reduce risks of disease transmission.

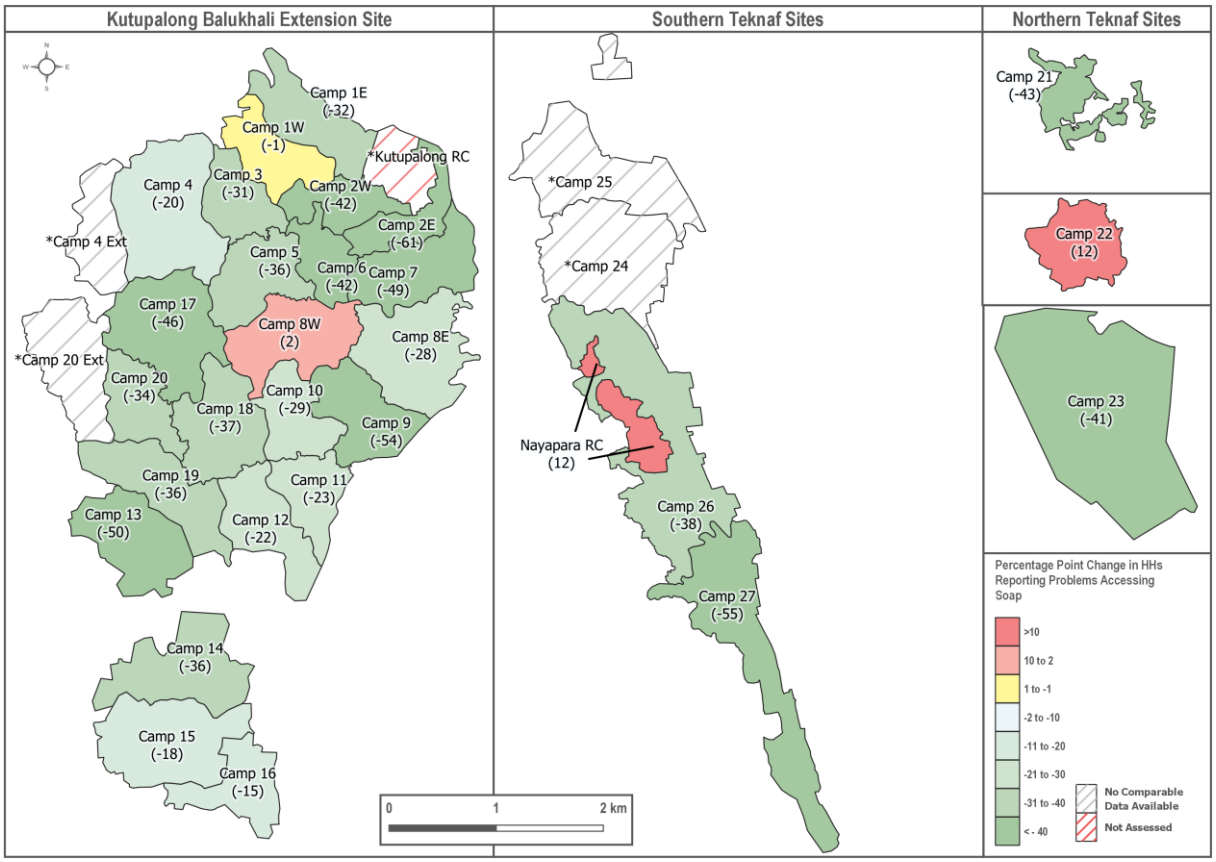
As shown in Figure 11, a significantly higher proportion of households reported possession of soap in October compared with April (93% versus 65%). Higher levels of soap possession were reported in all camps than in April, with no major differences recorded across camps or between Kutupalong and Teknaf.

Figure 11: Proportion of households reporting possession of soap, April vs. October



Twenty-seven (27%) of households reported problems accessing soap, down significantly from 57% in the baseline. While similar rates households reported facing problems in Kutupalong and Teknaf, significantly higher proportions of households reported soap access problems compared to the overall average in Camp 1W (64%), Nayapara RC (56%), Camp 25 (54%), Camp 8W and Camp 20 Extension (both 52%), and Camp 10 (50%). However, it should be noted that all of these camps still reported high rates of soap possession (between 80% and 95%). The most commonly reported problems included insufficient provision of soap in distributions (18%), and soap being too expensive (17%). Notably, nearly half of assessed households in Camp 1W (49%) and Camp 10 (48%) reported soap being too expensive —significantly higher than in any other camp.

Map 7: Change in proportion of households reporting facing problems accessing soap, April vs. October



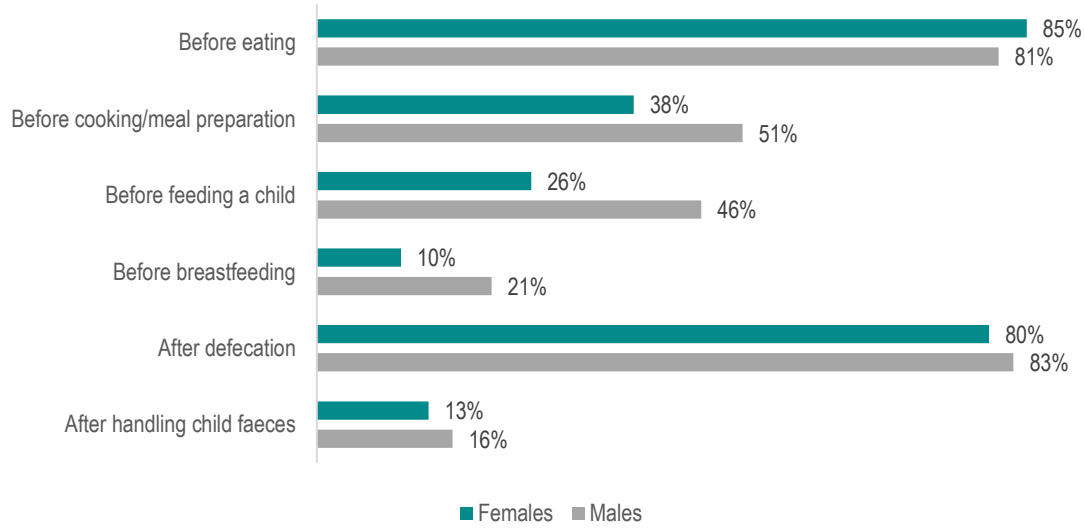
The follow-up survey included a new set of questions on handwashing practices. Firstly, respondents were asked to name the most important times when someone should wash their hands. To avoid bias, enumerators did not read out a list of options for this question.

Overall 46% of respondents were able to name at least three critical handwashing times.[65] Households were more likely to do so in Teknaf (54%) compared with Kutupalong (44%).[66] Males (55%) were able to name three critical times at a higher rate than females (34%). Concerningly, only 18% of respondents in Camp 16 and 21% in Camp 3 were able to name at least three critical times. Overall, the most commonly reported critical times were after defecation (81%) and before eating (83%). Response rates differed based on gender of respondents for some options: before feeding child (26% females, 46% males), before breastfeeding (10% females, 21% males). That males identified critical handwashing times more commonly than females may be explained by the fact that substantially higher proportions of males reported having participated in hygiene training or demonstrations (see hygiene training and demonstrations section). However, these findings suggest further research is required to understand why male respondents named washing hands at critical times – including before feeding and breastfeeding children - at higher rates than females.

[65] The "Joint Response Plan for Rohingya Humanitarian Crisis (March-October 2018)" included a target of 70% of targeted women, men, boy and girls able to demonstrate at least 3 critical hygiene practices. See: https://reliefweb.int/sites/reliefweb.int/files/resources/JRP%20for%20Rohingya%20Humanitarian%20Crisis%20-%20FOR%20DISTRIBUTION.PDF

[66] Global WASH Cluster standard: the six critical times when people should wash their hands are (1) before eating, (2) before cooking, (3) after defecation, (4) before breastfeeding, (5) before feeding children, (6) after handling a child's stool/changing a child's nappy/cleaning a child's bottom. See: https://washcluster.net/resources/imtk

Figure 12: Proportion of households identifying critical times when people should wash their hands[67]



On the question of how households wash their hands on a normal day, 92% of households reported using soap and water, 7% water only, and 1% water and ash. No major differences were recorded across camps or between gender of respondents.

Bathing facilities

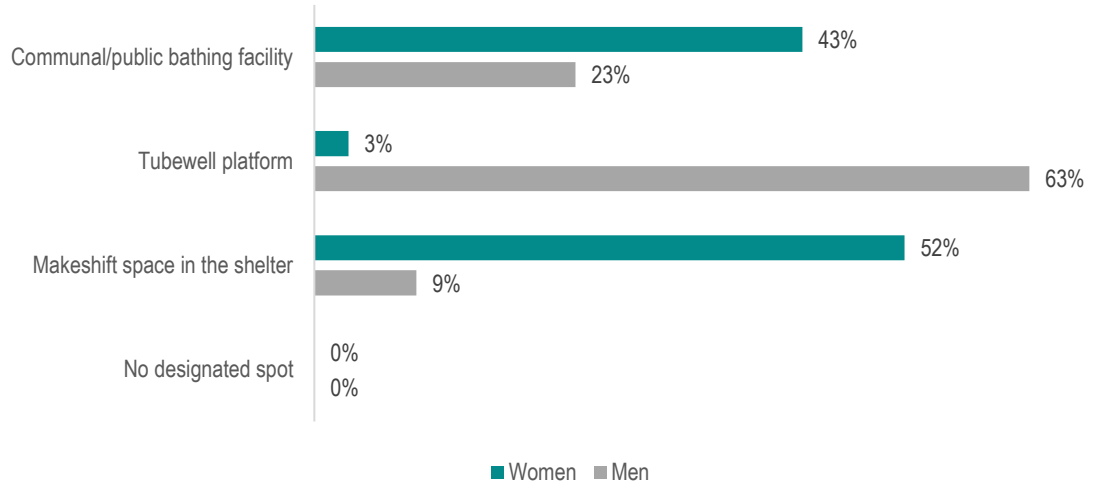
Significant differences in bathing practices between males and females were recorded, with women more commonly reported as bathing inside the household than men who are more commonly reported as using tubewells. Although bathing in the household may reduce women's protection concerns at public facilities, the high proportions of households reporting women bathing inside the household in some camps may require attention from the WASH Sector, to monitor the discharge of greywater to areas surrounding the camps.

The baseline survey asked where adult members regardless of gender usually go to bathe, whereas the follow-up survey asked where women and men go to bathe. Understanding gendered and geographical differences in bathing practices can inform programming that addresses issues of concern, especially household bathing facilities. Overall, 52% of households reported women using makeshift spaces in the shelter for bathing.[68] This was reported most commonly in Camp 8E (71%) and Camp 21 (70%). Although bathing inside the household may pose hygiene-related risks resulting from a discharge of grey water into nearby soil, potentially containing disease spreading organisms, it could be observed that this is an example of positive action taken by women to find their own solutions and feel more comfortable whilst bathing across the camps. In contrast, only 9% of households reported men using makeshift spaces in the shelter, with Nayapara RC an exception at 37%. Significant proportions of households also reported women and men using communal/public bathing facilities (43 and 23% respectively).

The broad majority of households reported that males (63%) bathe at tubewells, compared with only 3% that reported women do this. Generally, lower rates of women and men using communal/public bathing facilities was reported in the same camps. The only significant difference between the north and south applied to men: more households reported men using tubewells in Kutupalong (70%) compared with Teknaf (34%), whereas fewer households reported men using communal/public bathing facilities in Kutupalong (18%) compared with Teknaf (41%). This is likely related to there being more tubewells in Kutupalong than in Teknaf.

[67] Respondents could select more than one option.
[68] Follow-up data was analysed to determine whether there was a relationship between household-level water quantity and high rates of household members opting to bathe inside the households, however this yielded no direct relationship. As such, further triangulation of data is required to better understand whether households with a high number of individuals bathing inside are collecting higher quantities of water—particularly in context of findings pointing to high proportions of female members bathing inside the household.

Figure 13: Proportion of households reporting women and men bathing in different spaces



Enumerators then asked respondents how long it takes them to walk to/from the bathing facilities normally used. Overall, 76% reported the journey taking 5 minutes or less, and 24% reported it taking 10 minutes or longer. Unsurprisingly given the high number of women bathing within their households, female respondents generally reported taking shorter times to walk to and from bathing facilities.

Problems and safety

Households were asked whether women and men face problems with accessing bathing facilities, and if so what types of problems. Overall, 22% of households reported women facing problems[69]—particularly in Camp 1W (45%), Camp 3 (36%) and Camp 10 (36%). By contrast, only 5% of households reported men facing problems with accessing bathing facilities. The main problem faced by women was "too many people/too crowded," reported by 11% of households. There were no significant differences by either gender of respondent or between Ukhia and Teknaf for these questions.

There was no relationship observed between households that reported women bathing in makeshift spaces inside the shelter, and households that reported facing problems with accessing bathing facilities. However, this data does not provide sufficient evidence to understand why low rates of women are reporting problems. Focus group discussions are likely to assist in understanding the push factors behind women opting to bathe inside the shelter, and the impact this may be having on their levels of satisfaction and in terms of access to bathing facilities – an indicator of the dignity across the camps.

In the baseline survey households were asked which household members feel unsafe using bathing facilities. In the follow-up survey, households were first asked whether anyone feels unsafe using bathing facilities, followed by a question on which family members are likely to feel unsafe. Overall, 9% of households reported at least one family member feeling unsafe. Findings were generally consistent across the camps, with Camp 1W the only exception, where 34% reported at least one member feeling unsafe. In terms of family members, 6% of households reported adult females feeling unsafe, and 2% reported child females, elderly females or elderly males, with less than 1% reporting elderly males or child males feeling unsafe. However, it is possible that the initial question on whether anyone feels unsafe was misinterpreted, as indicated by the significantly low response rates for this indicator.[70]

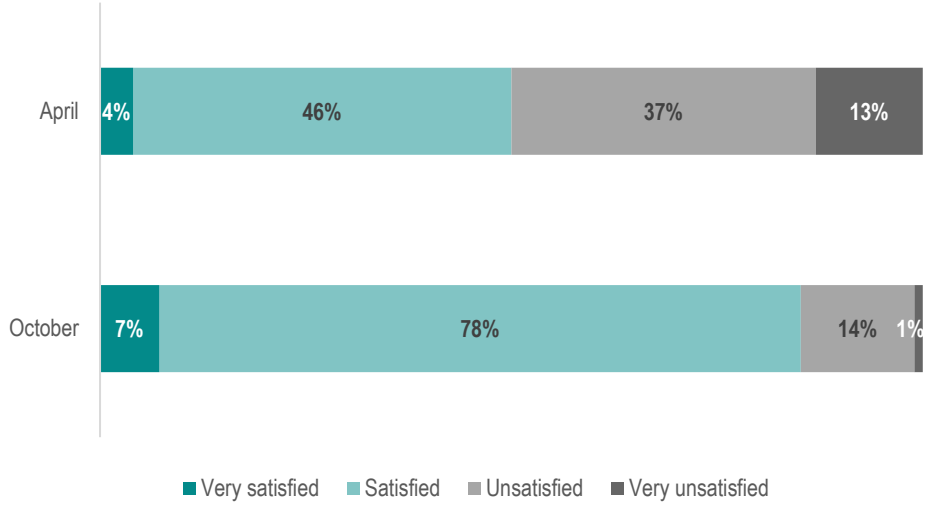
Satisfaction and perceived change to bathing access since before the monsoon season

As elsewhere in this report, a likert scale was used to assess household levels of satisfaction with access to bathing facilities, allowing collection of feedback on the WASH Sector's progress in delivering key sanitation services across

[69] That 53% of households reported women bathing inside the shelters likely affected the relatively low rate (22%) of households reporting women face problems with accessing bathing facilities.
[70] Responses did not differ between gender of respondents, suggesting there was an issue with interpretations of the question.

the response, as well as enabling comparison with baseline data. Overall, 7% of households reported being satisfied, 78% satisfied, 14% unsatisfied and 1% very unsatisfied. There were no significant differences between Kutupalong and Teknaf. Compared to April, a significantly higher proportion of households overall reported being satisfied or very satisfied (85% versus 50%).

Figure 14: Proportion of households reporting different levels of satisfaction with bathing facility access, April vs. October



In terms of perceptions of changes in access to bathing facilities since before the monsoon season, overall 3% reported it being much better, 41% better, 54% no change, and 2% worse. While there were only marginal differences between Kutupalong and Teknaf, there were several outliers: 63% of households reported bathing facility access being much better in Camp 9, whereas several camps included a significantly above-average proportion of households reporting there being no change: Camp 23 (Shamlapur) (73%), Camp 10 (71%), and Camp 1W (70%).

Laundry

Households were asked where they normally do their laundry. Overall, there was a relatively even spread of responses across three main spaces: tubewells (35%), communal/public bathing facilities (34%), and inside the shelters (31%). Camps where households most commonly do their laundry within the shelter were in Teknaf, including Nayapara RC at 79%, followed by Camp 24 at 53% and Camp 22 at 47%. Locations of doing laundry varied between north and south, with 27% of households reporting use of communal/bathing facilities in Kutupalong compared with 28% in Teknaf. Additionally, while 39% reported using tubewells for laundry purposes in Kutupalong, 12% reported this was the case in Teknaf. This aligns closely with findings outlined in the water section, showing that a higher proportion of households households have access to tubewells in Kutupalong than in Teknaf.

Menstrual hygiene management

The baseline survey yielded menstrual hygiene management findings that were indicative only due to the small number of women interviewed, and not generalizable to the population as a whole.[71] The follow-up survey sought to address this limitation by ensuring that a gender-balanced team of enumerators interviewed an equal number of male and female respondents. Of the 1,598 females interviewed, 1,139 consented[72] to participate in the menstrual hygiene section of the survey. It is important to note that although the follow-up survey resulted in a significantly larger amount of data relating to menstrual hygiene management, findings based on the responses of a subset of the sample population (in this case females only) have a lower confidence level and wider margin of error at the

[71] In the baseline survey questions on menstrual hygiene were only asked to females by female enumerators, with female and male enumerators able to interview respondents of any gender

[72] Of the 458 females that did not consent to participating in the menstrual hygiene section of the survey, 227 reported this was because they do not menstruate anymore, 125 reported no reason, and 119 reported they are pregnant

camp level. For this reason, camp-level findings for menstrual hygiene management are not reported on. However, overall findings as well as findings aggregated to Kutupalong and Teknaf are reported on, as a sufficient number of women were interviewed to produce findings that are representative to these areas.

Ensuring all women can access menstrual hygiene materials – and where necessary wash, dry and change reusable materials in a safe space – is critical in ensuring they are living in the camps with dignity. Accessing appropriate materials is also important to meeting women's basic health needs. Women are using reusable pads, pieces of cloth and disposable pads at relatively similar rates, with around a quarter of women facing problems accessing materials.

In terms of menstrual hygiene materials normally used, 57% of women reported reusable pads up from 31% in the baseline, 41% reported pieces of cloth down from 47%, and 35% reported disposable pads up from 25%, with only minimal differences between Kutupalong and Teknaf.[73][74]To determine whether women are using preferred types of materials, they were also asked if there are any types of materials they would prefer to use, apart from those already being used. The majority of women (54%) said they do not have a preferred type, 36% reported they would prefer using cloth, and 29% reported they would prefer reusable pads.

Significantly, only 15% of women reported accessing menstrual hygiene materials in hygiene kit distributions, whereas 82% reported that someone else provides them.[75] Twenty-six percent (26%) of women reported accessing them in markets, with a smaller proportion of women reporting this was the case in Kutupalong than in Teknaf (22% versus 45%).

Overall, 90% of the women that reported using reusable pads said that they wash and dry these materials. This group of women were also asked where they wash, dry and change the materials. Respondents overwhelmingly reported washing materials in the household (40% inside the household (without specifying an area within the household), 40% specifically in the household bathing facility). Similarly, 75% women reported drying materials in the household, with 13% reporting they dry them in the household bathing facility. In terms of where women change materials, 65% reported they do this in the household, and 34% reported in the household bathing facility.

Table 4: Proportion of women reporting washing, drying and changing menstrual hygiene materials in different spaces[76]

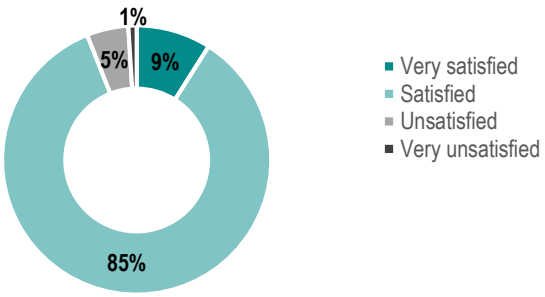
Spaces	Washing	Drying	Changing
In the household (area within the household not specified)	40%	75%	65%
In the household bathing facility	40%	13%	34%
In the communal bathing facility	13%	4%	10%
In the household latrine	1%	1%	3%
In the communal latrine	1%	0%	1%

Women most commonly reported disposing of menstrual hygiene materials by burying them (52%). Another 25% reported disposing of them inside a latrine, potentially increasing the likelihood of clogging, while 16% reported using a household pit. While women reported burying them or using a household pit at similar rates in Kutupalong and Teknaf, a lower proportion of women reported disposing of them inside a latrine in the north compared to the south (24% versus 35%).

[73] This was a multiple choice question with respondents able to select as many that apply, meaning the choices do not equal 100%.
[74] It should be noted that an insufficient number of females were interviewed in the baseline survey, meaning menstrual hygiene findings were indicative only and are not directly comparable with follow-up data for this indicator.
[75] Future household surveys will be designed to better understand the reasons behind the high response rate for "someone else provides them" for this indicator.
[76] Questions related to washing and drying menstrual hygiene materials were asked only if the female respondent reported using disposable pads or a piece of cloth. Respondents were able to select as many answers that applied for each question, meaning answers may not equal 100%.

Overall 31% of women reported facing problems with accessing menstrual hygiene materials. The most commonly reported problem was "preferred types are unavailable" (23%), followed by "too expensive" and "not enough provided in distributions" (both 12%).[77] When asked if the household had received any menstrual hygiene materials as part of a distribution in the 30 days prior to data collection, only 17% of women said this was the case—with a greater proportion responding this way in Kutupalong than in Teknaf (19% versus 6%). In terms of satisfaction with access to menstrual hygiene materials, 9% reported being very satisfied, 85% satisfied, 5% unsatisfied, and less than 1% very unsatisfied. Satisfaction levels were similar across Kutupalong and Teknaf.[78]

Figure 15: Proportion of women reporting different levels of satisfaction with access to menstrual hygiene materials



Hygiene distributions

The hygiene distribution section produced mixed results. A lower-than-expected proportion of households reported having received "full" hygiene kits, while a far greater proportion had received "top-up" kits. It should be noted that the following findings related to hygiene distributions should be read with a degree of caution, particularly in relation to high rates of households reporting having never received "full" kits. These results could be attributed to households misinterpreting the question or definitions used, forgetting the length of the recall period.

There are two main types of hygiene kits distributed across the camps.[79] This includes "full" hygiene kits containing a plastic bucket, an aluminium pitcher, a potty, and consumables such as bathing and laundry soap. These kits were provided to refugees upon arrival to the camps between August and December 2017. Separately, "top-up" kits contain mainly consumables such as soap, laundry powder, and toothbrushes. These smaller kits aim to replenish households' hygiene items every three months. As only the "full" kits contain water containers, to distinguish between the two types in the survey enumerators were trained to ask when households last received a hygiene kit containing a water container, followed by a separate question on when they last received a hygiene kit containing soap, laundry powder and toothbrushes.

Fifty-three per cent (53%) of households reported never receiving a "full" hygiene kit. In addition, 5% reported receiving one more than a year prior to data colelction, 10% in the previous year, 18% in the previous six months, 9% in the previous 3 months, and 4% in the previous month. While there was no major difference between Kutupalong and Teknaf, responses varied across the camps. Especially high proportions of households reported never receiving a "full" kit in Camp 23 (94%), Camp 11 (91%), Nayapara RC (90%), Camp 8E (87%), and Camp 20 (85%). By contrast, a high proportion of households reported receiving one in the previous year in Camp 21 (92%), Camp 5 (84%), Camp 2E and Camp 17 (both 81%). However, as "full" kits are provided upon arrival to the camps—which was around one year prior to data collection for most refugees, it is possible that respondents' ability to accurately recall receiving this type of kit varied.

[77] In the Joint Agency Research Report, female respondents within and surrounding the camps reported additional problems not captured in the REACH surveys, with key issues including shortages of water and areas for drying materials. Save the Children, and Action Against Hunger (August, 2018). 'Join Agency Research Report (JARR): Rohingya Refugee Response Gender Analysis: Recognizing and responding to gender inequalities": https://policy-practice.oxfam.org.uk/publications/rohingya-refugee-response-gender-analysis-recognizing-and-responding-to-gender-620528 p.23 (accessed 17 February, 2019).
[78] Further to footnote no. 71, the high rate of women reporting satisfaction with access to menstrual hygiene materials may be due to social desirability bias.
[79] See: Cox's Bazar WASH Sector Strategy (March – December 2018), pg. 20.

While results for households receiving a "top-up" kit were more positive overall, 24% of households still reported never receiving a "top-up" kit. Around a quarter (26%) of households reported receiving a "top-up" kit more than three months prior to data collection, 16% two months prior, 11% more than one month prior, 12% the previous month, 5% in the previous two weeks, and 5% in the previous week. Therefore, 50% of households overall reported receiving a "top-up" kit within the WASH Sector's three-month distribution cycle. There were no major differences between Kutupalong and Teknaf, or between gender of respondents.

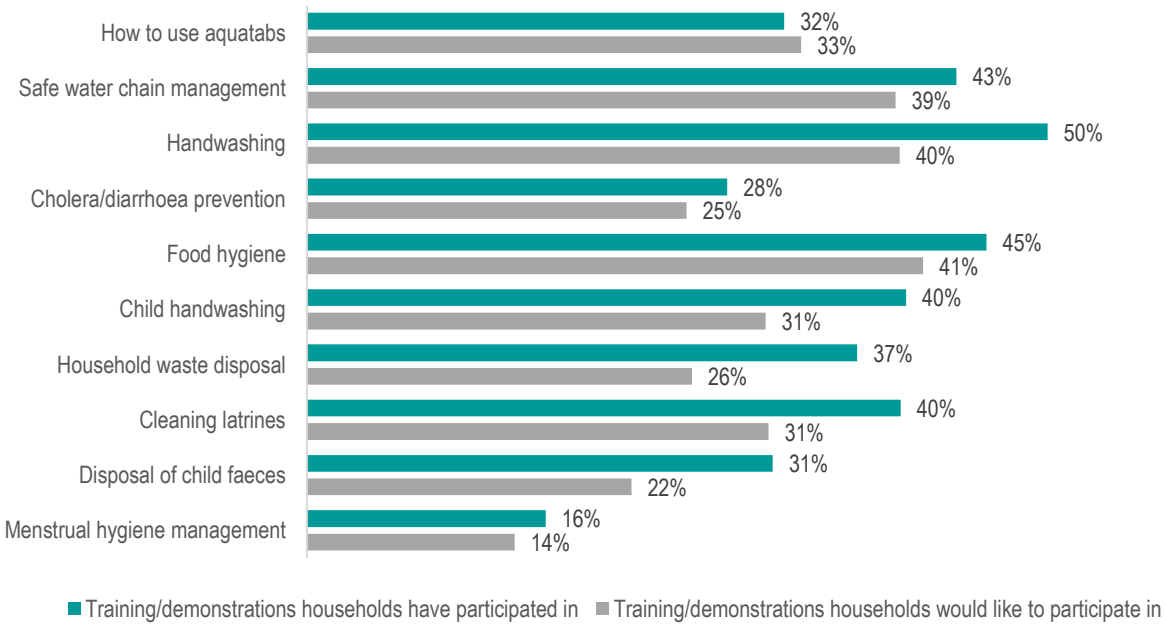
Hygiene training and demonstrations

A majority of respondents reported participating in at least one hygiene training or demonstration in the two weeks prior to data collection, with a similar number of households reporting they would like to participate in more. Men were more likely than women to have participated in training or demonstrations, with households residing in the Kutupalong-Balukhali site also more likely to have participated in them.

Overall, 53% of households reported participating in at least one hygiene training or demonstration in the two weeks prior to data collection. Participation rates were significantly below-average in Camp 1W (21%), Camp 8E (24%), Camp 15 (28%) and Camp 20 Extension (36%). By contrast, significantly above-average participation rates were reported in Camp 4 (73%), Camp 3 (71%) and Camp 1E (70%). While there were no major differences between Kutupalong and Teknaf, differences based on gender of respondent were significant: 62% of males reported household participation in at least one session, compared with 39% of females. Although the question was focused on household participation, these results suggest men may be more likely to participate in hygiene training or demonstrations compared with women – and that men may not share with women what they learn in training or demonstrations. Higher proportions of men than women reporting participation on hygiene training or demonstrations may also be linked to women in purdah being less confident or comfortable talking to strangers, especially when needing to recall participation in an activity such as in this context.

Figure 14 shows the varying participation rates for types of hygiene training or demonstrations. See Annex 3 for a full overview of camp-level data on rates of household participation in different hygiene trainings or demonstrations.

Figure 16: Proportion of households reporting different hygiene training or demonstrations that they have participated in and would like to participate in (respondents could select more than one option)



Respondents were also asked whether they would like to participate in more hygiene training or demonstrations. Overall, 58% of households said they would like to. The highest proportion of households reporting willingness to participate were found in Camp 16 (86%), Camp 8E (85%), Camp 10 (82%) and Camp 1W (81%). These camps were also included amongst the highest rates of participation in at least one hygiene training or demonstration. Households also reported wanting to participate in more training or demonstrations in Kutupalong than in Teknaf (61% versus 49%), and male respondents showed more of an interest than female respondents (77% versus 45%). The fact that a higher proportion of men than women reported participating in a training or demonstration may explain their higher level of willingness to participate in more training sessions than women: a person that has not participated in a training may not feel interested to participate in more, and vice versa. Overall, the most common types of training or demonstrations in which households expressed interest were food hygiene (41%), handwashing (40%) and safe water chain management (39%).

In terms of satisfaction with access to training and demonstrations, overall 14% were very satisfied, 72% satisfied, 11% unsatisfied, and 3% very unsatisfied.[80] The highest rates of dissatisfaction were reported in Camp 10 (39% unsatisfied or very unsatisfied) and Camp 1W (34%), whereas the highest rates of satisfaction were in Camp 6 and Camp 14 (100% very satisfied or satisfied), as well as in Camp 9 and Camp 18 (both 97%). Notably, Camp 1W and 8E were both found to have low rates of households participation in hygiene training/demonstrations, high rates of households wanting to participate in hygiene training/demonstrations, and lower satisfaction levels with access to hygiene training/demonstrations. There were no major differences in satisfaction levels between Kutupalong and Teknaf, or between genders of respondent.

Diarrhoea and cholera

Given the importance of refugees knowing how to prevent and recognise the causes of diarrhoea (especially during the monsoon season, as bacterial transmission is more likely in warm, damp weather), households were asked perception-based questions on this topic. These findings may be usable to determine priority areas for training or demonstrations on diarrhoea and cholera prevention—a key means of promoting hygienic practices to reduce health risks of households contracting either of these two conditions.

When asked how diarrhoea can be prevented, households most commonly reported washing hands with soap (90%), drink only clean water (74%), eat only safe food (72%), and use latrines (61%). On the question of what causes diarrhoea, households named dirty food (86%), dirty water (84%), dirty hands (60%), open defecation (44%) and germs (42%). Similar proportions of households reported knowing these diarrhoea prevention methods and causes across all camps. Female and male respondents also demonstrated a similar understanding of both diarrhoea prevention and causes.

Households were finally asked to identify symptoms of cholera/acute watery diarrhoea. Overall, the most commonly identified signs of cholera were watery stools (91%), stomach pain/cramps (48%), vomiting (42%), rapid dehydration (38%), and sunken eyes (36%). While no significant differences were recorded between Kutupalong and Teknaf, there were outliers in some camps. A low proportion of households identified vomiting as a symptom of cholera in Camp 18 (14%) and Camp 9 (23%). Similarly, significantly below-average proportions of households identified dehydration as a symptom in Camp 5 (19%) and Camp 13 (22%). Several camps also identified sunken eyes as a symptom at low levels in Camp 3 (17%), Camp 8E (13%), Camp 15 and Camp 16 (both 15%).

These findings demonstrate that refugees have a strong understanding of the causes of and ways to prevent diarrhoea, but this is not the case with cholera. Hygiene training and demonstrations is one effective way of addressing this knowledge gap across the camps – with the dry season in early 2019 an opportune time before the monsoon season starts.

[80] The "Joint Response Plan for Rohingya Humanitarian Crisis (March-October 2018)" included a target of 70% of targeted women, men, girls and boys including older people and those with disabilities who are satisfied with the WASH response. See: https://reliefweb.int/sites/reliefweb.int/files/resources/JRP%20for%20Rohingya%20Humanitarian%20Crisis%20-%20FOR%20DISTRIBUTION.PDF

ACAPS severity analysis: hygiene findings

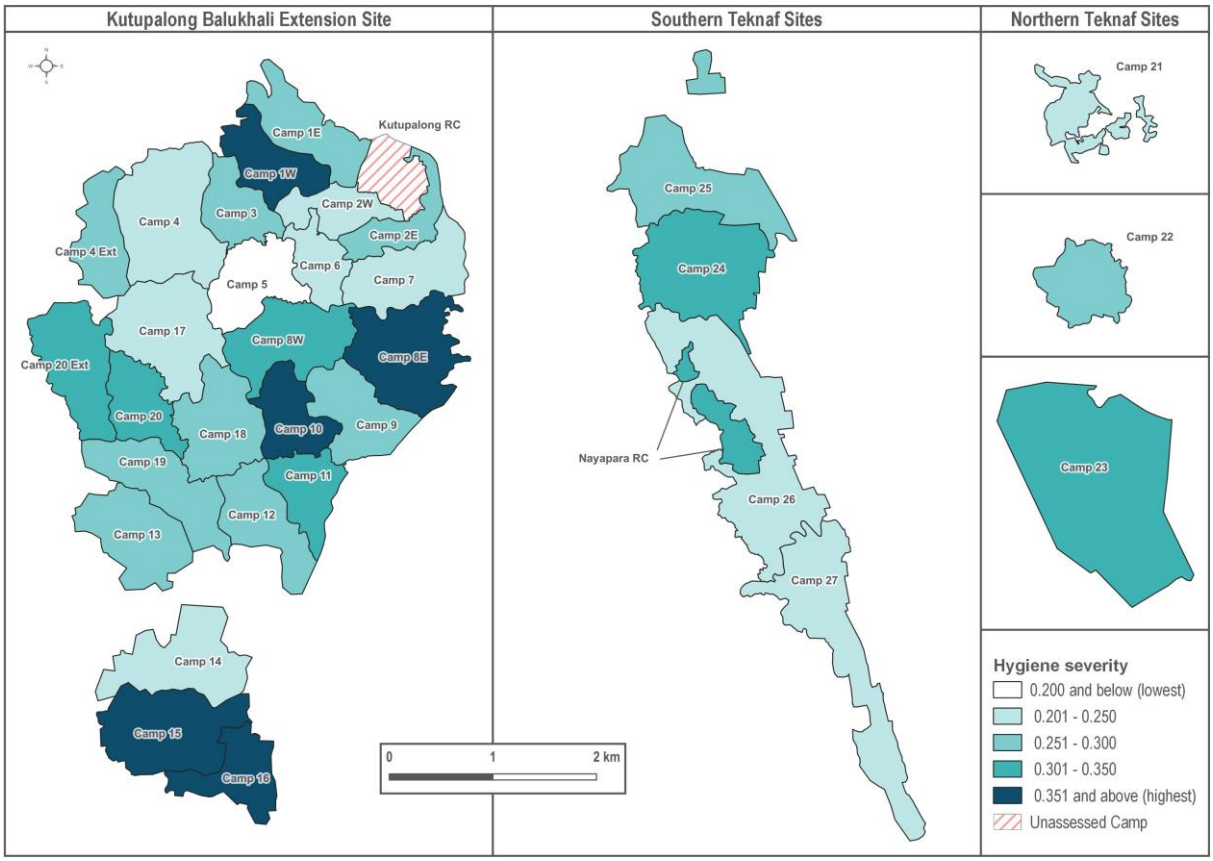
According to the Hygiene Severity Sub-Index, across 33 camps, only 0.13% of households (1,447 people) fall into Category 5 (very high severity) for hygiene needs. A further 1.97% of households (17,400 people) fall into Category 4 (high severity), and 18.78% (168,556 people) fall into Category 3 (moderate severity). Those in Categories 3, 4 and 5 are unable to identify critical handwashing times, have not received hygiene kits or participated in hygiene training, reported using unsafe methods for disposing of child faeces, do not have soap, and reported problems accessing bathing facilities for men and women, long travel times to reach bathing facilities and feeling unsafe in bathing facilities.

Table 5: Hygiene needs severity ranking

Category	Hygiene needs severity ranking	% households per category	# households per category	# people per category
1 – Very low severity	% of households with hygiene index value less than 0.2	29.53%	58,229	252,150
2 – Low severity	% of households with hygiene index value between 0.2 and <0.4	49.59%	98,444	426,295
3 – Moderate severity	% of households with hygiene index value between 0.4 and <0.6	18.78%	38,925	168,556
4 – High severity	% of households with hygiene index value between 0.6 and <0.8	1.97%	4,018	17,400
5 – Very high severity	% of households with hygiene index value greater than or equal to 0.8	0.13%	334	1,447

The following hygiene needs severity map includes five intervals, showing camps with the highest (in dark blue) to lowest (in white) mean needs severity index ranking for hygiene. A Jenks natural breaks method was employed and adapted based on the spread of mean index rankings, allocating values into the five different classes. As displayed, camps with the highest mean hygiene needs severity rankings included Camp 8E (with a mean needs severity ranking of .4230), Camp 10 (.3678), Camp 15 (.3666), Camp 1W (.3545), and Camp 16 (.3510) – all in the Kutupalong-Balukhali Extension site.

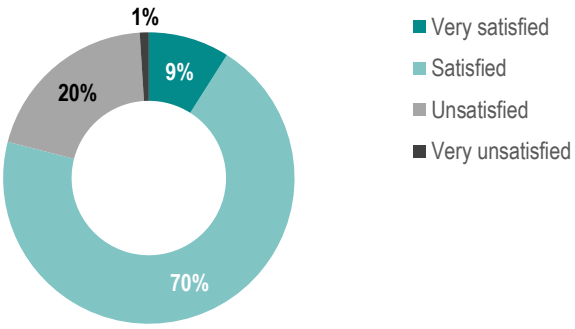
Map 8: Hygiene needs severity



Overall satisfaction

The final question in the survey asked about households' level of satisfaction with water, sanitation and hygiene conditions. Overall, 9% of households said they were very satisfied, 70% satisfied, 20% unsatisfied, and 1% very unsatisfied.[81] There was no major difference between camps, or between gender of respondents.

Figure 17: Proportion of households reporting overall satisfaction levels with water, sanitation and hygiene across the camps



[81] The "Joint Response Plan for Rohingya Humanitarian Crisis (March-October 2018)" included a target of 80% of men women, men, girls and boys including older people and those with disabilities to be satisfied with the WASH response. See: https://reliefweb.int/sites/reliefweb.int/files/resources/JRP%20for%20Rohingya%20Humanitarian%20Crisis%20-%20FOR%20DISTRIBUTION.PDF

ACAPS severity analysis: combined findings (water, sanitation and hygiene)

According to the overall WASH Severity Index, a combination of all three water, sanitation and hygiene sub-indices, across 33 camps, no households fall into Category 5 (very high severity) of WASH needs. This is because a cross sub-sector threshold is applied, meaning households need to be in high needs categories across all indices in order to be considered in Category 4 or 5 in the overall severity index. Despite a number of camps having a portion of the population falling into Category 5 in each of the sub-indices of water, sanitation and hygiene, no camp has a household that falls into Category 5 in every sub-index. Therefore, no household, and no proportion of the population, falls into Category 5 overall.

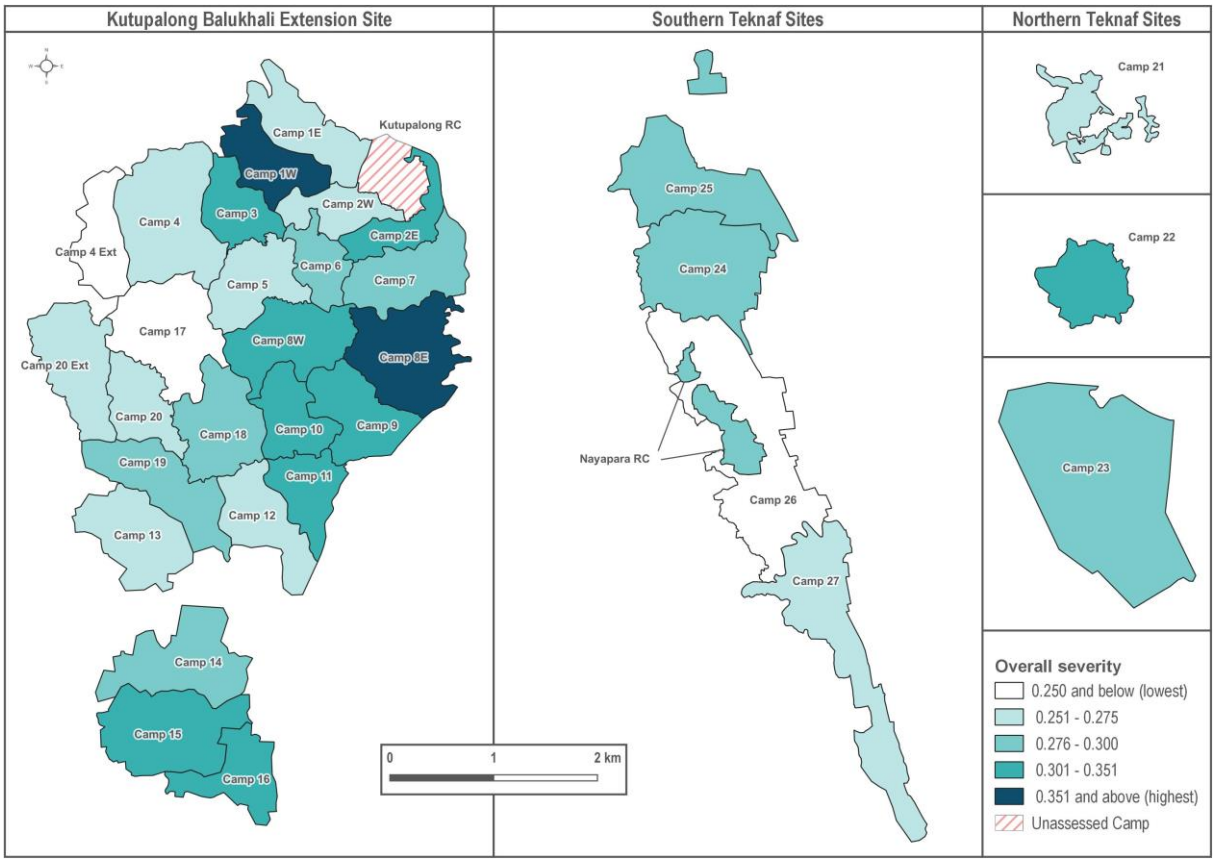
However, this does not mean that WASH needs are not severe in many camps. Overall, 1.23% of households, accounting for 12,625 people, fall into Category 4 (high severity) of WASH needs, and 25.22%, accounting for 227,615 people, fall into Category 3 (moderate severity). It is also important to stress that the index values, and therefore the categories of severity, are relative, not absolute. A household is ranked at a certain level of the index relative to the levels of other surveyed households. This means that those in Category 1 (very low severity) are experiencing low severity in their WASH needs relative to other refugees. It does not mean that their total WASH needs are met, or that they can sustain their WASH needs without continued humanitarian assistance.

Table 6: Overall WASH needs severity ranking

Category	Overall WASH needs severity ranking	% households per category	# households per category	# people per category
1 – Very low severity	% of households with WASH index value less than 0.2	23.35%	21,341	92,412
2 – Low severity	% of households with WASH index value between 0.2 to <0.4	58.97%	123,131	533,196
3 – Moderate severity	% of households with WASH index value 0.4 to <0.6	16.45%	52,563	227,615
4 – High severity	% of households with WASH index value 0.6 to <0.8	1.23%	2,916	12,625
5 – Very high severity	% of households with WASH index value above or equal to 0.8	0%	0	0

The following overall WASH needs severity map includes five intervals, showing camps with the highest (in dark blue) to lowest (in white) mean severity index ranking for overall WASH needs. A Jenks natural breaks method was employed and adapted based on the spread of mean index rankings, allocating values into the five different classes. As displayed, camps with the highest mean needs severity index ranking included Camp 1W (with a mean needs severity ranking of .3763) and Camp 8E (.3543) – both in the Kutupalong-Balukhali extension site.

Map 9: Overall WASH needs severity



CONCLUSION

In April 2018, REACH implemented a baseline WASH household survey on behalf of the Cox's Bazar WASH Sector as the Rohingya refugee response in Cox's Bazar was transitioning from an acute emergency phase to a more stable and potentially protracted crisis. Baseline findings highlighted significant progress made during the first phase of the response, demonstrated by 99% of households reporting use of improved water sources and latrines in the initial phase of the response. These positive findings were countered by concerningly high levels of households reporting problems related to the accessibility and quality of WASH infrastructure, as well as low rates of accessing essential hygiene items such a soap and aquatabs – particularly in camps in southern Teknaf.

Between April and October 2018, the response focused on mitigating the impact of the monsoon season on the Rohingya community living in the camps, with the WASH Sector coordinating large-scale decommissioning, replacement and improvements of WASH infrastructure built in the early stages of the crisis. The WASH Sector also focused on improving the reach of essential services such as hygiene distributions and hygiene training and demonstrations. Compared to the April baseline, this follow-up assessment highlights significant improvements in the WASH conditions and perceptions experienced by the Rohingya community—particularly in southern Teknaf on indicators linked to accessing essential WASH facilities. However, follow-up findings also highlight key areas where the WASH Sector is falling short of meeting its 2018 targets, both across the response and within specific camps.

For water, use of unimproved water sources remains largely concentrated in Teknaf, while the problems of waiting times and overcrowding at waterpoints persist in the more densely populated Kutupalong-Balukhali site. In terms of sanitation, overcrowding at latrines remains a major challenge for males and females – while high rates of households reporting family members using self-made latrines in some camps warrants attention. Regarding hygiene, ongoing issues include concerningly high rates of household members (particularly women) using makeshift spaces in the shelter for bathing, while some camps included equally concerningly low rates of soap possession.

Together, findings from the April and October assessments provide a significant amount of information at the household level – including how WASH conditions and perceptions changed from before and during the monsoon season. However, limitations of these quantitative assessments mean that information gaps remain, which should be addressed to provide a better evidence base and inform WASH programming across refugee camps in Cox's Bazar. The following activities are recommended to assist in this process:

- Incorporate qualitive elements in future WASH household assessments, with a particular emphasis on understanding the lived experience of women, girls, elderly people, and people living with disabilities across the camps.
- In order to mitigate potential recall issues around attempting to monitor distributions through low-frequency, strategically-focused WASH assessments such as this study, develop more focused qualitative/quantitative post-distribution monitoring tools, to be standardised in collaboration with the WASH Sector, and to be implemented within one month of each distribution cycle according to a consistent methodology. This will ensure findings are operationally useful and relevant in strengthening accountability across the response.

A third household assessment is scheduled for April/May 2019, to ensure information remains relevant and up-to-date, and in particular to assess how far improvements documented in this study are sustained during the dry season. This will build on the initial two assessments, involving continued collaboration with the WASH Sector in designing the survey, to ensure data provides a strong evidence-base to inform humanitarian programming throughout 2019.

ANNEXES

Annex 1: List of assessed camps

Area	Camp Name	# Families (UNHCR Family Counting Datasets)	Sample
Kutupalong-Balukhali Extension	Camp 1E	9,122	105
	Camp 1W	9,381	117
	Camp 2E	6,900	107
	Camp 2W	5,725	104
	Camp 3	9,118	116
	Camp 4	7,490	111
	Camp 4 Extension*	602	97
	Camp 5	6,054	106
	Camp 6	5,762	116
	Camp 7	9,188	113
	Camp 8E	7,624	102
	Camp 8W	7,563	116
	Camp 9	8,642	117
	Camp 10	7,710	127
	Camp 11	7,331	113
	Camp 12	4,855	99
	Camp 13	9,538	112
	Camp 14	6,843	117
	Camp 15	11,145	116
	Camp 16	4,828	114
	Camp 17	3,458	112
	Camp 18	6,799	116
	Camp 19	4,633	115
	Camp 20	1,136	95
	Camp 20 Extension*	817	99
Northern Teknaf	Camp 21	3,001	115
	Camp 22	4,592	94
	Camp 23	2,642	95
Southern Teknaf	Camp 24	7,804	96
	Camp 25	2,185	108
	Camp 26	9,776	97
	Camp 27	2,891	97
	Nayapara RC	5,734	98
	Total	**200,889**	**3,562**

Annex 2: Household questionnaire

No.	Question	Choices
1.	Camp name	• Camp 1E • Camp 1W • Camp 2E • Camp 2W • Camp 3 • Camp 4 • Camp 4 Extension • Camp 5 • Camp 6 • Camp 7 • Camp 8E • Camp 8W • Camp 9 • Camp 10 • Camp 11 • Camp 12 • Camp 13 • Camp 14 • Camp 15 • Camp 16 • Camp 17 • Camp 18 • Camp 19 • Camp 20 • Camp 20 Extension • Camp 21 • Camp 22 • Camp 23 • Camp 24 • Camp 25 • Camp 26 • Camp 27 • Kutupalong RC • Nayapara RC
2.	Gender of enumerator	• Male • Female
3.	Enumerator ID #	
4.	Hello my name is _____. I work for REACH. Together with UNICEF, we are currently conducting a survey to understand the needs of refugees from Myanmar relating to water, sanitation and hygiene. We would like to know more about the needs of your family and to what services you have access. We also may ask you a few questions about yourself personally and members of your household. The survey usually takes around an hour. Any information that you provide will be kept anonymous. This is voluntary and you can choose not to answer any or all of the questions if you want; you may also choose to quit at any point. Participation in the survey does not have any impact on	

No.	Question	Choices
	whether you or your family receive assistance. However, we hope that you will participate since your views are important. Do you have any questions?	
5.	Based on what I have told you, do you consent to participate in this interview?	• Yes • No
6.	Please note that respondents must be at least 18 years old to partake in this survey. How are old are you?	*Integer entry* [If respondent is under 18, survey discontinues]
7.	Gender of respondent	[If enumerator is male, the respondent must be male] • Male • Female
8.	Is the respondent the head of this household?	• Yes • No
9.	If no, what is the gender of the head of household?	• Male • Female
10.	Including yourself, how many people live in this household?	*Integer entry*
Repeat questions for each individual in HH		
11.	Age	*Integer entry*
12.	Gender	• Male • Female
13.	Does this person have a disability or chronic illness that affects their ability to do everyday tasks?	• Yes • No • Don't know
14.	Has this person had diarrhea in the last 2 weeks?	• Yes • No • Don't know
15.	If yes, what did you do? *Read out answers; select as many as apply*	• Take oral rehydration • Take medicine • Go to pharmacy • Go to health facility • Go to traditional healer • Pray • Other
End of repeat group		
Water		
16.	What is the primary source of drinking water for your household? *Read out answers; select only one answer*	• Piped water tap/ tapstand into settlement site • Tubewells/borehole/handpump • Protected dugwell • Protected spring • Rainwater collection • Bottled water • Cart with small tank or drum • Tanker truck • Unprotected dug well • Unprotected spring • Surface water (river, dam, lake, pond, stream canal, irrigation canals) • Do not know • Other
17.	Do you use a secondary or other sources for drinking water?	• Yes • No

No.	Question	Choices
18.	If yes, what are the secondary/other sources of drinking water? *Read out answers; select as many as apply*	• Piped water tap/ tapstand into settlement site • Tubewells/borehole/handpump • Protected dugwell • Protected spring • Rainwater collection • Bottled water • Cart with small tank or drum • Tanker truck • Unprotected dug well • Unprotected spring • Surface water (river, dam, lake, pond, stream canal, irrigation canals) • Do not know • Other
19.	What water sources does your household use for other purposes, such as cooking and cleaning? *Read out answers; select as many as apply*	• Piped water tap/ tapstand into settlement site; • Tubewells/borehole/handpump • Protected dugwell • Protected spring • Rainwater collection • Bottled water • Cart with small tank or drum • Tanker truck • Unprotected dug well • Unprotected spring • Surface water (river, dam, lake, pond, stream canal, irrigation canals) • Do not know • Other
20.	Who normally collects water for the household? *Read out answers; select only one*	• Adult male • Adult female • Child male • Child female • A neighbour helps • Other
21.	Does your household face problems collecting water?	• Yes • No
22.	If yes, what are the problems? *Read out answers; select as many as apply*	• Long wait times (queue) at the source • Water source is too far • Path to water source is too steep • The source is only available some times of the day (trucking, water rationing, poor aquifer) • Going to the source/collecting water is dangerous • Water tastes bad • Water smells bad • Water does not look clean (i.e. yellow colour) Other
23.	How is your access to water now compared to before the rainy season started? *Do not prompt; select only one answer*	• Much better • Better • No change • Worse • Much worse

No.	Question	Choices
24.	How satisfied are you with access to drinking water? *Read out answers; select only one answer*	• Very satisfied • Satisfied • Unsatisfied • Very unsatisfied
25.	How long does it normally take to walk to and from the water source you normally use? (approximately) *Read out answers; select only one answer*	• 5 minutes or less • 10 minutes • 15 minutes • 20 minutes • 30 minutes • More than 30 minutes
26.	How long does it normally take to collect water (including waiting time/queuing) at the water source you normally use? (approximately) *Read out answers; select only one answer*	• 5 minutes or less • 10 minutes • 15 minutes • 20 minutes • 30 minutes • 1 hour • More than 1 hour • Other
Start of repeat group *Ask to see all the containers the household used to collect water yesterday.* *For each container, ask the following set of questions*		
27.	What type of container is this?	*Select from list of images of common containers*
28.	For all containers, measure height [inches]	*Integer - Measure height*
29.	For all containers, measure width at widest point [inches]	*Integer - Measure width*
30.	Is this container covered / protected (i.e. with a lid, plastic, plate)?	• Yes • No
31.	Does the container appear to be clean?	• Yes • No
32.	Is this container used to store water for drinking, water for other uses, or both? *Read out answers; select only one answer*	• Drinking water storage • Non-drinking water storage • Both
33.	How many times did your household collect water with this container yesterday?	*Integer entry*
End of repeat group		
Start of repeat group *Ask to see any additional containers the household uses to store water in the household.*		
34.	Do you have any other containers to store water in the household?	• Yes • No • Don't know
35.	If yes, what type of container is this?	*Select from list of images of common containers*
36.	Measure height [inches]	*Integer – measure height*
37.	Measure width at widest point [inches]	*Integer - measure width*
38.	Is this container covered with a lid?	• Yes • No
39.	Does this container appear to be clean?	• Yes • No

No.	Question	Choices
40.	Is this container used to store water for drinking, water for other uses, or both? *Read out answers; select only one answer*	• Drinking water storage • Non-drinking water storage • Both
41.	If drinking water storage selected, ask to test the container for residual chlorine May I take a sample of the water in the container to test for chlorine?	• Yes • No
42.	If yes, test for residual chlorine Free Chlorine Residual (mg/L)	• *Integer entry (mg/L)*
End of repeat group		
43.	How long do you normally store water within your household? *Read out answers; select only one answer*	• Less than one day • 1-2 days • 3-4 days • 5 days or more
44.	In the past month, have there been times when your household could not access enough drinking water?	• Yes • No
45.	If yes, what type of coping strategies did you use to deal with this? *Read out answers; select as many as apply*	• Rely on less preferred and unimproved/untreated water sources for drinking water • Rely on surface water for drinking water • Rely on less preferred and unimproved/untreated water sources for other purposes such as cooking and washing • Rely on surface water for other purposes such as cooking and washing • Fetch water at a source further than the usual one • Send children to fetch water • Fetch water at a source that could be dangerous • Other
46.	Does your household normally treat water before drinking?	• Yes • No
47.	If yes, how often? *Read out answers; select only one answer*	• Always • Often • Sometimes • Never • Don't know
48.	If yes, which methods do you use? *Read out answers; select as many as apply*	• Aquatabs • PUR sachets • Boiling • Cloth filters • Household filters • Leave bottled water in the sun (solar disinfection) • Other

No.	Question	Choices
49.	[If aqua-tabs not selected at q41] Why don't you use water purification tablets (aqua-tabs)? *Do not prompt; select as many as apply*	• Don't know about aqua-tabs • Never received aqua-tabs • Don't know how to use aqua-tabs • Supply of aqua-tabs ran out • Tastes bad • Smells bad • Bad for health • Using aqua-tabs occasionally is sufficient • Forgot to use • Unsafe for pregnant women • Unsafe for children • Water from piped tapstand is already chlorinated • Other
Sanitation		
50.	Where do adult men (excluding children under 5) normally go to defecate? *Read out answers; select only one answer*	• Single household latrine • Shared household latrine • Self-made household toilet • Communal/public latrine • Open defecation • Plastic bag • Bucket toilet • Other
51.	Where is the space located?	• Attached to the household • Inside the household • Communal area • Other
52.	Where do adult women (excluding children under 5) normally go to defecate? *Read out answers; select only one answer*	• Single household latrine • Shared household latrine • Add Self-made household toilet • Communal/public latrine • Open defecation • Plastic bag • Bucket toilet • Other
53.	Where is this space located?	• Attached to the household • Inside the household • Communal area • Other
54.	Where do children under 5 from this household normally go to defecate? *Read out answers; select as many as apply*	• Single household latrine • Shared household latrine • Self-made household latrine • Communal/public latrine • Makeshift spaces attached to shelter • Open defecation • Plastic bag • Bucket toilet • At facilities (eg. school, health clinic) • Other
55.	Where is this space located?	• Attached to the household • Inside the household • Communal area • Other

No.	Question	Choices
56.	How long does it take to walk to and from the latrine you normally use? (approximately) *Read out answers; select only one answer*	• 5 minutes • 10 minutes • 15 minutes • 20 minutes • 30 minutes • More than 30 minutes
57.	Did the latrine you normally use have soap the last time you used it? *Read out answers; select only one answer*	• Yes • No • Don't know
58.	Do women have problems with accessing latrines?	• Yes • No
59.	If yes, what are the problems? *Do not prompt; select as many as apply*	• Latrine is too far away • Too many people using latrines • Latrine is not clean • Insufficient water at the latrines • Latrine is full • Bad smell/many flies • Open defecation around latrines • Not private (i.e. people can see inside) • No separation between men and women • Route to the latrine is not safe • Latrine is not safe • No lighting • There are ghosts • Animal attacks • Other
60.	Do men have problems with accessing latrines?	• Yes • No
61.	If yes, what are the problems? (Baseline) *Do not prompt; select as many as apply*	• Latrine is too far away • Too many people using latrines • Latrine is not clean • Insufficient water at the latrines • Latrine is full • Bad smell/many flies • Open defecation around latrines • Not private • No separation between men and women • Route to the latrine is not safe • Latrine is not safe • No lighting • There are ghosts • Animal attacks • Other
62.	How is access to latrines now compared to before the rainy season? *Read out answers; select only one answer*	• Much better • Better • No change • Worse • Much worse
63.	Does anyone from your household feel unsafe using latrines?	• Yes • No
64.	If yes, which family members? *Read out answers; select as many as apply*	• Adult male • Adult female • Elderly male • Elderly female

No.	Question	Choices
		• Child male • Child female • Unsure • Other
65.	How satisfied are you with your access to latrines? *Read out answers; select only one answer*	• Very satisfied • Satisfied • Unsatisfied • Very unsatisfied
66.	If there are children under 5 who don't use the latrine what is done with their faeces? *Read out answers; select maximum 3*	• Open defecation • Collected, rinsed and disposed in latrine • Collected and put in latrine (not rinsed) • Collected and disposed in an open area • Collected and disposed inside the shelter • Disposed with other garbage • Buried it • Other
67.	Where does your household normally dispose of domestic waste? *Read out answers; select maximum 2*	• Household pit • Communal pit • Bin in the households/Streets • Designated open area • Undesignated open area • Bury it • Burned • Other
68.	How frequently do you find domestic waste in the vicinity of your household (30 meters or less)? *Read out answers; select only one answer*	• Always • Often • Sometimes • Never • Don't know
69.	Who is normally responsible for disposing of solid waste within your household? *Read out answers; select only one answer*	• Adult male • Adult female • Elderly male • Elderly female • Child male • Child female • Unsure/ • Other
70.	How satisfied are you with the solid waste management system in your block? *Read out answers; select only one answer*	• Very satisfied • Satisfied • Unsatisfied • Very unsatisfied
71.	How frequently do you find visible faeces in the vicinity of your household (30 meters or less)? *Read out answers; select only one answer*	• Always • Often • Sometimes • Never • Don't know
72.	How frequently do you find domestic waste in the vicinity of your household (30 meters or less)? *Read out answers; select only one answer*	• Always • Often • Sometimes • Never • Don't know

No.	Question	Choices
73.	Following heavy rain, does water gather around your household?	• Yes • No
74.	[If Reusable pad selected at question 92] If these materials are reusable, are they washed and dried?	• Yes • No
75.	[If Reusable pad selected at question 92] Where do you wash disposable materials? *Read out answers; select only one answer*	• Inside shelter • Inside the latrine • Outside shelter • Prefer not to say • Other
76.	[If Reusable pad selected at question 91] Where do you dry disposable materials? *Read out answers; select only one answer*	• Inside shelter • Outside shelter • Prefer not to say • Other
77.	Where do you normally change your menstrual hygiene materials? *Read out answers; select only one answer*	• In the household • In the household latrin • In the communal latrine • In the household bathing facility • In the communal bathing facility; • Other
78.	Do you face challenges with accessing menstrual hygiene materials?	• Yes • No
79.	If yes, what challenges do you face? *Do not prompt; select as many as apply*	• Not enough materials provided in distributions • Not enough available in markets • Preferred types not available • Too expensive • Other needs are prioritized • Other
80.	Apart from the materials you are using, are there any other types of menstrual hygiene management materials you would prefer to use? *Read out answers; select as many as apply*	• Disposable pad • Reusable pad • Piece of cloth • Tampon • Other • None
81.	In the past 30 days, has your household received any menstrual hygiene materials as part of a distribution?	• Yes • No • Don't know
82.	How satisfied are you with your access to menstrual hygiene materials? *Read out answers; select only one answer*	• Very satisfied • Satisfied • Unsatisfied • Very unsatisfied
83.	When did your household last receive a hygiene kit? *Read out answers; select only one answer*	• This week • In the last month • More than one month ago • More than 2 months ago • More than 3 months ago
84.	Has your household participated in any hygiene training or demonstrations in the past 2 weeks?	• Yes • No
85.	If yes, what was the topic(s)? *Read out answers; select as many as apply*	• Use of aqua-tabs • Safe water chain (collection, transport, storage and handling) • Hand washing with soap (how and when)

No.	Question	Choices
		• Cholera/Acute Watery Diarrhea • Food Hygiene • Child handwashing • Disposal of household waste • Cleaning latrines • Disposal of child faeces • Menstrual hygiene management • Domestic waste management • Other • None
86.	Would your household like to participate in more training sessions or demonstrations?	• Yes • No
87.	What types of hygiene promotion training sessions or demonstrations would you like to receive? *Read out answers; select as many as apply*	• Use of aqua-tabs • Safe water chain (collection, transport, storage and handling) • Hand washing with soap (how and when) • Cholera/Acute Watery Diarrhea • Food Hygiene • Child handwashing • Disposal of household waste • Cleaning latrines • Disposal of child faeces • Menstrual hygiene management • Domestic waste management • Other • None
88.	How satisfied are you with your access to hygiene training and demonstrations? *Read out answers; select only one answer*	• Very satisfied • Satisfied • Unsatisfied • Very unsatisfied
89.	[If Reusable pad selected at question 92] If these materials are reusable, are they washed and dried?	• Yes • No
90.	[If Reusable pad selected at question 92] Where do you wash disposable materials? *Read out answers; select only one answer*	• Inside shelter • Inside the latrine • Outside shelter • Prefer not to say • Other
91.	[If Reusable pad selected at question 91] Where do you dry disposable materials? *Read out answers; select only one answer*	• Inside shelter • Outside shelter • Prefer not to say • Other
92.	Where do you normally change your menstrual hygiene materials? *Read out answers; select only one answer*	• In the household • In the household latrin • In the communal latrine • In the household bathing facility • In the communal bathing facility; • Other
93.	Do you face challenges with accessing menstrual hygiene materials?	• Yes • No
94.	If yes, what challenges do you face? *Do not prompt; select as many as apply*	• Not enough materials provided in distributions • Not enough available in markets • Preferred types not available • Too expensive

No.	Question	Choices
		• Other needs are prioritized • Other
95.	Apart from the materials you are using, are there any other types of menstrual hygiene management materials you would prefer to use? *Read out answers; select as many as apply*	• Disposable pad • Reusable pad • Piece of cloth • Tampon • Other • None
96.	In the past 30 days, has your household received any menstrual hygiene materials as part of a distribution?	• Yes • No • Don't know
97. '	How satisfied are you with your access to menstrual hygiene materials? *Read out answers; select only one answer*	• Very satisfied • Satisfied • Unsatisfied • Very unsatisfied
98.	When did your household last receive a hygiene kit? *Read out answers; select only one answer*	• This week • In the last month • More than one month ago • More than 2 months ago • More than 3 months ago
99.	Has your household participated in any hygiene training or demonstrations in the past 2 weeks?	• Yes • No
100.	If yes, what was the topic(s)? *Read out answers; select as many as apply*	• Use of aqua-tabs • Safe water chain (collection, transport, storage and handling) • Hand washing with soap (how and when) • Cholera/Acute Watery Diarrhea • Food Hygiene • Child handwashing • Disposal of household waste • Cleaning latrines • Disposal of child faeces • Menstrual hygiene management • Domestic waste management • Other • None
101.	Would your household like to participate in more training sessions or demonstrations?	• Yes • No
102.	What types of hygiene promotion training sessions or demonstrations would you like to receive? *Read out answers; select as many as apply*	• Use of aqua-tabs • Safe water chain (collection, transport, storage and handling) • Hand washing with soap (how and when) • Cholera/Acute Watery Diarrhea • Food Hygiene • Child handwashing • Disposal of household waste • Cleaning latrines • Disposal of child faeces • Menstrual hygiene management • Domestic waste management • Other • None
103.	How satisfied are you with your access to hygiene training and demonstrations?	• Very satisfied • Satisfied

No.	Question	Choices
	Read out answers; select only one answer	• Unsatisfied • Very unsatisfied
104.	[If Reusable pad selected at question 92] If these materials are reusable, are they washed and dried?	• Yes • No
105.	[If Reusable pad selected at question 92] Where do you wash disposable materials? *Read out answers; select only one answer*	• Inside shelter • Inside the latrine • Outside shelter • Prefer not to say • Other
106.	[If Reusable pad selected at question 91] Where do you dry disposable materials? *Read out answers; select only one answer*	• Inside shelter • Outside shelter • Prefer not to say • Other
107.	Where do you normally change your menstrual hygiene materials? *Read out answers; select only one answer*	• In the household • In the household latrin • In the communal latrine • In the household bathing facility • In the communal bathing facility; • Other
108.	Do you face challenges with accessing menstrual hygiene materials?	• Yes • No
109.	If yes, what challenges do you face? *Do not prompt; select as many as apply*	• Not enough materials provided in distributions • Not enough available in markets • Preferred types not available • Too expensive • Other needs are prioritized • Other
110.	Apart from the materials you are using, are there any other types of menstrual hygiene management materials you would prefer to use? *Read out answers; select as many as apply*	• Disposable pad • Reusable pad • Piece of cloth • Tampon • Other • None
111.	In the past 30 days, has your household received any menstrual hygiene materials as part of a distribution?	• Yes • No • Don't know
112.	How satisfied are you with your access to menstrual hygiene materials? *Read out answers; select only one answer*	• Very satisfied • Satisfied • Unsatisfied • Very unsatisfied
113.	When did your household last receive a hygiene kit? *Read out answers; select only one answer*	• This week • In the last month • More than one month ago • More than 2 months ago • More than 3 months ago
114.	Has your household participated in any hygiene training or demonstrations in the past 2 weeks?	• Yes • No
115.	If yes, what was the topic(s)? *Read out answers; select as many as apply*	• Use of aqua-tabs • Safe water chain (collection, transport, storage and handling) • Hand washing with soap (how and when) • Cholera/Acute Watery Diarrhea

No.	Question	Choices
		• Food Hygiene • Child handwashing • Disposal of household waste • Cleaning latrines • Disposal of child faeces • Menstrual hygiene management • Domestic waste management • Other • None
116.	Would your household like to participate in more training sessions or demonstrations?	• Yes • No
117.	What types of hygiene promotion training sessions or demonstrations would you like to receive? *Read out answers; select as many as apply*	• Use of aqua-tabs • Safe water chain (collection, transport, storage and handling) • Hand washing with soap (how and when) • Cholera/Acute Watery Diarrhea • Food Hygiene • Child handwashing • Disposal of household waste • Cleaning latrines • Disposal of child faeces • Menstrual hygiene management • Domestic waste management • Other • None
118.	How satisfied are you with your access to hygiene training and demonstrations? *Read out answers; select only one answer*	• Very satisfied • Satisfied • Unsatisfied • Very unsatisfied
119.	[If Reusable pad selected at question 92] If these materials are reusable, are they washed and dried?	• Yes • No
120.	[If Reusable pad selected at question 92] Where do you wash disposable materials? *Read out answers; select only one answer*	• Inside shelter • Inside the latrine • Outside shelter • Prefer not to say
121.	[If Reusable pad selected at question 91] Where do you dry disposable materials? *Read out answers; select only one answer*	• Inside shelter • Outside shelter • Prefer not to say • Other
122.	Where do you normally change your menstrual hygiene materials? *Read out answers; select only one answer*	• In the household • In the household latrin • In the communal latrine • In the household bathing facility • In the communal bathing facility; • Other
123.	Do you face challenges with accessing menstrual hygiene materials?	• Yes • No
124.	If yes, what challenges do you face? *Do not prompt; select as many as apply*	• Not enough materials provided in distributions • Not enough available in markets • Preferred types not available • Too expensive

No.	Question	Choices
		• Other needs are prioritized • Other
125.	Apart from the materials you are using, are there any other types of menstrual hygiene management materials you would prefer to use? *Read out answers; select as many as apply*	• Disposable pad • Reusable pad • Piece of cloth • Tampon • Other • None
126.	In the past 30 days, has your household received any menstrual hygiene materials as part of a distribution?	• Yes • No • Don't know
127.	How satisfied are you with your access to menstrual hygiene materials? *Read out answers; select only one answer*	• Very satisfied • Satisfied • Unsatisfied • Very unsatisfied
128.	When did your household last receive a hygiene kit? *Read out answers; select only one answer*	• This week • In the last month • More than one month ago • More than 2 months ago • More than 3 months ago
129.	Has your household participated in any hygiene training or demonstrations in the past 2 weeks?	• Yes • No
130.	If yes, what was the topic(s)? *Read out answers; select as many as apply*	• Use of aqua-tabs • Safe water chain (collection, transport, storage and handling) • Hand washing with soap (how and when) • Cholera/Acute Watery Diarrhea • Food Hygiene • Child handwashing • Disposal of household waste • Cleaning latrines • Disposal of child faeces • Menstrual hygiene management • Domestic waste management • Other • None
Overall satisfaction		
131.	How satisfied are you overall with water, sanitation and hygiene conditions within the camp? *Read out answers; select only one answer*	• Very satisfied • Satisfied • Unsatisfied • Very unsatisfied

Annex 3: Hygiene Training/Demonstration Participation Data Table

Proportion of households reporting having participated in hygiene training/demonstrations

	How to aquatabs	Safe water chain management	Handwashing with soap	Cholera / diarrhoea prevention	Food hygiene	Child handwashing	Disposal of household waste	Cleaning latrines	Disposal of child faeces	Menstrual hygiene management
Camp 1E	29%	55%	61%	32%	64%	51%	47%	51%	24%	51%
Camp 1W	10%	18%	18%	3%	16%	14%	10%	13%	7%	0%
Camp 2E	44%	62%	59%	42%	58%	49%	45%	47%	39%	19%
Camp 2W	32%	53%	53%	43%	48%	47%	47%	48%	46%	26%
Camp 3	44%	55%	63%	21%	56%	51%	45%	52%	37%	29%
Camp 4	53%	64%	71%	50%	52%	50%	43%	50%	43%	31%
Camp 4E	18%	41%	41%	25%	31%	26%	25%	29%	24%	3%
Camp 5	30%	56%	62%	21%	62%	50%	41%	44%	32%	26%
Camp 6	21%	43%	44%	25%	42%	38%	35%	38%	35%	26%
Camp 7	43%	54%	60%	25%	59%	51%	43%	45%	36%	23%
Camp 8E	17%	23%	24%	8%	22%	22%	20%	21%	20%	0%
Camp 8W	26%	38%	42%	30%	31%	30%	33%	30%	27%	8%
Camp 9	17%	30%	40%	8%	42%	29%	21%	22%	14%	34%
Camp 10	10%	19%	19%	11%	19%	18%	16%	19%	17%	3%
Camp 11	38%	39%	42%	28%	39%	34%	28%	38%	28%	6%
Camp 12	40%	54%	60%	39%	55%	52%	47%	57%	47%	30%
Camp 13	45%	54%	65%	50%	55%	45%	48%	45%	41%	25%
Camp 14	33%	44%	57%	26%	57%	52%	39%	50%	25%	45%
Camp 15	9%	22%	26%	11%	25%	24%	25%	22%	21%	20%
Camp 16	31%	36%	37%	26%	31%	29%	28%	28%	25%	25%
Camp 17	44%	43%	63%	36%	53%	41%	42%	45%	42%	43%
Camp 18	30%	36%	41%	26%	44%	39%	30%	36%	27%	23%
Camp 19	35%	42%	51%	32%	50%	40%	40%	44%	29%	23%
Camp 20	35%	44%	56%	38%	58%	55%	55%	58%	47%	20%
Camp 20E	13%	31%	29%	25%	28%	25%	25%	24%	23%	29%
Camp 21	40%	60%	65%	47%	59%	56%	53%	58%	51%	24%
Camp 22	26%	45%	52%	33%	46%	38%	34%	41%	25%	28%
Camp 23	26%	51%	44%	33%	38%	38%	31%	35%	32%	20%
Camp 24	33%	46%	58%	19%	46%	37%	37%	37%	21%	58%
Camp 25	30%	44%	42%	32%	38%	32%	32%	29%	33%	21%
Camp 26	57%	50%	69%	46%	66%	66%	63%	69%	60%	10%
Camp 27	50%	57%	60%	51%	63%	59%	59%	60%	55%	19%
Nayapara RC	29%	38%	46%	30%	34%	31%	32%	31%	26%	21%
All camps	32%	43%	50%	28%	45%	40%	37%	40%	31%	16%
Kutupalong only	30%	42%	48%	26%	44%	38%	35%	38%	29%	17%
Teknaf only	42%	47%	58%	34%	51%	47%	46%	48%	39%	13%

Annex 4: ACAPS Needs Severity Data Tables

Annex 4.1: Water Needs Severity Data Table

Camp Name	Category 1 - Very low severity	Category 2 - Low severity	Category 3 - Moderate severity	Category 4 - High severity	Category 5 - Very high severity
Camp 1E	11.43%	55.24%	13.33%	19.05%	0.95%
Camp 1W	0.85%	41.88%	17.09%	35.04%	5.13%
Camp 2E	2.80%	47.66%	17.76%	28.97%	2.80%
Camp 2W	5.77%	44.23%	12.50%	34.62%	2.88%
Camp 3	0.00%	34.48%	24.14%	36.21%	5.17%
Camp 4	7.21%	37.84%	10.81%	41.44%	2.70%
Camp 4Ext	5.15%	51.55%	14.43%	28.87%	0.00%
Camp 5	0.00%	32.08%	12.26%	54.72%	0.94%
Camp 6	1.72%	39.66%	16.38%	41.38%	0.86%
Camp 7	3.54%	38.94%	11.50%	42.48%	3.54%
Camp 8E	0.00%	52.94%	18.63%	19.61%	8.82%
Camp 8W	1.72%	51.72%	11.21%	32.76%	2.59%
Camp 9	1.71%	35.04%	12.82%	50.43%	0.00%
Camp 10	3.94%	47.24%	14.96%	26.77%	7.09%
Camp 11	0.88%	53.10%	21.24%	23.01%	1.77%
Camp 12	6.06%	51.52%	10.10%	31.31%	1.01%
Camp 13	8.04%	38.39%	15.18%	38.39%	0.00%
Camp 14	2.56%	28.21%	17.09%	50.43%	1.71%
Camp 15	0.85%	53.85%	14.53%	25.64%	5.13%
Camp 16	0.88%	44.74%	5.26%	45.61%	3.51%
Camp 17	7.14%	42.86%	22.32%	27.68%	0.00%
Camp 18	6.03%	37.07%	10.34%	44.83%	1.72%
Camp 19	3.48%	47.83%	19.13%	29.57%	0.00%
Camp 20	1.05%	58.95%	16.84%	23.16%	0.00%
Camp 20Ext	0.00%	45.45%	15.15%	34.34%	5.05%
Camp 21	9.57%	40.00%	20.87%	22.61%	6.96%
Camp 22	4.26%	37.23%	24.47%	26.60%	7.45%
Camp 23	0.00%	34.74%	5.26%	60.00%	0.00%
Camp 24	11.46%	27.08%	21.88%	36.46%	3.13%
Camp 25	3.70%	33.33%	12.96%	47.22%	2.78%
Camp 26	6.19%	49.48%	16.49%	25.77%	2.06%
Camp 27	3.09%	32.99%	17.53%	36.08%	10.31%
Nayapara RC	7.14%	42.86%	13.27%	30.61%	6.12%

Annex 4.2: Sanitation Needs Severity Data Table

Camp Name	Category 1 - Very low severity	Category 2 - Low severity	Category 3 - Moderate severity	Category 4 - High severity	Category 5 - Very high severity
Camp 1E	56.19%	22.86%	19.05%	1.90%	0.00%
Camp 1W	32.48%	35.90%	18.80%	11.97%	0.85%
Camp 2E	45.79%	30.84%	14.02%	6.54%	2.80%
Camp 2W	54.81%	33.65%	6.73%	3.85%	0.96%
Camp 3	54.31%	22.41%	18.10%	5.17%	0.00%
Camp 4	55.86%	28.83%	13.51%	0.90%	0.90%
Camp 4Ext	70.10%	25.77%	4.12%	0.00%	0.00%
Camp 5	60.38%	20.75%	16.04%	2.83%	0.00%
Camp 6	41.38%	41.38%	10.34%	6.90%	0.00%
Camp 7	54.87%	30.97%	9.73%	3.54%	0.88%
Camp 8E	47.06%	31.37%	11.76%	6.86%	2.94%
Camp 8W	61.21%	23.28%	12.93%	2.59%	0.00%
Camp 9	47.01%	19.66%	22.22%	8.55%	2.56%
Camp 10	51.97%	22.05%	18.11%	6.30%	1.57%
Camp 11	54.87%	20.35%	16.81%	6.19%	1.77%
Camp 12	66.67%	25.25%	4.04%	3.03%	1.01%
Camp 13	76.79%	17.86%	5.36%	0.00%	0.00%
Camp 14	55.56%	20.51%	21.37%	2.56%	0.00%
Camp 15	56.41%	22.22%	11.97%	9.40%	0.00%
Camp 16	54.39%	23.68%	15.79%	5.26%	0.88%
Camp 17	59.82%	30.36%	8.04%	1.79%	0.00%
Camp 18	59.48%	13.79%	19.83%	5.17%	1.72%
Camp 19	64.35%	20.87%	9.57%	4.35%	0.87%
Camp 20	61.05%	30.53%	8.42%	0.00%	0.00%
Camp 20Ext	73.74%	21.21%	4.04%	1.01%	0.00%
Camp 21	63.48%	26.09%	7.83%	2.61%	0.00%
Camp 22	45.74%	39.36%	9.57%	4.26%	1.06%
Camp 23	69.47%	18.95%	8.42%	3.16%	0.00%
Camp 24	63.54%	25.00%	11.46%	0.00%	0.00%
Camp 25	56.48%	28.70%	11.11%	3.70%	0.00%
Camp 26	62.89%	28.87%	8.25%	0.00%	0.00%
Camp 27	69.07%	17.53%	11.34%	2.06%	0.00%
Nayapara RC	58.16%	29.59%	11.22%	1.02%	0.00%

Annex 4.3: Hygiene Needs Severity Data Table

Camp Name	Category 1 - Very low severity	Category 2 - Low severity	Category 3 - Moderate severity	Category 4 - High severity	Category 5 - Very high severity
Camp 1E	30.48%	56.19%	11.43%	1.90%	0.00%
Camp 1W	18.80%	41.88%	35.04%	4.27%	0.00%
Camp 2E	38.32%	46.73%	13.08%	1.87%	0.00%
Camp 2W	49.04%	45.19%	5.77%	0.00%	0.00%
Camp 3	23.28%	52.59%	22.41%	1.72%	0.00%
Camp 4	45.05%	39.64%	15.32%	0.00%	0.00%
Camp 4Ext	21.65%	58.76%	17.53%	2.06%	0.00%
Camp 5	59.43%	33.02%	7.55%	0.00%	0.00%
Camp 6	41.38%	46.55%	12.07%	0.00%	0.00%
Camp 7	40.71%	48.67%	10.62%	0.00%	0.00%
Camp 8E	7.84%	31.37%	50.98%	8.82%	0.98%
Camp 8W	17.24%	47.41%	30.17%	5.17%	0.00%
Camp 9	35.04%	53.85%	9.40%	0.85%	0.85%
Camp 10	10.24%	51.97%	33.86%	3.94%	0.00%
Camp 11	9.73%	61.95%	25.66%	1.77%	0.88%
Camp 12	22.22%	56.57%	21.21%	0.00%	0.00%
Camp 13	27.68%	57.14%	14.29%	0.89%	0.00%
Camp 14	51.28%	42.74%	5.98%	0.00%	0.00%
Camp 15	12.82%	50.43%	30.77%	5.13%	0.85%
Camp 16	19.30%	43.86%	33.33%	3.51%	0.00%
Camp 17	50.89%	41.96%	6.25%	0.89%	0.00%
Camp 18	33.62%	46.55%	18.10%	1.72%	0.00%
Camp 19	27.83%	51.30%	15.65%	5.22%	0.00%
Camp 20	20.00%	45.26%	32.63%	2.11%	0.00%
Camp 20Ext	12.12%	62.63%	20.20%	5.05%	0.00%
Camp 21	46.09%	43.48%	8.70%	0.87%	0.87%
Camp 22	23.40%	57.45%	19.15%	0.00%	0.00%
Camp 23	27.37%	48.42%	22.11%	2.11%	0.00%
Camp 24	14.58%	62.50%	21.88%	1.04%	0.00%
Camp 25	27.78%	57.41%	13.89%	0.93%	0.00%
Camp 26	47.42%	42.27%	10.31%	0.00%	0.00%
Camp 27	50.52%	41.24%	7.22%	1.03%	0.00%
Nayapara RC	11.22%	69.39%	17.35%	2.04%	0.00%

Annex 4.4: Overall WASH Needs Severity Data Table

Camp Name	Category 1 - Very low severity	Category 2 - Low severity	Category 3 - Moderate severity	Category 4 - High severity	Category 5 - Very high severity
Camp 1E	21.90%	58.10%	19.05%	0.95%	0.00%
Camp 1W	4.27%	46.15%	45.30%	4.27%	0.00%
Camp 2E	13.08%	58.88%	27.10%	0.93%	0.00%
Camp 2W	23.08%	59.62%	17.31%	0.00%	0.00%
Camp 3	6.90%	62.93%	27.59%	2.59%	0.00%
Camp 4	12.61%	67.57%	19.82%	0.00%	0.00%
Camp 4Ext	9.28%	74.23%	15.46%	1.03%	0.00%
Camp 5	17.92%	63.21%	17.92%	0.94%	0.00%
Camp 6	10.34%	65.52%	23.28%	0.86%	0.00%
Camp 7	15.04%	63.72%	21.24%	0.00%	0.00%
Camp 8E	4.90%	46.08%	44.12%	4.90%	0.00%
Camp 8W	6.03%	62.07%	31.90%	0.00%	0.00%
Camp 9	6.84%	63.25%	27.35%	2.56%	0.00%
Camp 10	6.30%	47.24%	44.09%	2.36%	0.00%
Camp 11	1.77%	63.72%	34.51%	0.00%	0.00%
Camp 12	9.09%	67.68%	23.23%	0.00%	0.00%
Camp 13	10.71%	69.64%	19.64%	0.00%	0.00%
Camp 14	9.40%	72.65%	17.09%	0.85%	0.00%
Camp 15	6.84%	54.70%	32.48%	5.98%	0.00%
Camp 16	3.51%	61.40%	31.58%	3.51%	0.00%
Camp 17	24.11%	63.39%	12.50%	0.00%	0.00%
Camp 18	12.07%	62.07%	25.00%	0.86%	0.00%
Camp 19	12.17%	65.22%	20.00%	2.61%	0.00%
Camp 20	7.37%	75.79%	16.84%	0.00%	0.00%
Camp 20Ext	3.03%	70.71%	25.25%	1.01%	0.00%
Camp 21	20.00%	63.48%	16.52%	0.00%	0.00%
Camp 22	6.38%	63.83%	27.66%	2.13%	0.00%
Camp 23	9.47%	49.47%	38.95%	2.11%	0.00%
Camp 24	8.33%	65.63%	26.04%	0.00%	0.00%
Camp 25	3.70%	69.44%	26.85%	0.00%	0.00%
Camp 26	20.62%	64.95%	14.43%	0.00%	0.00%
Camp 27	15.46%	60.82%	23.71%	0.00%	0.00%
Nayapara RC	8.16%	73.47%	18.37%	0.00%	0.00%