WASH Cluster
Water Sanitation Hygiene

# SOUTH SUDAN WASH BASELINE

## Akobo County, South Sudan

May 2016

## About this report

This assessment was conducted in the framework of a global partnership between the Global WASH Cluster and REACH and was made possible with the funding of OFDA. Since 2015, REACH has provided technical specialists in assessment and information management to help the Global Cluster improve the availability of evidence on which to make informed decisions when planning and monitoring response.

## Acknowledgements

The Global and the South Sudan WASH Clusters would like to acknowledge the contribution of the partners who were involved in the WASH Baseline assessments in Akobo East and Akobo West: Nile Hope, ACTED, Save the Children, OXFAM, Intersos, and Plan.

Supported by:

**Cover Picture:** Child carrying water, South Sudan © Clement Rouquette

**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.

REACH has been working in partnership with the Global WASH Cluster since 2015, providing assessment and information management specialists for the cluster support team.

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

In September 2015, the South Sudan WASH Cluster, along with the humanitarian community across the country, undertook the Humanitarian Needs Overview (HNO) process in order to identify the overall needs and vulnerabilities of the crisis-affected population. It brought to light significant WASH-specific information gaps across South Sudan. In particular, various baseline assessments conducted by WASH actors produced incomparable data that could not be analysed together. The lack of inter-operable data made it challenging both to quantify needs and to accurately rank the severity of the WASH situation in the different administrative areas.

To address this, the Global WASH Cluster has supported actors in South Sudan to harmonize future assessments. With the help of an Assessment Specialist and in partnership with REACH, a tool was designed to collect the minimum amount of necessary data in order to assess the WASH needs and vulnerabilities at the household level. The tool was finalized through consultation with Cluster partners and a pilot assessment was conducted in Akobo County.

Akobo County is located in the north-eastern part of Jonglei State and has been severely affected by insecurity since the outbreak of conflict across South Sudan in December 2013. Akobo County is composed of 8 payams: Bilkey, Dengjok, Gakdong, and Nyandit in Akobo East, and Barmach, Buong, Diror, and Walgak in Akobo West. However, since the road connecting the two major population centres, Akobo Town and Walgak, is unusable for most of the year, and because of limited availability of transport, the Eastern and the Western parts of the county operate independently on many levels. For this reason, it was decided that the assessment would be conducted separately in these two areas.

This report presents the findings from two separate, yet comparable, rounds of data collection in Akobo County. The first phase of data collection covered the 4 payams of Akobo East and took place between January 25th and 29th, 2016, while the second, covering the 4 western payams, took place between February 18th and 27th, 2016. Assessed locations can be seen on Map 1 below. Cluster sampling was used to conduct the assessment and findings are assumed to be representative at county level with a confidence interval of 90% and a 5% margin of error.

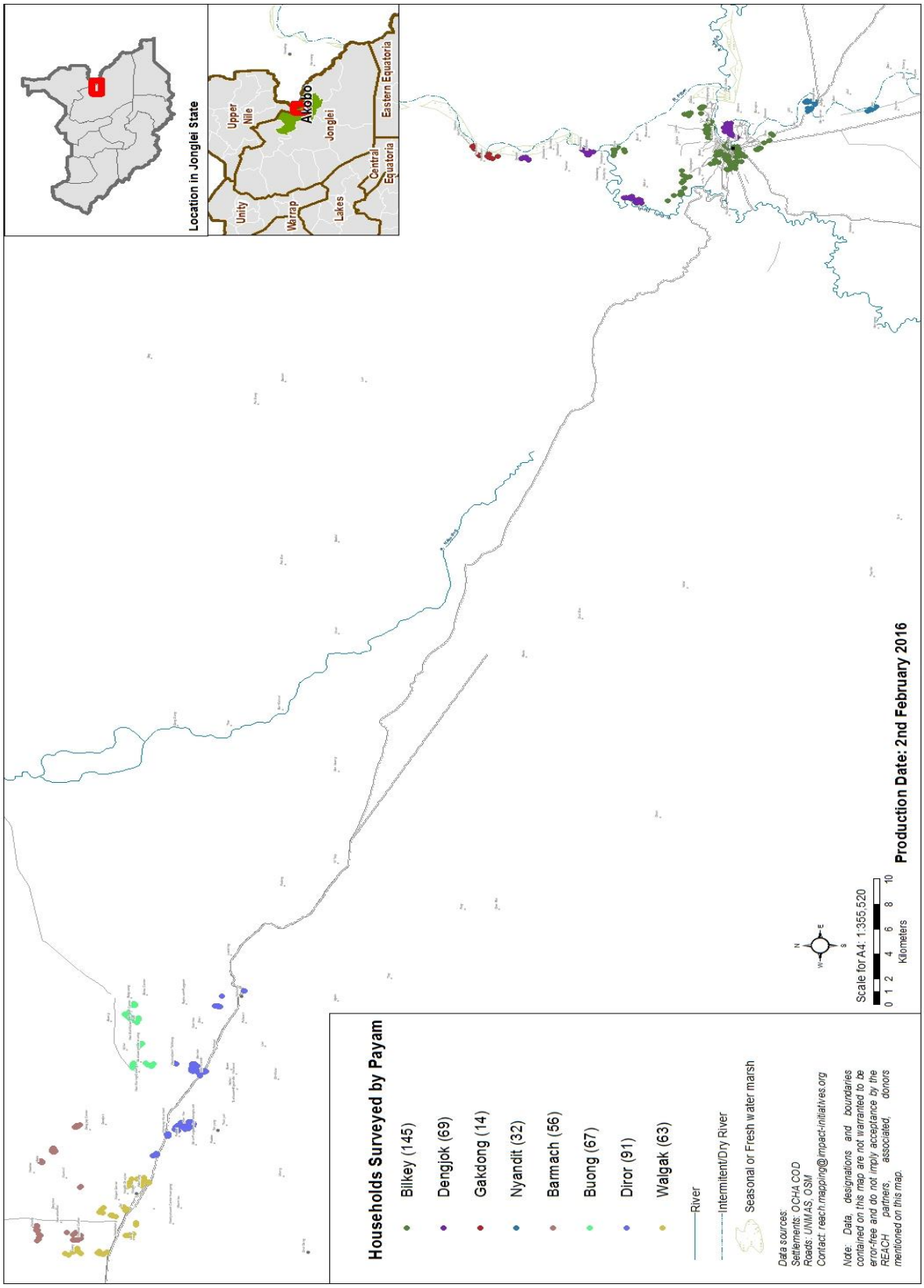
The main findings of the report are as follows:

- **Water Source:** Akobo East - More than half the population reported having access to a water source that is considered safe (63%), with water coming from boreholes. Akobo West – The majority of the population reported having access to a water source that is considered safe (93%), with water coming from hand pumps.
- **Water Consumption:** Akobo East - 83% of households did not meet the Sphere standard of 15 litres per person per day and 10% of households reported consuming less than 5 litres per person per day; the most common cited reason for not having a sufficient amount of water was the lack of containers to carry or store water (80%). Akobo West – 86% of households did not meet the Sphere standard of 15 litres per person per day and 14% of households reported consuming less than 5 litres per person per day; the most common cited reason for not having a sufficient amount of water was the lack of containers to carry or store water (70%)
- **Water Treatment:** Akobo East - 89% of respondents reported not treating their drinking water while 80% of the households accessing an unsafe water source do not treat their water. Akobo West – 98% of respondents reported not treating their drinking water while all households accessing an unsafe water source do not treat their water.
- **Water and Protection:** Akobo East - 12% of respondents reported feeling unsafe at one point or another while collecting water. Akobo West – Contrary to Akobo East a majority (65%) of respondents reported feeling unsafe at one point or another while collecting water in Akobo West.
- **Access to Latrines:** Akobo East - 78% of households do not have access to a household latrine. Akobo West – 91% of households do not have access to a household latrine.
- **Handwashing Practices:** Akobo East - Only 6% of respondents reported washing their hands at all critical times. Akobo West – 12% of respondents reported washing their hands at all critical times.
- **Handwashing Materiel**: Akobo East - 23% of assessed households reported having soap at the time of the assessment. Akobo West – 7% of assessed households reported having soap at the time of the assessment.

- **Hygiene Promotion:** Akobo East - 42% of assessed households had been reached by a hygiene promotion activity at one point or another in the year before the survey. Akobo West – 31% of assessed households had been reached by a hygiene promotion activity at one point or another in the year before the survey.

Overall, the findings of this report highlight a need for activities aiming at inducing behavioural changes with regards to WASH practices and attitudes in Akobo East and West, particularly with regards to hand washing practices, open defecation and treatment of water. Coupled with distribution of WASH items such as soap and most importantly water containers, these activities would likely contribute to an improved WASH situation in both of the study areas. WASH actors may consider implementing a dual approach to addressing WASH needs in Akobo County. First, WASH actors should look at covering the emergency needs of the most vulnerable groups to limit the spread of water-borne diseases in high risk IDP groups in urban and rural areas. Additional targeted assessments would be needed to identify their immediate needs. Second, WASH actors should elaborate a longer term approach toward the general population which still has considerable needs in WASH. The objective should be to look at expanding access to improved water sources and improved sanitation facilities, as well as continue outreach on best hygiene practices.

**Map 1: Assessed Locations in Akobo County**



## Contents

## List of acronyms

| | |
|---|---|
| **GWC** | Global WASH Cluster |
| **HNO** | Humanitarian Needs Overview |
| **IDP** | Internally Displaced Person |
| **IMC** | International Medical Corps |
| **ODK** | Open Data Kit |
| **TOR** | Terms of Reference |
| **WASH** | Water, Sanitation and Hygiene |

## Geographic classifications

| | |
|---|---|
| **State** | Highest form of governance below the national level. |
| **County** | States are divided into counties |
| **Payam** | Counties are divided into payams |
| **Boma** | Payams are divided into bomas |
| **Village** | Bomas are generally composed of between 2 and 10 villages |

## List of figures, maps, and tables

# Introduction

In September 2015, the South Sudan WASH Cluster, along with the humanitarian community across the country, undertook the Humanitarian Needs Overview (HNO) process in order to identify the overall needs and vulnerabilities of the crisis-affected population. It brought to light significant WASH-specific information gaps across South Sudan. In addition, the few baseline assessments that had been previously conducted by WASH actors produced incomparable data that could not be analysed together. The lack of inter-operable data made it challenging both to quantify needs and to accurately rank the severity of the WASH situation in the different administrative areas.

To address this, the Global WASH Cluster has supported actors in South Sudan to harmonize future assessments. With the help of an Assessment Specialist and in partnership with REACH, a survey tool was designed to collect the minimum amount of necessary data in order to assess WASH needs and vulnerabilities at household level. The tool was finalized through consultation with Cluster partners and tested during this pilot assessment in Akobo County.

The main objective of this assessment was to gather quantitative data at the household-level to better understand the primary WASH needs of communities across Akobo. Through gathering detailed information about the WASH profile of affected households, the assessment aimed to identify priority areas of intervention to orient future targeting for WASH-related activities.

Although severely affected by insecurity since the outbreak of conflict across South Sudan in December 2013, Akobo County is now perceived to be safer and more stable than other parts of the country, in particular following partial implementation of the peace agreement signed in August 2015. This has enabled some people to return to their areas of origin or to relocate to communities in Akobo. Assessing the situation in Akobo County is therefore particularly interesting, as the number of returnees is likely to continue to increase if the situation remains relatively stable.

Located in the north-eastern part of Jonglei State, Akobo County is composed of 8 payams: Bilkey, Dengjok, Gakdong, and Nyandit in Akobo East, and Barmach, Buong, Diror, and Walgak in Akobo West. However, since the road connecting the two major population centres, Akobo Town and Walgak, is unusable for most of the year, and because of limited availability of transport, the Eastern and the Western parts of the county operate independently on many levels. For this reason, it was decided that the assessment would be conducted separately in these two areas.

This report presents the findings from two separate, yet comparable, rounds of data collection in Akobo County. The first phase of data collection covered the 4 payams of Akobo East and took place between January 25th and 29th, 2016, while the second, covering the 4 western payams, took place between February 18th and 27th, 2016. Assessed locations can be seen on Map 1 above.

These findings apply specifically to the dry season, as a similar assessment conducted during the rainy season yield different results. Indeed, in various parts of Akobo East, population was found to be migrating towards Akobo Town during the dry season to escape inter-tribal violence facilitated by the increased freedom of movement. Households reported returning to their areas of origin during the rainy season.

# Methodology

This section contains an abridged overview of the methodology and sampling strategy. The terms of reference, see Annex 1, contains more detailed information about the approach for each of the assessed areas. Note that the methodology and sampling were done separately for both Akobo East and West, which allows comparison of datasets as they both are a statistically representative sub-sample of the county.

Throughout this analysis, data collected during the assessments in Akobo will be viewed through the lens of comparable secondary data to help understand changes in conditions over time and to highlight areas where further investigation is needed.

## Sampling

**Sampling strategy:** Cluster sampling was chosen to conduct this assessment since the target area was relatively large and time and resources were limited. In cluster sampling, basic sampling units are selected within groups named clusters (villages, administrative areas, camps, etc.). The objective of this method is to choose a limited number of smaller geographic areas in which simple or systematic random sampling can be conducted. It is therefore a multi-stage sampling method. Often such sampling is completed in two stages; in the case of Akobo, it was conducted in three stages due to the lack of available population data at village level.[1]

**Confidence level and margin of error:** The survey was conducted with a sample of the population in both the eastern and western portions of the county, which enables generalization of findings to both the sub-county (i.e. east and west) and county levels with a confidence interval of 90% and a 5% margin of error.

**Design Effect:** The design effect is a "correction factor" to account for the heterogeneity between clusters with regard to the measured indicator that is used to determine sample size in cluster sampling. It is a multiplying factor that is determined by the expected inter-cluster homogeneity: the more similar your clusters are, the lower your design effect factor will be. Since this is a baseline survey and no similar exercise has been conducted before, it was impossible to determine the multiplying factor prior to the survey; more assessments will be needed to have the amount of data required to calculate the design effect. Proceeding this way allowed the initial sample size to be maintained, but may have affected the confidence level of some of the findings. Once more datasets are collected, it will be possible to predict a design effect for future sampling size calculations.

### Target population

**Sample size**: According to Akobo Town local authorities, Akobo East has an approximate population of 119,491 inhabitants. Aiming for a 90% confidence level and 5% margin of error, 270 households needed to be assessed.[2] Adding to that a non-response rate of 15%, the final sample size was 318 households. Of the 318 households assessed in Akobo East 232 are host community, 29 are IDP, 4 are nomads, and 8 are returnees. Nile Hope indicated that Akobo West has an approximate population of 53,595 inhabitants. Aiming for a 90% confidence level and 5% margin of error, 260 households needed to be assessed. Adding a non-response rate of 15%, the final sample size was 306 households. Of the 306 households assessed in Akobo East 213 are host community, 58 are IDP, and 6 are returnees.

**Table 1: Sample size**

| | Akobo East | Akobo West |
|---|---|---|
| **Est. Population** | 119,491 | 53,595 |
| **Households assessed** | 318 | 306 |
| **Confidence interval** | 90% | 90% |
| **Margin of error** | 5% | 5% |

Since households, as opposed to individuals, are the basic unit at the last stage of sampling, a clear definition of the term household is a key part of the survey planning. This assessment used the following definition: *a group of people who routinely eat out of the same pot and live on the same compound (or physical location*). In the case that several wives made up one household, household members only included those living in the same compound, who share food and resources. The household also includes displaced members who are temporarily hosted by a household if they share the resources.

## Data collection and cleaning

The survey was conducted using a questionnaire administered by trained enumerators through Open Data Kit (ODK) technology on Android-based smartphones. Once data collection was completed, data was cleaned to eliminate errors. These were caused mostly by two factors: some of the questions had been misunderstood by the

[1]The sampling strategy was inspired by the SMART methodology: http://smartmethodology.org/survey-planning-tools/smart-methodology/
[2] To determine sample size, one can use one of the multiple calculators available online, such as http://www.raosoft.com/samplesize.html

enumerators, and some enumerators were underqualified for the position. In the first case, problematic questions were removed but the rest of the questionnaire was kept while in the second case, the entire questionnaire was removed. Out of 680 surveys completed, 549 surveys were kept for the final analysis.

### Analysis

Throughout this survey, findings are presented for both Akobo East and Akobo West. In several cases, findings are compared to those from a similar assessment of Akobo County, conducted by IMC at the end of May 2015.[3] Since the methodology, coverage and indicators used in these two assessments are comparable, such comparisons contribute to our understanding of changes to the situation over the past year.

### Limitations

The primary limitation of this study is that it only focuses on dry season conditions; no comparative wet season study has yet been completed. In the target areas, populations are mobile, shifting locations due to seasonal accessibility of water and potential raiding of wet season settlements as a result of the recession of flood waters. Based on anecdotal discussions with some respondents, it has been noted that the availability of and proximity to water sources may differ between dry season assessment locations and areas of wet season habitation.

Another limitation relates to the sampling strategy. As explained, the design effect to use when planning are survey is often based on previous surveys in the same area, if there is no reason to think that there has been any change that might have increased or decreased the heterogeneity among clusters. Since the objective of this assessment was to determine how homogeneous the clusters were, it was not factored in, which could lead to the sample being less representative of the population than initially planned. A separate report will be produced once each question is analysed and we can evaluate the variation both within and between clusters.

Further limitations are found within the assessment tool itself. Before data collection, it is crucial that a special emphasis be put on training of enumerators and common agreement on translation of some of the key words. Some of the most misunderstood and misreported questions related to questions about protection risks[4], both when fetching water, and when hand washing at several critical moments. After daily debriefing with the data collection teams, it appeared that there was uncertainty about what should be included as a source of danger; for example, fear of animals or fear of the dark might have been included in this report in the first day of data collection. Furthermore, the translation of safety in local languages led to confusion, pointing to the importance of spending more time during training in explaining that question, and translating it properly. Moving forward, it would be strongly advised, in the first place, to invite a person working on protection issues to the training to really explain in depth what falls under that category and how to react when a respondent reports a protection-related incident. Secondly, from a longer-term perspective, the WASH Cluster at both national and global level, should seek to better define this question and identify general protection recommendations for partners with the support and advice from protection experts at all levels. Finally, given the findings of the assessment on water access, the questionnaire may be adjusted to attempt to identify additional reasons for limited access to water. The question B4.1 could then allow for multiple answers, possibly ranked from one to three, while all the answers may be first read to the respondent. Also, the structure of the questionnaire may be amended. Indeed, the question B4.1 comes after two questions on water containers, possibly orienting the respondent to mention the lack of container as the main issue limiting access to water.

[3] Akobo Anthropometric and Mortality Survey, IMC, May23-June5 2014.
[4] See question B2.1 in Annex III – WASH Assessment Questionnaire.

# Findings

This section outlines the main assessment findings from the data collected in Akobo East and Akobo West. Findings are presented in three main sections: water, sanitation and hygiene.

For further details about all the information collected and the demographics of the assessed population, the questionnaire is included in Annex III. The clean assessment database is also available on the Humanitarian Data Exchange website.

# Water

## Water sources

**More than half the population in Akobo East (63%) and nearly the entire population of Akobo West (93%) reported having access to safe water through boreholes.**[5] The remaining households in Akobo East reported gathering water from the river (34%) or from swamps (3%), while swamps were the only other drinking water source reported in Akobo West (7%).

When comparing these results with an assessment conducted by IMC in Akobo County at the end of May 2015 some variation can be noted: their survey found that 84% relied on boreholes and 13,5% of households reported relying on the river as their primary source of water.[6] Seasonality could play a role in explaining this variation, as a large segment of the population in Akobo East was found to have migrated during the dry season in fear of inter-tribal violence and was living along the river at the time of the assessment. A similar condition was also seen in Akobo West, where many inhabitants had migrated to areas in closer proximity to the Akobo – Waat road. Some of the villages in Akobo East that were visited by the assessment team were empty at the time of assessment, but still had functioning hand pumps, which the population would use in the rainy season when they move back to their area of origin.

When comparing these figures with the 2010 National Baseline Household Survey figures for Jonglei State, it appears that the proportion of households accessing a safe water source in Akobo East is 9% lower than for the rest of the state, and that of Akobo West is 21% higher.[7] Keeping in mind that this is pre-conflict data, the survey found 72% of households accessing safe drinking water (boreholes) in Jonglei State, 17% river water and 11% swamp water.

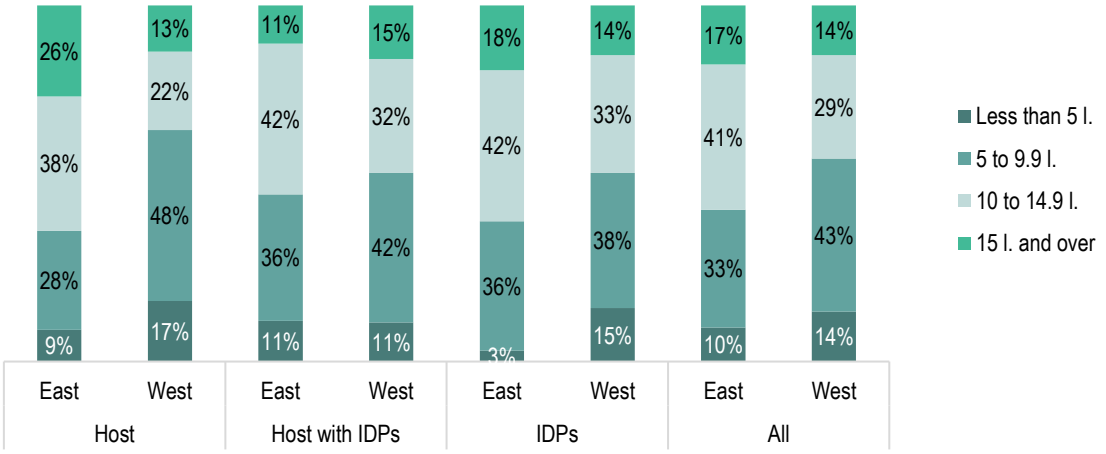
## Water consumption

**Despite primarily sourcing their water from boreholes, 86% of households in Akobo West and 83% in Akobo East did not meet the Sphere standard of 15 litres of water per person per day.**[8] In addition, 10% of households in Akobo East and 13% in Akobo West reported consuming less than 5 litres per person per day. The absence of data for other areas or for the country as a whole makes it difficult to understand how these findings compare to other areas of the country.

When considering household level water consumption through the lens of displacement status, we found that in Akobo East 62.5% of households who reported hosting internally displaced persons (IDP) were found to be among the most vulnerable when it came to water consumption. Only 11% of these households met the minimum Sphere water consumption requirement compared to 26% of households not hosting or not IDPs themselves.

[5] Based on the assumption that a borehole is a safe water source.
[6] Akobo Anthropometric and Mortality Survey, IMC, May23-June5 2014, p.8
[7] Statistical Yearbook for Southern Sudan 2010, Southern Sudan Centre for Census, Statistics and Evaluation, p.36 (can be found at http://www.ssnbs.org/)
[8] http://www.spherehandbook.org/en/water-supply-standard-1-access-and-water-quantity/

**Figure 1: Litres of water per person per day, by status**

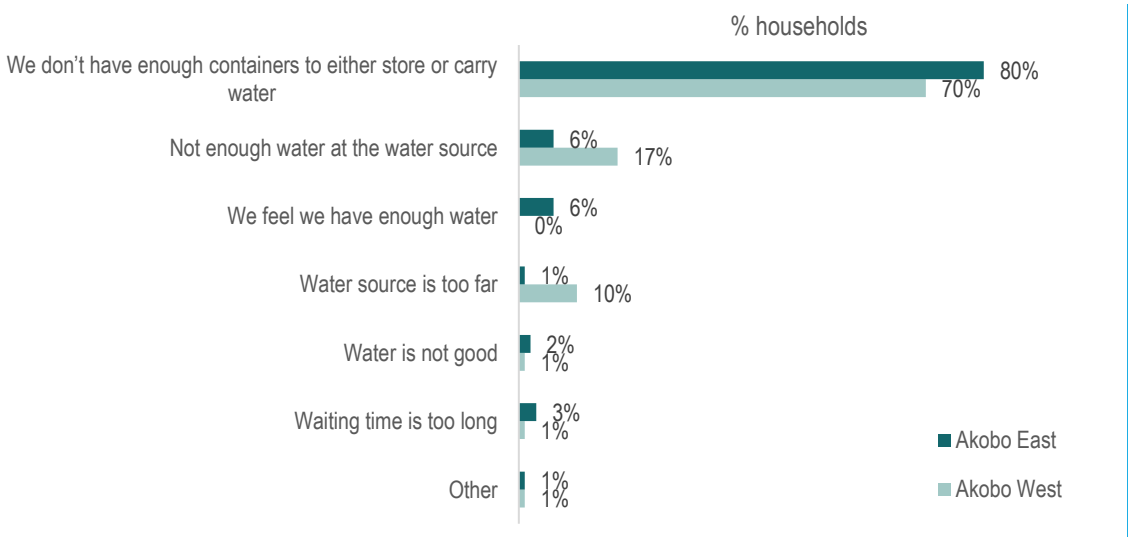



This pattern looks considerably different in Akobo West. Here, adequate levels of water consumption (vis-à-vis Sphere standards) hover around 14%, regardless of the status of the household. 65% of host households reported consuming less than 10 litres of water per person per day, significantly more than combined host-IDP households (52%) and IDP-only households (54%).

When looking specifically at households with children under five years old in Akobo East, 84% of them reported not meeting the 15 litres per person per day while 38% did not use a safe drinking water source, both figures being marginally higher than the overall figures. Similar figures are seen in Akobo West where 88% of households with children under 5 did not meet Sphere standards for water consumption, though only 7% used an unsafe source.

**In both Akobo East and West, the most commonly cited reason for not having a sufficient amount of water, for those households not meeting SPHERE consumption standards, was the lack of containers to carry or store water** (reported by 80% in Akobo East, 70% in Akobo West), as shown in figure 2, below. Despite this reported lack of containers, all assessed households but two (both of these in Akobo East) were found to meet the Sphere standard of owning at least one 10-20 litres container to transport water.[9] In order to better understand the reasons for this, further information is needed about other constraints to water access, such as distance from water source and queuing time.

**Figure 2: Reported reasons for not meeting the Sphere Standard of 15 litres per person per day**




[9] http://www.spherehandbook.org/en/hygiene-promotion-standard-2-identification-and-use-of-hygiene-items/

While insufficient amount of water at water point was the second most common reason for insufficient water in both Akobo East and West (17% in the West, 6% in the East), the third most common reported answer in Akobo East was that their daily water intake was sufficient for them (6%) while 10% in Akobo West stated that the water source was too far.

### Water treatment

**89% of respondents in Akobo East and 98% in Akobo West reported not treating their drinking water**, a finding which is consistent with the data from the International Medical Crops (IMC) report cited previously which found 88% of households not treating water. Of the 11% households who reported treating their water in Akobo East the most commonly cited methods were Pur[10] water treatment tablets (48%), filter cloth (34%), sharp (28%), boiling (21%) and finally chlorine (10%). This is consistent with the various hygiene promotion campaigns led by the organisations active in the area, who distributed these products.

According to households who responded that they did *not* treat their water, the most commonly reported reason for doing so it is the absence of treatment materials (64% Akobo East, 54% Akobo West), followed by the impression that there is no need to treat the water (32% East, 24% West). The latter reason is particularly concerning considering **80% of the households in Akobo East accessing an unsafe water source do not treat it**, leaving these households particularly exposed to water-borne disease and increasing their chances of diarrhoea. In Akobo West, only 7% reported accessing unsafe water, but none of them reported treating it; considering the water source is a swamp, this can be considered highly problematic.

In addition, 12% of households in Akobo West reported not having an understanding of how to treat water, which points to a pressing need for both distribution of water treatment materials and training related to healthy water consumption practices in Akobo County, specifically in the West.

### Water and protection

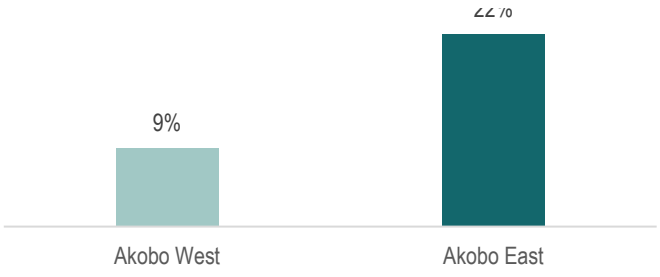
In Akobo East, the large majority (88%) of respondents who collected water for their household (95% of which were women) reported feeling safe when doing so while **12% reported feeling unsafe at one point or another while collecting water**. This is markedly different in Akobo West. Here, **33% of the women interviewed (who make up 76% of the total respondents) reported feeling unsafe while collecting water.**

## Sanitation

### Access to latrines

**The proportion of households accessing latrines was found to be very low in both Akobo West (22% of households) and Akobo East (9%).** However, the vast majority of households with latrines reportedly used them, with only 1% of respondents stated not using them mainly due to lack of privacy. This number is lower than the one reported by IMC, which could once again be explained by the movement of population during the dry season. IMC found that *"the access to toilet facilities was very low at 33.3% with open defecation being predominant in the*

**Figure 3: Proportion of households with access to a latrine**




[10] Pur water treatment tablets contains a chemical mixture that removes pathogenic microorganisms and suspended matter, making previously contaminated water clean

*county. The 33.3% latrine coverage was attributed by the community within the town. The high rate of open defecation when combined with the low rate of water treatment may explain the high diarrhoea cases in the community among the children less than 5 years of age".*[11] Similarly, the majority of households (75%) who reported access to a latrine were found in Bilkey Payam, where Akobo Town is located.

It is safe to conclude that the majority of households in both Akobo East and Akobo West practice open defecation. Virtually all respondents (93% in Akobo East and 88% in Akobo West) mentioned not practicing the safe disposal method of burial, which could significantly increase the health hazards in the area. When comparing these figures with the 2010 National Baseline Household Survey figures for Jonglei State, households in Akobo appear to have higher access to latrines than in the rest of the state, where only 9% of households do.[12] Since the state data was collected before the December 2013 crisis, it is possible that the increased presence of humanitarian actors might have impacted on the number of latrines built since that data was collected.

# Hygiene

## Handwashing practices

Over half of respondents (53%) in Akobo East reported washing their hands on at least three critical handwashing times[13]. However, only 6% reported washing their hands at all critical times, half of proportion found by IMC.[14] **In Akobo West, 49% of respondents reported washing their hands on at least three critical handwashing occasions,** while 12% of respondents reported washing their hands at all critical times.

After observing how enumerators collected the data and finding such high proportions when reviewing the dataset, it was concluded that the question "when do you wash your hands" was generally not well formulated: it led respondents to reply that they washed their hands every time they felt it was needed, which prompted the enumerators to enter what he/she considered these times to be. It was therefore decided that the Akobo West round of data collection would ask about knowledge (with the question being: Please name at least 3 of the most important times when someone should wash their hands) rather than practice to ensure data validity. Despite this change in the questionnaire, the proportion of positive responses remained consistent.

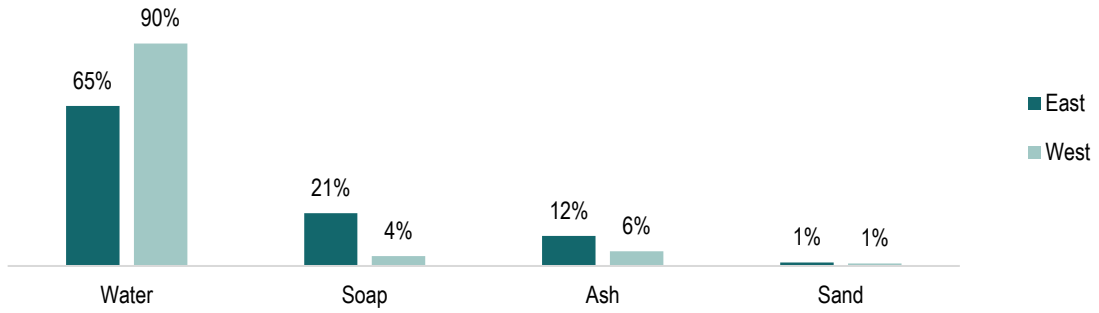
## Handwashing material

**Only 7% of respondents in Akobo West indicated they had soap at the time of the assessment while 23% did in Akobo East. This was primarily because of a lack of means to pay for soap, with 88% of respondents in Akobo East and 90% in Akobo West reporting that soap was too expensive**. The second most commonly cited reason in Akobo East was that the households had run out of soap (7%) while 5% of households in the West stated it was unavailable at the market (a reason cited by 1% in the East).

Most of the respondents reported **using only water to wash their hands,** with 90% in Akobo West and 65% in the East. 21% of respondents reported using soap in Akobo East and 4% in Akobo West, consistent with the proportion of households owning soap in each area, the variation being potentially attributed to the fact that some households might want to keep the soap they have left for other purposes than washing their hands. Ash was used by 12% in the East and 6% in the West while sand was used by only 1% in both Akobo East and West.

[11] Akobo Anthropometric and Mortality Survey, IMC, May23-June5 2014, p.8
[12] Statistical Yearbook for Southern Sudan 2010, Southern Sudan Centre for Census, Statistics and Evaluation, p.41 (can be found at http://www.ssnbs.org/)
[13] The 5 most commonly agreed-upon critical handwashing times are before preparing food, before eating or feeding someone and after defecating or disposing of human waste.
[14] Akobo Anthropometric and Mortality Survey, IMC, May 23-June 5 2014, p.8

Figure 4: Handwashing material used by assessed households



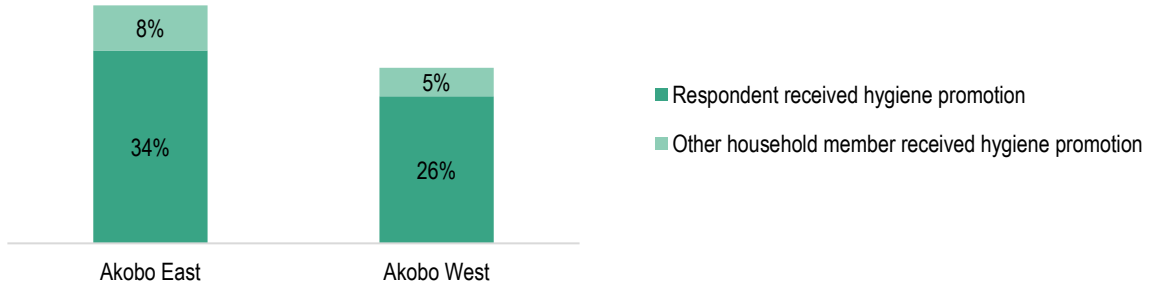

When disaggregating the data by residence status in Akobo East, households hosting IDPs are once again the most vulnerable ones when it comes to handwashing material: 72% of them only use water, a proportion higher by at least 10% than any other group (59% of IDP households and 54% of regular host households only use water). They are also the households who least reported having soap, showing marginally lower proportions than the other groups (23% vs 24% for IDP households and 26% for households not hosting IDPs).

This pattern varies considerably in Akobo West, where there is little variation between households status and all of them are nearly equally vulnerable. 90% of host households with IDPs use only water to wash their hands, compared to 92% of IDP and 100% of returnee households. In stark contrast to the findings from Akobo East, 95% of households that do not host IDPs reported using only water for hand washing.

## Hygiene promotion

**Overall, 42% of assessed households in Akobo East had been reached by a hygiene promotion activity at a point or another in the year before the survey.** Around one third (34%) of respondents in Akobo East mentioned having directly received hygiene promotion training or messaging in the last year, which is consistent with the relatively high level of hygiene promotion activities undertaken by organisations active in the area, such as ACTED, Nile Hope, Save the Children, and Plan. Of those respondents who reported not having directly received training or messaging, 8% stated that someone else in their household had. In Akobo West, only 26% of respondents reported receiving hygiene messaging or promotion training over the past 12 months. When considering members of their family, this number rose only slightly to 31%.

Figure 5: Proportion of households reached by at least one hygiene promotion activity in the past year




Despite the presence of hygiene promotion activities in many parts of Akobo, assessment teams observed that even those households who had received hygiene promotion visits, were not always using WASH materials such as water purification tablets received, pointing to a need for more extensive outreach.

# Conclusion

**Akobo County remains a typical example of an emergency situation in the Greater Upper Nile region.** It hosts large numbers of IDPs, integrated with host populations with ongoing migration, notably seasonal, and local inter-communal violence. The local population suffers from an overall lack of WASH services, although several differences can be observed across the assessed areas. Urban centres, such as Akobo Town, have higher levels of access WASH services, but also an increased risk of disease outbreak and spread due to congestion and overcrowding. Conversely, WASH coverage is more challenging in rural areas. At the same time, most of the population exhibits poor hygiene behaviours and practices, issues which are compounded by low water availability at household level and lack of improved sanitation facilities, and contribute to high levels of WASH-related vulnerability among much of the population.

**The findings of this assessment show a similar situation with regards to water access compared to many other rural areas of South Sudan. While most assessed households have access to improved water sources (63% in Akobo East; 93% in Akobo West), their ability to collect sufficient quantities of safe water is limited.** While respondents usually cite the lack of containers as the main factor limiting water collection (80% in Akobo East; 70% in Akobo West), other factors, such as distance to the water points, long queuing times, and overcrowding at the water points, are also likely to play a role. **In Akobo East and Akobo West, the large majority of households, respectively 83% and 86%, therefore did not meet the Sphere standards of 15 litres per person per day for water consumption.** Against this background, the limited water supply in rural areas may be exacerbating the already challenging health and nutrition situations, especially for pregnant and lactating women, malnourished children, and other vulnerable population groups.

**Aside from the inadequate supply of water, most respondents (89% in Akobo East; 98% in Akobo West) reported not treating their drinking water.** While the lack of water treatment does not necessarily pose the highest risk at water points, as most of the households have access to improved water sources, it does raise the risk of secondary contamination. It is especially the case as households are likely to have poor practices with regard to water storage and handling, raising the risk for diseases spread. Overall, water treatment options may be limited, with treatment products being difficult to procure locally and many households not having the resources, firewood and pots to systematically boil the collected water. Further assessments will be needed to understand household water storage practices in greater detail.

Assessment findings on latrine access and use remain coherent with what is already known of the sanitation situation in rural areas of South Sudan. Indeed, **78% of households in Akobo East and 91% of households in Akobo West did not access latrines, pointing to high levels of open defecation across the assessed areas.** With open defecation linked to heightened risks of the spread of disease, including typhoid, cholera, and hepatitis, a lack of access to adequate sanitation facilities is likely to further increase vulnerability to health problems among the assessed communities. While the majority of latrines were observed to be cluster close to urban areas, notably Akobo Town, further assessment is be needed to specifically determine local sanitary risks and priority areas for emergency interventions in rural areas.

**Only 6% of households in Akobo East and 12% in Akobo West reported washing their hands at all critical times, although respectively 49% and 53% reported that they washed them at least three times a day. In parallel, 65% of respondents in Akobo East and 90% in Akobo West have reported only using water during handwashing.** Overall, these assessment findings appear to be mostly in line with the available data for other non-emergency rural areas in South Sudan. In particular, the lack of soap (only used by respectively 21% and 4% of the households) is not specific to Akobo County, but represents a systemic issue across the country, despite the key role of handwashing with soap or ash to limit the spread of disease. **While 90% of households in Akobo West and 88% in Akobo East responded that soap was too expensive as the main reason for not using it, the assessment findings also show an unusually low rate of replacement of soap with ash.** At present, the reasons behind this remain unclear, and additional assessments may be needed to gather information on this aspect.

**Hygiene promotion activities were less commonly reported in Akobo West, where 31% of respondents reported that they or their immediate family members had been reached by activities or messaging in the past 12 months, than in Akobo East (42%).** This relatively low hygiene promotion coverage, especially given the large number of WASH partners present, may in part explain the observed low levels of handwashing and low proportions of households reporting the use of soap or ash.

Finally, as this assessment was conducted during the dry season, given the mobility of the population in Akobo County during the year, a similar WASH assessment needs to be conducted during the rainy season. While the data is expected to be similar for hygiene practices and attitudes, patterns of water consumption and access may be considerably different. Such an assessment and comparative seasonal analysis should hence be undertaken before new programs are implemented in the area, especially with regards to the construction of infrastructure (boreholes, latrines, etc.).

### Recommendations and next steps

WASH actors may consider implementing a dual approach to addressing WASH needs in Akobo County. First, WASH actors should look at covering the emergency needs of the most vulnerable groups to limit the spread of water-borne disease in high risk IDP groups in urban and rural areas. Additional targeted assessments would be needed to identify their immediate needs. Second, WASH actors should elaborate a longer term approach toward the general population which still has considerable WASH-related needs. The objective should be to look at expanding access to improved water sources and improved sanitation facilities, as well as continue outreach activities on hygienic practices.

**Water Sources:** Akobo County has a higher than average access to improved water sources compared with much of the Greater Upper Nile Region but WASH actors should work towards identifying the areas that are most in need of new improved water sources. A water point mapping exercise should be conducted that can estimate the water point coverage and functionality per Payam and then determine where additional water points are most needed.

**Water Treatment:** WASH actors should look to specifically target the most vulnerable populations for household water treatment (PUR, boiling, or filters). This should include communities which primarily rely on unsafe water sources, usually river water in Akobo County. In parallel, all households can benefit from increased messaging and training on safe water handling and storage which can reduce the potential for secondary contamination.

**Soap and WASH NFI Distributions:** The greatest need for WASH NFIs seems to be for increased water storage and collection containers that will support increased availability of water at the household level in Akobo County. Since a blanket distribution of containers is not feasible, a more targeted approach will have to be developed by WASH actors. First, an agreed upon soap distribution strategy should be developed by WASH partners, targeting the most vulnerable groups such as people in overcrowded areas, pregnant and lactating women, households with children affected by malnutrition. Second, longer term programming should focus on strengthening the availability of WASH items in local markets.

**Hygiene Promotion and Handwashing:** All of the population in Akobo County can benefit from longer term programming directed at changing hygiene practices and behaviours such as handwashing at critical times. The current coverage of hygiene promotion activities by WASH actors in Akobo County needs to be analysed separately to identify existing gaps. In parallel, a common strategy and approach on key messages can be adopted by WASH partners to ensure that coherent and consistent messaging is being delivered. Barrier analysis can be conducted at household level to better understand the challenges around handwashing and lack of ash use to further identify strategies that can increase positive behaviours.

**Sanitation and Latrine Coverage:** Lack of access to latrines in congested areas represents one of the highest risks in Akobo County. WASH partners should now look to cover the existing gaps where there is a lack of adequate latrines. While new internal displacement remains limited, there is a potential to push for community-based approaches to latrine construction, with possibly shared or household latrines being constructed and maintained with the participation of communities. In rural and remote areas, a community based strategy or full CLTS could be adopted in order to reduce the open defecation rates.

# Annex I: Akobo County WASH assessment terms of reference

## A. Summary

| **Sector** | WASH | **Cluster Lead** | UNICEF |
|---|---|---|---|
| Country | South Sudan | | |
| **Specific location** | Akobo County, Jonglei State, South Sudan | | |
| Partners involved | ACTED, Intersos, Nile Hope, OXFAM, Plan International, Save the Children | | |
| Main objective | The main objective of this assessment is to gather quantitative data at the household-level to better understand the main WASH needs of communities across South Sudan, with a special emphasis on conflict-affected states. | | |
| Specific objectives | ➢ To assess WASH-specific needs and vulnerabilities at household level in order to identify priority areas of intervention for both partners and the cluster as a whole;<br>➢ To gather profile information on the population that can be used as a reference to orient future targeting for WASH-related activities;<br>➢ To provide a consolidated database accessible by agencies containing primary data at household level.<br>➢ To provide a report highlighting all key findings which will be disseminated among all relevant humanitarian actors. | | |
| Data Sources | **Primary Data Collection**: Face-to-face household and field observations will be conducted by trained enumerators across the county.<br>**Secondary Data Collection**: Complement household-level/quantitative data with community-level/qualitative data from previous assessments having taken place in the same county. | | |
| Sample | A sample representative at the county level with 90% level of confidence and a 5% margin of error will be collected. As travelling between Akobo East and Akobo West presents logistical challenges and partners present in both locations differs, it was decided to treat each part separately. Therefore, a 90% / 5% sample of households will be collected for both locations. | | |
| Period of assessment | Data collection from 26 -29 January 2016 (Akobo East) and 18-27 February (Akobo West) | | |
| Expected Results | 1. Primary profiling data is gathered through household interviews and field observations.<br>2. A consolidated and user-friendly database is provided for agencies to access household-level information gathered through the assessment.<br>3. Primary and secondary data is triangulated and analysed.<br>4. Key findings are presented in a report which is disseminated | | |
| Expected Deliverables | 1. One user-friendly database<br>2. One comprehensive assessment report<br>3. One PowerPoint presentation of preliminary findings<br>4. If relevant, production of static maps | | |

## B. Methodology

### B1.1 Data collection methods

A **household-level survey** will be conducted across the county according to the sampling method outlined below. The survey will be conducted using a questionnaire administered by trained enumerators using Open Data Kit (ODK) technology on Android-based smartphones.

### B2.1 Sampling Frame

**Sampling strategy:** Cluster sampling will be the method used to conduct this assessment since the survey area is relatively large and time/resources is limited. In cluster sampling, basic sampling units are selected within groups named clusters (villages, administrative areas, camps, etc.) The objective of this method is to choose a limited number of smaller geographic areas in which simple or systematic random sampling can be conducted. It is therefore a multi-stage sampling method. Very often, it's completed in 2 stages, but in the present case, it will be conducted in 3 stages as population data is not available at the village-level. The cluster strategy applied here is inspired by the SMART methodology.[15]

- 1st stage = random selection of clusters: the entire population of interest is divided into small distinct geographic areas, such as villages, camps, etc. You then need to find an approximate size of the population for each "cluster". At this stage and in the present case, the primary sampling unit is the boma. Afterwards, clusters could be assigned randomly to bomas;
- 2nd stage = random selection of villages within bomas;
- 3rd stage =random selection of households within village: households are chosen randomly within each village using simple random sampling.

**Confidence level and margin of error:** The survey will be conducted with a sample of the population in the county that enables generalization of findings to the county level with a confidence level of 90% and a 5% margin of error. Since households, as opposed to individuals, will be the basic sampling unit at the last stage of sampling, a clear definition of the term household is a key part of the survey planning. This assessment will use the following definition: a group of people who routinely eat out of the same pot and live on the same compound (or physical location). It is possible that they may live in different structures. Sharing the pot is the unifying factor for households. If several wives, household members only includes those living in the SAME compound, who share food and resources.

**Sample size**: According to the Akobo Town local authorities, Akobo County has an approximate population of 119,491 inhabitants and is composed of 4 payams: Bilkey, Dengjok, Nyandit, and Gakdong[16]. The aim is to assess a sample with a confidence level of 90% and a 5% margin of error for a population totaling 119, 491 households for Akobo East, then 270 households will need to be assessed. Adding to that a non-response rate of 15%, the final sample size is 318 households[17]. Nile Hope indicated that Akobo West has an approximate population of 53,595 inhabitants. Aiming for a 90% confidence level and 5% margin of error, 260 households needed to be assessed. Adding to that a non-response rate of 15%, the final sample size is 306 households.

### B2.1.1 First stage = random selection of clusters

**Cluster units:** Bomas will be the geographic units being used as clusters as they represent the lowest administrative unit for which it was possible to get population figures.

**Number of clusters**: The number of clusters that will be visited has to be determined by taking into consideration the reality of the team work on the field during data collection. Generally speaking, there is a minimum of clusters that should be included in each survey for the survey to be considered valid; the SMART survey recommends a

[15] http://smartmethodology.org/survey-planning-tools/smart-methodology/

[16] Gakdong is a payam created according to the 21 state division of South Sudan and not officially recognized. However, the full payam of Alali could not be assessed do to insecurity.

[17] The NRR is usually around 5%-10%, but the fact that enumerators' competency has not been assessed and little is known about the population, it has been put higher to be able to discard more data if need be.

minimum of 25. That being said, nutrition surveys often time are quite complex and sometimes require that assessed households exhibit some common features, explaining a need for a bigger number of clusters. Here, 20 clusters will be assessed, and although more clusters are recommended if time/logistics permits, 20 should be considered a minimum for the WASH cluster.

**Sampling interval**: Total population/ number of clusters needed, so 119, 491 / 20=5975.

**Starting point:** Sampling will begin at a randomly selected starting point; therefore, we choose a random number as our starting point between 1 and the sampling interval (5,975). The geographic unit where this number lies will be the cluster number 1. The randomly selected number here was 585, which falls into boma #1. If one/many of the selected boma is inaccessible, the cluster will be reassigned throughout non-selected boma from the 1st selection round.

The table below details the sample selection for Akobo East and West:

| PAYAM | BOMA NO. | BOMA | POPULATION | CUMULATIVE POPUALTION | ALLOCATED NUMBERS | | CLUSTERS | HOUSEHOLDS TO BE SURVEYED |
|---|---|---|---|---|---|---|---|---|
| | | | | | **FROM** | **TO** | | |
| Barmach | 1 | Dongjop | 289 | 289 | 1 | 289 | 1 | 15 |
| | 2 | Manjung\ Mangjung | 309 | 598 | 290 | 598 | 2 | 15 |
| | 3 | Ulang | 513 | 1111 | 599 | 1111 | 3,4 | 30 |
| | 4 | Wechjal | 1183 | 2294 | 1112 | 2294 | 5,6,7,8 | 60 |
| Buong | 5 | Balok\ Chuek Balok | 276 | 2570 | 2295 | 2570 | 9 | 15 |
| | 6 | Buong Kuel\ Bwong-Kuel | 183 | 2753 | 2571 | 2753 | | |
| | 7 | Manguet | 598 | 3351 | 2754 | 3351 | 10, 11,12 | 45 |
| | 8 | Matar | 143 | 3494 | 3352 | 3494 | 13 | 15 |
| Diror | 9 | Dik | 596 | 4090 | 3495 | 4090 | 14 | 15 |
| | 10 | Kaikueny | 324 | 4414 | 4091 | 4414 | 15 | 15 |
| | 11 | Padoi | 423 | 4837 | 4415 | 4837 | 16 | 15 |
| | 12 | Tangnyang\ Tangyang | 402 | 5239 | 4838 | 5239 | 17, 18 | 30 |
| Walgak | 13 | Kuernyuon | 154 | 5393 | 5240 | 5393 | | |
| | 14 | Walgak | 142 | 5535 | 5394 | 5535 | 19 | 15 |
| | 15 | Wechyakuach\ Wech Yakuac | 394 | 5929 | 5536 | 5929 | 20 | 15 |
| | 16 | Wunkuel | 158 | 6087 | 5930 | 6087 | | |

### B.2.1.2 Second stage: Random selection of villages

As cluster sampling are generally done at the village-level, there is no clear strategy on how it should be done when the unit being selected is composed of sub-units for which no population data exists. As bomas are often found to be flexible entities, and generally composed of between 2 and 10 villages, it was determined that a minimum of 2 randomly selected villages should be assessed within each boma. If information about relative population size of each village to be assessed becomes available once in the field, it is possible to weight how many household should be assessed within each village (so if village A is 2 times bigger than village B, then twice the number of households could be assessed in village A). Otherwise, the sample size for the boma should be equally divided by village.

If a very large village or town is located in a boma to be assessed, it should by default be one of the village, or even be the only assessed village/town. If the number of households is over 100 or if the households are very dispersed, the team will proceed to a segmentation of the village (similar to cluster sampling). Once a segment is

selected, survey team would need to go through the same process of getting a list of households. In a town, segmentation could be done along neighborhood lines.

**NOTE:** If population figures at the village level is available, this step should be skipped and the cluster sampling should be done in a classic 2-step approach.

**B2.1.3 Third stage: Random selection of households**

One of the reasons to use cluster sampling is to divide the survey area into smaller geographical units where simple or systematic random sampling will be feasible. However, in some cases, even villages that are chosen to contain a cluster might be too large and in most cases, no list of households is available at the village level. Therefore, when arriving to the village, some preparatory work needs to be done before being able to select the actual households that will be included in your survey. If the local leader is able to provide a list of households in the village, random sampling can be done quite easily and if no such list exists, the teams should try to make one with local authorities. If the number of households is over 100 or if the households are very dispersed, the team will proceed to a segmentation of the village as explained in B2.1.2). Once a segment is selected, survey team would need to go through the same process of getting a list of households. After the preparatory steps mentioned in previous section (segmentation, getting a list of households), selection of households within clusters can start using the most recommended methods: simple (for example, picking a HH from a hat) or systematic random sampling (with a sampling interval).

If it is impossible to get a list households, then modified EPI method should be used:

1. First, find the center of the village or segment where you are conducting your survey and choose a random direction by spinning a pen or any sharp object.
2. Walk in a straight line until you reach the boundary of the village or cluster.
3. Spin the pen or the sharp object once again.
4. Walk along this 2nd direction, numbering households on both sides (left and right); for ex, N= 10.
5. Choose a random number between 1 and N (e.g., between 1 and 10; lets' say 7).
6. Go back to household number 7. This is the first household to survey.
7. Continue to next household on the right until the cluster is completed.

**B3.1 Data Entry and Analysis**

Data will be collected using Android-based smartphones with a Kobo platform, enabling data entry directly during the interview if internet connection allows it or through an offline tool such as Briefcase.

Data analysis will be qualitative, to provide significant statistics to help orient future actions and provide recommendations.

## C. Resource Plan & Timeline

It is expected that the assessment will go from the 26nd of January until the 2nd of March. The assessment team will be composed of 4 teams of 4 enumerators (one of which will be a Team Leader, in each team).

**C1.1. Resource Plan and Timeline**

Refer to Planning Document in Toolkit.

# Annex II: Indicator list

| *Theme* | Indicator |
|---|---|
| *Demographics* | % of HH per resident status of head of household |
| *Demographics* | % of HH hosting IDPs |
| *Demographics* | % of HH with one or more vulnerable household member-per category (-5y.o.; pregnant/lactating women; member with disability; over 60 y.o.) |
| *Hygiene* | % of respondents who can identify 3 of the 5 critical times for handwashing |
| *Hygiene* | % of household per type of product used to wash hands |
| *Hygiene* | % of HH without soap-by reason |
| *Hygiene* | % of HH who received hygiene promotion messaging in the last year |
| *Protection* | % of respondents who ever felt unsafe collecting water-by gender |
| *Sanitation* | % of HH with access to a functional latrine |
| *Sanitation* | % of respondents not using latrine- by reason |
| *Sanitation* | % of HH who practice open defecation |
| *Sanitation* | % of HH who practice the safe excreta disposal method of burial (for open defecation) |
| *Water* | % of HH per type of main source of drinking water |
| *Water* | % of HH who have access and use an improved source of drinking water as main source |
| *Water* | % of HH who used an unsafe source of drinking water as secondary source in the last 7 days- by type |
| *Water* | % of HH who used a different source for drinking water than water for washing or cooking in the last 7 days |
| *Water* | % of HH with an average number of litres per person per day of water that meets the Sphere standards for water quantity (15 litres per person per day) |
| *Water* | % of household who do not meet the Sphere standards minimum water/person/day- by reason |
| *Water* | % of HH who treat their drinking water-by type of treatment |
| *Water* | % of HH who use a water treatment which makes their drinking water safe |
| *Water* | % of HH who don't treat their water-by reason |
| *Water* | Average water transport volume available for each HH (with a proxy for storage) |
| *Water* | % of HH who meet the Sphere standards minimum water transport container/HH (10-20 l containers/HH) |

Note All indicators, including demographics, aim at identifying vulnerabilities within households

# Annex III: Questionnaire

## WASH CLUSTER BASELINE QUESTIONNAIRE

### SOUTH SUDAN

**Consent**

We are conducting a survey to find out more about the access to water and hygiene practices for your household. It would be important to talk to someone who knows about these topics and, if possible, an adult who collects water. The survey should take about 15 minutes to complete. Any information that you provide will be confidential and also anonymous. This is voluntary and you can choose not to answer any or all of the questions; however we hope that you will participate since your views are important. Do you have any questions? May I begin now?

**A0.1 InterviewerID:** _____

**A0.2 State:** _____ **A0.3 County:** _____

**A0.4 Payam:** _____ **A0.5 Boma:** _____

### A. Demographic

**A.1.1 What is the sex of the respondent? (***Do not ask that question, just observe and fill)*

- ☐ Male
- ☐ Female

**A2.1 What is the residence status of the head of household?**

- ☐ Host (Ask Question A3.1)
- ☐ IDP (Internally Displaced Person) (Skip to Question A4.1)
- ☐ Nomad (Skip to Question A4.1)
- ☐ Returnee (Ask Question A3.1)
- ☐ Refugee (Skip to Question A4.1)

**A3.1 Are you currently hosting any people who are not usually members of this household and who share resources, such as food and water, with you?** This could include friends or extended family

- ☐ Yes
- ☐ No

**A4.1 How many people live in your household? (INCLUDING the head of household):** _____
Count ALL members sharing resources, including IDPs, if any

**A5.1 Do any member in your household fall under the following category (tick box if yes):**

- ☐ A5.1.1 Children under 5 years old
- ☐ A5.1.2 Person with disability
- ☐ A5.1.3 Pregnant/lactating woman
- ☐ A5.1.4 Adult over 60 years old

1

## B. Water

**B1.1 What is the main source of drinking water for your household?**

*Select only one but don't read the choices to the respondent*

| | |
|---|---|
| ☐ tap-stand/water yard | ☐ hand pump |
| ☐ protected shallow well | ☐ unprotected shallow well |
| ☐ hafir | ☐ river or stream |
| ☐ swamp/stagnant water | ☐ rain water |
| ☐ water trucking | ☐ bottled water |
| ☐ Other, please specify: | |

**B1.2 In the last 7 days, did you use any other source(s) of drinking water apart from the one mentioned above?**

☐ Yes
☐ No (Skip to Question B1.3)
☐ I don't know (Skip to Question B1.3)

**B1.2.1 What other source(s) of drinking water did you use?**

*Select all that apply but don't read the choices to the respondent. Do not select same source as Question B1.1*

| | |
|---|---|
| ☐ tap-stand/water yard | ☐ hand pump |
| ☐ protected shallow well | ☐ unprotected shallow well |
| ☐ hafir | ☐ river or stream |
| ☐ swamp/stagnant water | ☐ rain water |
| ☐ water trucking | ☐ bottled water |
| ☐ Other, please specify: | |

**B1.3 In the last 7 days, did you use a different source for drinking water than water for washing or cooking?**

☐ Yes
☐ No
☐ Don't know

**B2.1 Do you collect water for your household?**

☐ Yes
☐ No (Skip to Question B3.1)

**B2.1.1 If yes, did you ever feel unsafe when collecting water?**

☐ Yes
☐ No
☐ I don't want to answer

2

**B3.1 How many containers do you have to collect water? _____ containers**

- Ask to see the containers. If not available, use the pictogram to estimate.
- Water for household purposes only: drinking, bathing, cooking, laundry) – not for animal use, brickmaking, agriculture, gardening, etc.)
- This includes all water collected morning, afternoon, and evening

**B3.2 Record containers one by one in the following table. Use the pictogram to identify the containers and find the amount of litres this container can hold. Calculate the total volume used by the household at the bottom of the table.**

| Container # | B3.2.1Volume of the container (in litres) | B3.2.2 Number of times the container was filled the last time water was collected | B3.2.3 Volume * # times it was filled (B3.1.1 * B3.1.2) |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| B3.1.4 TOTAL OF LITRES FOR THE HOUSEHOLD | | | |

**If there are more containers, continue table at the back of the sheet**

Enter the total number of litres: A=_____ litres  Write the total number of household members: B=_____members

Divide A by B (divide the total number of liters/total number of household members):C=_____

*This number is the number of litres per person per day.*

**If it is 15 or lower, ask Question B4.1. If higher than 15, skip to B5**

**B4.1 Based on the information you gave me, it seems like the water consumption of your household is low. What do you think is the main reason?** Select only one but don't read the choices to the respondent

- ☐ There is not enough water at my water source
- ☐ We don't have enough containers to either store or carry water
- ☐ The water is not good (taste, smell, quality)
- ☐ The water source is too far
- ☐ The waiting time is too long
- ☐ We don't feel safe going to the water point
- ☐ We feel we have enough water
- ☐ I don't know
- ☐ Other, please specify:_____

3

**B5.1 Do you or someone else in the household generally do something to your drinking water to make it ready to drink, such as treat it?**

- ☐ Yes (Go to Question B5.1.1)
- ☐ No (Go to Question B5.1.2)
- ☐ Don't know (Go to Section C)

**B5.1.1 If yes, what method(s) do you use?**

*Select all that apply but don't read the choices to the respondent*

| | |
|---|---|
| ☐ Boiling | ☐ Filter cloth |
| ☐ Other type of filter (ceramic, membrane, slow-sand, etc) | ☐ Chlorine tablets/Aqua tabs |
| ☐ Pur (flocculent) | ☐ Sharp (alum) |
| ☐ Moringa seeds | ☐ Three Pot System |
| ☐ Sun exposure (solar desinfectation) | ☐ Other, specify:_____ |

**B5.1.2 If no, why don't you treat the water?**

- ☐ There is no need as I feel the water I collect is clean and does not need to be treated
- ☐ I dont have materials for water purification/treatment
- ☐ I don't know any treatment methods
- ☐ I don't have the time
- ☐ I don't know
- ☐ Other:_____

## C. Hygiene

**C1.1 Please name at least 3 of the most important times when someone should wash their hands.**

*Specify the focus on activities (ex: before eating), not times of the day (ex: in the morning)*
*Select all that apply but don't read the choices to the respondent*

| | |
|---|---|
| ☐ I never wash my hands | ☐ Before preparing food |
| ☐ When my hands are dirty | ☐ After defecating |
| ☐ Before eating | ☐ After eating |
| ☐ Before feeding baby | ☐ After disposing of baby's feces |
| ☐ Other, please specify | |

**C1.1.1 What do you most commonly use to wash your hands?**

| | |
|---|---|
| ☐ Water only | ☐ Soap |
| ☐ Ash | ☐ Sand |
| ☐ Other, please specify:_____ | |

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**C2.1 Do you have soap in your household?** Ask to see soap and only select yes if the respondent can show the soap within 1 min

- ☐ Yes (Go to Section D)
- ☐ No (Go to Question C2.1.1)

**C.2.1.1 If no, why don't you have soap?**

| | |
|---|---|
| ☐ It is unavailable at the local market | ☐ We cannot afford it |
| ☐ We prefer a substitute | ☐ We ran out of soap |
| ☐ We are waiting for the next distribution | ☐ Soap is not necessary |
| ☐ The market is too far | ☐ Other:_____ |

## D. Sanitation

**D1.1 Does your household have access to a functional latrine?**

☐ Yes (Go to Question D1.1.1) ☐ No (Go to question D1.1.3)

**D1.1.1 If yes, do you use the latrine?**

- ☐ Yes (Go to Section E)
- ☐ No (Go to Question D1.1.2)
- ☐ I don't want to answer (Go to Section E)

**D1.1.2 What is the main reason why you don't use a latrine?**

| | |
|---|---|
| ☐ Too far | ☐ Lack of privacy |
| ☐ Too dirty | ☐ It is not safe |
| ☐ I prefer other options | ☐ I don't want to answer |
| ☐ Other, please specify: _____ | |

**D1.1.3 If you don't use a latrine, do you dig and cover? (also named "cats method")**

☐ Yes ☐ No ☐ I don't want to answer

## E. Hygiene Promotion

**E1.1 Did you receive hygiene promotion messaging or training in the last year?**

☐ Yes (The questionnaire is over) ☐ No (Ask Question E1.1.1)

**E1.1.1 If not, did one or more household member other than you receive hygiene promotion messaging or training in the last year?**

☐ Yes ☐ No ☐ I Don't know

**A0.6 If you have a GPS, record your location (decimal degree)**: Latitude_____ Longitude: _____

GPS coordinates can only be collected when outside and Accuracy should be less than 8m

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