IPC
Integrated **F**ood **S**ecurity **P**hase **C**lassification
Evidence and Standards for Better Food Security and Nutrition Decisions

20 YEARS
2004 - 2024
informing decisions

KENYA

FOOD INSECURITY PERSISTS IN PARTS OF KENYA'S ASAL COUNTIES DESPITE ABOVE-AVERAGE RAINS

IPC ACUTE FOOD INSECURITY AND ACUTE MALNUTRITION ANALYSIS

JULY 2024 – JANUARY 2025

Published on 5 September 2024

CURRENT ACUTE FOOD INSECURITY JULY – SEPTEMBER 2024

0.9M

5% of the population

People facing high acute food insecurity (IPC Phase 3 or above)

IN NEED OF URGENT ACTION

Phase		
Phase 5	0	People in Catastrophe
Phase 4	43,000	People in Emergency
Phase 3	895,000	People in Crisis
Phase 2	5,798,000	People Stressed
Phase 1	9,882,000	People in food security

PROJECTION ACUTE FOOD INSECURITY OCTOBER 2024 – JANUARY 2025

1.7M

11% of the population

People facing high acute food insecurity (IPC Phase 3 or above)

IN NEED OF URGENT ACTION

Phase		
Phase 5	0	People in Catastrophe
Phase 4	98,000	People in Emergency
Phase 3	1,635,000	People in Crisis
Phase 2	6,084,000	People Stressed
Phase 1	8,800,000	People in food security

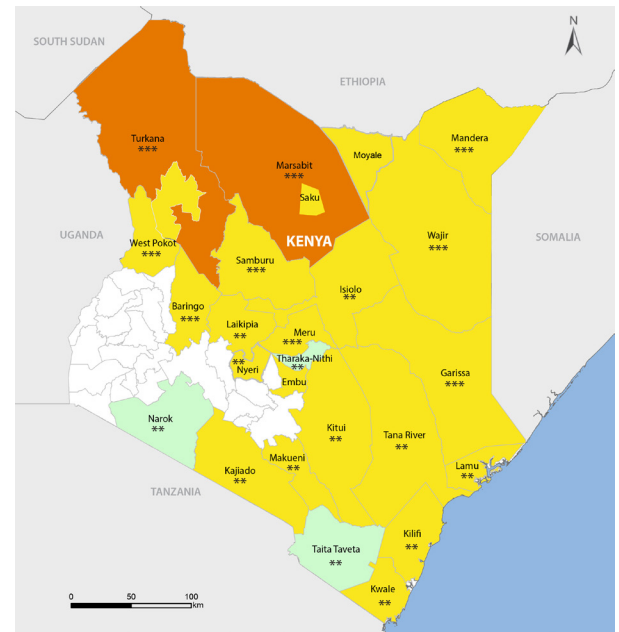## CURRENT ACUTE MALNUTRITION APRIL 2024 – MARCH 2025

760,500

the number of 6-59 months children acutely malnourished

IN NEED OF TREATMENT

Severe Acute Malnutrition (SAM)	180,400
Moderate Acute Malnutrition (MAM)	580,100

112,500 Pregnant or lactating women acutely malnourished

IN NEED OF TREATMENT

Overview

The cumulative seasonal benefits of the March to May 2024 long rains brought above-average rainfall across the country, particularly in Kenya's arid and semi-arid lands (ASAL) counties, leading to a significant improvement in food security compared to the same period last year. During the current period (July to September 2024), around 1 million people (5 percent of the ASAL counties population) are classified in IPC AFI Phase 3 or worse, including about 895,000 people (5 percent of the ASAL population) in IPC Phase 3 (Crisis) and about 43,000 people (0.3 percent of the ASAL population) in IPC Phase 4 (Emergency). The most affected people are the poor rural households who experienced flooding, which severely affected agriculture, infrastructure, and livestock, leading to substantial losses. They

Current Acute Food Insecurity Jul - Sep 2024

Key for the Map
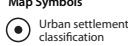
IPC Acute Food Insecurity Phase Classification

- 1 - Minimal
- 2 - Stressed
- 3 - Crisis
- 4 - Emergency
- 5 - Famine
- Areas with inadequate evidence
- Areas not analysed

Evidence Level
- * Acceptable
- ** Medium
- *** High

Current Acute Malnutrition April 2024 - Mar 2025

IPC Acute Malnutrition Phase Classification

- 1 - Acceptable
- 2 - Alert
- 3 - Serious
- 4 - Critical
- 5 - Extremely critical
- Phase classification based on MUAC
- Areas with inadequate evidence
- Areas not analysed

Map Symbols
- Urban settlement classification
- IDPs/other settlements classification

Evidence Level
- * Acceptable
- ** Medium
- *** High
- Scarce evidence due to limited or no humanitarian access

require large-scale and urgent action to reduce food consumption gaps and prevent livelihood depletion, starvation and further wasting and death – especially among children under five.

The above-normal Long Rains have had a significant positive impact on rangeland conditions across the region. Due to the abun-dant rainfall, there has been substantial regeneration of both pasture and browse, leading to healthy rangelands that are expected to sustain livestock for more than three months. This is particularly evident in the ASAL counties, where the pasture and browse conditions are reported to be good. As a result of the improved rangeland conditions, livestock body conditions have also seen a marked improvement, currently rated as good to very good. This has led to increased milk production, which not only boosts nutritional intake for households but also provides an additional source of income.

During the projection period (October 2024 to January 2025), the food security situation is likely to deteriorate further due to the high likelihood of severe rainfall deficits during the OND (October-November-December) season in 2024, which may result in below-average harvests, especially across the northern and eastern Kenya (ASALs). As usual, households are expected to rely more on their food stocks and market purchases. About 1.7 million people (11percent of the ASAL Population) are classified in Crisis or worse (IPC Phase 3 and 4), including about 98,000 people classified in Emergency (IPC Phase 4) and 1.6 million classified in Crisis (IPC Phase 3).

The nutrition situation has generally improved in the IPC long rains assessment in July 2024 compared to a similar period in 2023. The number of children 6 to 59 months requiring treatment is 760,488 in July 2024, which is a 20 percent reduction from a similar period in 2023 (945,610). In addition, the number of pregnant and breastfeeding women requiring treatment for acute malnutrition has reduced by 22 percent to 112,401 in July 2024 from 144,940 reported in a similar period in 2023. The improvement is attributed to the response to acute malnutrition with nutrition interventions and above-average rainfall in April and May 2024 that improved pasture and milk availability at the household and vegetables. However, malnutrition remains prevalent in arid counties due to factors such as poor childcare practices, high maternal workload, sub-optimal coverage of essential health and nutrition services, stockouts of commodities for management of acute malnutrition, inadequate water sanitation and hygiene, high burden of disease, reduced humanitarian support and multiple shocks such as floods and local insecurity which negate the positive effects of the two rain seasons. Over the projection period from August to October 2024, the nutrition situation is expected to continue improving, although it will likely remain within the same acute malnutrition classification phases.

Key Drivers for Acute Food Insecurity

Flooding

Flooding caused severe damage, submerging houses and settlements, sweeping away roads, and disrupting transportation: this hampered market operations and the delivery of humanitarian aid to affected areas.

High staple food prices

The average price of maize, a staple food, has risen sharply above the Long-Term Average (LTA) in most counties. This increase has been driven by a combination of factors, including poor crop yields mainly due to flooding, heightened demand, and market disruptions in some areas.

Conflict and insecurity

The security situation was generally stable. Still, Turkana and Marsabit counties (natural areas of good pasture) faced resource-based conflicts over water and grazing land, resulting in frequent clashes and heightened tensions with neighbouring communities.

Crop pests and diseases

The Fall Armyworm (FAW) infestation incidences were reported in several counties on maize, leading to reduced production.

Key Drivers for Acute Malnutrition

Limited Health services

Stockouts of health and nutrition commodities, particularly in East Pokot, highly reduced access to immunizations, vitamin A supplementation, SFP and OTP services.

Poor child food consumption

While minimum meal frequency improved, dietary diversity remained relatively low depicting nutrient inadequacies and acute malnutrition. The milk available at the household was below the recommended 2 litres, which reduced consumption.

Sub-Optimal care practices

Very low exclusive breastfeeding observed in Wajir, depriving the children of protective benefits. Late introduction to solid and semisolid foods resulting in nutrient inadequacies was reported.

High disease burden

Cholera and measles outbreaks were reported in Garissa, Tana River, Turkana West and Laisamis, which increases nutrient needs and contributes to acute malnutrition.

Poor access to sufficient water, safe water sources and sanitation facilities

Contribute to compromised hygiene practices and susceptibility to disease and acute malnutrition.

Flooding

Damaged health facilities, reducing access to health services. Damaged roads cut off the communities in hard-to-reach areas that would not benefit from outreaches, especially in Garissa and Tana River Counties. Displaced households had less access to food, increasing food insecurity.

Scale down of humanitarian support

Due to resource limitations, many Counties experienced scale down of humanitarian support that contributed to stock-outs of nutrition commodities, reduced number of outreaches and children that benefited from the child-targeted interventions such as SFP, OTP and cash vouchers.

CURRENT ACUTE FOOD INSECURITY MAP AND POPULATION TABLE (JULY – SEPTEMBER 2024)
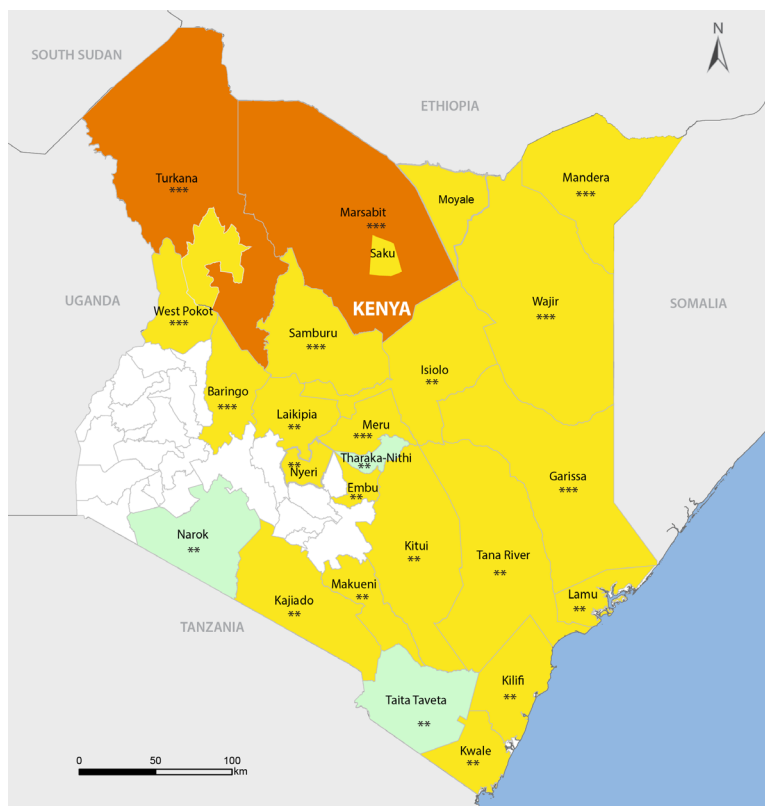
Key for the Map
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- 1 - Minimal
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- 5 - Famine
- Areas with inadequate evidence
- Areas not analysed

Area receives significant humanitarian food assistance
(accounted for in Phase classification)

> 25% of households meet 25-50% of caloric needs through assistance

> 25% of households meet > 50% of caloric needs through assistance

Evidence level:
* Acceptable
** Medium
*** High

Current Population Table: July – September 2024

District	Total population analysed*	Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Area Phase	Phase 3+	
		#people	%	#people	%	#people	%	#people	%	#people	%		#people	%
Baringo	733,000	586,400	80	109,950	15	36,650	5	0	0	0	0	2	36,650	5
Embu	281,000	182,650	65	98,350	35	0	0	0	0	0	0	2	0	0
Garissa	927,000	324,450	35	509,850	55	92,700	10	0	0	0	0	2	92,700	10
Isiolo	316,000	126,400	40	173,800	55	15,800	5	0	0	0	0	2	15,800	5
Kajiado	1,268,000	887,600	70	380,400	30	0	0	0	0	0	0	2	0	0
Kilifi	1,577,000	788,500	50	709,650	45	78,850	5	0	0	0	0	2	78,850	5
Kitui	1,230,000	922,500	75	307,500	25	0	0	0	0	0	0	2	0	0
Kwale	944,000	472,000	50	424,800	45	47,200	5	0	0	0	0	2	47,200	5
Laikipia	561,000	392,700	70	140,250	25	28,050	5	0	0	0	0	2	28,050	5
Lamu county	167,000	66,800	40	91,850	55	8,350	5	0	0	0	0	2	8,350	5
Makueni	1,042,000	729,400	70	260,500	25	52,100	5	0	0	0	0	2	52,100	5
Mandera	959,000	383,600	40	479,500	50	95,900	10	0	0	0	0	2	95,900	10
Marsabit - Laisamis	113,230	39,631	35	50,954	45	22,646	20	0	0	0	0	3	22,646	20
Marsabit - Moyale	172,230	94,727	55	68,892	40	8,612	5	0	0	0	0	2	8,612	5
Marsabit - Northhorr	140,850	49,298	35	56,340	40	35,213	25	0	0	0	0	3	35,213	25
Marsabit - Saku	88,690	39,911	45	44,345	50	4,435	5	0	0	0	0	2	4,435	5
Meru	795,000	596,250	75	159,000	20	39,750	5	0	0	0	0	2	39,750	5
Narok	1,284,000	1,091,400	85	192,600	15	0	0	0	0	0	0	1	0	0
Nyeri	205,000	153,750	75	51,250	25	0	0	0	0	0	0	2	0	0
Samburu	348,000	174,000	50	139,200	40	34,800	10	0	0	0	0	2	34,800	10
Taita Taveta	364,000	327,600	90	36,400	10	0	0	0	0	0	0	1	0	0
Tana River	353,000	141,200	40	158,850	45	52,950	15	0	0	0	0	2	52,950	15
Tharaka Nithi	178,000	151,300	85	26,700	15	0	0	0	0	0	0	1	0	0

District	Total population analysed*	Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Area Phase	Phase 3+	
		#people	%	#people	%	#people	%	#people	%	#people	%		#people	%
Turkana (Turkana East, Lioma, Kibish)	312,400	109,347	35	140,589	45	46,863	15	15,621	5	0	0	3	62,484	20
Turkana Central	204,500	61,350	30	102,250	50	30,675	15	10,225	5	0	0	3	40,900	20
Turkana North	71,970	21,591	30	35,985	50	10,796	15	3,599	5	0	0	3	14,395	20
Turkana South	169,660	59,381	35	84,830	50	25,449	15	0	0	0	0	2	25,449	15
Turkana West	264,450	105,780	40	105,780	40	39,668	15	13,223	5	0	0	3	52,891	20
Wajir	871,000	261,300	30	522,600	60	87,100	10	0	0	0	0	2	87,100	10
West Pokot	676,000	540,800	80	135,200	20	0	0	0	0	0	0	2	0	0
Grand Total	**16,617,000**	**9,881,616**	**60**	**5,798,165**	**35**	**894,557**	**5**	**42,668**	**-**	**0**	**0**		**937,225**	**5**

Note: A population in Phase 3+ does not necessarily reflect the total population needing urgent action. This is because some households may be in Phase 2 or even one but only because of receipt of assistance; therefore, they may need continued action. Marginal inconsistencies that may arise in the overall percentages of totals and grand totals are attributable to rounding.

CURRENT ACUTE FOOD INSECURITY SITUATION OVERVIEW (JULY – SEPTEMBER 2024)

The focus of the IPC analysis in Kenya revolves around 23 Arid and Semi-Arid Lands (ASAL) counties, where the population grapples with persistent food insecurity challenges attributed to high poverty levels and individual survivability of exposure to shocks and hazards, primarily those associated with climatic events and rainfall variability. The ASAL comprises about 80 percent of Kenya's landmass and is segregated into five livelihood clusters: Pastoral North-West Cluster (Turkana, Samburu, and Marsabit), Pastoral North-East Cluster (Wajir, Garissa, Isiolo, Tana River, and Mandera), South-East Marginal Agriculture Cluster (Kitui, Makueni, Tharaka Nithi, Embu, and Meru), Coastal Marginal Agriculture (Kilifi, Kwale, Taita Taveta, and Lamu), and the Agropastoral cluster (Baringo, Narok, Kajiado, West Pokot, Laikipia, and the northern part of Nyeri county - Kieni sub-county). These counties serve as the units of analysis, with pastoralism, agro-pastoralism, mixed farming, marginal mixed farming, and some irrigated cropping being the main livelihoods.
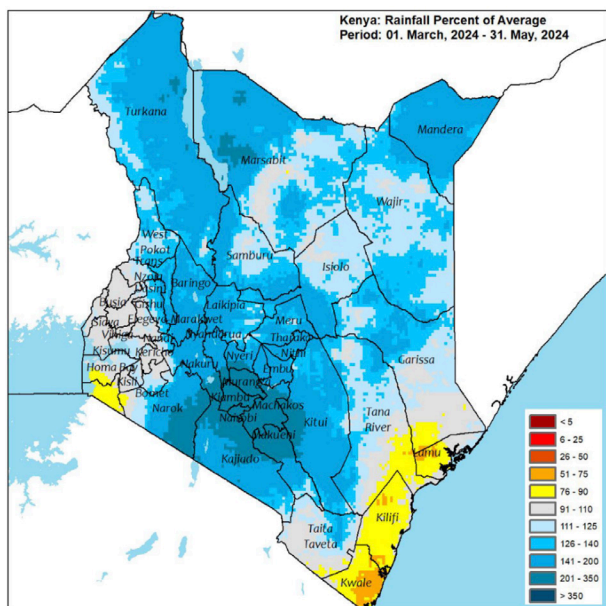
The onset of the seasonal rainfall was normal across several parts of the ASALs, with the Southeastern lowlands (Voi and Kitui) recording an earlier-than-normal onset. Most of the counties received above-average rainfall, with 111-140 percent of the average rainfall amounts. However, the coastal counties of Kilifi, Kwale and Lamu received below-average rainfall ranging between 51 per cent and 90 per cent of normal levels.

Kenya: Rainfall Percent of Average
Period: 01. March, 2024 - 31. May, 2024

The IPC Acute Food Insecurity (AFI) analysis was carried out in 23 ASAL counties. Turkana and Marsabit were analyzed at the sub-county level due to the variation observed across their sub-counties and the availability of sufficient data for such detailed analysis. In total, 30 units were analyzed, among which six (6) areas in Turkana (Turkana Central, Turkana North, Turkana West and, Kibish, Turkana East & Loima) and two areas in Marsabit (Laisamis and North Horr), which are predominantly pastoral livelihoods are classified in IPC Phase 3. Compared to the analysis of February 2024, Mandera, Wajir, Isiolo, and Garissa counties have improved from IPC Phase 3 (Crisis) to IPC Phase 2 (Stressed). Three (3) counties including Taita Taveta, Narok and Tharaka Nithi are classified as IPC phase 1 (none/minimal).

Availability

The main rain-fed crops grown during the March-April-May (MAM) rain season were maize, beans, cowpeas, green grams, irish potatoes and sorghum. According to the LRA 2024 assessment, in the Agro-Pastoral Cluster, the planting areas for maize and beans remained stable, while Irish potato production increased by 15 percent compared to the Long-Term Average (LTA). This was particularly evident in Baringo, where investor support led to higher Irish potato yields . However, in terms of production, fall armyworms negatively impacted crops in West Pokot and Baringo, and production in Narok and Laikipia declined due to blight and poor-quality seeds. These production challenges leading to reduced yields in these areas could lead to food shortages and increased food prices.

In the South-East Marginal Agriculture Cluster, maize, green grams, and cowpeas production fell during the MAM season due to flooding, pests, and wildlife damage. The Coastal Marginal Agriculture Cluster experienced significant declines in crop production compared to LTA because of dry spells and seed shortages. In the Pastoral North-East Cluster, while maize planting remained stable, production of maize and sorghum fell due to flooding and pest infestations. Although the Pastoral North-West Cluster saw an increase in maize and sorghum acreage, with notable gains in sorghum production, bean production decreased compared to LTA. These declines in key crop yields further exacerbate food insecurity across these clusters. In addition, insecurity in Samburu led to the abandonment of 935 acres of farmland as reported during the assessment, further straining local food production.

The Agro-Pastoral Cluster shows maize stocks 32 percent below the LTA, though rice and sorghum stocks have increased. Baringo holds 39 percent of the maize stocks, but these are expected to last only one month. Isiolo and Garissa have low cereal stocks due to poor harvests, with maize expected to last 1-2 months. Marsabit's cereal stocks have improved from the short rains but remain below the LTA, with Samburu County reporting cereal stocks that are 90 percent below normal. These significant shortages in key staple crops will force households to rely more heavily on markets for food,

where prices are already high, thereby worsening food insecurity to poor households. Despite these challenges in cereal availability, forage conditions in the Agro-Pastoral Cluster are very good, with adequate pasture and browse expected to last for the next three months. This has resulted in above-normal livestock body conditions. In contrast, the Coastal Marginal Cluster recorded fair forage and livestock body conditions, while the South-East Marginal Agriculture Cluster noted good forage and livestock body conditions. Overall, while all clusters report very good forage conditions, the Agro-Pastoral and Pastoral clusters show better livestock body conditions compared to the Coastal and South-East Marginal clusters.

The good forage and livestock body conditions have led to above-normal birth rates for all livestock species, particularly in pastoral areas, resulting in improved milk production and consumption, which could, in turn, enhance children's nutrition and improve food security at the household level. This is largely due to three consecutive favorable rainy seasons. Peak calving for camels and cattle occurred in June-July and May-June, respectively, which is typical for these regions. Additionally, across the clusters, livestock return watering distances are below normal, further supporting the improved livestock health.

While some regions, such as the South-East Marginal Agriculture Cluster and coastal counties, have higher-than-average bean and maize stocks, the overall decline in crop production across multiple clusters poses a threat to food security. The cumulative impact of these factors could result in food shortages, higher prices, and increased vulnerability for populations that rely on these crops for their sustenance. The reduced availability of staple crops could lead to food insecurity, especially in areas heavily dependent on maize, despite the favorable conditions for livestock production.

Access

Figure 1: Wholesale Maize Prices in Major Urban Consumption Markets
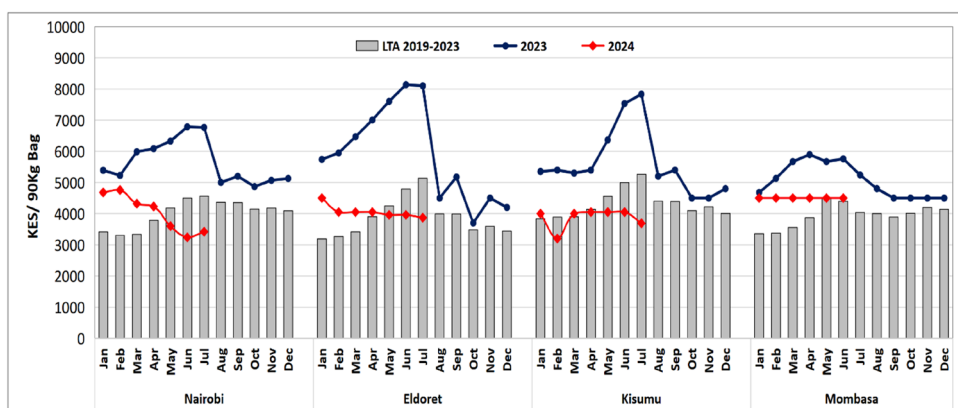
According to FEWSNET price monitor, Wholesale maize prices are declining, influenced by above-average 2023 harvests and imports from Uganda and Tanzania. In July 2024, maize prices ranged from 3,420 to 4,500 KES per 90 kg bag, which is 24-30 percent below the five-year average, except in Mombasa where prices remained average due to adequate supply levels from local production and imports.

The terms of trade (ToT) in the Pastoral cluster have been favourable, driven by high goat prices and relatively lower maize prices. Marsabit experienced the greatest improvement, with ToT 93 percent above the long-term average (LTA), allowing households to purchase 123 kg of maize per goat. Isiolo also saw a significant improvement, with ToT 143 percent above the LTA, enabling the purchase of 112 kg of maize per goat. In contrast, Garissa had less favourable ToT, with households able to buy only 40 kg of maize per goat, close to the LTA.

Overall, maize prices are lower than the short-term average in most areas due to improved availability from recent harvests, while goat prices are considerably higher than the LTA, ranging from Kshs. 5,796 to Kshs. 8,181, reflecting a strong goat market. In Kajiado, West Pokot, Nyeri, and Narok, terms of trade improved due to high goat prices and lower maize prices, boosting household purchasing power. Maize prices were notably lower in Embu and Kitui compared to short-term averages, due to good harvests. The maize prices were below the short-term average in Taita Taveta and Kwale, consistent in Kilifi attributed to the carry over harvests from the last short rains period, and above in Lamu, while goat prices exceeded the long-term average by 13 to 81 percent.
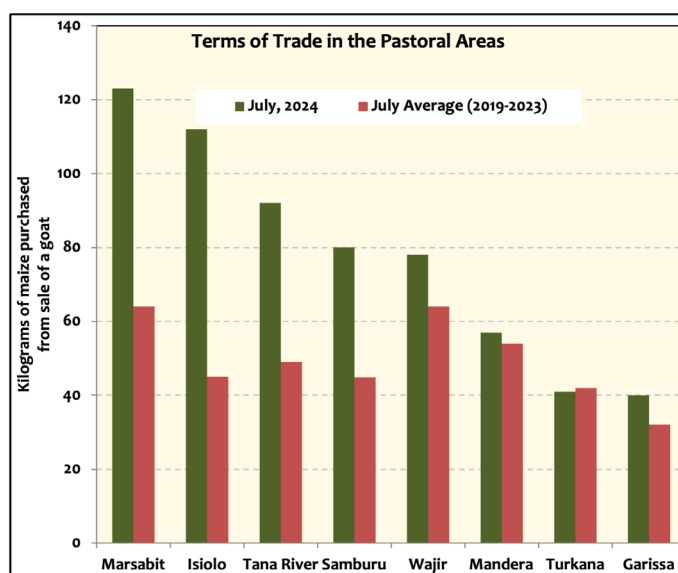
Utilization including water

The main domestic water sources across the ASAL counties include seasonal rivers, boreholes, water pans, dams, springs, and shallow wells, with many open water sources well-recharged due to favorable long rains. According to the assessment results, water consumption in litres per person per day (Lppd) varies across clusters but generally remains within normal ranges. However, challenges such as high-water salinity in Marsabit and long waiting times in areas, like Nuu Ward and Lamu's fishing zone, affect access to clean water.

Water costs also vary, with the highest prices observed in Lamu's fishing zone and through water vendors in areas like Laikipia and Narok. While the overall water availability and consumption are stable, high costs and long waiting times in some clusters strain household budgets and limit access to adequate and safe water for household consumption, which may lead to transmission of water-borne diseases such as diarrhoea.

Overview of outcome indicators

The analysis utilized outcome indicators from 3 sources: National Drought Management Authority (NDMA) (23 counties), SMART Surveys (9 counties) and REACH (3 counties). The Food Consumption Score (FCS) is a composite score based on dietary diversity, food frequency, and relative nutritional importance of different food groups consumed by a household. According to the outcome results from NDMA and SMART surveys, the FCS generally showed an improved situation with only 3 counties: Lamu, Tana River and Turkana (3 sub-counties in Turkana) showing more than 20 percent of households experiencing poor food consumption. Only Turkana and Marsabit counties were analyzed at sub-county level. Counties like Kajiado, Narok and Taita Taveta show a high percentage of the population with an acceptable food consumption score, indicating relatively good food security.

The Reduced Coping Strategy Index (rCSI) focuses on the food-based coping strategies employed by the households when faced with lack of food or money to buy food. According to NDMA, areas like Garissa, Mandera and Turkana North show a higher reliance on coping strategies (Indicative Phase 3+), with more than 30% of the population falling into this category. This suggests that while some households may still have access to food, others still have some food gaps and this could lead to increased rates of acute malnutrition among children. On the other hand, counties like Kitui, Taita Taveta and West Pokot have a smaller percentage of households relying on food-based coping strategies, indicating a relatively stable food security situation.

The Livelihood Coping Strategy (LCS) indicator further highlights the livelihood-based strategies that households employ to cope with insufficient access to food or income for purchasing food. The strategies are classified into three categories: stress, crisis, and emergency. NDMA outcome results show that most households relied on stress and crisis strategies, while only a few did not use any coping strategies at all. Wajir county showed a significant reliance on the emergency coping strategies (Phase 4) which could have long-term implications for households' ability to recover from food insecurity.

PROJECTED ACUTE FOOD INSECURITY MAP AND POPULATION TABLE (OCTOBER 2024 – JANUARY 2025)
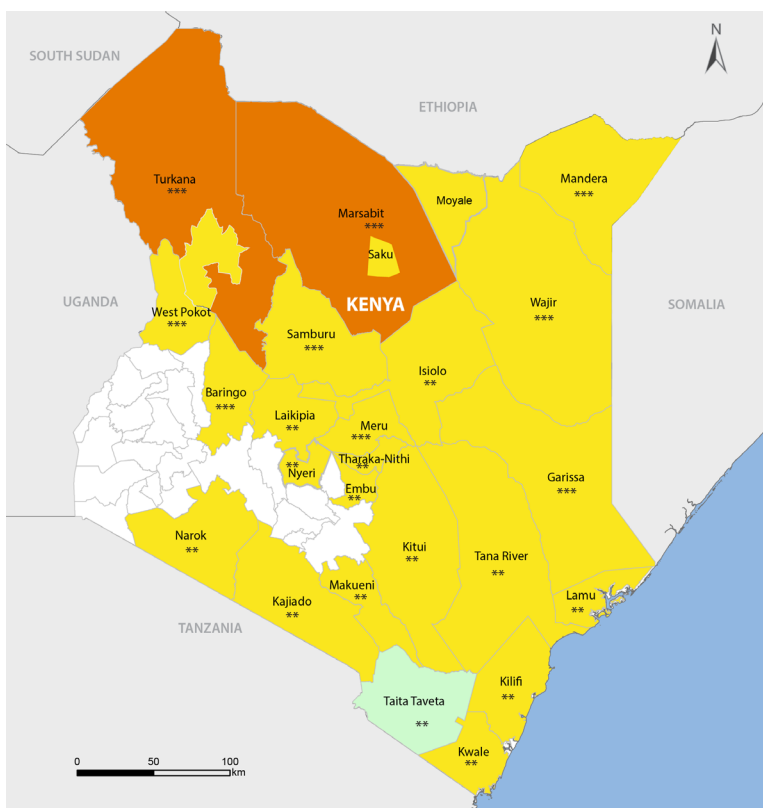
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Area receives significant humanitarian food assistance
(accounted for in Phase classification)

> 25% of households meet 25-50% of caloric needs through assistance

> 25% of households meet > 50% of caloric needs through assistance

Evidence level:
* Acceptable
** Medium
*** High

Projected Population Table October 2024 – January 2025

District	Total population analysed*	Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Area Phase	Phase 3+	
		#people	%	#people	%	#people	%	#people	%	#people	%		#people	%
Baringo	733,000	549,750	75	109,950	15	73,300	10	0	0	0	0	2	73,300	10
Embu	281,000	182,650	65	84,300	30	14,050	5	0	0	0	0	2	14,050	5
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Laikipia	561,000	364,650	65	140,250	25	56,100	10	0	0	0	0	2	56,100	10
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Mandera	959,000	335,650	35	479,500	50	143,850	15	0	0	0	0	2	143,850	15
Marsabit - Laisamis	113,230	28,308	25	50,954	45	28,308	25	5,662	5	0	0	3	33,970	30
Marsabit - Moyale	172,230	77,504	45	77,504	45	17,223	10	0	0	0	0	2	17,223	10
Marsabit - Northhorr	140,850	33,213	25	56,340	40	42,255	30	7,043	5	0	0	3	49,298	35
Marsabit - Saku	88,690	35,476	40	44,345	50	8,869	10	0	0	0	0	2	8,869	10
Meru	795,000	437,250	55	278,250	35	79,500	10	0	0	0	0	2	79,500	10
Narok	1,284,000	1,027,200	80	192,600	15	64,200	5	0	0	0	0	2	64,200	5
Nyeri	205,000	133,250	65	61,500	30	10,250	5	0	0	0	0	2	10,250	5
Samburu	348,000	174,000	50	139,200	40	34,800	10	0	0	0	0	2	34,800	10
Taita Taveta	364,000	309,400	85	54,600	15	0	0	0	0	0	0	1	0	0
Tana River	353,000	123,550	35	176,500	50	52,950	15	0	0	0	0	2	52,950	15
Tharaka Nithi	178,000	133,500	75	35,600	20	8,900	5	0	0	0	0	2	8,900	5

District	Total population analysed*	Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Area Phase	Phase 3+	
		#people	%	#people	%	#people	%	#people	%	#people	%		#people	%
Turkana (Turkana East, Lioma, Kibish)	312,400	93,726	30	140,589	45	46,863	15	31,242	10	0	0	3	78,105	25
Turkana Central	204,500	40,900	20	102,250	50	40,900	20	20,450	10	0	0	3	61,350	30
Turkana North	71,970	14,394	20	35,985	50	14,394	20	7,197	10	0	0	3	121,591	30
Turkana South	169,660	50,898	30	93,313	55	25,449	15	0	0	0	0	2	25,449	15
Turkana West	264,450	92,558	35	105,780	40	39,668	15	26,445	10	0	0	3	66,113	25
Wajir	871,000	174,200	20	566,150	65	130,650	15	0	0	0	0	2	130,650	15
West Pokot	676,000	473,200	70	169,000	25	33,800	5	0	0	0	0	2	33,800	5
Grand Total	**16,617,000**	**8,799,927**	**53**	**6,084,210**	**36**	**1,634,829**	**10**	**98,039**	**1**	**0**	**0**		**1,732,868**	**11**

Note: A population in Phase 3+ does not necessarily reflect the total population needing urgent action. This is because some households may be in Phase 2 or even one but only because of receipt of assistance; therefore, they may need continued action. Marginal inconsistencies that may arise in the overall percentages of totals and grand totals are attributable to rounding.

PROJECTION ACUTE FOOD INSECURITY SITUATION OVERVIEW (OCTOBER 2024 – JANUARY 2025)

During the projection period (October 2024 and January 2025), a deterioration in the current food security situation in areas analyzed is expected, mainly due to forecasted below average short rains in October to December2024. Among the 30 areas analyzed, it is projected that approximately 1.7 million people will experience high levels of acute food insecurity (IPC Phase 3 or above). This represents a 2 percent increase compared to last year's LRA projection period when about 1.5 million people were classified in IPC Phase 3 or above. The deterioration is attributed to the anticipated depressed OND rainfall, which may result in poor harvests and poor quality of browse and pasture conditions. This contrasts with the previous year when these counties experienced above-normal rainfall.

The food security situation has improved across the ASAL counties compared to the same period last year, despite this progress, the number of food insecure population is projected to increase to nearly 1.7 million (1.6 million in Phase 3 and

100,000 in Phase 4) during the projected period (October 2024 - January 2025) if appropriate measures and responses are not implemented, mainly due to the forecasted below-average short rains for 2024. A small population, around 100,000 people (one percent of those analyzed), is expected to be in IPC Phase 4 (Emergency). These people are likely to rely on food-based or livelihood coping strategies, highlighting the urgent need for action to address food consumption gaps and protect their livelihoods.

Food Availability

A mixed outlook is expected between October 2024 and January 2025, with some improvements in food security situation in certain regions but persistent challenges will remain in others. Despite the expected below-average short rains from October to November and December 2024, it is expected an average regeneration of pasture and browse, which will further improve livestock body conditions and reducing the distance to water sources at the household level. Across all the livelihood zones, livestock are expected to see slight improvements in body conditions, with most animals remaining within the wet-season grazing areas as the milking herd produces above-average milk quantities. Most mature breeding cattle and camels are anticipated to calve early in January 2025, contributing to an overall increase in herd sizes and livestock populations due to above-normal birth rates across all species.

The OND 2024 rains will support the cultivation of early maturing crops like sorghum and cowpeas hence replenishing household food stocks. This, in turn, could lead to better household dietary diversity and food consumption scores. If the short rains fail, the situation is unlikely to worsen significantly, and slight deterioration is envisaged because of the previous cumulative effect of two well-performing seasons that mitigate potential negative impacts.

However, in January 2025, a deterioration in the rangeland resources and livestock productivity is expected, which could reduce household milk availability as livestock migrates to dry-season grazing areas with the seasonal depletion of pasture resources. High levels of acute malnutrition among children under five years may persist, especially in areas

Key Assumptions:

Rainfall forecast: Preliminary forecasts by the Kenya Meteorological Department (KMD), and the World Meteorological Organization (WMO) suggest that the 2024 October to December short rains season in northern and eastern Kenya is expected to be below average, while western Kenya will likely experience near-average rainfall. In addition, forecasts indicate that most parts of the country are likely to expect warmer-than-normal temperatures during the October to December 2024 (OND) rainfall season. OND forecast shows a higher-than-average chance of (50 - 85%) of mild drought across most of the country, especially in the eastern parts (70 – 85%). The forecast also shows a higher-than-average chance (20 - 45%) of severe drought across the country with the eastern parts having the highest chance (35 – 50%) of severe rainfall shortages during the season.

Livestock diseases: Livestock pests and disease incidences during the projected period will be moderate and livestock morbidity is expected to slow. However, the suspected cases of Peste des petits ruminants (PPR), Trips, sheep and goat pox, and Contagious caprine pleuropneumonia (CCPP), Foot and Mouth Disease (FMD), Lumpy Skin Disease (LSD) and East Coast Fever (ECF)are expected to remain until the short rains.

Livestock production: Livestock body condition, especially for cattle, will likely deteriorate due to the depletion of rangeland resources. However, the deterioration will only be moderate. Milk production and availability are expected to decrease as small livestock feeds dry up and larger herds move deeper into the rangelands. The anticipated deterioration of forage will increase the trekking distances to water sources, adversely affecting the body condition of the livestock. This, in turn, will lead to lower milk production and reduced milk consumption levels at the household level.

Crop production: In the October to December 2024 season, rainfall is expected to be 45-75% below normal which will likely lead to low production of all

where underlying factors such as poor water access and disease are not adequately addressed. Throughout January 2025, household food stocks are predicted to seasonally deplete, increasing the reliance on markets and contributing to food insecurity. Although the market access is expected to seasonally improve due to supply from local production, particularly in agro-pastoral areas, the reliance on negative coping strategies will continue for many households, reflecting ongoing vulnerabilities. Overall, despite some seasonal improvements in , the food availability situation is expected to worsen as most households will have limited food stocks, and others may have depleted their stocks.

Food Access

Despite the anticipated below-average short rains, slight improvements in pasture and livestock conditions are expected to stabilize or enhance access to food in some regions. Market operations are expected to remain normal over the period, to provide households uninterrupted access to food commodities. Additionally, most markets are expected to continue being well supplied with food commodities apart from a few rural markets where supplies of food commodities are relatively limited due to low production and high cost of transportation over long distances. In areas prone to civil insecurity, market access is expected to improve with

the main crops across most livelihood zones. Areas of the marginal mixed farming zone whose production in the MAM period was below average is likely to be affected, leading to further household food stress.

Market prices: The prices of staple food commodities are likely to increase up to January 2025. Maize prices will likely increase but remain below the long-term average (LTA) as demand increases in the backdrop of the crop's failure across the agropastoral zones. With the increasing prices of staple food, it is expected that the terms of trade and purchasing power at the household level will reduce. Livestock prices are anticipated to drop as the supplies to the market increase to meet other household financial needs. Milk prices are expected to remain above the LTA.

Income sources: Livestock health is expected to be good, which will lead to better productivity and keep livestock prices stable, thus providing a stable income source for pastoralists. Diverse income sources, including livestock sales, casual labour, and small-scale trade, are expected to remain stable or improve.

better security measures. Stabilized food prices and enhanced market functionality will support food security for many households. Despite these improvements, livestock migration, particularly for large stock such as camels and cattle, is expected to occur in September 2024. This may further depress markets and reduce traded volumes. Furthermore, increased reliance on markets due to seasonally depleted food stocks can lead to higher vulnerability among households, especially in times of high commodity prices during the projected period.

Food Utilization including water.

Water resources are expected to deteriorate faster than normal due to the warmer-than-average temperatures that will last until mid-October 2024 and the forecasted below-average rains, which will likely lead to poor water recharge and limited access to clean water. This will result in an increase in the household's non-potable water, due to limited access to water treatment. As the water availability decreases, food utilization and hygiene are likely to deteriorate across most households.
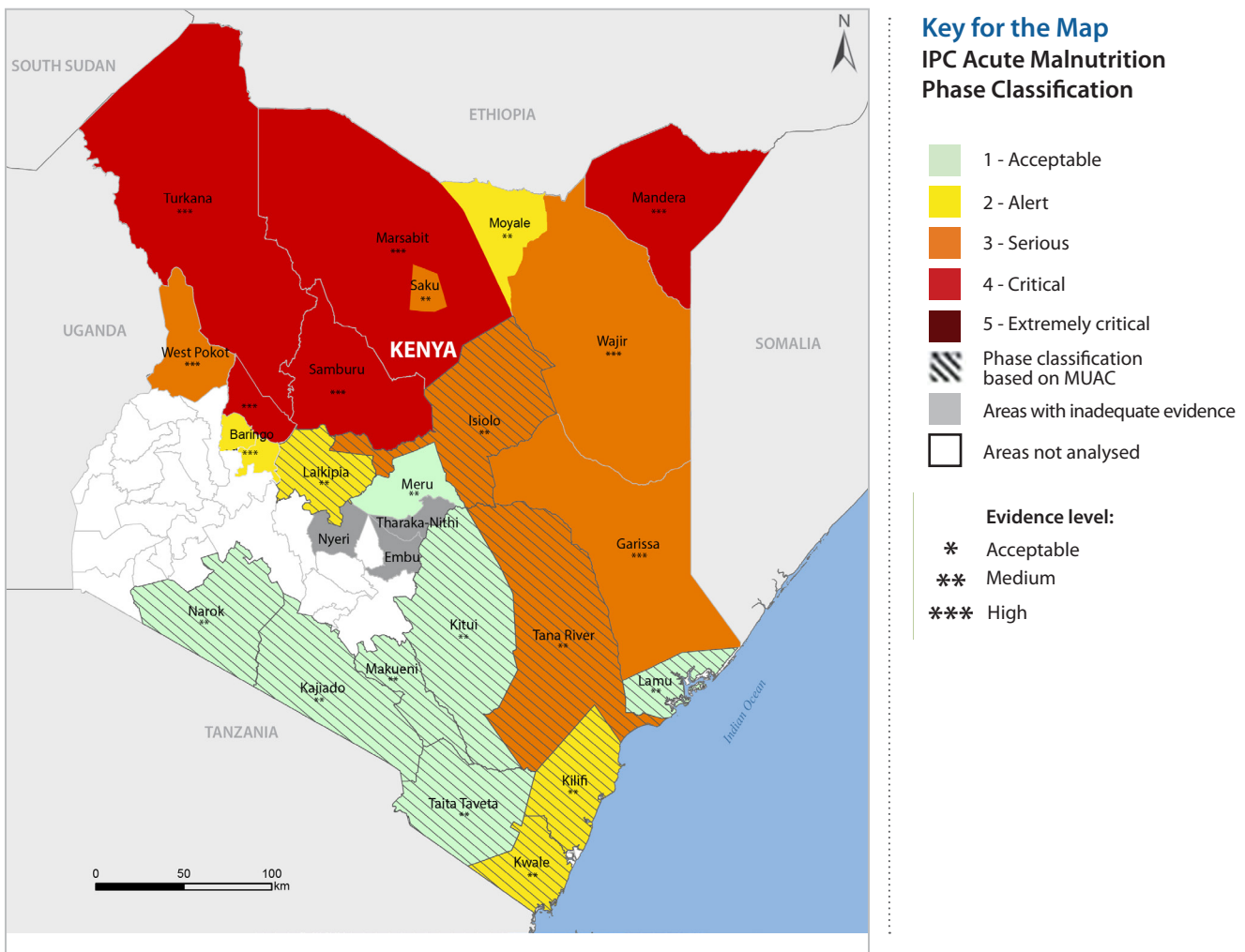
Access to cooking fuel is expected to remain stable, ensuring sufficient capacity to sustain food preparation throughout the season. However, potential increases in gas prices could strain the budgets of casual-waged labor and unskilled households, reducing their ability to afford cooking fuel.

CURRENT ACUTE MALNUTRITION SITUATION OVERVIEW
(APRIL - JULY 2024)

Key for the Map
IPC Acute Malnutrition Phase Classification

- 1 - Acceptable
- 2 - Alert
- 3 - Serious
- 4 - Critical
- 5 - Extremely critical
- Phase classification based on MUAC
- Areas with inadequate evidence
- Areas not analysed

Evidence level:
- * Acceptable
- ** Medium
- *** High

The Integrated Phase classification for Acute Malnutrition (IPC AMN) analysis conducted in July 2024 shows overall improvement. However, some areas continue to report high levels of acute malnutrition. Turkana South improved from IPC AMN Phase 5 (Extremely Critical) to IPC AMN Phase 4 (Critical). Turkana Central, Turkana West, Turkana North, North Horr, Laisamis, Mandera, and Tiaty improved though within the same phase; IPC AMN Phase 4 (Critical). Isiolo, Wajir, Garissa, Tana River, Saku and West Pokot remained within IPC AMN Phase 3 (Serious). Kilifi, Moyale, and Baringo North/South remained in IPC AMN Phase 2 (Alert). Makueni, Kitui, and Kajiado improved from IPC AMN Phase 2 (Alert) to Phase 1 (Acceptable). There are hot spot areas in phase 3 and above for both acute malnutrition and acute food insecurity; Garissa, Tana River, Wajir, North Horr, Laisamis, Saku, Samburu, Turkana West, Turkana South, Turkana Central and Turkana North. There is an urgent need to intensify interventions that address malnutrition and food insecurity taking a wholistic concurrent multisectoral approach to realize the impact.

The nutrition situation is expected to continue improving over the projection period, although it will likely remain within the same acute malnutrition classification phases. The major improvement in reducing the prevalence of global acute malnutrition is attributed to enhanced nutrition and food security interventions in addition to improved food security characterized by positive impact of long rains in the pastoral communities associated with improved milk availability and consumption, and in agropastoral communities increased food stocks and vegetables resulting from the favorable cumulative performance from the 2023 short rains and the 2024 long rains. Despite the marked improvements in GAM prevalence, acute malnutrition remains high (Phase 3 and above) in 13 out of 27 areas analyzed, out of which 13 areas have GAM prevalence above emergency threshold (15%). Thus, need to continue and increase coverage with the interventions to prevent, manage acute malnutrition and save lives of children less than 5 years, pregnant and breastfeeding women in the arid and semi-arid lands (ASALs) of Kenya.

SMART surveys LRA -2022 to 2024

■ LRA - July 2022   ■ LRA - July 2023   ■ LRA - July 2024
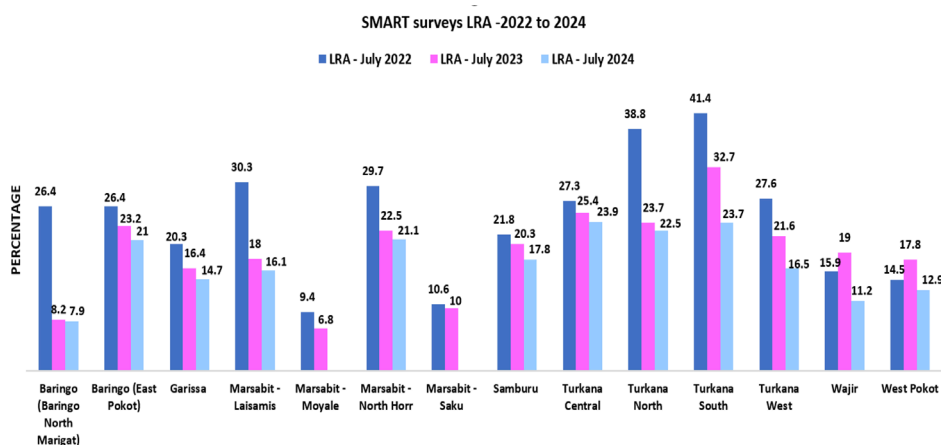
Key Drivers for Acute Malnutrition

High disease burden

Persistent disease burden in ASAL regions continues to drive recurrent acute malnutrition. In Baringo, ARI prevalence reached 30.9% in Baringo North/South, while Tiaty reported high disease burden at 27.5% among children less than 5 years that is mainly Malaria prevalence at 18.9%. Measles outbreaks were also reported in Turkana West sub-County, Loima, Mandera, Isiolo, Wajir, and Garissa Counties.

Inadequate food consumption

Dietary intake among children aged 6-23 months in the ASAL region is critically low in both quantity and quality. Minimum Dietary Diversity (MDD), Minimum Meal Frequency (MMF), and Minimum Acceptable Diet (MAD) are alarmingly low. In Garissa, only 12.6% of children meet MDD, and just 6.5% achieve MAD, while in Turkana South and North, the MDD was 7.4% and 0.4% respectively. Low dietary diversity against improved meal frequency contribute to nutrient inadequacies and significantly to the region's high acute malnutrition rates (Phase 3 and above), highlighting the urgent need for targeted interventions.

Elevated levels of food insecurity

Approximately one million people, representing 6% of the population, are currently experiencing high acute food insecurity and are in urgent need of assistance while less than 50% of the households are meet acceptable dietary diversity. Food insecurity has led to consistently low levels of food consumption across affected regions and contributing to acute malnutrition, necessitating urgent and intensification of existing interventions.

Sub-Optimal childcare practices

Infant and young child feeding (IYCF) practices remain of significant concerns. In Garissa, 17% of children aged 0-23 months received pre-lacteal feeds, a practice that can undermine early initiation of breastfeeding efforts and the associated protective benefits to disease. Exclusive breastfeeding is as low as 15.2% in Wajir County while only 36.5% of children 6-8 months were timely introduced to solid and semi-solid foods in Garissa County. Both early and late initiation of complementary foods predispose children to disease and nutrient inadequacies respectively and contributing to acute malnutrition. Despite the measles outbreak in Mandera County, health seeking behavior remains sub-optimal at 65.1% and 57.4% in Turkana North. Delayed medical attention to sick children aggravates nutrient inadequacies and acute malnutrition.

Insufficient Water, poor sanitation and Hygiene (WASH) practices

Limited access to sufficient water is reported in households where 86% in Turkana west,70% in Garissa and Turkana North, and 65% in Turkana Central and Samburu consume less than 15 liters of water per person daily. Insufficient water, coupled with hand washing remains a challenge (<10%) compromise hygiene while increasing susceptibility to disease and acute malnutrition. Access to safe sources of drinking water remain a challenge in most ASAL areas with Turkana North reporting access at 28.9%. Very low access (<30%) to sanitation facilities is reported in North Horr, Laisamis, Turkana North and Turkana West. Temporary pit latrines are often damaged by floods while open defecation aggravates environmental contamination and vulnerability to disease and acute malnutrition.to sanitation.

Poor access to health services

Scale down of outreaches and mass screening due to constrained resources- affecting access to services in hard-to-reach areas in the ASAL Counties with suboptimal Vitamin A supplementation. This has contributed to low immunization coverage, vitamin A supplementation and IMAM coverage. Stock outs of nutrition commodities and vitamin A was reported in 689 (29.4%) health facilities in June 2024. In Samburu the health services such as IMAM programs were limited due to stockouts of nutrition commodities affecting OTP and SFP programs.

Shocks

The cumulative impacts of the above-average seasonal rains from March to May 2024 resulted in flooding, causing the loss of livestock, destruction of infrastructure -roads and health facilities, property, and farmland mainly in Garissa, Tana River and Turkana south hindering access to health and nutrition services, markets and trade. Insecurity in East Pokot significantly contributed to limited access to health services contributing to reduction in outreaches from 80 in 2023 to less than 30 during by July 2024 and downscaling of Nutrition activities that negatively affected nutrition specific interventions such as SFP and OTP.

Reduced Humanitarian assistance

Due to resource constraints, humanitarian support has greatly reduced negatively impacting on outreaches, IMAM coverage, nutrition commodity stocks and child targeted safety nets such as coverage of supplementary feeding programs and cash vouchers. In Mandera, most cash transfers programs have ended except HNSP programs by government which is less than minimum expenditure basket.

Detailed number of children who are acutely malnourished and in need of treatment

The total number of children 6 to 59 months requiring treatment of acute malnutrition is 760,488 children 6-59 months and 112,401 pregnant and lactating women require treatment in the period of April 2024- March 2025.

Estimated Caseloads of Children 6-59 months and Pregnant & Lactating Women Requiring Treatment for Acute Malnutrition

Area	Global Acute Malnutrition 6 to 59 months		Moderate Acute Malnutrition 6 to 59 months		Severe Acute Malnutrition 6 to 99 months		Pregnant and Lactating Women
	Total Caseload	Target	Total Caseload	Target	Total Caseload	Target	
Baringo	21,568	12,022	16,614	8,307	4,953	3,715	4,740
Embu	2,749	1,664	1,592	796	1,158	868	48
Garissa	36,917	20,231	29,829	14,915	7,088	5,316	11,640
Isiolo	11,496	6,141	9,923	4,961	1,573	1,180	2,820
Kajiado	9,727	5,582	6,855	3,427	2,873	2,154	982
Kilifi	23,351	12,584	19,718	9,859	3,632	2,724	1,272
Kitui	18,746	11,151	11,636	5,818	7,111	5,333	1,593
Kwale	11,871	7,038	7,461	3,731	4,409	3,307	960
Laikipia	5,735	3,374	3,711	1,856	2,024	1,518	60
Lamu	1,984	1,168	1,282	641	703	527	36
Machakos	5,944	3,626	3,329	1,664	2,615	1,961	24
Makueni	9,667	5,559	6,767	3,383	2,900	2,175	348
Mandera	75,317	41,082	61,623	30,812	13,694	10,271	16,644
Marsabit	25,529	13,944	20,811	10,405	4,719	3,539	7,356
Meru	10,390	6,160	6,531	3,265	3,859	2,894	700
Narok	8,004	4,502	6,003	3,002	2,001	1,501	132
Nyeri	1,372	739	1161	581	211	158	142
Samburu	20,870	11,185	17,869	8,935	3,001	2,251	5,796
Taita Taveta	4,423	2,629	2,752	1,376	1,671	1,253	177
Tana river	15,914	8,632	13,214	6,607	2,700	2,025	3,240
Tharaka Nithi	983	530	832	416	151	113	160
Turkana	83,488	45,601	68,061	34,031	15,427	11,570	31,896
Wajir	48,876	27,062	38,379	19,190	10,497	7,873	16,908
West Pokot	24,574	13,693	18,948	9,474	5,625	4,219	2,496
Total ASAL	**479,498**	**265,898**	**374,902**	**187,451**	**104,596**	**78,447**	**110,169**
Kisumu	6,976	4,320	3,648	1,824	3,328	2,496	192
Mombasa	20,979	12,998	10,944	5,472	10,035	7,526	312
Nairobi	31,603	18,778	19,699	9,850	11,904	8,928	984
Total urban	**59,558**	**36,096**	**34,291**	**17,146**	**25,267**	**18,950**	**1,488**
Total non- ASAL	**221,432**	**123,354**	**170,880**	**85,440**	**50,552**	**37,914**	**744**
GRAND TOTAL	**760,488**	**425,348**	**580,074**	**290,037**	**180,414**	**135,311**	**112,401**

The automated standard Kenya Caseload Tracker was used to calculate the caseloads. The number of children requiring treatment was determined by analysis area using global acute malnutrition by weight for height (GAM-WHZ) prevalence in the ASAL areas. The formula used to calculate the caseloads was Caseload = N × P × K × C where N is the Population of children 6 to 59 month in the area, P is the estimated prevalence of SAM or MAM, K is a correction factor to account for new or incident cases over 12 months, which in this case, K is 2.6. C is the mean coverage that is expected to be achieved by the program over the time. Programmatic experience and considerations such as actual number of children admitted to the program in the previous year's vis-a-vis the targeted number was considered given that changes occur especially with the mobile pastoral communities and areas prone to shocks leading to displacements. Caseload calculation for the pregnant and lactating women was mainly based on programmatic experience coupled with technical discussion and consensus.

OVERVIEW OF PROJECTED ACUTE MALNUTRITION SITUATION (AUGUST - OCTOBER 2024)
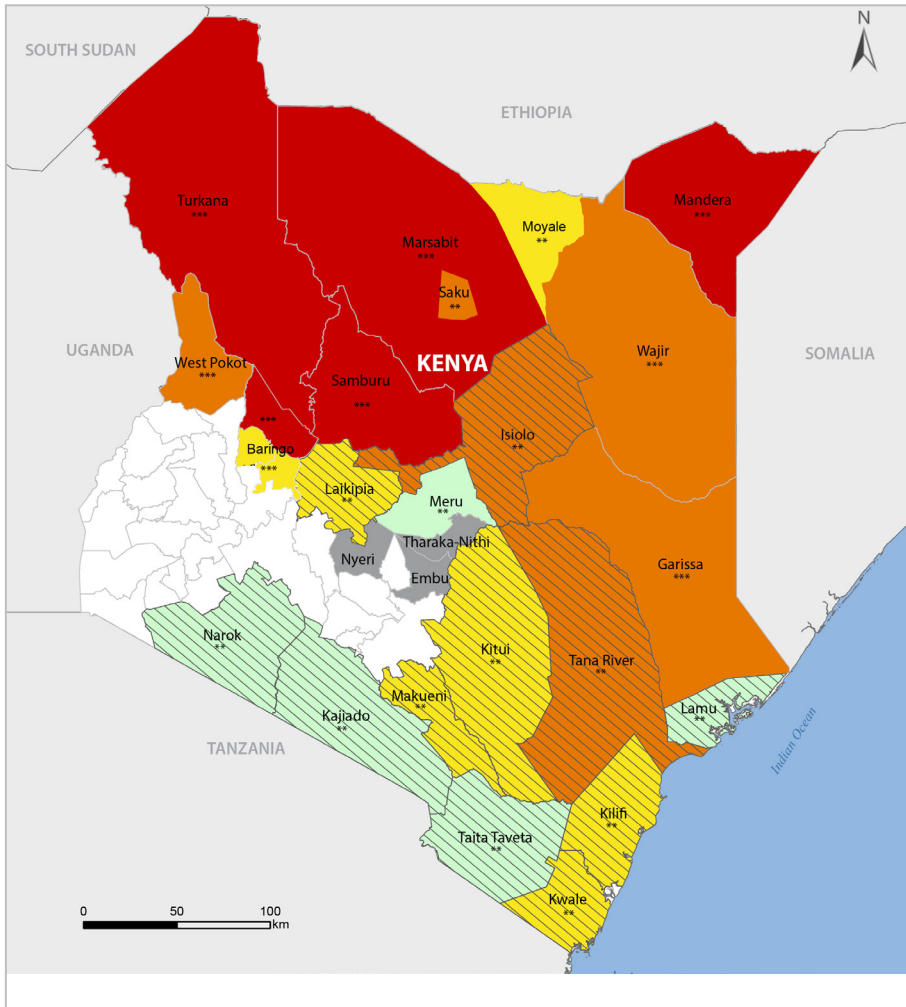
Key for the Map
IPC Acute Malnutrition Phase Classification

- 1 - Acceptable
- 2 - Alert
- 3 - Serious
- 4 - Critical
- 5 - Extremely critical
- Phase classification based on MUAC
- Areas with inadequate evidence
- Areas not analysed

Evidence level:
- *   Acceptable
- **   Medium
- ***   High

The overall nutrition situation is expected to see gradual improvement, yet it will likely remain within the same phases of acute malnutrition. The anticipated improvements are dependent on sustained humanitarian assistance and favourable climatic conditions. Nutrition situation has improved in many areas, Turkana South improved to IPC AMN Phase 4 (Critical) from phase 5. Makueni, Kitui, and Kajiado improved from IPC AMN Phase 2 (Alert) to Phase 1 (Acceptable) attributed to improving food security situation on milk availability, food stocks across households due to cumulative effects of enhanced rainfall. Further improvements during the projection period (August to October 2024) are expected across the counties but within same phases except Kitui and Makueni which are projected to deteriorate to the next phase (from acceptable to Alert).

More efforts should be geared towards continued response monitoring among the shocks affected communities to ensure implementation of drought and flood recovery interventions and resilience building activities, conduct mass screening for early detection of acute malnutrition and treatment of acute malnutrition through health facilities and integrated outreaches, and scale up of actions to address poor dietary intake among children 6 to 23 months, poor WASH, and high morbidity, while sustaining routine disease surveillance and nutrition situation monitoring.

Furthermore, sustain continuous needs assessments of the flash flood affected population to ensure safely settled and emerging needs are addressed, continuous psycho-social support to the affected communities and situation monitoring for waterborne disease outbreak.

Key Assumptions:

Food Security: The food security outlook indicates potential deterioration due to expected below-normal rainfall in key agricultural zones, driven by La Niña conditions. This could lead to reduced crop yields and further stress on pastoral resources

Food consumption: With ongoing food insecurity, household food consumption is likely to remain compromised.

Disease: Disease outbreaks could persist, particularly in areas with poor WASH infrastructure. Diarrheal diseases and other waterborne illnesses may remain prevalent due to the expected decline in water quality and access.

Children practices: Inadequate Infant and Young Child Feeding (IYCF) practices are expected to persist, exacerbating child malnutrition, especially in regions where health services remain under strain and maternal education on nutrition is limited.

Health and Health services: Access to health services may improve marginally, yet challenges such as insufficient healthcare personnel and facilities, coupled with ongoing disease outbreaks, could hamper significant progress.

WASH practices: WASH practices are likely to remain inadequate, with low handwashing rates and insufficient access to safe water sources continuing to drive high malnutrition rates. Open defecation will also remain prevalent in many regions, contributing to poor sanitation and related health risks.

Humanitarian Assistance: The limitations with scale down of humanitarian services is likely to continue during the projection period. This is likely to result to stock outs of nutrition commodities and outreaches for hard to reach areas.

LINKAGES BETWEEN ACUTE FOOD INSECURITY AND ACUTE MALNUTRITION

Out of the 27 analyzed areas, 3 areas (East Pokot, Mandera and Samburu) had divergence of 2 phases either in current or projection classifications where the acute malnutrition (AMN) was mainly the higher phase to the acute food insecurity (AFI). Ten areas (Garissa, Laisamis, Saku, North Horr, Wajir, Tana River, Turkana North, Turkana West, Turkana South and Turkana Central) presented Phase 3 or above for both scales (AFI and AMN). Divergence is defined as a difference of at least 2 or more phases between AFI and AMN phase classifications.

Analysis areas with divergence between IPC AFI and AMN phase classifications

Area of Analysis	AMN Current (April-July 2024)	AMN Projection (August-October 2024)	AFI Current (July-September 2024)	AFI Projection (October-December 2024)	Divergence
Baringo East Pokot	4 (Critical)	4 (Critical)	2 (Stressed)	2 (Stressed)	2
Mandera	4 (Critical)	4 (Critical)	2 (Stressed)	2 (Stressed)	2
Samburu	4 (Critical)	4 (Critical)	3 (Crisis)	2 (Stressed)	2

Despite that the acute malnutrition is taking the upper phase (critical) in the divergence, there has been a trend of improvement within the same phase overtime in the GAM prevalence from similar seasons over the past 3 years; Baringo East Pokot from 26.4% (2022) to 23.2% (2023) and 21.0% (2024), Mandera from 28.8%(2022) to 21.2%(2023) and 20.6%(2024) while Samburu from 21.8%(2022) to 20.3%(2023) and 17.8%(2024).

The high acute malnutrition in these areas were attributed to 1) high disease burden including recurrent outbreaks of cholera and measles, 2) Low or lack of access to humanitarian assistance, 3) low dietary diversity 4) Insufficient water and poor sanitation and 5) Scaled down health services including outreaches and Integrated management of acute malnutrition (IMAM) coverage.

Samburu

In Samburu, AMN has constantly remained in phase 4(critical), while AFI has been in IPC Phase 2 (Stressed) over the past five years (2020-2024). Despite the low AFI IPC Phase, there is a lack of diversified diets at the household level (HDDS at 39.3%), while minimum dietary diversity (MDD) and minimum adequate diets (MAD) for children less than 5 years are 4.6% and 6% respectively. The Sub-Optimal infant and young child feeding practices are exhibited in Samburu, where continued breastfeeding to 2 years is 41.1%, and the timely introduction to solid and semi-solid foods is at 47.9%, further contributing to nutrient inadequacies and acute malnutrition. Although 66.7% of the health facilities are functional, health services such as IMAM programs are limited due to stockouts of nutrition commodities affecting outpatient services (OTP) and supplementary feeding programs (SFP). The routine immunization coverage is low at 61.64%, specifically measles (64.7%) and polio (69%), which is a deterioration from 70% and 80%, respectively, in 2023. The low immunization contributes to higher vulnerability to child diseases that lead to acute malnutrition. The limited access to sufficient water (47.6%) and latrine coverage (40.6%) leads to compromise in hygiene at the household level and an unsafe environment, which increases vulnerability to disease and malnutrition.

East Pokot (Tiaty)

Historically (2020-2024), East Pokot has exhibited higher AMN at Phase 4 (Critical) despite the constant AFI IPC Phase 2 (stressed). However, according to SMART surveys conducted between 2022 and 2024, there has been progressive improvement in the GAM prevalence from 26.4% in 2022 to 21% in 2024 but within the same Phase 4. The high acute malnutrition is attributed to nutrient inadequacies from limited diet diversity, where 10.8% and 10.1% of children and women consume 5 food groups per day. Livestock migration to further distances in search of water had pasture has reduced access to milk at the household level. From the Long Rains Assessment 2024, hunger gaps exist where 31 % of the households employ crisis coping strategies while 42% had a moderate hunger scale against 3.9% of the households receiving cash assistance. The patriarchal nature of the region also influences the dietary practices as the father makes decisions on what to eat at the household level. The civil insecurity has significantly contributed to the limited access to health services in the few health facilities available and contributed to the reduction in outreaches from 80 in 2023 to less than 30 reported by the Ministry of Health in July 2024 and the downscaling of Nutrition activities that negatively affected nutrition-specific interventions such as SFP and OTP. The high disease burden reported at 27.5% among children less than 5 years in LRA 2024 is mainly the Malaria prevalence

at 18.9% against the low routine immunization coverage of 67% for both measles and polio and vitamin A at 77.4%, which increases vulnerability to disease and acute malnutrition.

According to LRA 2024, poor hygiene and sanitation practices are observed, with latrine coverage at 8.7% in 2024, down from 11.3% in 2023, while 15.6% access water from safe sources as 1.8 % Treat water at the household level. High open defecation contaminates the environment and, coupled with unsafe water sources, increases the vulnerability to diseases that contribute to acute malnutrition.

Mandera

Despite the historical progressive improvement in AFI from IPC Phase 4 (Emergency) in 2022 to IPC Phase 2 (stressed) in 2024, high acute malnutrition has remained at Phase 4 (critical) with improvements within the same phase from 28.8% in 2022 to 20.6% in 2024. A high food consumption score of about 92% was registered against low variety and adequacy of food consumed in reference to diversity (MDD, 16.6 per cent among children 6-23 months and 22.9 percent among women) and frequency where 53.9 percent met minimum meal frequency (MMF)as reported in the SMART survey for the LRA 2024. The amount of milk consumed at the household level is 1 litre on average, below the expected 2 litres, which reduces the quantities and frequency of daily milk consumption by children. Most cash transfer programs have ended except HNSP programs by the government, which is less than the minimum expenditure basket. The SMART survey conducted in June/ July 2024 reported a high disease burden in Mandera with currently active measles and Kalazaar outbreaks against low Vitamin A supplementation at 51.6 per cent and sub-optimal health-seeking behaviour (65.1 per cent). Coupled with malaria at 15.6% among children, the disease burden contributes to increased nutrient needs that, if not met, lead to acute malnutrition. Floods experienced reported by the NDMA bulletin in the months of April 2024 have caused the destruction of farmlands along river Daua and damaged water pans and roads, affecting transport systems, including access to health services and reduction of outreach and CMAM coverage to 18.9% (LRA 2024). Vulnerability to environmental hygiene and disease is aggravated by low access to sufficient water (47.5%) and improved safe water sources (35.8%). In comparison, 30% of the population has no access to latrines, as reported in the SMART survey in June/July 2024.

Hot Spots

AFI Phases	5	AFI hotspots (11 areas)		AFI-AMN hotspot (11 areas)		
	4	Garissa, Tana River, Wajir, North Horr, Laisamis, Saku, Samburu, Turkana West, Turkana South, Turkana Central and Turkana North		Garissa, Tana River, Wajir, North Horr, Laisamis, Saku, Samburu, Turkana West, Turkana South, Turkana Central and Turkana Northl		
	3					
	2			AMN hotspots (13 areas)		
	1			East Pokot, Garissa, Mandera, Tana River, Wajir, North Horr, Laisamis, Saku, Samburu, Turkana West, Turkana South, Turkana Central and Turkana North		
		1	2	3	4	5
		AMN Phases				

Hot spots here refer to analysis areas classified in IPC Phase 3 or above for acute food insecurity and acute malnutrition. Hotspots were identified in 10 analysis areas as listed in Table above.

Mapping of Hot spots areas

There were 11 hotspots during the IPC long rains analysis: Garissa, Tana River, Wajir, North Horr, Laisamis, Saku, Turkana North, Turkana South, Turkana West, Turkana Central and Samburu. Despite remaining Hotspots in phase 3 or above for both scales (AMN and AFI), marked improvements have been observed in acute malnutrition in 2024 compared to similar seasons in 2022 and 2023. Garissa and Wajir's improvement resulted in a Phase change from Critical to severe in Turkana South in 2024. Meanwhile, a significant reduction within the same phase was observed in Turkana South and Laisamis from phase 5 (Extremely critical) in 2022 to phase 4 (critical) in 2023 and further reduction within the same phase in 2024. The reduction in GAM prevalence has been attributed to intensified nutrition interventions and improved livestock products such as milk consumption and affordable food prices.

Despite the marked reduction in GAM prevalence, the areas remain in the hot spot zone, reporting high acute malnutrition beyond the emergency threshold (15%). The high acute malnutrition is attributed to food gaps resulting from low dietary diversity, which is as low as 0.4% in Turkana North. In comparison, the lowest minimum meal frequency (37%) is reported in Turkana Central, depicting nutrient inadequacies. The household dietary diversity score remained below 50% in all the areas, with children reporting that they hardly consume animal protein (eggs and flesh). Milk production improved in the long rains season of 2024 compared to 2023. Still, consumption at the household was below the recommended minimum of 2 litres as most of it was sold but at a lower price that was below the long-term average. Reduced coping strategy at indicative phase 3 and above at the household level remained over 60% in all Samburu, Turkana (North, West, South and Central) areas, Laisamis and North Horr. The household hunger scale (HHS) was in crisis and above was reported as high as ≥ 60% in 7 out of the 11 hotspot areas, with the highest at 90% in Laisamis. This shows nutrient inadequacies that require continuous multifaceted interventions to increase food availability and diversity in the households and the children.

Disease burden remains high in Turkana South with malaria prevalence at 48 percent, Diarrhoea at 13 percent and ARI at 71Percent. Disease outbreaks such as measles were reported in Garissa and Turkana West, while cholera was reported in Laisamis, Garissa and Tana Rivers. High disease burden against reduced access to health and nutrition services from reduced outreach programs related to effects of climate change, such as unusual flooding in Tana River, Garissa and Turkana areas that caused destruction of roads, bridges and submerged health facilities and outreach centres, increasing vulnerability to acute malnutrition since the CMAM coverage was also negatively impacted. Scale down of outreach due to limited funding also affects access to health services, particularly in Saku, where only one outreach centre out of the previous 27 is functional. Garissa faces a surge in refugees that cross the Somalia border into the County, stretching the resources, including health and nutrition commodities available to the host communities.

The water and sanitation (WASH) practices were suboptimal, with as few as 14% of the households accessing sufficient water in Turkana West while remaining below 50% in Samburu, Turkana North and Central, and Garissa. Open defecation remains rampant in North Horr, Laisamis and Turkana North and West. Access to safe water sources remains sub-optimal, especially in Turkana North (28.9%), North Horr (51.6%), Turkana West (58%), and Samburu (59%) with long distances up to 5 kilometres round trip to the water point, coupled with queuing time deprives the children of optimal care as the mothers are involved in both caregiving and fetching water for the household. The compromised WASH practices increase vulnerability to disease and acute malnutrition.

RECOMMENDATIONS FOR ACTION

Response Priorities

Acute food insecurity response priorities

- Enhance agricultural productivity by providing essential farm inputs like seeds, fertilizers, and tractors, controlling crop pests, expanding irrigation infrastructure, and promoting agro-processing, value addition, and market access.
- Strengthen llivestock health through disease surveillance, emergency vaccinations, and rangeland rehabilitation while improving livestock husbandry practices and repairing critical water infrastructure for animals.
- Develop and repair water infrastructure such as boreholes and pipelines, promote solarization and water harvesting systems, and ensure the availability of clean and safe water through treatment and protection of water sources.
- Boost nutrition and health services by mobilizing resources, scaling up mass screenings, integrated health outreaches, and community-based nutrition programs, focusing on early detection and treatment of malnutrition.
- Support education by implementing school meal programs, enhancing sanitation and water access, constructing essential facilities, and providing necessary supplies such as sanitary pads and food for school fees.
- Strengthen social safety nets by distributing food, non-food items, and cash transfers to vulnerable households while building resilience to future shocks through asset creation programs.
- Promote peace and security by facilitating conflict resolution and peace-building initiatives to address resource-based disputes and assist affected communities in their recovery efforts

Acute Malnutrition Recomendations for Action

- Strengthen existing community structures to improve nutrition and health services.
- Further scale-up of multi-sectoral interventions to address the immediate needs with complementary actions to accelerate recovery from the effects of drought, floods and other shocks and build the resilience of communities.
- Strengthen multi-sectoral approach to address the nutrition situation in collaboration with national and County Governments.
- Heighten resource mobilization to improve the nutrition supply pipeline for commodities to manage moderate acute malnutrition.
- Scale up community-based nutrition services, including scale-up Social Behaviour Change Communication (SBCC) focusing on health and nutrition, care practices, and WASH.
- Sustain surveillance of disease and malnutrition hotspots areas.
- Implementation of integrated outreach programme in hard-to-reach areas.
- Train, roll-out and scale IMAM surge guidelines and family led MUAC approach to health facilities.
- Implementation of integrated nutrition-sensitive programs aimed at improving household food security and dietary intake, such as livelihood improvement programs, social safety net initiatives including food non-food essentials, cash transfers with comprehensive case management services for vulnerable children
- Promotion of Community Led Hygiene and Sanitation Practices.
- Continued mass screening and active case finding, referral and treatment of SAM and MAM in all the IMAM treatment sites.
- Further scale up of timely nutrition and health situation monitoring and surveillance including financing data and surveillance activities to allow for comprehensive nutrition situation analysis.
- Strengthen nutrition commodities supply chain.

Risk factors to monitor

Acute Malnutrition

- Morbidities, disease outbreak and Water, Sanitation and Hygiene situation, care practices.
- Monitor civil security situation in vulnerable communities as resource-based conflict are likely to deteriorate the improving situation.
- Rainfall performance on food security and Nutrition situation.
- Effects of the short rains on continuity of health and nutrition services given the projected heavy rains.
- Effect of scale down of outreaches on coverage of health and nutrition services in far flung areas affecting access to services by hard-to-reach population.
- Nutrition situation across the country given still high levels of acute malnutrition in arid counties.

Acute food insecurity

- Forecasted below average October to December 2024 short rains.
- Food insecure and flood-affected populations in need of humanitarian assistance.
- Elevated acute malnutrition in Laisamis and North Horr sub-counties of Marsabit, Tiaty in Baringo and Turkana, Mandera and Samburu Counties.
- Supply chain and availability of nutrition commodities and essential medical supplies to health facilities.
- Human disease trends and outbreaks and their effect on malnutrition.
- Availability of farm inputs and extension services.
- Incidences of crop pest and diseases in the cropping areas.
- Livestock productivity and health.
- Likely increase in resource-based conflict and insecurity incidences during the dry period.
- Prices of staple food prices across major food commodity markets.

PROCESS AND METHODOLOGY

The Kenya LRA 2024 IPC AFI and AMN Analyses from July 22 to August 2, 2024, were coordinated by the Kenya Food Security Steering Technical Working Group (TWG). Before the analysis, the national TWG, in collaboration with the County Steering Group (CSG), conducted the 2023 short rains food and nutrition security assessment across the 23 arid and semi-arid counties.

The national officers' assessment team conducted transect drives and ensured sectoral data quality assurance within the selected counties. These 23 arid and semi-arid counties are historically known for their fragile ecosystem, exposure to shocks and vulnerabilities, and erratic rainfall patterns, all of which have a negative impact on the food security status of the population. Various technical partners and government agencies, including government line ministries, USAID, ACF, CONCERN worldwide, WV, Save the Children, Feed the Children, REACH, Food for the Hungry, Kenya Red Cross, FEWS NET, Global Nutrition Cluster, and UN Agencies such as WFP, FAO, UNDP, and UNICEF, physically participated in the analysis processes. The Ministry of Health and Nutrition partners actively engaged in SRA IPC analysis to ensure the integration of nutrition and health into the analysis. Before conducting the

What are the IPC, IPC Acute Food Insecurity and IPC Acute Malnutrition?

The IPC is a set of tools and procedures to classify the severity and characteristics of acute food and nutrition crises as well as chronic food insecurity based on international standards. The IPC consists of four mutually reinforcing functions, each with a set of specific protocols (tools and procedures). The core IPC parameters include consensus building, convergence of evidence, accountability, transparency and comparability. The IPC analysis aims at informing emergency response as well as medium and long-term food security policy and programming.

For the IPC, Acute Food Insecurity and Acute Malnutrition are defined as any manifestation of food insecurity or malnutrition found in a specified area at a specific point in time of a severity that threatens lives or livelihoods, or both, regardless of the causes, context or duration. The IPC Acute Food Insecurity Classification is highly susceptible to change and can occur and manifest in a population within a short amount of time, as a result of sudden changes or shocks that negatively impact the determinants of food insecurity. The IPC Acute Malnutrition Classification's focus is on identifying areas with a large proportion of children acutely malnourished preferably by measurement of Weight for Height Z-Score (WHZ) but also by Mid-Upper Arm Circumference (MUAC).

Contact for further Information

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This analysis was carried out under the auspices of the Kenya Food Security Steering Group (KFSSG), in collaboration with the respective County Steering Groups (CSGs). It received both technical and financial support in partnership with Canada.

Classification of food insecurity and malnutrition was conducted using the IPC protocols, which are developed and implemented worldwide by the IPC Global Partnership - Action Against Hunger, CARE, CILSS, EC-JRC, FAO, FEWS NET, Global Food Security Cluster, Global Nutrition Cluster, IFPRI, IGAD, Oxfam, SICA, SADC, Save the Children, UNDP, UNICEF, WFP, WHO and the World Bank.

Acute Food Insecurity Phase name and description

Phase 1 None/Minimal	Phase 2 Stressed	Phase 3 Crisis	Phase 4 Emergency	Phase 5 Catastrophe/ Famine
Households are able to meet essential food and non-food needs without engaging in atypical and unsustainable strategies to access food and income.	Households have minimally adequate food consumption but are unable to afford some essential non-food expenditures without engaging in stress-coping strategies.	Households either: • have food consumption gaps that are reflected by high or above-usual acute malnutrition; **or** • are marginally able to meet minimum food needs but only by depleting essential livelihood assets or through crisis-coping strategies.	Households either: • have large food consumption gaps that are reflected in very high acute malnutrition and excess mortality; **or** • are able to mitigate large food consumption gaps but only by employing emergency livelihood strategies and asset liquidation	Households have an extreme lack of food and/or other basic needs even after full employment of coping strategies. Starvation, death, destitution and extremely critical acute malnutrition levels are evident. For famine classification, area needs to have extreme critical levels of acute malnutrition and mortality.)

Acute Malnutrition Phase name and description

Phase 1 Acceptable	Phase 2 Alert	Phase 3 Serious	Phase 4 Critical	Phase 5 Extremely Critical
Less than 5% of children are acutely malnourished.	**5–9.9%** of children are acutely malnourished.	**10–14.9%** of children are acutely malnourished.	**15–29.9%** of children are acutely malnourished. The mortality and morbidity levels are elevated or increasing. Individual food consumption is likely to be compromised.	**30% or more** children are acutely malnourished. Widespread morbidity and/or very large individual food consumption gaps are likely evident.

IPC Analysis Partners:

analysis, participants underwent a one-day refresher training session for IPC AFI analysis, one-day training sessions for IPC AMN analysis, and one-day training on the new IPC Analysis platform for AFI.

A three-day hybrid vetting exercise of the 23 counties on current and projected phase classifications was conducted based on the evidence generated for contributing factors, outcome indicators, assumptions, and risk factors, with the technical consensus reached for all counties' classifications. Throughout the analysis, the IPC GSU team provided continuous technical support. According to IPC protocols, the analysis was assigned a medium level of evidence, categorized as Level 2 (**) for AFI and AMN. In conclusion, the IPC self-assessment was conducted in plenary through discussions to ascertain adherence to IPC protocols, identify challenges experienced, and provide feedback for future improvements.

Sources

1. NDMA: Food security and nutrition indicators' data from the Drought Early Warning and Monitoring System.

2. SMART Surveys: Outcome data collected in eight (8) counties (Baringo, Samburu, Garissa, Turkana, Wajir, West Pokot, Mandera and Marsabit)

3. REACH Data for 3 counties – Mandera, Turkana and Marsabit

4. KFSSG and CSGs: Sector checklists data at the county and sub-county levels, field observations during transect drive.

5. FEWS NET/KMD: Agro-climatic data and weather forecast,

6. KNBS: 2019 Census Data and population projections, and KDHS 2022

7. MoH: KHIS 2021, 2022 and 2023, screening data, coverage assessment, NICHE MIS Data

Limitations of the Analysis

• It is necessary to provide additional comprehensive IPC Level 1 training to ensure that analysts at both county and national levels are fully equipped in IPC.

• In several ASAL (Arid and Semi-Arid Lands) counties, there is a significant gap in the availability of SMART survey data. Over an extended period, these counties have largely relied on MUAC screening data to assess and monitor nutritional status. While MUAC data provides valuable insights, it is often not comprehensive enough to serve as a sole basis for informed decision-making, particularly when addressing broader issues of food security and malnutrition. Need to align the NDMA sentinel sites with the newly released livelihood zones factoring in representativeness of the data to meet IPC requirement of the evidence reliability level.

Annex: RISK FACTORS TO ACUTE MALNUTRITION

Legend

- ■ Extremely Critical
- ■ Critical
- ■ Serious
- ■ Alert
- ■ Acceptable
- ■ No data
- □ Not a RF

Counties (columns): Turkana West, Turkana South, Turkana North, Turkana Central, Saku, North Horr, Moyale, Laisamis, Samburu, Isiolo, Garissa, Tana River, Mandera, Wajir, Meru North, Makueni, Kitui, Embuu-Mbeere, Tharaka, Kilifi, Taita Taveta, Kwale, west Pokot, Narok, Kieni, Laikipia, Kaijado, Baringo North and South, Lamu, Baringo East -Tiaty

Individual Food Consumption
- Minimum Dietary Diversity (MDD)
- Minimum Meal Frequency (MMF)
- Minimum Acceptable Diet (MAD)
- Minimum Dietary Diversity – Women (MDD-W)

Diseases
- Diarrhoea
- Dysentery
- Malaria/fever
- Acute Respiratory Infection (ARI)
- HIV/AIDS
- Cholera or Acute Watery Diarrhoea (AWD)
- Measles (outbreak)

Food dimensions Outcome of IPC analysis

Caring and feeding practices
- Exclusive breastfeeding under 6 months
- Continued breastfeeding at 1 year
- Continued breastfeeding at 2 years
- Introduction of solid, semi-solid or soft foods
- Restricted consumption by adults in order for small children to eat

Health services and health environment
- Measles vaccination
- Polio vaccination
- Vitamin A supplementation
- Skilled birth attendance
- Health seeking behaviour

Legend

- ■ Extremely Critical
- ■ Critical
- ■ Serious
- ■ Alert
- ■ Acceptable
- ■ No data
- □ Not a RF

Legend codes used in the table below: EC = Extremely Critical, C = Critical, S = Serious, A = Alert, Ac = Acceptable, ND = No data, (blank) = Not a RF

Category	Indicator	Turkana West	Turkana South	Turkana North	Turkana Central	Saku	North Horr	Moyale	Laisamis	Samburu	Isiolo	Garissa	Tana River	Mandera	Wajir	Meru North	Makueni	Kitui	Embuu-Mbeere	Tharaka	Kilifi	Taita Taveta	Kwale	west Pokot	Narok	Kieni	Laikipia	Kajiado	Baringo North and South	Lamu	Baringo East-Tiaty
Health services and health environment	Coverage of outreach programmes – CMAM programme coverage (SAM, MAM, or both)	ND	ND	ND	ND	Ac	ND	A	ND	ND	ND	Ac	ND	C	A	ND	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Ac
	Access to a sufficient quantity of water	C	C	C	C	A	A	C	S	C	S	C	C	C	S	S	A	ND	ND	ND	Ac	A	Ac	C	S	A	ND	ND	S	A	S
	Access to sanitation facilities	C	C	S	A	C	S	A	C	ND	C	A	S	S	S	S	Ac	ND	Ac	ND	A	A	A	S	C	ND	S	ND	A	ND	EC
	Access to an improved source of drinking water	S	A	C	C	S	S	S	A	ND	A	S	S	S	S	S	Ac	A	S	ND	Ac	S	ND	C	ND	A	ND	ND	C	ND	A
Shocks	Insecurity	S	S	ND	ND	ND	ND	S	ND	S	S	ND	ND	S	S	ND	S	ND	ND	ND	ND	ND	ND	S	ND	ND	ND	ND	S	A	S
	Floods	C	C	C	S	ND	ND	S	ND	ND	S	EC	EC	S	A	ND	S	ND	ND	ND	ND	A	S	ND	ND	ND	S	S	ND	ND	ND
	Increased food prices	S	S	S	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Drought	S	S	S	S	ND	ND	ND	S	S	ND	ND	ND	ND	ND	ND	A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	A
	Livestock disease outbreak	ND	ND	ND	ND	ND	ND	ND	ND	S	ND	ND	ND	A	ND	ND	A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Crop failure	ND	ND	ND	ND	ND	ND	ND	ND	ND	S	ND	ND	ND	ND	S	S	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	S	ND	ND
	Locust invasion	ND	ND	ND	C	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Basic causes	Human capital	C	C	EC	C	ND	ND	C	ND	ND	C	ND	ND	ND	S	ND	S	S	ND	ND	ND	S	S	S	ND	ND	ND	A	C	ND	S
	Physical capital	S	C	S	C	ND	ND	C	ND	ND	A	S	ND	ND	S	ND	S	A	ND	ND	ND	Ac	ND	ND	ND	ND	ND	A	S	ND	ND
	Financial capital	C	S	C	C	C	ND	S	ND	ND	S	ND	ND	A	ND	S	S	ND	ND	ND	A	ND	ND	ND	ND	ND	ND	A	ND	ND	ND
	Natural capital	C	S	C	ND	ND	ND	S	ND	ND	C	ND	A	ND	Ac	ND	A	A	ND	ND	ND	A	ND	S	ND	ND	ND	A	ND	ND	A
	Social capital	S	C	C	C	ND	ND	C	ND	ND	Ac	ND	ND	S	ND	A	S	ND	ND	ND	Ac	ND	ND	S	ND	ND	Ac	ND	S	ND	S
	Policies, Institutions and Processes	S	C	Ac	S	ND	ND	ND	A	ND	ND	ND	ND	A	ND	ND	S	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	A
Other Nutrition issues	Anaemia among children 6-59 months	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Anaemia among pregnant women	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Anaemia among non-pregnant women	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Vitamin A deficiency among pre-school children (6 – 71 months)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Vitamin A deficiency among non-pregnant women (15 – 49 years)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Low birth weight	ND	ND	ND	ND	ND	ND	ND	ND	ND	S	ND	ND	ND	ND	ND	Ac	ND	Ac	ND	ND	S	ND	A	S	ND	ND	ND	A	ND	A
	Fertility rate	Ac	Ac	Ac	ND	ND	ND	ND	ND	ND	A	ND	ND	ND	ND	ND	Ac	ND	Ac	ND	ND	ND	ND	S	A	ND	ND	ND	ND	ND	Ac