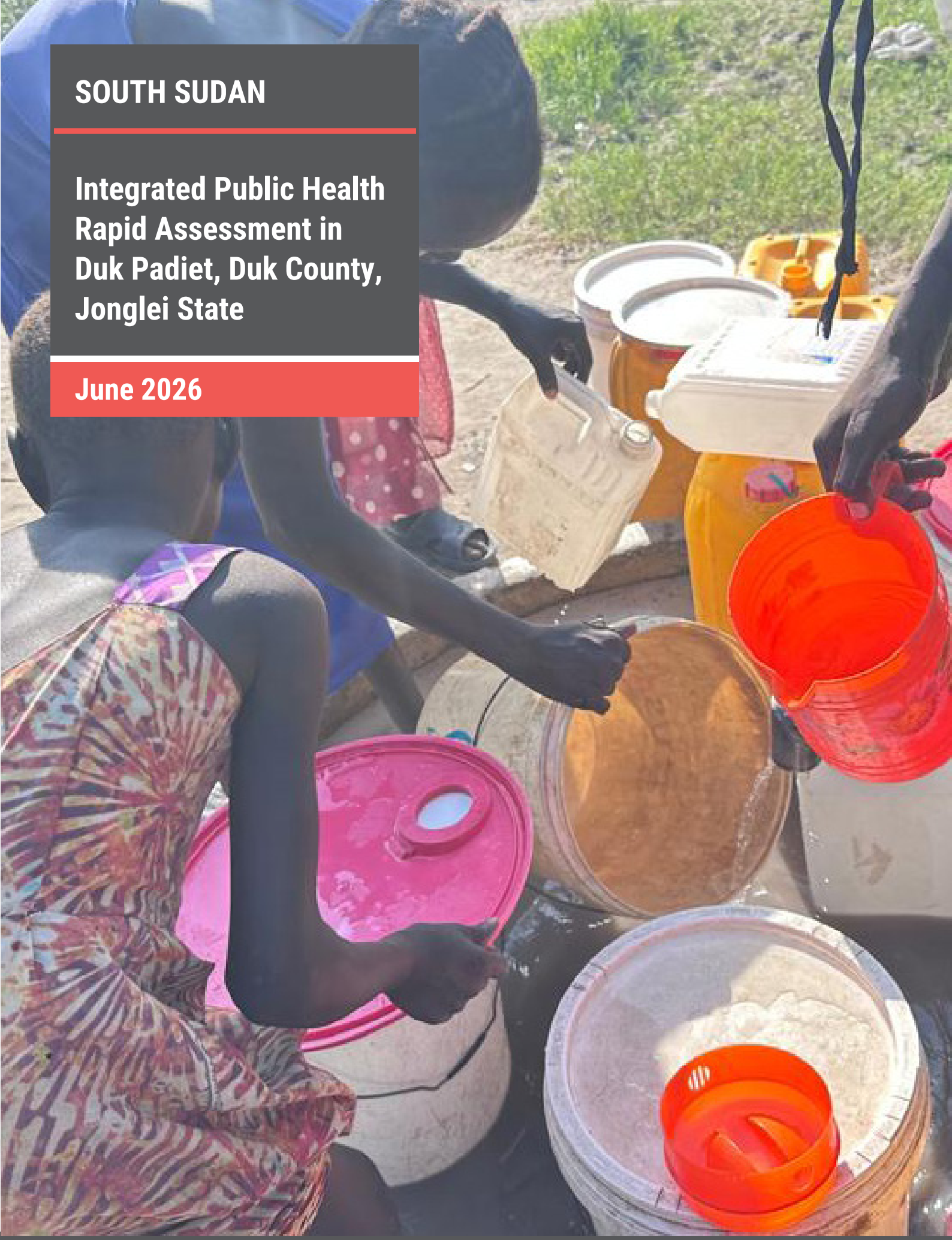


SOUTH SUDAN

Integrated Public Health Rapid Assessment in Duk Padiet, Duk County, Jonglei State

June 2026

UKaid
from the British people

REACH Informing more effective humanitarian action

About REACH

REACH facilitates the development of information tools and products that enhance the capacity of aid actors to make evidence-based decisions in emergency, recovery, and development contexts. The methodologies used by REACH include primary data collection and in-depth analysis, and all activities are conducted through inter-agency aid coordination mechanisms. REACH is a joint initiative of IMPACT Initiatives, ACTED and the United Nations Institute for Training and Research - Operational Satellite Applications Programme (UNITAR-UNOSAT). For more information, please visit our website. You can contact us directly at: geneva@reach-initiative.org and follow us on Twitter @REACH_info.

Summary

Padiet Payam, located in the northern part of Duk County in Jonglei State, has experienced a severe and worsening public health crisis driven primarily by prolonged and recurrent flooding since 2020. Flooding has displaced thousands of people from more remote villages,[1] mainly to Canal and Padiet Centre. This is consistent with wider trends observed across flood-affected areas in Unity and Jonglei States, where recurrent flooding since 2023 has damaged homes, farmland, markets, water points, sanitation facilities, and health infrastructure, repeatedly displacing communities and constraining access to essential services.[2] In Duk County, these conditions have contributed to heightened vulnerability among both host populations and internally displaced persons (IDPs) in Canal and Padiet Centre, reflected in widespread severe acute food insecurity and elevated malnutrition rates.[3]

Protracted flooding directly undermines public health conditions in Duk County. Flooding has contaminated water sources and damaged sanitation facilities, contributing to widespread open defecation and elevated risks of diarrhoeal disease. Meanwhile, flood water has disrupted livelihoods and isolated households from alternate food sources, such as markets. Both Integrated Food Security Phase Classification (IPC) and FEWS NET analyses regularly identify flooding and access constraints as key drivers of acute food insecurity Duk.

This Integrated Public Health Rapid Assessment (IPHRA) was conducted by REACH in coordination with humanitarian partners under established health and nutrition coordination mechanisms in South Sudan. While secondary sources provided regular updates on flooding impacts, food insecurity projections, and disease outbreaks at state and national levels, partners identified a critical information gap on population-level public health outcomes in hard-to-reach areas of Duk County, such as settlements in Duk Padiet. Routine surveillance and facility-based reporting systems were unable to assess excess mortality, morbidity patterns, nutrition status, and compounding WASH risks among isolated, flood-affected communities in these areas.

The IPHRA was conducted between June 10-26, 2026. Data were collected in Canal and Padiet, Duk County. The assessment focused on flood-affected host and IDP communities, including remote settlements facing persistent access constraints. Data were collected through household-level quantitative surveys using standardized public health indicators covering mortality, morbidity, malnutrition (using MUAC screening among children under-5), food security, WASH conditions, and access to preventive and curative health services.

The assessment identified extremely critical acute malnutrition rates among children under-5 in assessed areas, as well as considerable gaps in WASH facilities, widespread acute food insecurity, and limited access to essential health services. Widespread open defecation and limited access to soap increased the risk of waterborne diseases, particularly in the Canal sites.

The reliance on MUAC for nutrition screening limited direct comparability with WHZ-based GAM estimates, while reported morbidity and mortality indicators were subject to recall and reporting bias.. Ongoing population movement, insecurity, and a shifting humanitarian context may have further influenced the situation after data collection, meaning findings should be interpreted as a snapshot of a rapidly evolving humanitarian emergency.

[1] REACH (2025) Duk County: Flood overview (September 2025). Available here.
[2] OCHA (2025) South Sudan: Flooding Situation Flash Update No. 9 (As of 31 October 2025). Available here.
[3] See Integrated Food Security Phase Classification (IPC): South Sudan – Acute Food Insecurity Projection Update for April-July 2026. Available here.; IPC: South Sudan – Acute Malnutrition Projection Update for April-June 2026. Available here.

Key Messages

1. The overall public health situation in Duk Padiet was of High Severity at the time of data collection, according to IPHRA Core Indicator Thresholds. Although mortality remained below emergency thresholds, the prevalence of acute malnutrition by MUAC (30.6%, including a 9.7% Severe Acute Malnutrition (SAM) rate), doubled the extremely critical threshold (15%). The nutrition crisis was compounded by widespread household food insecurity, poor WASH conditions, limited access to essential healthcare services, and continued displacement-related vulnerabilities. These factors collectively increased the risk of child morbidity, further nutritional deterioration, and excess mortality, particularly among children under five years of age.

2. Mortality levels among the general population in the assigned recall period were below the emergency threshold (1.0), with a Crude Mortality Rate (CMR) of 0.56 deaths/10,000 persons/day (95% CI: 0.27-0.85) and an Under-Five Mortality Rate (U5MR) of 0.29 deaths/10,000 children/day (95% CI: -0.11-0.86). The majority of reported deaths (79%) were due to non-traumatic causes (including malaria, pneumonia, diarrhoea, cholera, malnutrition, and other illnesses), with the remainder (21%) being traumatic deaths.

3. Acute malnutrition among children aged 6-59 months (according to the Mid-Upper Arm Circumference (MUAC) approach) was at an extremely critical level, with a GAM prevalence of 30.6% (95% CI: 27.4-34.0%), including 20.9% Moderate Acute Malnutrition (MAM) and 9.7% SAM. The SAM rate more than doubled the emergency thresholds (4%). According to WHO thresholds, these findings represent a severe public health emergency at the time of data collection. The high burden of malnutrition was likely linked to poor food consumption, inadequate dietary diversity, unsafe water and sanitation conditions, recurrent child illness, and limited access to healthcare services.

4. The food security situation in Duk Padiet was moderate, characterised by inadequate food consumption, widespread household hunger, and heavy reliance on humanitarian assistance. Food Consumption Score (FCS) results showed that 36% of households had borderline or poor food consumption (31% borderline and 5% poor) in the 7 days prior to data collection, while Household Hunger Scale (HHS) findings indicated 83% of households experienced moderate *or worse* hunger in the 30 days prior to data collection. Persistent barriers to food access, including insufficient food availability, insecurity, and high transportation costs, were proximate drivers of poor dietary intake.

5. WASH conditions were characterised by widespread open defecation, limited access to hygiene materials, and heightened disease transmission risks. Nearly all households (96.9%) practiced open defecation, while 87.1% lacked soap for handwashing. Recurrent flooding, limited space for latrine construction, and the destruction of sanitation facilities have severely constrained access to safe sanitation facilities. These conditions were increasing the risk of diarrhoeal diseases, other waterborne infections, and disease outbreaks, particularly among children under five years of age, while also contributing to assessed areas' extremely critical acute malnutrition burden.

6. Between August and October, the public health situation in Duk Padiet is expected to deteriorate slightly due to seasonal flooding, ongoing insecurity, rising food prices, disrupted livelihoods, and constrained humanitarian access. These factors are likely to reduce access to food, healthcare, and essential services, while increasing the risk of waterborne diseases and further limiting household coping capacity. Given the already extremely critical burden of acute malnutrition, persistent food insecurity, and severe WASH deficiencies, vulnerable groups, particularly children under five years of age, pregnant and lactating women, and IDPs, are

expected to face heightened risks of illness, malnutrition, and adverse health outcomes. Sustained multisectoral assistance will be critical to prevent further deterioration of the public health situation.

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List of Acronyms

AFI:	Acute Food Insecurity
AMN:	Acute Malnutrition
CDC	Centers for Disease Control and Prevention
CDR:	Crude Mortality Rate
ENA:	Emergency Nutrition Assessments
FCS:	Food Consumption Score
FGD:	Focus Group Discussion
FSL:	Food Security and Livelihoods
FSNMS:	Food Security and Nutrition Monitoring System
GAM:	Global Acute Malnutrition
HC:	Host community
HH:	Household
HHS:	Household hunger scale
IPC:	Integrated Phase Classification
IPHRA:	Integrated Public Health Rapid Assessment
IYCF:	Infant and Young Child Feeding
JMP:	Joint Monitoring Programme
KI:	Key Informant
LCS:	Livelihood Coping Strategies
MAD:	Minimum Acceptable Diet
MAM:	Moderate Acute Malnutrition
MDD:	Minimum Dietary Diversity
MSF:	Médecins Sans Frontières
MSSMEB:	Multi-sectoral Survival Minimum Expenditure Basket
MUAC:	Mid-Upper Arm Circumference.
PHCC:	Primary Health Care Centre
PLW:	Pregnant and Lactating Women
PPS:	Probability Proportional to Size
RRC:	Relief and Rehabilitation Commission
SAM:	Severe Acute Malnutrition
SSD:	South Sudan
U5MR:	Under Five Mortality Rate
UNICEF:	United Nations International Children's Emergency Fund
Vit A:	Vitamin A
WASH:	Water, Sanitation and Hygiene
WFH:	Weight for Height
WHO:	World Health Organization

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CONTEXT & RATIONALE

Duk County, located in western Jonglei State, has become a major host area for internally displaced persons (IDPs) following the onset of conflict in Jonglei State in January 2026. Most IDPs originated from Uror county, as well as and other parts of Duk and Nyirol counties.4 The large influx of displaced households placed considerable pressure on already limited basic services, including health care, water and sanitation infrastructure, food systems, and shelter. As a result, both IDP and host communities experienced severe overcrowding, erosion of coping mechanisms, and heightened vulnerabilities.

The situation deteriorated further due to an ongoing cholera outbreak in areas hosting IDPs, particularly in Canal and Padiet centres.[5] Overcrowded living conditions, inadequate sanitation facilities, and limited access to safe drinking water precipitated a rapid increase in cholera cases and associated deaths.[6] An emergent public health emergency was compounded by a high prevalence of other communicable diseases, including diarrheal diseases, acute respiratory tract infections, urinary tract infections, and malaria.

These health challenges unfolded alongside an acute food and nutrition crisis affecting both IDPs and host communities. Households increasingly resorted to negative coping strategies, such as the consumption of wild foods, driven by severe food shortages and extremely poor dietary diversity. As a result, vulnerable populations, especially children under five years of age and pregnant and lactating women, faced heightened risks of malnutrition, illness, and mortality.[7] A Mid-Upper Arm Circumference (MUAC) screening exercise between February 11-14, 2026, which covered 243 children aged 6–59 months, revealed a Global Acute Malnutrition (GAM) prevalence of 24.3%, including 17.7% MAM and 6.6% SAM.[8]

According to the March–April 2026 IPC update, Duk County was classified in IPC AFI Phase 4 (Emergency) between April-July, and IPC AMN Phase 5 (Extremely Critical) between April-June, highlighting the extreme severity of food insecurity and acute malnutrition ahead of the lean season.[9] Despite this, significant information gaps remained regarding the current scale of humanitarian needs, as well as service availability, access, and coverage within IDP sites and affected host communities, particularly in the context of rapidly evolving displacement dynamics and disease outbreaks.

Table 1 - April 2026 IPC analysis update results for Duk County (April-July)

County	AFI Phase (April - July 2026)	AMN Phase (April - July 2026)
Duk	4	5

[4] OCHA (2026) South Sudan: Conflict in Jonglei State – Flash Update No. 6 (as of 10 February 2026). Available here.
[5] Radio Tamazuj (2026) 'Duk County faces alarming cholera outbreak amid IDP influx.' January 27. Available here.
[6] OCHA (2026) South Sudan Humanitarian Update 1-17 April 2026. Available here.
[7] Rapid Needs Assessment (Payuel (Poktap), Padiet and Kongor Payams of Duk and Twic East counties of Jonglei State). February 11-14, 2026.
[8] Rapid Needs Assessment, February 11-14, 2026.
[9] See Integrated Food Security Phase Classification (IPC): South Sudan – Acute Food Insecurity Projection Update for April-July 2026. Available here.; IPC: South Sudan – Acute Malnutrition Projection Update for April-June 2026. Available here.

METHODOLOGY

Between 10th June and 26th June 2026, REACH conducted primary data collection in parts of Duk County using a mixed-methods approach, consisting of 518 household (HH) surveys and 13 Key Informant Interviews (KIIs). The methodology was designed to generate localized, representative findings for assessed populations, while recognizing that the results are not generalizable to the entire population of Duk County.

The population of interest for this IPHRA comprised households in Canal and Padiet Centre communities of Duk Padiet Payam, Duk County, including internally displaced persons from Greater Lou who arrived in these areas following the onset of the conflict in Jonglei State in January 2026. Canal and Padiet were treated as two separate strata; and within them, IDP and host communities were treated as two sub-strata. This level of stratification was selected to capture the potentially disparate impacts of shocks in Duk, including chronic flooding that has isolated communities for long periods, limited market access, submerged of crops, and disrupted livelihoods, contributing to high food insecurity, poor WASH conditions such as reliance on contaminated water and widespread latrine collapse, and restricted access to health services due to long travel distances, few facilities, insecurity from the neighbouring communities and frequent stockouts. A stratified sampling approach ensured the assessment adequately reflected the experiences of different groups and geographically isolated populations.

Sampling Strategy: Survey Design

A two-stage stratified simple random sampling design was used for household-level data collection.

Stage 1: Settlement-Level

An original total sample size of 488 households was allocated proportionally between Canal and Padiet Centre based on their respective estimated populations. Larger communities – mainly those in Duk Padiet – were assigned a greater share of the overall sample to ensure adequate representation of the population, while smaller and more isolated locations were allocated a smaller number of households to maintain geographical inclusion and capture variations in humanitarian needs across different settlements.

Stage 2: Household Selection

Within each selected settlement, households were selected using a simple random sampling approach. The REACH GeoRand tool was used to delineate settlement boundaries and generate randomly distributed GPS points within each defined area. The number of GPS points generated was determined based on the required sample size, with one random point representing approximately three households to be interviewed by three enumerators. For instance, to achieve a target sample of 300 households, at least 100 random GPS points were generated across the selected settlements.

Field teams navigated to each randomly generated GPS location and identified the three nearest households for interview. Data collectors administered the household questionnaire at each of these households, recording the GPS coordinates of each interviewed household to ensure spatial accuracy and support quality control during data analysis.

Sample Size Determination: Mortality Component

To estimate the required sample size for mortality indicators, the survey applied the following assumptions:

- **Host community**: a mortality rate of 1 death per 10,000 persons per day; a desired precision ±0.52 deaths per 10,000 persons per day, a 90-day recall period, an average household size of six members, and an anticipated non-response rate of 3%. Based on these parameters, the required sample size was calculated at 262 households inclusive of 1,528 persons. However, this final sample was raised to 270 as per the higher sample generated during the MUAC sample size estimation (see *Sample Size calculation of Anthropometry – HC*, below).
- **Internally displaced persons**: a mortality rate of 1 death per 10,000 persons per day; a desired precision ±0.45 deaths per 10,000 persons per day, a 90-day recall period, an average household size of six members, and an anticipated non-response rate of 3%. Based on these parameters, the required sample size was calculated at 218 households inclusive of 1,463 persons.

The sample was stratified by population group and location, covering both internally displaced persons (IDP) settlements and host communities in Canal and Duk Padiet. Of the 488 targeted households, 218 households were allocated to IDP sites, while 270 households were allocated to host communities. During field data collection, a total of 518 households were successfully surveyed, exceeding the minimum required sample size. Across the assessed locations, 308 households were interviewed among host communities in Canal and Padiet, while 210 households were surveyed within IDP sites across the two settlements. This distribution ensured adequate representation of both displaced populations and host communities, allowing for a comparative analysis of humanitarian needs and outcomes across population groups.

Mortality Sample Size

Table 2 - Sample size calculation (Mortality) of IDP Stratum

Parameter	Duk Padiet, Duk County	Assumption/Justification
Estimated death rate per 10,000/day	1/10,000/day	As per the SMART survey methodology
Desired Precision	0.45	As per the SMART survey methodology
Recall Period	90	A standard recall period of 90 days was used to plan this survey. However, for the analysis the actual recall period of 90 days (from March 20th, 2026, i.e. the appointment of the new commissioner for the county to June 18th, 2026) was used for analysis.
Population to be Included	**1463**	
Average Household Size	6	National Standard household average Size for South Sudan
% Non-Respondents	3%	Expected non-response based on experience
Households to be assessed	**218 households**	**Households to be included**

Table 3 - Sample size calculation (Mortality of HC Stratum

Parameter	Duk Padiet, Duk County	Assumption/Justification
Estimated death rate per 10,000/day	1/10,000/day	As per the SMART survey methodology

Desired Precision	0.52	As per the SMART survey methodology
Recall Period	90	A standard recall period of 90 days was used to plan this survey. However, for the analysis the actual recall period of 90 days (from March 20th, 2026, i.e. the appointment of the new commissioner for the county to June 18th, 2026) was used for analysis.
Population to be Included	**1528**	
Average Household Size	6	National Standard household average Size for South Sudan
% Non-Respondents	3%	Expected non-response based on experience
Households to be assessed	**270 households**	**Households to be included**

Size Determination: MUAC component

To estimate the required sample size for nutrition screening, the following assumptions were made: an estimated GAM (MUAC) prevalence of 24.30%, a desired precision of ±5%, a proportion of children under five of 20%, an average household size of 6, and a non-response rate of 3%. The sample also applied a finite correction factor for small populations (<10,000).

Table 4 - Sample Size calculation (Anthropometry) of IDP Stratum

Parameter	Duk Padiet, Duk County	Assumption/Justification
Estimated Prevalence (%)	24.30%	The GAM Rate was taken from the Duk IRNA, which was conducted from 11 to 14 February 2026 by all Humanitarian actors. This is substantially above the WHO emergency threshold and indicates a critical nutrition situation requiring urgent intervention.
Desired Precision	±5%	As per the SMART survey guidelines
Design effect	1	As per the SMART survey guidelines
Children to be included	**193**	Number of children to be assessed
Average Household Size	6	National Standard household average Size
% children under 5	20%	South Sudan U5 national average.
% Non-Respondents	3%	Expected non-response based on experience
Households to be assessed	**218 households**	**Minimum sample size-Households to be surveyed.**

Among host community members, the following assumptions were made to estimate the required sample size for nutrition screening: an estimated GAM (MUAC) prevalence of 24.30%, a desired precision of ±5%, a proportion of children under five of 20%, an average household size of 6, and a non-response rate of 3% for IDPs. The final sample included 270 households corresponded to approximately 283 children aged 6–59 months targeted for MUAC assessment.
Table 5 - Sample Size calculation (Anthropometry) of HC Stratum

Parameter	Duk Padiet, Duk County	Assumption/Justification
Estimated Prevalence (%)	24.30%	The GAM Rate was taken from the Duk IRNA, which was conducted from 11 to 14 February 2026 by humanitarian partners. This is substantially above the WHO emergency threshold and indicates a critical nutrition situation requiring urgent intervention.
Desired Precision	±5%	As per the SMART survey guidelines
Design effect	1	As per the SMART survey guidelines
Children to be included	**283**	Number of children to be assessed

Average Household Size	6	National Standard household average Size
% children under 5	20%	South Sudan U5 national average.
% Non-Respondents	3%	Expected non-response based on experience
Households to be assessed	**270 households**	**Minimum sample size-Households to be surveyed.**

Qualitative Data collection

A total of 13 Key Informant Interviews (KIIs) were conducted with community leaders, humanitarian staff, and community members to capture contextual information and community perceptions on humanitarian needs, displacement dynamics, and service availability. Prior to primary data collection, a comprehensive secondary data review was undertaken to inform the assessment design and provide contextual understanding of inter-communal relations, population movements, the humanitarian operating environment, and the availability and coverage of essential services. The qualitative findings were triangulated with quantitative data to strengthen the overall analysis and interpretation of results.

Table 6 - Breakdown of qualitative data collection

Key Informant Interviews	
Community leaders KIs	4
Community members KIs	8
Implementing partner KIs	1

ASSESSMENT OBJECTIVES

General objective

- To assess the severity of public health outcomes and identify initial public health priorities for the humanitarian response to mitigate excess morbidity, malnutrition, and mortality in the seven selected sites of Duk Padiet, Duk County with a recall period of 90 days prior to data collection.

Population Demographics

- To understand the demographic composition of the target population.

Health and Nutrition

- To estimate the proportion of the population with health care needs in the two weeks prior to data collection (any health care needs, unmet needs, needs by sex/age/symptom)
- To understand the main barriers for the target population in accessing health and nutrition services.
- To assess broad infant and young child breastfeeding and consumption patterns in emergency for children under 2 years of age.
- To identify any challenges for caregivers in infant and young child feeding practices.
- To estimate the proportion of children 6-59 years of age severely or moderately acutely malnourished by MUAC.
- To estimate the coverage of Vitamin A supplementation among children 6-59 months of age
- To estimate the coverage of measles vaccination among children 9-59 months of age
- To estimate the coverage of oral cholera vaccinations among people 5+ years of age
- To estimate the crude mortality rate of the assessed population since [recall date].

Food Security & Livelihoods

- To estimate the proportion of the target population experiencing food consumption gaps, both in terms of quantity and diversity.
- To estimate the proxy coverage of emergency food security interventions in the target population.
- To understand the availability and utilisation of food at the household level.
- To understand the main barriers for the target population in accessing food.
- To estimate the proportion of the population using livelihood-based coping strategies to access food, or other basic needs, and their severity.

Water, Sanitation, and Hygiene

- To estimate the proportion of the population with access to improved sanitation facilities
- To understand the main barriers for the target population in accessing water.
- To understand the distance of water collection for the targeted population.
- To understand what kind of water treatment methods households in the assessed population are using
- To assess the functionality of water points used by the target population in the community and at health or nutrition facilities.

- To understand what proportion of households in the assessed population have access to improved sanitation facilities.
- To estimate the proportion of households with access to basic WASH NFIs.

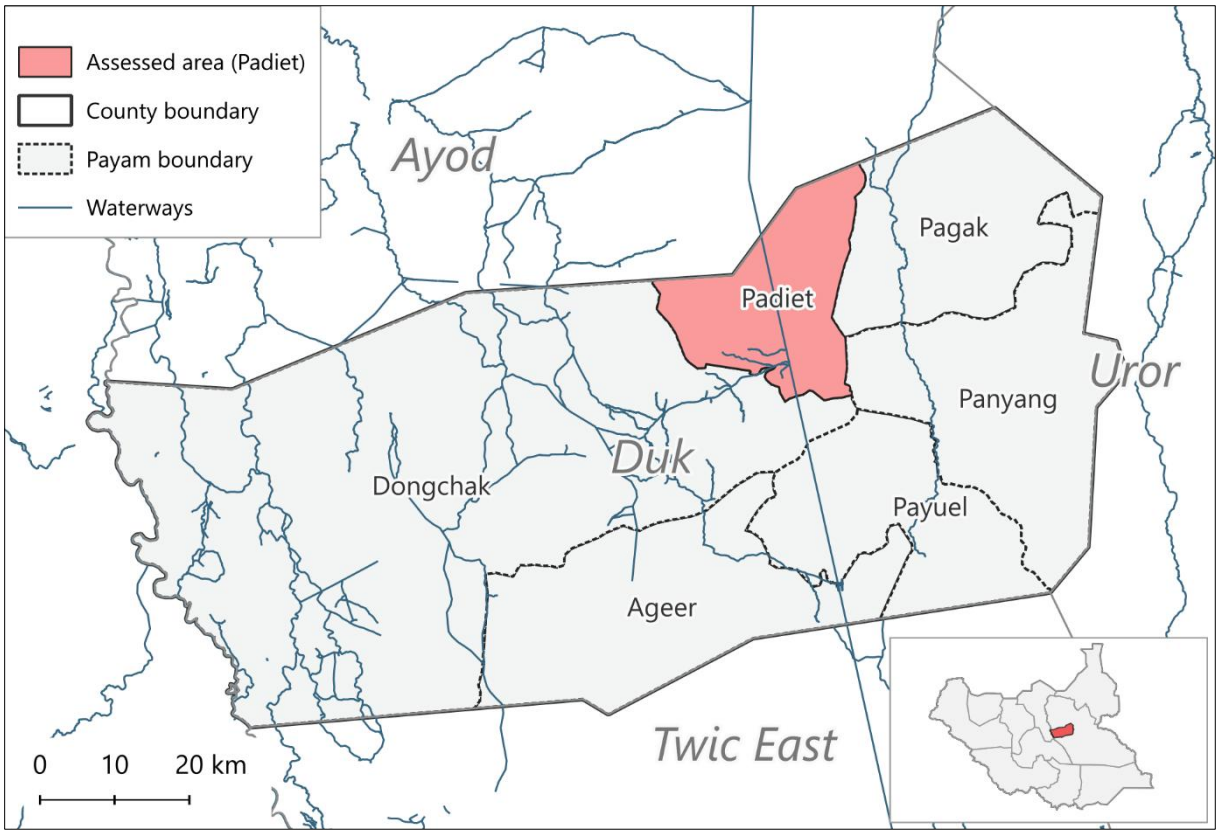
Shelter and NFIs

- To assess the main shelter types being used by the population.
- To assess the prevalence of shelter damage among the population.
- To estimate the proportion of the population with access to critical non-food items (soap, mosquito nets, water treatment tablets, blankets, tarpaulin, cooking supplies, jerry cans, etc.)

GEOGRAPHIC SCOPE

Data collection was conducted in Duk County, specifically in Canal and Duk Padiet Centre, both within Padiet Payam (see Figure 1). The assessment targeted internally displaced persons (IDPs) and host communities residing in the assessment areas. These locations were selected due to the high concentration of displaced populations and the significant humanitarian needs resulting from conflict, displacement, and limited access to essential services.

Figure 1 - Map of assessed location



FINDINGS

Participant Demographics

REACH enumerated a total 3,158 individuals across 518 surveyed households, with females comprising 54.0% of the population and males 46.0%. Children constituted most household members (60.4%), underscoring a high dependency burden and highlighting the importance of prioritizing child-focused humanitarian interventions, including nutrition, health, education and protection services.

Regarding residency status, 59.5% of surveyed households identified as belonging to the host community, while 40.5% identified as being internally displaced persons (IDPs). This distribution reflects the mixed population composition of Canal and Duk Padiet Centre, where displaced households were living alongside host communities. Including both population groups in the assessment enabled a comparison of humanitarian needs, vulnerabilities, and access to essential services, while ensuring that the findings were representative of the overall affected population.

Table 7 - Participant Characteristics both the Host and IDP

Household-level data collection	Host (n = 1,895)	IDP (n = 1,263)	Population (%) (n = 3,158)
Gender of household members			
Female	54% (1023)	54% (682)	54% (1,705)
Male	46% (872)	46% (581)	46% (1, 453)
Age groups			
Children aged 0-2 years	14% (265)	15% (189)	14% (442)
Children aged 3-5 years	15% (284)	14% (177)	15% (474)
Household size			
Average household size	6	6	6
Head of household marital status			
Married	99% (304)	98% (206)	99% (510)
Single	1% (3)	1% (2)	1% (5)
Widowed	0.3% (1)	1% (2)	1% (3)

Table 8 - Household Residency Status

Household Residency Status	
Host community	308 (59.5%)
Internally Displaced person (IDP)	210 (40.5%)

Reported priority needs

Throughout the assessment, quantitative surveys and key informants consistently identified food assistance as the highest priority need in assessed areas, highlighting the severity of food insecurity and the heavy reliance on humanitarian support. Almost two-thirds of households (60%), including similar percentages of host community and displaced households, identified food as their primary need, reflecting widespread challenges to accessing food and disruption to livelihoods. Drinking water was the second most reported primary need (33% of households).

When asked about their second priority needs, the largest percentage of households (45%) identified drinking water. Meaning over three-quarters of households (78%) identified this as a primary or secondary need. Food was the second most reported secondary need (30%). When asked about their third priority needs, the largest percentage of households (34%) identified shelter materials or repairs, followed by healthcare (32%).

The predominance of food and drinking water as first and second priorities, combined with substantial demand for healthcare, shelter materials and shelter repair, reflects the interaction between food insecurity, flooding, displacement, and deteriorating living conditions. The findings suggest that interventions should remain integrated across food security, WASH, health, shelter, and livelihoods, rather than addressing food needs in isolation.

As a matter of priority, there is a need for dyke construction to reduce the impacts of recurrent flooding, protect agricultural land, and safeguard livelihoods in Duk County. Additional priorities included shelter, hygiene support, and canoe transportation to improve living conditions and facilitate access to essential services in flood-affected areas.

Table 9 - Priority Needs

Household level data collection	HC (n = 308)	IDPs (n = 210)	Overall (n = 518)
First priority need			
Food	55.8% (172)	64.8% (136)	59.5% (308)
Drinking water	35.7% (110)	30% (63)	33.4% (173)
Clothing and blankets	1.9% (6)	1.4% (3)	1.7% (9)
WASH NFIs (soap, buckets, etc.)	2.9% (9)	Not reported	1.7% (9)
Shelter materials (tarpaulin or other materials)	0.6% (2)	2.4% (5)	1.4% (7)
Shelter repair support	1.3% (4)	Not reported	0.8% (4)
Healthcare	1.3% (4)	Not reported	0.8% (4)
Cooking facilities (cooking gear)	0.3% (1)	1% (2)	0.6% (3)
Livelihoods support	Not reported	0.5% (1)	0.2% (1)
Second priority need			
Food	32.8% (101)	25.7% (54)	29.9% (155)
Drinking water	40.6% (125)	51% (107)	44.8% (232)
Clothing and blankets	5.5% (17)	3.8% (8)	4.8% (25)
WASH NFIs (soap, buckets, etc)	10.4% (32)	6.2% (13)	8.7% (45)
Shelter materials (tarpaulin or other materials)	6.8% (21)	81% (17)	7.3% (38)
Shelter repair support	0.3% (1)	1.9% (4)	1% (5)
Healthcare	1.9% (6)	2.4% (5)	2.1% (11)
Cooking facilities (cooking gear, etc.)	0.6% (2)	1% (2)	0.8% (4)
Livelihood support	1% (3)	Not reported	0.6% (3)
Third priority need			
Food	2.9% (9)	2.9% (6)	2.9% (15)
Drinking water	5.5% (17)	9.5% (20)	7.1% (37)
Clothing and blankets	3.2% (10)	37.1% (15)	4.8% (25)
WASH NFIs (soap, buckets, etc)	7.1% (22)	9.5% (20)	8.1% (42)
Shelter materials (tarpaulin or other materials)	35.7% (110)	31.9% (67)	34.2% (177)
Shelter repair support	2.6% (8)	0.5% (1)	1.7% (9)
Healthcare	32.8% (101)	31.4% (66)	32.2% (167)

Cooking facilities (cooking gear, etc.)	6.8% (21)	2.9% (6)	5.2% (27)
Livelihood support	2.9% (9)	4.3% (9)	3.5% (18)

Food Security and Livelihoods

The food security situation in Canal and Padiet of Duk County was assessed as critical, with evidence of large food consumption gaps and a widespread deterioration in the accessibility and availability of food, as well as eroded coping capacity. Findings align with long-term analyses (including at the Integrated Food Security Phase Classification) showing protracted disruption to traditional livelihood activities and strategies in Duk County. Several years of devastating floods have inundated farmland, diminishing crop production and restricting households' access to seasonal staple foods. Meanwhile, flooding and insecurity have also disrupted households' access to critical alternate food sources, namely livestock products, fishing and humanitarian food distributions. These challenges have combined to strain households' access to stable and sufficient quantities of food, particularly during the lean season – which coincides with the time of the assessment.

The convergence of quantitative indicators and qualitative findings during this assessment point to profound disruption to livelihoods and households' ability to meet minimum food needs, with outcomes largely indicative of and consistent with area-level IPC Phase 3 (Crisis) *or worse* acute food insecurity, based on the convergence of food consumption deficits, life-threatening food insecurity, widespread reliance on low-return and damaging copings strategies, profound livelihood disruption, as well as economic and physical barriers to accessing market purchases. These outcomes are aligned with the analysis during the April 2026 IPC workshop, which classified Duk County in area-level Phase 4 (Emergency) between April and July 2026.[10]

Household food sources

At the time of data collection, the largest percentages of households relied primarily on humanitarian food distributions (38%) and rainy season agriculture (37%) (see Table 10). Host community households (47%) were more likely than displaced households (34%) to report agriculture as a first main food source. It is possible that displaced persons faced unique challenges to participating in agriculture, such as low ownership of land in assessed communities. This could also explain the higher percentage of displaced households (50%) than host households (37%) relying on humanitarian food distributions as a main food source. Roughly equal percentages of host and displaced households were supplementing diets with fishing (identified as a primary or secondary food source by almost half of households (48%)). This mirrors the situation in other flood-affected parts of Jonglei, Unity and Upper Nile States, where protracted flooding has intensified alternate food gathering activities whilst disrupting traditional livelihood activities.

These findings reflect the seasonal calendar in Duk. Data were collected during the beginning of the rainy season, which is also during the typical 'lean season' when households' access to staple foods – agricultural production and livestock – are seasonally low, and reliance on alternate food sources – particularly humanitarian food distributions – is seasonally high. Reported reliance on own crops likely referred to early maturing crops and green harvests. Data collection coincided with the World Food Programme's Lean Season Response (LSR), which targeted over 25% of the population in Duk with food and cash assistance equivalent to more than 25% of daily kilocalorie needs.[11] This aligns with findings that humanitarian food assistance was a primary food source for over one-third of assessed

[10] South Sudan: Acute Food Insecurity Situation for April-July 2026.
[11] FEWS NET, Conflict and poor rains to sustain Emergency and risk of Famine through the harvest. June 2026-January 2027.

households. Similarly, reports that fishing was supplementing own production and food distributions is expected, with fish availability peaking seasonally from June/July.

Table 10 - Main food sources

Household-level data collection	Host (n = 308)	IDP (n = 210)	Population (n = 518)
First food source			
Own Crop/Garden production	41.2% (127)	30.5% (64)	36.9% (191)
Humanitarian food assistance	33.1% (102)	45.7% (96)	38.2% (198)
Fishing	17.9% (55)	18.1% (38)	18% (93)
Gathering	0.6% (2)	1% (2)	0.8% (4)
Exchange of food for labour	1.6% (5)	1% (2)	1.4% (7)
Market purchase	1% (3)	1% (2)	1% (5)
Support from neighbours/relatives	2.3% (7)	1.9% (4)	2.1% (11)
Second food source			
Own Crop/Garden production	22.7% (70)	21.9% (46)	22.4% (116)
Humanitarian food assistance	19.8% (61)	12.4% (26)	16.8% (87)
Fishing	28.2% (87)	31.4% (66)	29.5% (153)
Gathering	11.7% (36)	13.3% (28)	12.4% (64)
Exchange of food for labour	1.3% (4)	1% (2)	1.2% (6)
Market purchase	3.9% (12)	1.9% (4)	3.1% (16)
Support from neighbours/relatives	4.5% (14)	4.8% (10)	4.6% (24)
Third Food Source			
Own Crop/Garden production	5.2% (16)	8.1% (17)	6.4% (33)
Humanitarian food assistance	21.8% (67)	19.5% (41)	20.8% (108)
Fishing	44.8% (138)	41% (86)	43.2% (224)
Gathering	9.1% (28)	12.9% (27)	10.6% (55)
Exchange of food for labour	1.3% (4)	1% (2)	1.2% (6)
Market purchase	5.5% (17)	1.4% (3)	3.9% (20)
Support from neighbours/relatives	2.9% (9)	3.8% (8)	3.3% (17)

Household Food Consumption

Data on food consumption indicate some households' access to a frequent supply of diverse food was limited in the week prior to data collection. While most (63%) assessed households' consumption corresponded to an acceptable Food Consumption Score (FCS) in the 7 days prior to data collection, a little more than a third (36%) exhibited borderline (31%) or poor (5%) food consumption, characterised by infrequent consumption of nutritious food sources, such as fruits, meat and vegetables. FCS results show assessed households consumed fruits, on average, on less than one day in the week prior to data collection; households reported consuming vegetables less than two days and meat just two days. These results largely aligned with KIIs describing a near absence of reliable food sources due to prolonged flooding, forcing households in both locations to rely on irregular and nutritionally inadequate foods. Food consumption scores were largely similar between host and IDP households,

indicating widespread challenges in accessing food that were not necessarily differentiated by displacement status.

Table 11 – Food Consumption Score (FCS) results

Household-level data collection	Host (n = 308)	IDP (n = 210)	Population (n = 518)
Food Consumption Score (FCS)			
Acceptable	65% (199)	61% (128)	63% (327)
Borderline	30% (93)	33% (70)	31% (163)
Poor	5% (16)	6% (12)	5% (28)

Experiences of hunger further underscored the severity of acute food insecurity at the time of data collection. According to the Household Hunger Scale (HHS), the large majority of households (83%) experienced moderate hunger in the 30 days prior to data collection. Findings reveal 81% of households had at least one member who went an entire day and night without eating in the month prior to data collection, with similar percentages of host (79%) and displaced (82%) households reporting this. These results suggest food consumption gaps extended beyond limited access to diverse and nutritious food sources, reflecting limited quantities of food available at household level.

Table 12 – Household Hunger Scale (HHS) results

Household-level data collection	Host (n = 308)	IDP (n = 210)	Population (n = 518)
Household Hunger Scale (HHS)			
None/slight	13% (41)	13% (27)	13% (68)
Little	5% (15)	1% (3)	3% (18)
Moderate	82% (252)	86% (180)	83% (432)
Severe	0%	0%	0%
Very Severe	0%	0%	0%

Food insecurity in assessed areas was also reflected in the high percentage of households engaged in consumption-based coping in the 7 days prior to data collection. Over one-third (38%) of households exhibited "High" Reduced Coping Strategies Scores. Most frequently, households reported deliberately consuming lower quality foods (an average 2.41 days in the week before data collection), borrowing food or relying on help (2.29 days), reducing the number of meals eaten in a day (2.21 days) and reducing meal sizes (2.13 days).

Table 13 - Average number of days households employed different coping strategies, in the 7 days prior to data collection

Household-level data collection	Host (n = 308)	IDP (n = 210)	Population (n = 518)
Reduced coping strategy index Score (rCSI)			

High Medium Low	38% (95) 50% (124) 12% (31)	37% (65) 55% (97) 7% (13)	38% (160) 52% (221) 10% (44)
Reduced coping strategy index (rCSI)			
Rely on lower-quality food	2.29	2.59	2.41
Borrowing	2.09	2.58	2.29
Reducing meal size	2.03	2.29	2.13
Reducing meals for adults	1.62	1.52	1.58
Reducing number of meals	2.11	2.34	2.21

Household Food Access

Key informants described severe food availability issues in Canal and Padiet, largely attributed to inundation of farmland as a result of prolonged flooding, which has reduced crop yields over a period of several years. Limited fishing opportunities and disruption to humanitarian food distributions had worsened the situation. The loss of livestock further undermined access to dairy and meat. Households therefore resorted to wild foods as a coping mechanism, which were reportedly inadequate to satisfy nutritional needs over longer periods. Meanwhile, fishing – another seasonal supplementary food source – was equally constrained because most households lacked canoes, nets, or fishing gear, greatly limiting daily catches. As a result, fishing was largely inadequate to compensate for the absence of more traditional food and livelihood sources, mainly agriculture and livestock, in Padiet and canal settlement.

The main barrier households identified during the quantitative household survey was insufficient food availability, affecting 23% of households. Findings revealed a small difference in the percentage of host (33%) and displaced (43%) households reporting there was not enough food in the household. Insecurity while travelling to and from food sources was also a notable constraint, reported by 15% of households overall. Other barriers included the high cost of transportation to food sources (6%) and living too far from food sources or lacking transportation (1%).

Table 14 - Main barriers to accessing food

Household-level data collection	Host (n=308)	IDP (n=210)	Population (n=518)
Main barriers to accessing food			
Not enough food is available	33.4% (103)	42.9% (90)	37.3% (198)
Insecurity travelling to and from food sources	21.8% (67)	19% (40)	20.7% (107)
Transportation to food source too expensive	17.5% (54)	12.9% (27)	15.6% (81)
Live too far from food sources/no means of transport	12% (37)	8.6% (18)	10.6% (55)

Food access in Duk Padiet, particularly among IDP and host-community households in Canal and Padiet Centre, was further constrained by a combination of economic and physical challenges. Key informants reported that the prices of staple foods have increased beyond the purchasing power of many households. In Duk Padiet, a 50 kg sack of maize flour cost approximately 250,000 SSP (around USD 35) at the time of data collection, while a 3.5 kg Malwa costs approximately 45,000–50,000 SSP (around USD 6). These prices were prohibitively high, especially for households with limited or irregular income.

Physical access constraints compounded these economic barriers. Recurrent flooding had damaged roads, pathways, and other transport routes connecting communities to markets and food sources.

This had a significant impact on households without access to canoes and other water-based transportation. These households were exposed to increased risks, especially when women and children ventured through flooded areas to collect foods. Physical access constraints also impacted disproportionately on communities located on isolated islands surrounded by floodwaters, making movement treacherous for those without canoes, as they had to traverse chest-deep water and risk encounters with hazardous wildlife like snakes and crocodiles.

Table 15 - Access to humanitarian assistance

Household-level data collection	Host (n = 308)	IDP (n = 210)	Population (n = 518)
Households registered and receiving a general food distribution/cash/voucher			
Yes	73.7% (227)	63.3% (133)	69.5% (360)
No	26.3% (81)	36.7% (77)	30.5% (158)

While 70% of assessed households reported being registered to receive general food distribution/cash/voucher programming, informants also explained that localized insecurity, including revenge killings, further discouraged communities from accessing assistance whilst restricting humanitarian operations. Although implementing partners continued to provide general food distribution and complementary livelihood-based interventions, assistance was being hampered by delayed, limited operational capacity, and the challenging of delivering assorted commodities in a severely flood-impacted environment. As such, participants in all focus groups reported delays between distribution cycles. Key challenges relating to ration sizes and criteria for targeting were raised during qualitative data collection exercises. At the time of writing in September, the World Food Programme's Lean Season Response was expected to scale down in anticipation of the harvest, as it typical during this period in South Sudan. It is probable, then, food distributions will comprise a decreased share of household consumption in the remainder of 2026.

Livelihoods and Coping Strategies

During the assessment, both IDP and host communities identified several major barriers limiting livelihood activities in the area. The most critical challenges included a lack of transport assets such as canoes and plastic sheeting, long distances to access livelihood sources, and inadequate start-up capital, which restrict households' ability to establish or expand income-generating activities. Communities also reported limited access to fishing equipment, including fishing nets, and a shortage of essential tools for activities such as firewood and charcoal collection, reducing their capacity to sustain livelihoods.

The survey findings show that households' livelihoods depended primarily on natural-resource-based activities, humanitarian services, agricultural production, and fishing, at the time of the assessment. The most commonly reported first source of income was selling collected firewood, charcoal, and wild foods (reported by 24% of all households), followed by humanitarian cash assistance (21%), sale of own-produced agricultural products (17%), sale of livestock and livestock products (14%), and agricultural daily labour (12%). Fishing accounted for 8%, while only 3% reported salary or wages as their main source of income. As a second income source, however, fishing was predominant (38%), followed by selling collected firewood, charcoal and wild foods (17%) and selling agricultural products (17%).

These findings largely reflect the typical seasonal trends in Duk County during the time of the assessment. During the rainy season, households' access to agricultural production is typically limited to early maturing crops or green harvests. Instead, households depend mainly on a series of secondary

activities, such as collecting firewood, to generate income to purchase food and other goods. This is supplemented by humanitarian assistance, which is delivered via the traditional Lean Season Response. It is unsurprising, then, that these activities were most reported as income sources.

Table 16 - Main income sources

Household-level data collection	Host (n = 308)	IDP (n = 210)	Population (n = 518)
Main source of income			
First main income source			
Selling of collected firewood, charcoal, wild foods	19.8% (61)	29.5% (62)	23.7% (123)
Humanitarian cash assistance	18.2% (56)	23.8% (50)	20.5% (106)
Selling own-produced agricultural products	20.5% (63)	12.9% (27)	17.4% (90)
Selling of own produced animal and products	14.6% (45)	12.4% (26)	13.7% (71)
Daily labour – agricultural (farm, gardens, etc.)	10.7% (33)	14.3% (30)	12.2% (63)
Fishing	10.4% (32)	5.2% (11)	8.3% (43)
Salary and wages	3.9% (12)	0.5% (1)	2.5% (13)
Second main income source			
Selling of collected firewood, charcoal, wild foods	16.6% (51)	16.7% (35)	16.6% (86)
Humanitarian cash assistance	7.5% (23)	4.8% (10)	6.4% (33)
Selling own-produced agricultural products	14% (43)	20.5% (43)	16.6% (86)
Selling of own produced animal and products	6.2% (19)	4.3% (9)	5.4% (28)
Daily labour – agricultural (farm, gardens, etc.)	8.1% (25)	6.7% (14)	7.5% (39)
Fishing	40.6% (125)	36.2% (76)	38.8% (201)
Salary and wages	1% (3)	1% (2)	1% (5)
Third main income source			
Selling of collected firewood, charcoal, wild foods	9.4% (29)	4.3% (9)	7.3% (38)
Humanitarian cash assistance	21.1% (65)	14.3% (30)	18.3% (95)
Selling own-produced agricultural products	6.5% (20)	6.7% (14)	6.6% (34)
Selling of own produced animal and products	3.2% (10)	2.9% (6)	3.1% (16)
Daily labour – agricultural (farm, gardens, etc.)	3.9% (12)	6.7% (14)	5% (26)
Fishing	29.5% (91)	39.5% (83)	33.6% (174)
Salary and wages	1.3% (4)	Not reported	0.8% (4)

Assessed households exhibited critical livelihood stress and widespread engagement in various activities to deal with a lack of food or income to buy food, according to the Livelihood Coping Strategies Index (LCS). LCS results reveal widespread use of emergency-level coping strategies, including begging or food, relocating in search of food, and slaughtering animals.

Table 17 - Livelihood Coping Strategies Index - part 1

Household-level data collection	Host (n = 308)	IDP (n = 210)	Population (n = 518)
Livelihoods Coping Strategies Index			
None	6% (17)	4% (8)	5% (25)
Stress	3% (8)	0% (0)	2% (8)
Crisis	5% (16)	2% (4)	4% (20)
Emergency	82% (253)	94% (197)	87% (450)

Table 18 - Livelihood Coping Strategies Index - part 2

Livelihood Coping Strategy				
Livelihood Coping Strategy	Category	Used LCS (total)	Used LCS (host) (n = 308)	Used LCS (IDP) (n = 210)
Send household members to eat with another household	Stress	58%	54%	64%
Sell more animals than usual for this time of year	Stress	60%	54%	69%
Borrow money or purchase food on credit	Stress	75%	73%	79%
Gather wild foods more than normal for this time of the year	Stress	36%	32%	42%
Sell productive assets or means of transport (fishing net, hoe, axe, spear, hooks, wheelbarrow, bicycle, plough, etc.)	Crisis	41%	36%	47%
Send more household members than normal to cattle and/or fishing camps	Crisis	61%	59%	64%
Sell or eat seeds intended for planting this season	Crisis	65%	62%	68%
Sell or slaughter the last of your cows and goats	Emergency	51%	45%	59%
Travel to another village or cattle camp or fish camp to look for food	Emergency	76%	69%	87%
Beg other community members for food	Emergency	49%	41%	61%

Across all the locations in Canal and Padiet, among both IDP and host communities revealed that households were increasingly adopting extreme and unsustainable coping strategies due to severe food shortages, collapsed livelihoods, and limited access to markets and assistance. Communities reported heavy reliance on wild food gathering, particularly water lilies, and fishing for food as primary survival mechanisms, despite the low nutritional value and the significant risks involved in harvesting from flooded and snake-infested swamps. Families were also reportedly engaging in risky activities such as walking through deep water, undertaking long canoe trips to remote fishing and water lily collection areas, and using spears for fishing due to lack of proper equipment.

The situation in assessed areas had reportedly led to broader social issues, including increased crime, child involvement in survival activities, and girls dropping out of school. Further evidence of stress behaviours related to food shortages included reported engagement in dangerous activities, such as traveling through deep water to access food.

Water, Sanitation, and Hygiene

Access to water

Survey results show access to improved water sources was relatively high in assessed areas, with the majority of households reporting reliance on an improved source. Most households (83%) used boreholes to access drinking water. When assessed through the WHO/UNICEF Joint Monitoring Programme (JMP) drinking-water service ladder, this suggests a large share of households fell within the basic drinking-water service category, especially given that physical accessibility also appeared

adequate, with 50% of households able to collect water within 30 minutes of their dwelling.[12] Notably, almost one-fifth of assessed households (16%) reported consuming surface water, potentially increasing health risks from contamination.

Furthermore, water treatment practices were concerning, with almost two-thirds of households (62%) not treating their water and only a small fraction employing methods like boiling or filtration. Most households (92%) reported having containers for collecting and storing drinking water, with an average of 2 containers per household. The lack of soap was also critical, however, with 87% of households reporting no soap access, indicating major hygiene deficiencies.

Table 19 - Results of Water, Sanitation, and Hygiene - part 1

Household-level data collection	Host (n = 308)	IDP (n = 210)	Population (n=518)
Main source of drinking water			
Improved (public tap, borehole, etc.)	82.4% (254)	84.3% (177)	83.2% (431)
Non-improved (surface water like river, stream, etc.)	15.6% (48)	15.7% (33)	15.6% (81)
Main water treatment methods			
No treatment	57.5% (177)	68.1% (143)	61.8% (320)
Filter cloth	0.6% (2)	Not reported	0.4% (2)
Chlorine tablet / Aqua tab	41.2% (127)	29.5% (62)	36.5% (189)
Boil water	0.6% (2)	2.4% (5)	1.4% (7)
Households with access to soap			
No soap in the house	84.4% (260)	91% (280)	87.4% (453)

Overall, water conditions indicated some vulnerabilities across both host and IDP households, with IDPs generally experiencing greater challenges in some areas. Improved water access was relatively similar between host and IDP households (82% and 84%, respectively). However, water treatment practices remained limited, particularly among IDPs, with only 22% reporting the use of chlorine compared with 33% among host households. Informants similarly reported that many households consumed water without boiling, chlorination, or other forms of treatment. Although some households harvested rainwater during the rainy season, concerns were raised about potential groundwater contamination, while taste preferences also influenced the use of potentially unsafe water sources.

Despite most households' access to an improved water source, key informants reported major challenges related to water quantity and access in Canal and Padiet affecting both host communities and IDPs. The main concerns included insufficient availability of clean water, congestion at limited water points, and heavy reliance on unsafe water sources, which increased the risk of water-related health problems.

Flooding was also reported as a major barrier, limiting access to water collection areas and reducing the availability of safe water sources. Additional challenges included the time burden associated with boiling water, particularly for households relying on unsafe sources, and increased pressure on existing water facilities due to population displacement. Some communities reportedly depended on swamp water, while available boreholes were not always suitable or functional for domestic and drinking purposes.

[12] WHO/UNICEF: Joint Monitoring Programme (JMP)

Hygiene and Sanitation

Sanitation and hygiene conditions were more concerning. Open defecation was reported by 97% of host households and 99% of IDP households. Access to soap was also limited, with 82% of host households and 90% of IDP households reporting no access to soap.

Table 20 - Results of Water, Sanitation, and Hygiene – part 2

Household-level data collection	Host (n = 308)	IDP (n = 210)	Population (n = 518)
Households with access to functioning latrines			
Open defecation	96.4% (297)	97.6% (205)	96.9% (502)
Pit latrine with slab	2.6% (8)	2.4% (5)	2.5% (13)
Pit latrine without slab/open pit	1% (3)	Not reported	0.6% (3)

The near-universal practice of open defecation presents a major risk of environmental contamination and faecal-oral disease transmission, particularly in densely populated IDP areas and communities affected by flooding. These practices pose severe public health risks by contaminating water sources and increasing the likelihood of waterborne disease outbreaks.[13]

Key informants in Canal and Padiet attributed poor sanitation in assessed areas to inadequate infrastructure, recurrent flooding, and limited household resources. Widespread open defecation was attributed to the lack of functional and accessible latrines. Many households were unable to construct or maintain sanitation facilities because of insufficient access to construction materials, technical support, and financial resources.

Flooding was identified as a major factor affecting sanitation conditions, frequently damaging or inundating existing latrines and forcing households to resort to open defecation. Respondents also highlighted the shortage of suitable dry land for latrine construction, while challenging soil and high groundwater conditions require elevated or flood-resistant latrine designs that are often unaffordable for vulnerable households.

Community members further reported gaps in humanitarian support, noting reduced assistance for sanitation and water treatment activities in recent years. The discontinuation of some WASH interventions had left communities with limited access to sanitation services and increased exposure to public health risks. Hygiene service adequacy was described as critically low across all assessed locations in Canal and Padiet sites, echoing the broader challenges in water and sanitation systems. Across all discussions, key informants highlighted serious gaps in the adequacy of WASH services, particularly regarding hygiene practices and menstrual hygiene management (MHM).

Communities faced shortages of soap, limited access to sanitary materials for women and girls, and unsafe disposal of faeces. Many households reportedly depended on contaminated water for hygiene, compromising health. They also reported issues including a lack of personal hygiene items and high costs of hygiene supplies. Findings emphasize the urgent need for regular distributions of hygiene kits, improved access to essential materials, and enhanced sanitation interventions to mitigate health risks and improve community dignity and well-being.

Overall, findings indicate critical sanitation needs, including the provision of flood-resilient sanitation infrastructure, increased access to construction materials and technical assistance for latrine

[13] UNICEF: Sanitation is essential to children's survival and development.

construction, strengthened community sanitation and hygiene promotion programmes, and sustained humanitarian investment to reduce open defecation and improve public health outcomes.

Nutrition

The Mid-Upper Arm Circumference (MUAC) measurements were conducted to determine the prevalence of global acute malnutrition (GAM) among children aged 6–59 months in assessed areas. Acute malnutrition was classified using the WHO standard MUAC cut-off[14]: SAM as MUAC <115 mm, MAM as MUAC 115–<125 mm, and GAM as MUAC <125 mm. The team also tested for the presence of bilateral pitting oedema. GAM estimates are reported using age-adjusted weighted results generated with the CDC Excel MUAC calculator, which accounts for the relative representation of children under two years and those aged two to five years in the sample.[15] The CDC MUAC calculator was used to calculate final results because of a small skew in the final sample size (45.7% over-2).

MUAC screening of 772 children aged 6–59 months indicated an extremely critical burden of acute malnutrition, with a GAM rate of 30.6%, comprising a high proportion of children affected by MAM at 20.9% (95% CI: 18.1–23.9%) and SAM at 9.7% (95% CI: 7.8–11.9%).

This level signals a significant nutritional vulnerability in the population and suggests that acute malnutrition was widespread in the community. The assessed acute malnutrition prevalence indicated a progressively deteriorating situation exacerbated by high child morbidity levels, household food insecurity, and a poor WASH situation.

The proxy GAM by MUAC 30.6% (95% CI: 27.4–34.0%) indicates a serious nutrition situation. Based on established relationships and trend analyses in South Sudan between MUAC-derived and weight-for-height Z-score (WHZ) estimates, the true GAM by WHZ is estimated to be likely above 15%.

Table 21 - Prevalence of acute malnutrition based on MUAC cut offs and/or oedema, by sex

Data collection method	All N= (772)	Boys N= (379)	Girls N= (393)
Prevalence of moderate acute malnutrition (=115 mm, no oedema)	20.9% (173)	21.1% (80)	23.7% (93)
Prevalence of severe malnutrition (< 115 mm and/or oedema)	9.7% (84)	11.9% (45)	9.9% (39)

Infant and Young Child Feeding Practice (IYCF)

Proper feeding of infants and young children can increase their chances of survival and promote optimal growth and development, especially in the critical window from birth to two years of age.[16] During this assessment, information on child feeding practices was gathered for all children aged 0–23 months and analysed as described below. The sample sizes obtained for Infant and Young Child Feeding (IYCF) practices in this survey was 201 in Canal and Padiet among host and IDP communities. Results should only be viewed as indicative rather than representative of the broader population's knowledge and practices.

[14] WHO standard MUAC cut-off
[15] U.S. Centres for Disease Control and Prevention (CDC). *MUAC-for-Age Tools and Calculators (Excel-based).*

[16] Infant and Young Child Feeding, WHO, December 2023.

Breast milk remained the predominant food consumed by children, with 94% receiving breast milk; over one-third (37%) also consumed dairy products, including milk, infant formula, yoghurt, or cheese. However, findings suggest access to adequate complementary foods was constrained by significant household-level economic and environmental barriers. None of the 201 children aged 0-23 months met minimum dietary diversity (at least 5 of 8 pre-determined food groups) in the 24 hours prior to data collection.

Households reported multiple constraints affecting complementary feeding practices. The most frequently cited barrier was lack of money or financial constraints to purchase food, reported by 64% of the population. This was followed by poor hygiene due to inadequate access to water (23.4%) and a lack of information on important feeding practices (21% of households). A further 17% of households reported inadequate information on Infant and Young Child Feeding (IYCF), while 10% cited high food prices. Child illness or low appetite was reported by 6% of households, whilst 5% reported the lack of time to prepare food. Taken together, these factors point to poor achievement of the Minimum Acceptable Diet (MAD), reflecting both inadequate dietary diversity and insufficient overall diet quality and quantity among young children.

The findings indicate that although breastfeeding practices are relatively strong, complementary feeding was constrained by limited household purchasing power, high food prices, inadequate water and hygiene conditions, and gaps in IYCF knowledge. These constraints are particularly concerning in Canal and Padiet, where the broader assessment identified severe food insecurity, livelihood disruption, flooding, and critical WASH gaps.

Table 22 - Results of Nutrition Indicators

Individual-level data collection	Host	IDP	Population (n)
Child breastfed yesterday during the day or night by sex	**N=116**	**N=85**	**N=201**
Overall	90.5% (105)	98.8% (84)	94% (189)
Reasons for not breastfeeding	**N=11**	**N=1**	**N=12**
Cultural Barriers	54.5% (6)	Not reported	50% (6)
Mother has no milk	45.5% (5)	100% (1)	50% (6)
Child fed other breastmilk substitutes	0% (0)	100% (1)	8.3% (1)
Food types consumed by children	**N=116**	**N=85**	**N=201**
Breast milk	89.7% (104)	100% (85)	94% (189)
Dairy	34.5% (40)	41.2% (35)	37.3% (75)
Eggs	0.9% (1)	Not reported	0.5% (1)
Meat	1.7% (2)	Not reported	1% (2)
Pulses and beans	1.7% (2)	Not reported	1% (2)
Challenges households faced with the complementary feeding of the child	**N=116**	**N=85**	**N=201**
Lack of money/financial barriers to buy food	56% (65)	75.3% (64)	64.2% (129)
Poor hygiene due to lack of Water	20.7% (24)	27.1% (23)	23.4% (47)
Lack of information on feeding practices	24.1% (28)	16.5% (14)	20.9% (42)
Lack of adequate information on IYCF	21.6% (25)	10.6% (9)	16.9% (34)
High food prices/food is expensive	11.2% (13)	9.4% (8)	10.4% (21)
Child is sick/has a low appetite	7.8% (9)	2.4% (2)	5.5% (11)
Lack of time to prepare food	6.9% (8)	1.2% (1)	4.5% (9)

Health

The assessment asked about the health status of 3,154 individuals across households in Canal and Padiet, including both host-community and IDP populations. Findings indicated a significant prevalence of illness and unmet healthcare needs in the two weeks prior to data collection. Overall, 19% of individuals reported having been sick during this period. Illness was more frequently reported among females (22%) than males (15%). The prevalence was relatively similar between host-community members (19%) and IDPs (18%), suggesting that recent illness affected both population groups at comparable levels.

Among the 598 individuals who reported a health problem, fever was the most frequently reported symptom, affecting 81% (482 individuals), followed by coughing (69%; 413) and diarrhoea (37%; 218). A further 11% (65 individuals) reported fast and/or difficult breathing, while 7% (44) reported skin infections. The combination of fever, cough, diarrhoea and respiratory symptoms suggests a considerable burden of communicable diseases within the assessed communities, potentially compounded by poor WASH conditions, flooding, displacement, and limited access to healthcare.

Discussions with focus group participants and key informants across Canal and Padiet revealed a significant public health burden impacting both displaced persons and host communities. Malaria, acute respiratory infections, and cholera were highlighted as major health issues, alongside maternal health challenges, skin infections, and waterborne diseases, pointing to the effects of limited healthcare access and poor environmental conditions. Flooding emerged as a critical factor increasing health risks, leading to injuries from movement in flooded areas and a higher likelihood of exposure to contaminated water, exacerbating the spread of waterborne diseases

Access to healthcare was a major concern. Overall, 88% (526 individuals) of those reporting an illness in the two weeks prior to data collection experienced an unmet healthcare need. Unmet need was slightly higher among females (89%; 375) than males (85%; 223), indicating a substantial barrier to accessing appropriate healthcare across both sexes.

Key informants indicated that health service availability, adequacy, and quality across Canal and Padiet remained severely constrained, affecting both IDP and host communities. The reported challenges reflected a combination of physical access barriers, limited health infrastructure, shortages of essential supplies and qualified personnel, inadequate referral capacity, and weaknesses in the quality and safety of care. Key informants reported that only one PHCC served the area in Duk Padiet centre, which was insufficient for the population, particularly for Canal and other remote communities across the county facing severe access constraints. The respondents also added that health service delivery in Canal and Padiet was critically hindered by shortages of medicines, human resources, infrastructure, and emergency referral capacity. Essential medicines like antimalarials and antibiotics had been largely unavailable for seven months, impacting the management of common illnesses. Furthermore, the primary health care centre lacked qualified health workers and medical doctors, and emergency obstetric care was unavailable, exacerbating maternal health concerns and complicating emergency referrals.

Among households reporting healthcare needs, financial and service-related barriers were reported to have significantly hindered access to treatment. The inability to afford medication was the most cited issue (reported as a challenge for 48% of people with unmet needs). Long wait times affected 40% of people, while 25% faced unavailability of sought services. Long distances between the household and the nearest facility impacted 13% of people, mostly in remote communities where flooding and poor transport restricted access to health facilities. These findings underscore financial obstacles, long wait times, service unavailability, and geographical constraints as significant barriers to healthcare, especially for vulnerable populations.

Table 23 - Results of Health Indicators – part 1

Individual-level data collection	Host	IDP	Population (n)
Individuals within households who reported being sick during the two weeks prior to data collection	**(n=1892)**	**(n=1262)**	**(n = 3154)**
Overall	19.1%	18.7%	19%
Female	21.9%	22.1%	22%
Male	15.8%	14.7%	15.4%
Main symptoms reported in the past 2 weeks	**(n=362)**	**(n=236)**	**(n = 598)**
Fever	82% (297)	78.4% (185)	80.6% (482)
Cough	67.4% (244)	71.6% (169)	69.1% (413)
Diarrhoea	36.5% (132)	36.4% (86)	36.5% (218)
Pneumonia	12.2% (44)	8.9% (21)	10.9% (65)
Skin infection	9.1% (33)	4.7% (11)	7.4% (44)
Child sickness			**(n = 816)**
Children under-5 in within households who were reported sick during the two weeks prior to data collection	NA		25% (204)
Main symptoms reported among children under-5 in the past 2 weeks			**(n = 204)**
Fever	NA		81.6% (167)
Cough			65.7% (134)
Diarrhoea			55.9% (114)
Pneumonia			2% (4)
Skin infection			10.3% (21)
Individuals reporting unmet healthcare needs, by % of individuals with a health problem in the two weeks prior to data collection	**(n=362)**	**(n=236)**	**(n = 598)**
Overall	87% (315)	88.6% (209)	87.6% (524)
Household-level data collection			
Main barriers to accessing healthcare	**(n=308)**	**(n=210)**	**(n= 518)**
Could not afford the cost of medication (no price increase)	50% (154)	46.7% (98)	48.6% (252)
Long waiting time for the service	36.4% (112)	54.2% (95)	40% (207)
Could not afford the cost of medication (price increase)	28.6% (88)	24.8% (52)	27% (140)
Specific service sought unavailable	22.1% (68)	28.1% (59)	24.5% (127)
Health facility is too far away	12.7% (39)	13.3% (28)	12.9% (67)
No functional health facility nearby	10.1% (31)	13.8% (29)	11.6% (60)

Despite these challenges, preventive child health services showed relatively strong coverage. The assessment indicated relatively high reported coverage of oral cholera vaccination (OCV) among the assessed population. Among 2,935 individuals with available responses, 95.2% reported having received OCV, including 52.2% based on maternal recall and 43.0% verified through vaccination cards

or records. Only 4.7% reported never having received OCV. Coverage was broadly similar by sex, with 94.8% of females and 95.8% of males reporting vaccination. The high reported OCV coverage was an important protective factor given the wider assessment findings of poor sanitation, open defecation, untreated drinking water, and flooding. Notably, OCV exceeded the recommended SPHERE standards of 90%.[17]

Among children assessed for measles vaccination (n=793), 92.9% were reported to have received a measles vaccine. These were identified based upon maternal recall (53.6%) and or verified using a vaccination card or record (39.3%). Coverage was relatively similar between female (92.0%) and male (93.9%) children. However, 7.1% of children had reportedly never received measles vaccination.

For Vitamin A supplementation, among 797 children, 64.1% were reported to have received supplementation during the previous six months, while 35.8% had not received it and 0.1% of caregivers did not know. Coverage was almost identical by sex, with 64.2% among females and 64.1% among males.

Therefore, overall, the findings reflect a population facing high preventable morbidity, particularly among young children, driven by limited access to curative services and essential supplies. The findings also suggest strong reported OCV and measles vaccination coverage, but important gaps remain in routine child health interventions. While preventive programming has mitigated some risks, strengthening curative care, supply chains, referral systems, and outreach to hard-to-reach areas across the canal IDP site remains critical to improving health outcomes and preventing excess illness. This indicates relatively strong campaign-based vaccination reach but continued gaps in essential child nutrition and preventive health interventions.

Preventive health coverage was mixed, which drove overall severity to be High, driven by low measles coverage and access gaps: Vitamin A supplementation reached 64%, while measles vaccination was notably lower overall, particularly among hosts 44% than IDPs 83%. Oral cholera vaccination was high at 95%. Healthcare accessibility remained limited, with only 66% of households within one hour of a facility.

Table 24 - Results of Health Indicators – part 2

Individual-level data collection	Host Community	IDP site	Overall Population
Children 6-59 months who received vitamin A supplementation during the six months prior to data collection	**(n=437)**	**(n=312)**	**(n=797)**
Overall	62% (271)	64% (200)	64% (797)
Female	62% (228)	65% (155)	65% (402)
Male	61% (209)	64% (157)	64% (395)
Children 9-59 months who received the measles vaccination	**(n=435)**	**(n=312)**	**(n=793)**
Overall	44% (191)	83% (259)	39% (309)
Female	45% (226)	92% (287)	41% (398)
Male	43% (209)	94% (293)	38% (395)
Participants who have received oral cholera vaccination	**(n=1514)**	**N=1027**	**(n=2935)**
Overall	95% (1438)	94% (965)	95% (2788)

[17] Sphere standards handbook 2018

Female	95% (831)	93% (513)	96% (1352)
Male	95% (683)	95% (451)	95% (1583)
Households having access to healthcare within one hour by their normal means of transportation	**(n=308)**	**(n=210)**	**(n=518)**
Yes	64% (271)	59% (112)	66% (342)

Mortality

The mortality assessment reported a Crude Mortality Rate (CMR) of 0.56 deaths per 10,000 persons per day (95% CI: 0.27–0.85), remaining below the emergency threshold of 1 death per 10,000 persons per day. However, the upper confidence interval of 0.85 indicates true mortality may have neared emergency levels.

The Under-Five Mortality Rate (U5MR) was 0.29 deaths per 10,000 children under five per day (95% CI: -0.11–0.86), also below the emergency level of 2 deaths per 10,000 children under five per day. However, the included confidence intervals indicate high uncertainty, primarily due to the limited number of reported under-five deaths.

Key informants highlighted several mortality risk factors in assessed areas at the time of data collection: snakebite-related deaths were most prevalent across assessed locations, followed by delayed access to healthcare and facility-associated mortality. Maternal and outbreak-related mortality (specifically, a confirmed cholera outbreak)[18] were reported in four locations, emphasizing the importance of timely healthcare access, effective referrals, emergency response capabilities, and disease prevention initiatives.

Among the reported cases, 78.6% were attributed to non-trauma causes (42.9% were due to chronic diseases such as cancer, cardiovascular diseases, diabetes, and strokes, while 35.7% resulted from acute illnesses including malaria, measles, cholera, and diarrhoeal diseases). A majority (71.4%) of deaths occurred at home, with only 7.1% in health facilities. Of the deceased, 64.3% had sought healthcare within two weeks before death; however, 35.7% had not accessed care. The main barriers to seeking healthcare included distance to health facilities (40.0%), immediate death or lack of time (40.0%), and safety concerns on route to the facility (20.0%).

The findings suggest that geographical and security issues, along with rapid illness progression, hinder timely healthcare access, contributing to preventable deaths. While the CMR and U5MR remained below emergency thresholds, ongoing monitoring of the CMR of 0.56 is crucial, considering the humanitarian context and potential vulnerabilities like acute malnutrition, food insecurity, disease outbreaks, displacement, and poor access to health services. The report emphasizes the need for enhanced disease detection, emergency referrals, health capacity building, community healthcare access, and targeted interventions for snakebite prevention and outbreak readiness. Timely mortality surveillance and integrated humanitarian responses are critical to mitigating further mortality risks in the assessed areas.

[18] South Sudan Humanitarian Snapshot (April 2026). Available here.

Table 25 - Mortality rates

Population	Mortality Rate (/10,000/Day)	Design Effect
CDR	0.56 (0.27-0.85)	1.00
U5dr	0.29 (-0.11-0.69)	1.00
CDR Male	0.61 (0.16-1.06)	1.00
CDR Female	0.51 (0.13-0.89)	1.00

Shelter

The findings indicate that most households in assessed areas of Canal and Padiet Center lived in tukuls (84%), with a smaller percentage in Rakubas (15.6%) and tents (0.4%). Of the 518 households surveyed, 75.5% reported shelter-related issues. Common problems included damaged walls (23.7%), leaks (21.0%), both minor (20.1%) and major roof damage (17.4%), and damaged windows (14.1%). Urgent support is needed for the 4.1% of households with collapsed or unsafe shelters. Key concerns include the risks posed by roof damage and rainwater leaks, especially in the rainy season, affecting health and safety. This has been a recurrent challenge since the flooding began in 2020 up to the present.

Qualitative insights from key informant interviews highlight ongoing shelter challenges exacerbated by frequent flooding, which has destroyed traditional construction materials and led to dependence on inadequate solutions like worn-out plastic sheeting. Issues such as overcrowding contribute to poor hygiene, shelter quality deterioration, and community tensions.

Informants cited lack of materials, construction tools, and financial resources as significant barriers to repairing households. High costs of local construction materials and limited space for new shelters further complicated the situation, particularly for displaced individuals. Overall, persistent flooding, shelter damage, material inadequacy, and overcrowded conditions had compromised the safety and well-being of both host and displaced populations. The immediate focus should be on shelter repair and rehabilitation, providing proper materials and tools, supporting vulnerable households, and addressing overcrowding, along with long-term strategies to enhance community resilience against flooding.

Shelter conditions indicated significant vulnerability, with tukuls being the predominant shelter type overall 84%, though more common among hosts 98% than IDPs 88%. IDPs reported greater major roof damage (23%) than host community members (13%). Overall, 24% reported wall damage, 21% leaks, and 20% minor roof damage. These findings show the Severity to be High, reflecting widespread shelter deterioration and greater structural vulnerability among IDPs.

Table 26 - Results of Shelter Indicators

Individual-level data collection	Host (n=308)	IDP (n=210)	Population (n=518)
Types of shelter			
Tukul[19]	98% (266)	88% (166)	84% (435)
Rakooba (Rectangular-shaped grass roof house)[20]	2% (5)	12% (23)	16% (83)

[19] It is typically constructed using local materials such as mud or earth for the walls, wooden poles or branches for support, and a thatched grass roof. Tukuls are often used as permanent or semi-permanent shelters.
[20] A **rakooba** is a temporary or semi-permanent shelter structure, usually built using wooden poles for the frame and covered with materials like grass, plastic sheeting, or iron sheets.

Shelter issues			
Minor Damage to the roof	19% (59)	21% (45)	20% (104)
Major damage to the roof	13% (41)	23% (49)	18% (93)
Damage to walls	24% (75)	23% (48)	24% (124)
Leaks during rain	21% (65)	21% (44)	21% (109)
Damage to windows/doors	12% (39)	16% (34)	14% (73)

DISCUSSION

Findings indicate the overall public health situation in Duk Padiet was highly concerning at the time of data collection, driven by the interaction of extremely critical acute malnutrition levels, food insecurity, poor WASH conditions, limited access to healthcare, and displacement-related vulnerabilities. Prolonged and recurrent flooding has fundamentally altered the living environment, profoundly disrupted productive livelihoods, and obstructed access to basic services, leaving the population trapped in a cycle of vulnerability. These interconnected shocks have reduced households' capacity to access adequate food, safe water, healthcare, and sanitation, while increasing exposure to disease and other health risks. Consequently, the public health crisis in Duk Padiet should be understood as a multisectoral and compounding emergency, in which flooding, displacement, food insecurity, poor WASH conditions, and limited health services reinforce one another and contribute to the deterioration of nutritional and health outcomes, particularly among children under five and other vulnerable groups.

The food security situation further contributes to this vulnerability. More than one-third of households had borderline or poor food consumption, while most households experienced moderate hunger and relied heavily on humanitarian assistance. Limited food availability, insecurity, high transportation costs, and disrupted livelihoods continue to constrain access to adequate food and dietary diversity. These conditions, combined with recurrent illness and limited healthcare access, are likely to contribute to the high burden of acute malnutrition.

The prevalence of acute malnutrition among children aged 6–59 months in Duk Padiet was extremely critical, with a GAM prevalence of 30.6% by MUAC (95% CI: 27.4–34.0%), including 20.9% MAM and 9.7% SAM. This indicates a severe nutrition crisis and placed a substantial proportion of children at increased risk of morbidity and mortality. The particularly high proportion of SAM is concerning because severely malnourished children are more vulnerable to infections and other complications. The high burden of acute malnutrition is likely driven by multiple, interrelated factors. Poor household food consumption and inadequate dietary diversity may limit children's access to sufficient energy and essential nutrients. At the same time, poor WASH conditions, including widespread open defecation and limited access to hygiene materials, increase children's exposure to diarrhoeal and other infectious diseases, which can further compromise nutritional status. Recurrent illness can reduce appetite and nutrient absorption while increasing nutritional requirements.

WASH conditions substantially increased the risk of disease transmission. Nearly all households practiced open defecation and most lacked soap, while flooding and destruction of sanitation facilities have further reduced access to safe sanitation. These conditions increased exposure to diarrhoeal and other waterborne diseases, which can further worsen nutritional outcomes, particularly among young children. The reported snakebite-related deaths among IDPs also highlight additional environmental and seasonal risks associated with flooding, displacement, and inadequate shelter.

The health situation in Duk Padiet remained concerning, with 19.0% of individuals reporting illness requiring healthcare in the preceding two weeks. Illness was higher among females (22.0%) than males

(15.4%), while prevalence was similar among host communities (19.1%) and IDPs (18.7%). Among those needing care, 12.4% had unmet healthcare needs, indicating persistent access barriers. Preventive coverage also had gaps, with 4.7% never receiving oral cholera vaccination, 64.1% of children receiving Vitamin A supplementation, and 7.1% reporting no measles vaccination. Health system constraints, including drug stockouts, inadequate staffing, limited diagnostics, weak referral mechanisms, and flooding, further restrict timely treatment. These gaps increase vulnerability to infectious diseases, preventable complications, and excess mortality.

Looking ahead, the situation is expected to deteriorate slightly between August and October 2026 as seasonal flooding, insecurity, rising food prices, disrupted livelihoods, and restricted humanitarian access continue to affect households. These pressures are likely to reduce access to food, healthcare, WASH services, and other essential assistance while weakening household coping mechanisms. Given the already extremely critical nutrition situation, sustained and integrated multisectoral assistance, including nutrition, food security, health, WASH, and protection interventions, will be essential to prevent further deterioration and reduce the risk of illness, worsening malnutrition, and excess mortality among vulnerable populations, particularly children under five, pregnant and lactating women, and IDPs.

Table 27 - Comparison between IPHRA Core Indicator Thresholds

Category	Domain	Evidence	Standard (If applicable)	Severity Population
Health Outcomes	Mortality	CMR: 0.56 deaths per 10,000 persons per day (Emergency) 95% CI: 0.27 - 0.85 U5MR: 0.29 deaths per 10,000 under-5 persons per day (below the emergency threshold) 95% CI: -0.11 – 0.86	1 death per 10,000 per day; 2 under-5 deaths per 10,000 per day	**Medium**
	Malnutrition	Based on MUAC results: SAM: 9.7% MAM: 20.9% GAM: 30.6%	>5-<10% GAM MUAC default	**High**
	Morbidity	19% of individuals have been sick in the last 2 weeks. Health care problems in the last two weeks by residence status: 19.1% were Host community, and 18.7% were IDPs. 87.6% of individuals were able to obtain health care when he/she felt they needed it. 34% had no access to a health care facility.	>20% of people with any health care need in 2 weeks	**Medium**
Immediate Drivers	Individual food consumption	93% of children under 2 breastfed during the day and night yesterday	>60% of infants breastfeeding until two years of age	**Low**
	Individual water consumption	Not available	15 lpd for all purposes	Not assessed
Direct Contributing Factors	Household Food Security	Indicative IPC Phase 3 Critical. Severe reliance on unstable food sources, such as Humanitarian food assistance, wild food, and fish.	20% Severe and Very Severe hunger Very few households acceptably diverse food consumption (<40% Acceptable FCS or High HDDS) >80% Household convergence Matrix classification of P3, P4 or P5	**Medium**
	Household Water Security	93% of households have at least 2 water containers for collection and storage	At least 2 water containers per household for collection and storage	**Low**
	Household water consumption (quality)	83% of households reporting reliance on improved		**Low**

	HH Assets and Coping	Livelihood Coping Strategy Index (LCSI) results show that 45% of households are employing emergency coping strategies Main source of income: 56.5% sell firewood and 15.3% fishing	Most households are relying on humanitarian assistance, begging, or other severe coping strategies (>50%) Exhausted, Survival income sources or mainly aid	**High**
	Living Conditions	75.5% reported shelter-related issues, highlighting substantial vulnerability		**High**
Indirect Contributing Factors	Natural and built environment	Approximately 97% of households reported no access to a functioning latrine, resulting in widespread open defecation.	Most households have access to a latrine (80%)	**High**
	Market Functionality	34.9% reported barriers to accessing markets. Market barriers reported by households include insecurity and conflict (45.9%), lack of transport (41.5%), and long distances (26.0%)		**High**
	WASH Service Adequacy	50% of households can collect water in 30 minutes	Some households can fetch water within 30 minutes (50-<80%)	**Low**
	Health Service Adequacy	12.4% of individuals have unmet healthcare needs 54.2% of households can access a health facility within 1 hr 95.2% of individuals over five years had received a cholera vaccination, 92.9% of children aged 6–59 months had received a measles vaccine, and 64.1% of children aged 6–59 months received vitamin A supplementation in the past 6 months.	>20% of individuals with an unmet healthcare need; At least 80% of the population access healthcare in 1 hour; 95% measles vaccination coverage; 95% coverage of vitamin A doses within last 6 months	**Medium**
	Nutrition Service Adequacy	Not available	>90% CMAM coverage in formal camp setting	**Not assessed**
Integrated Analysis Score (High = 5; Medium = 3; Low = 1) **High** – Indicates the population is currently experiencing emergency levels, or risk of emergency levels, of public health outcomes (morbidity, malnutrition, or mortality) **Medium** – Elevated but not necessarily emergency levels of public health outcomes **Low** – Non-emergency or elevated levels of public health outcomes.				**High severity of 5 elements**
Risk of Excess Mortality Statement: High severity public health situation, driven by extremely critical acute malnutrition levels and widespread preventable disease in a context of extreme food insecurity.				

CONCLUSION AND RECOMMENDATIONS

The IPHRA findings demonstrate that parts of Duk Padiet were experiencing a severe and interconnected multisectoral public health crisis at the time of data collection between June 10-25, 2026, driven by the combined effects of extremely critical acute malnutrition, food insecurity, poor WASH conditions, inadequate healthcare access, recurrent flooding, and displacement. The 30.6% GAM prevalence, including 9.7% SAM, represents the most critical concern, with children under five facing heightened risks of morbidity and mortality. Although mortality remained below emergency thresholds, the persistence of preventable illness, unmet healthcare needs, poor vaccination and supplementation coverage, and weak health-system capacity indicates substantial underlying vulnerability.

Recurrent flooding continues to amplify these risks by disrupting livelihoods, markets, sanitation, healthcare access, and humanitarian operations. Without sustained intervention, seasonal flooding and insecurity are likely to further deteriorate household food security, access to essential services, and nutritional outcomes. An urgent, integrated, and sustained multisectoral response is therefore required, prioritising acute malnutrition treatment and prevention, food security and livelihoods, WASH, essential healthcare and disease prevention, vaccination, and protection. Particular attention should be given to children under five, pregnant and lactating women, IDPs, and other highly vulnerable households to prevent further deterioration and reduce avoidable morbidity and mortality.

Table 28 - Recommendations

Risk of Excess Mortality Dimension	Severity	Period	Recommendation
Acute malnutrition response	**Extremely Critical**	Short & Medium term	Immediate screening, referral and treatment of SAM/MAM; strengthen CMAM services; nutrition screening at community level; IYCF support.
Household Food Consumption	**High**	Short-term	Extend the coverage of FSL interventions by scaling up emergency food assistance with adequate coverage, frequency, and ration sizes to address extreme acute food insecurity (IPC AFI Phase 3 with pockets of Phase 4)
Livelihoods	**Severe**	Medium & Long term	Support with seasonal livelihood activities, such as agricultural inputs, fishing equipment, livestock support and livelihood grants to restore food production and income
Sanitation and Hygiene	**High**	Medium-term	Noting that 97% of the households practice open defecation, and that 87% of households lack access to soap and lack of sanitary materials, recommend that emergency sanitation and hygiene supplies, including soap, be provided to reduce diarrhoeal disease and prevent outbreaks during the lean season. There should be Emergency latrines, safe water, chlorination, soap, water containers, and hygiene promotion; strengthen cholera prevention.
Health Service Adequacy	**High**	Short & Medium term	Restore essential medicines, staffing, diagnostics, outreach services and emergency referral systems.

Disease prevention & vaccination	**High**	Short & Medium term	Strengthen cholera, measles and other vaccination campaigns; malaria prevention and community disease surveillance.

ANNEXES

References

1. South Sudan UNOCHA: South Sudan Humanitarian Update 1-17 April 2026
2. WHO: Public Health Situation Analysis (PHSA)
3. South Sudan: IPC Acute Food Insecurity and Malnutrition Snapshot | September 2025 - July 2026
4. WHO: Public Health Situation Analysis (PHSA)
5. CSRF: County Profile
6. OCHA: South Sudan: Floods Snapshot (As of 13 November 2025)
7. South Sudan: Acute Food Insecurity Situation for September - November 2025 and Projections for December 2025 - March 2026 and for April - July 2026
8. South Sudan: Acute Food Insecurity Situation for September - November 2025 and Projections for December 2025 - March 2026 and for April - July 2026
9. The FCS measures dietary diversity and frequency over a 7-day recall period, combining the consumption of different food groups into a single score.
10. The Household Hunger Scale (HHS) is a household food deprivation developed to allow for cross-cultural comparisons. It classifies households into five categories, None (indicative of IPC AFI Phase 1), Slight (Phase 2), Moderate (Phase 3), Severe (Phase 4) and Very Severe (Phase 5). WFP, VAM Resource Centre.
11. The reduced Coping Strategies Index (rCSI) is an indicator used to compare the hardship faced by households due to a shortage of food. The index measures the frequency and severity of the food consumption behaviours the households had to engage in due to food shortages in the 7 days prior to the survey. Index results from 0-3 are indicative of IPC AFI Phase 1, results from 4-18 are indicative of IPC AFI Phase 2, and results over 19 are indicative of IPC AFI Phase 3 to 5. WFP, VAM Resource Centre; Integrated Food Security Phase Classification, Technical Manual
12. WHO/UNICEF: Joint Monitoring Programme (JMP)
13. UNICEF: Sanitation is essential to children's survival and development.
14. WHO standard MUAC cut-off
15. U.S. Centers for Disease Control and Prevention (CDC). MUAC-for-Age Tools and Calculators (Excel-based).
16. Infant and Young Child Feeding, WHO, December 2023.
17. Sphere standards handbook 2018
18. It is typically constructed using local materials such as mud or earth for the walls, wooden poles or branches for support, and a thatched grass roof. Tukuls are often used as permanent or semi-permanent shelters.
19. A rakooba is a temporary or semi-permanent shelter structure, usually built using wooden poles for the frame and covered with materials like grass, plastic sheeting, or iron sheets.

Analysis

The household data were cleaned and analysed using IPHRA R scripts, which were developed by IMPACT HQ. Various statistics have been computed on the data, including percentages, means, and medians. The analysed data were presented in both tabular and Excel files. KIIs analysis was conducted using the REACH Data Saturation Analysis Grid (DSAG). The quantitative data were cleaned and analysed two days after data collection, and preliminary findings were drafted and shared with key partners, including donors, within seven days after the last day of data collection.

Limitations

The IPHRA methodology is intended to be a lightweight method to assess the most key public health outcomes and service coverage indicators compared to other more robust methods. Given the suggested IPHRA methods, there are several key limitations:

- **Not a causal analysis** – The IPHRA method intends to understand the severity of public health needs and service gaps; however, given this focus, it may not fully explain the reasons or causes of the results. Some analysis and triangulation with qualitative components may give an indication, but it will likely be limited.
- **Not generalizable** – Cluster sampling approaches are not recommended for IPHRA assessments. The allowance of purposive sampling means that results (although representative per strata) shouldn't be generalized to a wider population beyond the sites and facilities assessed.
- **Likely not reaching saturation** – For the qualitative components, sample sizes are likely not adequate to reach a full saturation of responses in the population. The intent of these is to provide some light-touch information to triangulate with household survey results.

For more information on the research design, refer to the Terms of Reference.