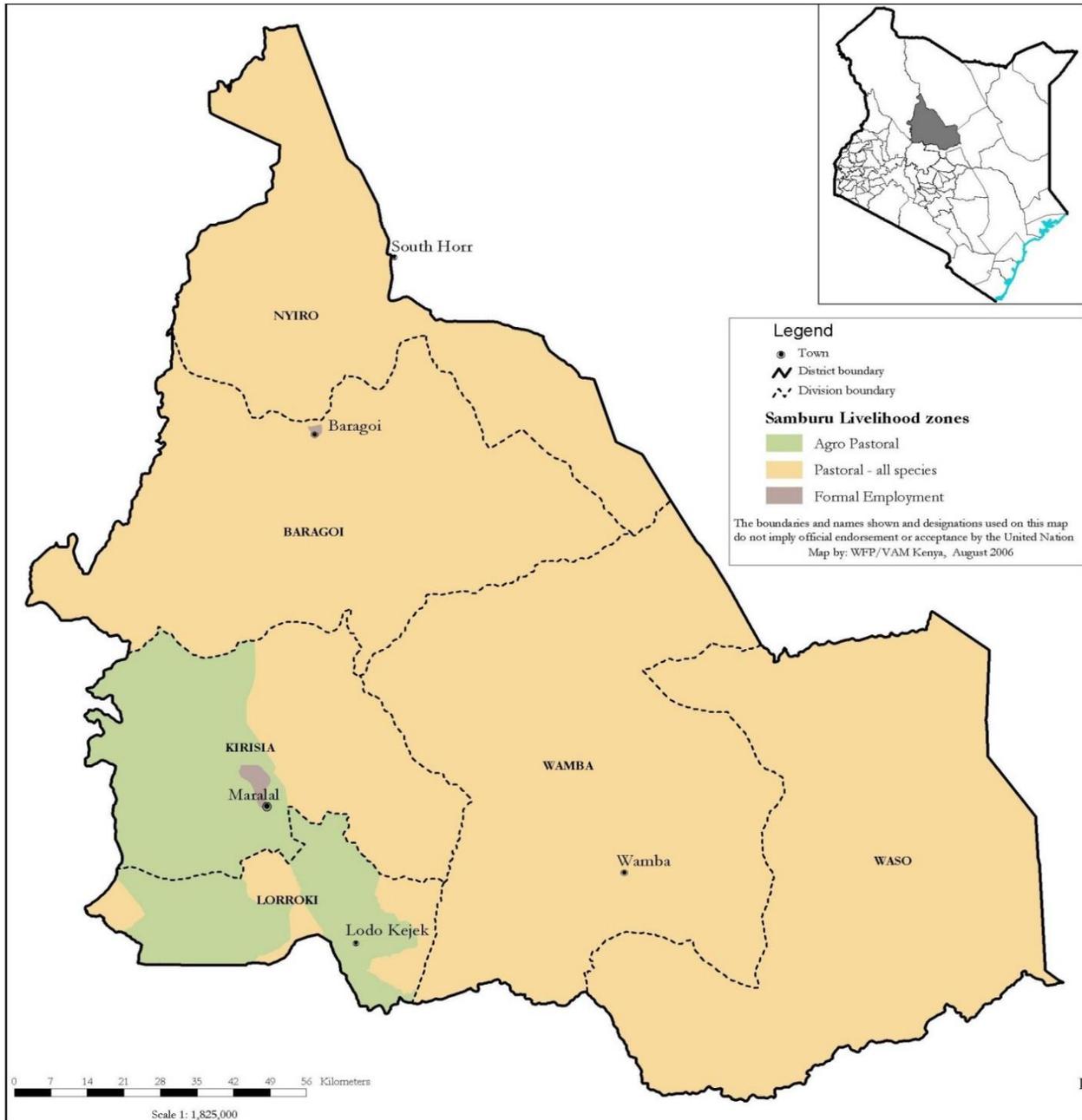


SAMBURU COUNTY

2019 LONG RAINS FOOD AND NUTRITION SECURITY ASSESSMENT REPORT



A Joint Report by the Kenya Food Security Steering Group (KFSSG)¹ and Samburu County Technical Steering Group (CSG)

July 2019

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EXECUTIVE SUMMARY

The Long Rains 2019 food and nutrition security assessment was conducted by Kenya Food Security Steering Group (KFFSG) and technical County Steering Group (CSG) members covering Pastoral and Agro Pastoral Livelihood Zones in the county. The assessment was undertaken between 8th – 19th July 2019. The broad objective of the assessment was to develop an objective, evidence-based and transparent food and nutrition security situation analysis, considering the cumulative effect of previous seasons and other shocks and hazards and suggest possible food and non-food intervention recommendations.

March – April – May (MAM) 2019 rainfall onset was late by four dekads. Most areas of Samburu central and Samburu north received rainfall of 90 – 110 percent of the normal with marginal pockets receiving 50 – 90 percent of the normal. The eastern part of the county received depressed rainfall of 50 – 75 percent of the normal with pockets recording 75 – 90 percent of the normal. Spatial distribution was even while temporal distribution was poor. Cessation was late as the rains progressed into the first dekad of June.

Area planted for maize and cowpeas decreased by 41 percent and 33 percent respectively thus will consequently result into decrease in projected production by 98, 83, and 50 percent for maize, beans and cowpeas respectively. Maize stocks have depleted at the household levels with few farmers particularly from Loosuk ward and trader's in urban centres holding stock below long term average (LTA) by 85 percent and 78 percent respectively. Stocks at NCPB are 45 percent of the LTA while millers are holding 14 percent above LTA. Vegetation cover improved in agro pastoral but deteriorated in most parts of pastoral while browse was fair to good across the livelihood zone. Body condition for grazers was fair to good while browsers body condition was good in both livelihood zones. Massive in-migration of livestock from Marsabit County were observed in Samburu north. Main markets were operational with increased food commodities prices however terms of trades are favourable.

The proportion of households with poor and acceptable food consumption were 11 percent and 69.1 percent compared to 10.6 percent and 68.1 percent respectively in the same period in 2018. The mean reduced coping strategy index decreased to 16.6 compared to 18.6. Three prevalent diseases in county were Upper Respiratory Tract diseases (URTI), diarrhea followed by Malaria. Under-five years' and crude mortality rates are at 0.0126/10,000/day and 0.416/10,000/day respectively and are below alert threshold of 1/10,000/day and 0.5/10,000/day respectively. Households in pastoral livelihood are consuming 1-2 meals a day while agro pastoral are taking 2-3 meals in a day which was normal. Household dietary diversity score showed that 53 percent of household's access 3-5 food, 37.6 percent consumed greater than five food groups and 9.4 percent were taking less than three food groups. Prevalence of GAM was 15.8 percent compared to GAM of 15.7 percent recorded in June 2018 (SMART Survey, June 2019). Severe acute malnutrition (SAM) and chronic malnutrition (stunting) improved to 2.4 percent from 4.1 percent and to 29.3 percent from 35.5 percent respectively compared 2018 SMART survey. The county is classified in Stressed (IPC Phase 2) in Agro Pastoral livelihood zone and Crisis (IPC Phase 3) in Pastoral All Species livelihood zone.

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1.0 INTRODUCTION

1.1 County Background

Samburu County is in the Rift Valley region bordering Baringo County to the Southwest, Marsabit County to the Northeast, Turkana County to the Northwest Laikipia County to the South and Isiolo County to the East. The county has three sub counties namely Samburu north, Samburu east and Samburu central. It covers an area of approximately 21,022.2 square kilometres with an estimated projected population of 283,780 (KNBS, 2016). The main livelihood zones are Pastoral All Species Livelihood Zone with a projected population of 161,755 and Agro-Pastoral Livelihood Zone having a projected population of 104,999 (Figure 1). In pastoral livelihood, livestock production contributes 85 percent of cash income, livestock production and food production contribute 60 and 20 percent to cash income in agro pastoral respectively while in formal employment/casual waged labour, small business and casual waged labour contributes 60 and 25 percent to cash income respectively.

Formal Employment/Casual Waged Labour Livelihood Zone was not considered in the analysis due to its relatively small proportion in the county and lower vulnerability to shocks.

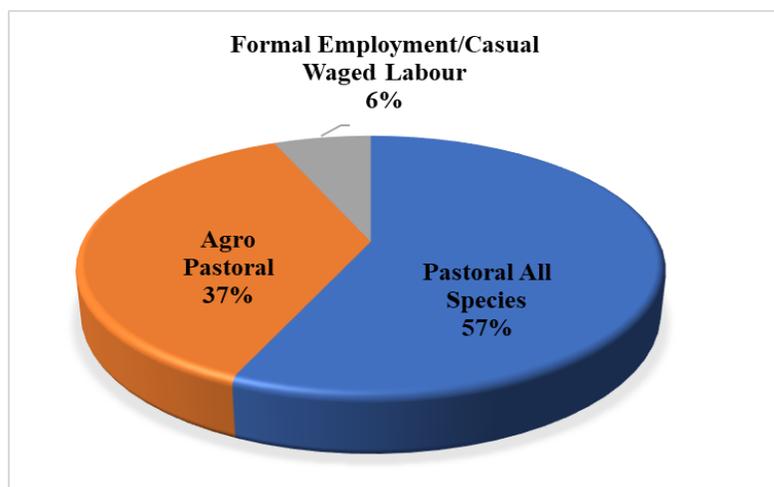


Figure 1: Population Proportion by Livelihood Zones

Formal Employment/Casual Waged Labour Livelihood Zone was not considered in the analysis due to its relatively small proportion in the county and lower vulnerability to shocks.

1.2 Methodology and Approach

The Kenya arid and semi-arid (ASAL) rapid food security and nutrition assessment for March – April – May 2018 rainfall season started with a pre-assessment training organized by Kenya Food Security Steering Group (KFSSG) whereby pre-existing secondary data was availed. The assessment was conducted from 15th to 19^h July 2019 covering mainly pastoral All species and agro-pastoral livelihood zones.

The approach was multi agency and multi sectorial whereby County Steering Group (CSG) briefing was done on 15th July 2019, desk review carried out on sectors checklists, SMART survey, NDMA bulletins, FEWSNET, VAM WFP reports and other available secondary data, field transect drive conducting focus group discussions, observation, markets interviews, households and community interviews. The KFSSG and technical CSG members analyzed both quantitative and qualitative data collected and based on convergence of evidence a current snapshot county report was produced with possible recommendations and projected scenario development based on prevailing most likely assumptions whose preliminary findings were disseminated to CSG during debriefing meeting held on 15th July 2019 at NDMA county office boardroom.

2.0 DRIVERS OF FOOD AND NUTRITION SECURITY IN THE COUNTY

2.1 Rainfall Performance

The onset for March – April – May (MAM) rainfall season was late by roughly 40 days with a false onset experienced in the third dekad of April. Major parts of Samburu west and Samburu north sub counties received rainfall amounts of 90 – 110 percent of the normal with marginal pockets within the two sub counties receiving 50 – 90 percent of the normal. The eastern part of the county bordering Isiolo County received depressed precipitation ranging between 50 – 75 percent of the normal with pockets recording precipitation amounts of 75 – 90 percent of the normal (Figure 2). Spatial distribution was even while temporal distribution was poor. Cessation was late as the rains progressed into the first dekad of June ceasing in the second dekad of June.

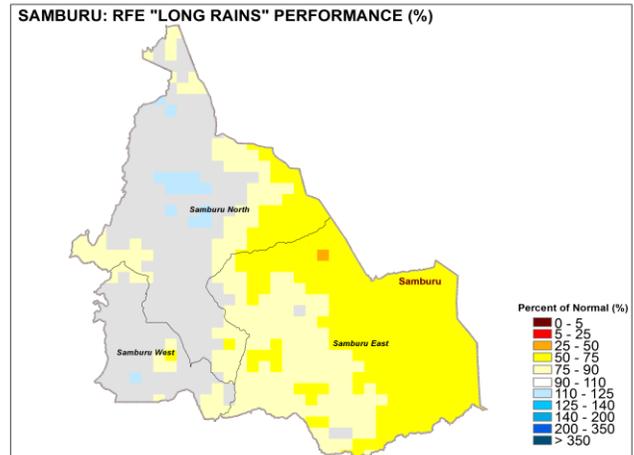


Figure 2: Rainfall Performance

2.2 Insecurity/Conflict

Resourced-based conflicts driven by scarce pasture and water were experienced in parts of Samburu north sub county which include Mbukoi, Marti, Suiyan, Angata Sikira, Baragoi, Kawop and Kom, Loruko in Samburu East sub county resulting in loss of lives and livestock through raiding. The conflicts specifically hindered access to rangeland resources in three wards which include Nachola, Elbarta and Nyiro in Samburu North and Waso ward in Samburu East sub county resulting in overconcentration of livestock in certain areas occasioning overgrazing and consequently low livestock production. Community dialogue meetings have been supported by government and partners to address the tension and drivers of conflicts.

2.3 Livestock Diseases

Outbreak of Foot and Mouth Disease (FMD) has been confirmed in dry grazing areas of Samburu North sub county where there is high livestock concentration including livestock species from Marsabit County. The county department of veterinary has imposed a quarantine in the all sub county disrupting markets functionality.

3.0 IMPACTS OF DRIVERS ON FOOD AND NUTRITION SECURITY

3.1 Availability

Acreage planted reduced thus decline in projected yields, household food stocks are depleted, and pasture condition was fair to poor in the Pastoral Livelihood Zone and fair in the Agro Pastoral Livelihood. Browse was fair to good compared to good normally across the livelihood zones.

3.1.1 Crops Production

The main crops grown in the county are maize and beans with maize production contributing 80 percent to food and 40 percent to cash income respectively. Beans production accounts for 10 percent to food and 5 percent to cash income. The Agro Pastoral Livelihood majorly relies on the long rains while Pastoral Livelihood depends on the October to December rains season.

Rain-fed Crop Production

There was significantly below average acreage planted consequently resulting in a low projected production for maize, beans and cowpeas. Area planted was 41 and 33 percent below average for maize and cowpeas respectively. The low area planted will consequently result below average production for maize, beans and cowpeas. The yields are projected to be 98, 83, and 50 percent below average for maize, beans and cowpeas respectively. The decrease in acreage for both maize and beans was as result of delayed onset of the rainfall coupled with shortage of certified seeds and lack tractor fuel subsidy locally as the county government failed to provide seed and fuel subsidy to farmers. In addition, most county tractors have broken down hindering access to mechanized ploughing.

Table 1: Rain-fed Crop Production

Crop	Area planted during 2019 Long rains season (Ha)	Long Term Average (5 year) area planted during the Long rains season (Ha)	2019 Long rains season production (90 kg bags) Projected	Long Term Average (5 year) production during the Long rains season (90 kg bags)
Maize	8,100	11,400	1,000	42,000
Beans	4,050	4,200	500	3,000
Cowpeas	750	1000	50	100

Irrigated Crop Production

Kales, spinach and tomatoes were the main crops planted under irrigation particularly in Lulu, Poro, Loibor-ngare, Nachola and Baawa. Like rain-fed crop production, acreage ploughed for irrigated crops decreased attributed to drying up of water sources especially for green houses production, increased pests and diseases and vandalism of Kurungu irrigation farm. Acreage cultivated for kales, spinach and tomatoes was 40, 33 and 50 percent below the long-term average (LTA). Projected production for irrigated crops is expected to be 60 percent below average for both kales and tomatoes while spinach production is projected to be 47 percent below average.

Table 2: Irrigated Crop Production

Crop	Area planted during the 2019 Long rains season (ha)	Long Term Average (3 years) area planted during Long rains season (ha)	2019 Long rains season production (90 kg bags/MT) Projected	Long Term Average (3 years) production during long rains season (90 kg bags/MT)
Kales	15	25	10	25
Spinach	10	15	8	15
Tomatoes	5	10	20	50

3.1.2 Cereals Stock

Maize stocks are depleted at the household levels owing to crop failure in the lowland of Agro pastoral due to poor short rains performance with few farmers particularly from Loosuk ward

and trader's in urban centres holding stock below LTA by 85 percent and 78 percent respectively. The available at household level are expected to last upto mid-August. Stocks at the National Cereals and Produce Board (NCPB) are 45 percent of the LTA while millers are holding stocks 14 percent above LTA. Stocks in the NCPB have been sourced locally from farmers and have been subsidized by the national government to stabilize maize prices. No cases of aflatoxin were reported within the county. Millers are accessing the maize stocks at the NCPB and markets from outside county and are hoarding them in anticipation of price increase. However, access to the stocks at NCPB is granted from the headquarters in Nairobi making it difficult for households to buy from the NCPB.

Table 3: Quantities held currently (90-kg bags)

Commodity	Maize	
	Current	LTA
Farmers	450	3000
Traders	1000	4500
Millers	4000	3500
Food Aid/NCPB	10845	7500
Total	16295	18500

3.1.3 Livestock Production

The main livestock reared in the county are cattle, goats, sheep and camel. Livestock production contributes to 85 percent of cash income in the Pastoral Livelihood Zone and 60 percent of cash income in the Agro-Pastoral Livelihood Zone.

Pasture and Browse Situation

Despite below average March to May rains, vegetation condition was significantly improved within the county with pasture condition in pastoral livelihood zone ranging between fair to good in Nachola and parts of Elbarta wards which include Suiyan, Lesepe, Ngilai and Bendera which is normal at this time of the year and is projected to last for 2-3 months but influx of livestock from Marsabit County will exhaust in two months. Other pastoral areas are depleted of pastures. In the Agro-pastoral Livelihood Zone, the situation is fair especially in Lorroki plateau while in the lowlands of agro pastoral is poor and projected to last through end of August apart from a few enclosures with about 40 percent regeneration.

The browse situation in pastoral livelihood zone is fair except in areas around Ndoto ward and pockets of Nyiro with poor browse which is normal at this time and is projected to last up to December but due to influx of livestock from Marsabit County it may only last up to September. In the agro-pastoral livelihood zone its good in the Kirisia hills which is normal and may last in the next 6 months. Conflict prone areas which include Angata Sikira, Kawop and parts of Marti have substantial amount of forage however access is limited due to insecurity in the area. Upsurge of invasive species such as *Acacia Reficiens* and other species are spreading in degraded soils in pastoral areas and suppress the growth of pasture and browse.

Table 4: Pasture and Browse Condition

Livelihood zone	Pasture					Browse				
	Condition		How long to last (Months)		Factors Limiting Access	Condition		How long to last (Months)		Factors Limiting Access
	Current	Normal	Current	Normal		Current	Normal	Current	Normal	
Pastoral	Fair – Poor	Fair	2-3	3-4	Insecurity	Fair - Good	Good	3	4-6	Insecurity
Agro-pastoral	Fair	Good	3	3	None	Fair - Good	Good	4	6	None

Livestock Productivity**Livestock Body Condition**

Body condition for cattle and sheep was fair to good while body condition for goats and camels was good in both livelihood zones. The improvement in livestock body condition was a result of improved forage and water access in agro pastoral and parts of pastoral areas such as Angata Nanyekie, Nachola and Elbarta wards in Samburu north due to intermittent long rains. The improved body condition is likely to result in kidding and lambing impacting positively in milk production and consumption at household level. *Acacia tortilis* pods may support body condition of browsers in pastoral livelihood zone.

Table 5: Livestock Body Condition

Livelihood zone	Cattle		Sheep		Goat		Camel	
	Current	Normal	Current	Normal	Current	Normal	Current	Normal
Pastoral	Fair-Good	Fair	Fair – Good	Good	Good	Good	Good	Good
Agro-pastoral	Fair - Good	Good	Good	Good	Good	Good	Good	Good

Tropical livestock units (Tropical Livestock Units) and Birth Rates

There has been a slight improvement in TLUs due to breeding favored by the previous long rains in both poor and medium households and pastures improvement. In pastoral, poor income TLU remained stable but slightly improved from 10 to 12 in medium income households.

Table 6: Tropical Livestock Units (TLUs) by household income groups

Livelihood zone	Poor income households		Medium income households	
	Current	Normal	Current	Normal
Pastoral	5	5	12	10
Agro-pastoral	6	4	15	10

Birth rates for all livestock species stabilized supported by the 2018 good performance of long rains that resulted into improved livestock body conditions therefore enhanced breeding cycle for all the livestock species.

Milk Production and Consumption

Milk production slightly declined due to prolonged dry spell experienced coupled with calves weaning off. Average milk availability for pastoral livelihood households was 1-2 litres per household which was below LTA of three litres per household as most of the livestock have migrated and 2-3 litres in Agro-pastoral zone largely being contributed by graded cattle which remained below LTA.

Table 7: Milk production, Consumption and Prices

Livelihood zone	Milk Production (Litres)/Household		Milk consumption (Litres) per Household		Prices (Ksh)/Litre	
	Current	LTA	Current	LTA	Current	LTA
Pastoral	1-2	3	1-2	1-2	50	40
Agro-pastoral	2-3	2-5	2	2-5	70	50

Migration

Influx of livestock from Marsabit County have invaded areas of Lesepe, Naisisho, Ngorishe, Lesirkan, Ngilai, Masikita and Suiyan in Samburu north which received enhanced rainfall. Majority of livestock from Samburu east have migrated to agro-pastoral areas with other moving towards Kirimun plains in Laikipia County and Kipsing and Oldonyiro in Isiolo County. Other cattle from Samburu east have migrated to Suiyan in Elbarta. In Samburu central majority of livestock are grazing close to their homesteads due to minimal replenishment of rangeland resources.

Table 8: Migration Routes

Livestock Species	From	To	Nature
Cattle, Goats, Sheep, Camels (In-migration)	Marsabit County	Lesepe, Naisisho, Ngorishe, Lesirkan, Ngilai, Masikita, Suiyan, Wamba West	Abnormal
Cattle	Samburu east	Suiyan, Lodochejeck, Suguta, Kirimun plains	Normal
Cattle (Out-migration)	Waso ward	Kipsing, Oldonyiro	Normal

Livestock Diseases and Mortalities

Confirmed cases of FMD in Samburu north sub-county occasioned imposition of quarantine restricting movement and sale of livestock as from 22nd July 2019 affecting six wards within the sub-county. Camels in Samburu east were reported suffering Orf and *haemorrhagic septicemia*. Other endemic diseases such as Contagious Caprine Pleuropneumonia (CCPP), East Coast Fever (ECF), Enterotoxemia, sheep and goat pox were also reported across the livelihood zones. Despite reported prevalence of diseases, livestock mortalities were within the normal threshold.

Water for Livestock

Current main water sources for livestock use were boreholes, traditional river well, pans and dams and shallow wells. In Agro pastoral zone, the recharge level for open water sources was 70 – 80 percent of their capacity and are projected last for five months while in pastoral zone, they are 50 – 60 percent full and are expected to last for 2 -3 months except in Ndoto ward where water pans have dried up due to poor recharge. Trekking distances in the Pastoral Livelihood Zone was 2-5 km compared to 3 -10 km save in Ndoto and parts of Nyiro wards where

households trekked over 20 km in search of water while in Agro pastoral Livelihood Zone was 1-5 km compared to 2-5 km. Distances decreased in most areas due to improved recharge level of water sources as a result of experienced intermittent long rains.

Table 9: Water for Livestock

Livelihood zone	Sources		Return trekking distances (Kms)		Expected duration to last (Months)	
	Current	Normal	Current	Normal	Current	Normal
Pastoral	Shallow wells, Boreholes, Water pans	Rivers, Springs, Boreholes Water pans	2-5	3-10	2-3	3-4
Agro pastoral	Pans, dams, seasonal streams	Pans, dams, seasonal streams	1-5	2-5	5	4-5

3.1.4 Impact on Availability

Delayed rainfall onset has occasioned low acreage planted for crops thus projected yields at household level are likely to be below normal hence insufficient stocks at farmers level. Livestock migration from pastoral areas to agro-pastoral and In-migration from Marsabit County will negatively affect available forage impacting on livestock productivity.

3.2 Access

3.2.1 Markets- Prices

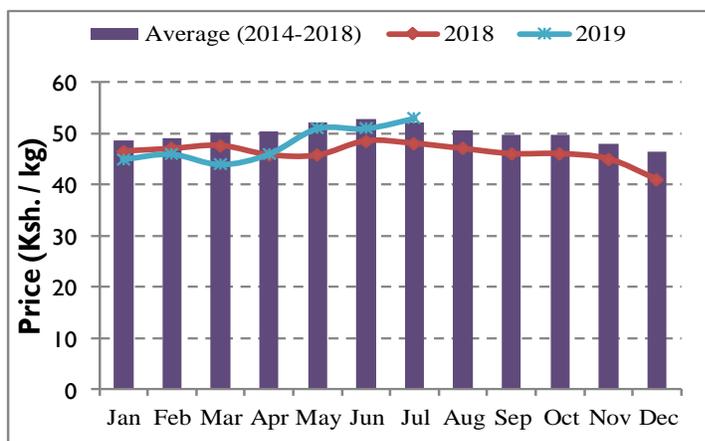
Market operations

The main markets both for livestock and staple food commodities are Lolkuniani and Lpus in Samburu east sub county, Tangar and Latakweny in Samburu north sub county and Lekuru, Kisima, Maralal in Samburu central sub county. All main markets in Agro Pastoral are operational and well stocked with staple food commodities however imposed quarantine has disrupted markets in Samburu north sub county. Livestock species are low in some markets in Samburu east sub county such as Lolkuniani, Lpus and Archers Post due to migration of cattle to the Agro-Pastoral Livelihood Zone which is normal at this time of the year. Livestock species are sourced within the county while the main staple food commodities are sourced externally from Nyahururu in Laikipia County, Nyandarua and Meru Counties.

Market Prices

Maize Price

Maize prices have been increasing since April although the current price of Ksh 53 per kilogram



(kg) was within the five-year LTA of Ksh 52 per kg and Ksh 48 per kg in 2018 same period. The increase is attributed to diminishing household stocks coupled with poor performance of the 2018 October to December rainfall season thus making households market reliant for staple food commodities. Main markets in agro-pastoral are selling maize/posho

Figure 3: Maize Price Trends

at Ksh 50 per kg while pastoral markets are selling at Ksh 60 per kg. The prices are projected to continue increasing till the next long rains harvest anticipated towards November.

Goat Price

A downward trend has been observed for goat prices from January up to June. The current average goat price was Ksh 2,641 which was 10 percent above the long-term average price of Ksh 2,393 but was six percent below to the 2018 average price during the same period. The above average goat price is linked to improved body conditions due to intermittent rainfall that improved browse regeneration and low supply in eastern pastoral markets occasioned by migration to northern and western parts of the counties resulting in high demand. Following the onset of the long rains in some parts of the county,

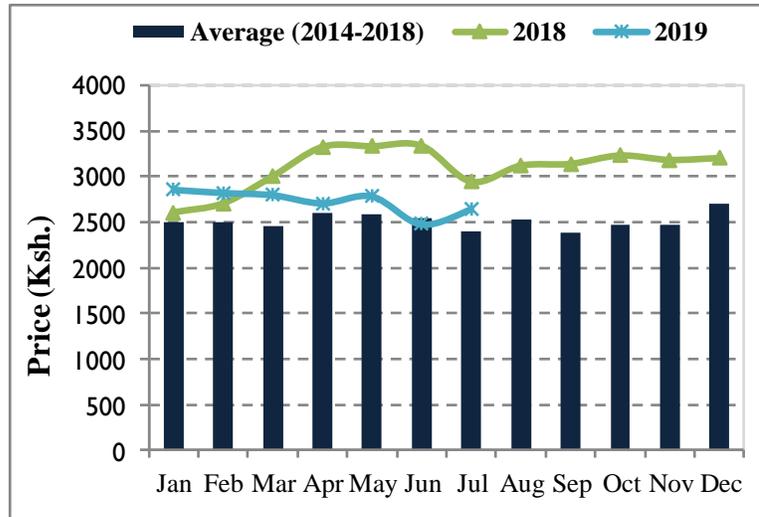


Figure 4: Goats Price Trends

forage improved thus likelihood of improved goats body condition consequently probability of increasing trend in selling prices. The prices for goats in the markets ranged between Ksh 2,300 – 4,500

3.2.2 Terms of Trade

Gradual reduction has been witnessed in terms of trade (ToT) for the last three months attributed

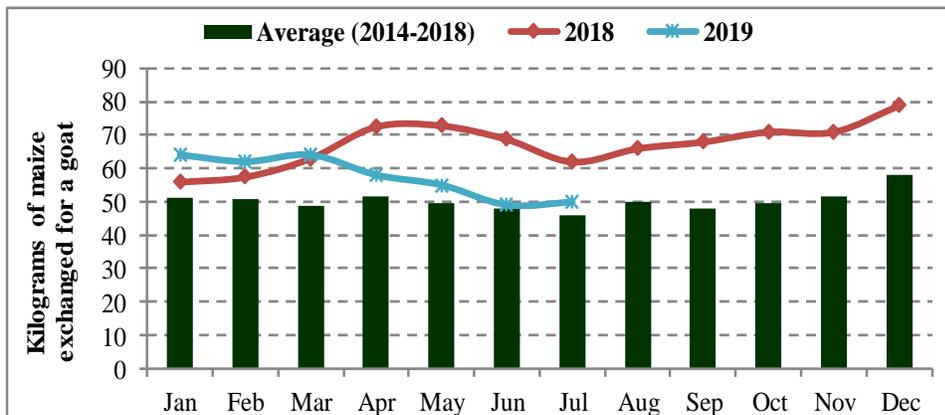


Figure 5: Terms of Trade Trends

to increase in maize prices coupled with reduction in goats' prices due to deteriorating body condition. The current ToT was nine percent above the current LTA but remained below the 2018 ToT by 19 percent at the same time of the year. The terms of trade are favourable to pastoralists as they can get 50 kilograms of cereals from proceeds of one mature goat. The decrease in livestock price coupled with increasing cereal prices depresses the purchasing power of the households thus hindering access to staple food commodities. The ToT is likely to continue declining as the cereal's prices increase further till the next harvest season.

to increase in maize prices coupled with reduction in goats' prices due to deteriorating body condition. The current ToT was nine percent above the current LTA but remained below the 2018 ToT by 19

3.2.3 Income Sources

Sale of livestock remained the main source of income with 45.6 percent of households depending on livestock followed with casual labour and petting trades with 19.8 percent and 15.2 percent of households relying on each respectively (SMART Survey, June 2019).

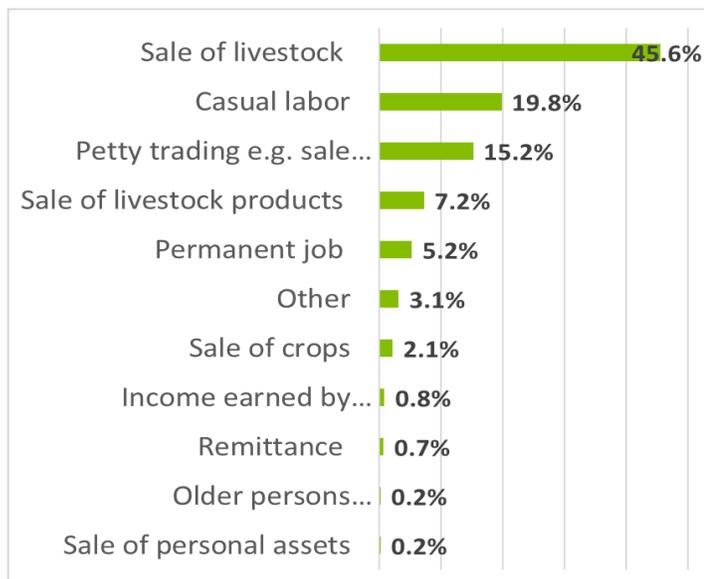


Figure 6: Households Sources of Income

3.2.4 Water Access and Availability

Major Water Sources

The commonly relied water sources across the county are shallow wells, boreholes and dams/pans as per NDMA June bulletin. Majority of households depends on shallow wells (38.7 percent), boreholes (29 percent), pans and dams at 16.1 percent and. A small proportion of households relied on springs and rivers at 9.7 percent and 6.5 percent respectively owing to their proximity of the water source to them. Intermittent showers received during MAM progressing to June impacted positively on recharging most water sources except in a few areas like Ndoto ward, parts of Nyiro ward and pockets of Samburu east which received insufficient rainfall. In Agro pastoral, surface water sources were

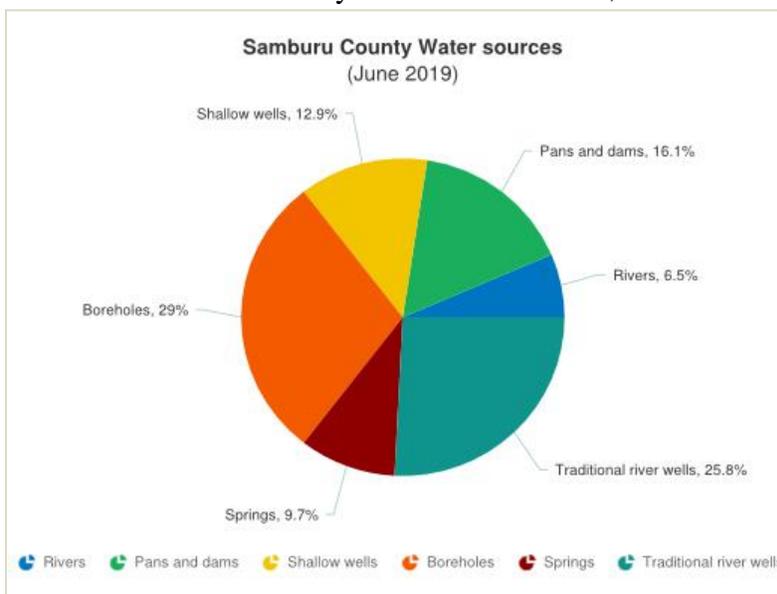


Figure 7: Water Sources

In Agro pastoral, surface water sources were

80 percent full recharge except those that are either breached, seepage or silted. In pastoral livelihood areas the recharge was 30 to 80 percent however the water levels have reduced especially in some parts in Samburu east sub county which are currently 10 percent full while others are almost drying up either due to siltation, seepage, breaching or due to low rainfall.

Distance to water sources, Waiting time at the source, Cost of water and Water Consumption

The current distance to water points in agro pastoral zone is 1-5 km which is normal while for pastoral livelihood, the distance ranges between 10-15 km compared to between 1-5 km normally (Table 10). Areas in Ndoto ward, Loruko in Nyiro ward and pockets of Nachola ward reported return trekking distances ranging between 15 - 25 km due to poor rainfall thus drying up of water sources. The current waiting time in agro pastoral zone is 15 minutes compared to normally 10 minutes whereas in pastoral livelihood, waiting time ranges between 15-20 minutes compared to 10-15 minutes normally due to low water level/yield.

The average cost of 20 litre jerrycan in agro pastoral livelihood is Ksh 5 which is normal whereas for pastoral livelihood, the cost ranges between Ksh 5-10 compared to Ksh 5-10 during a normal period. Maralal town, Baragoi town, Lodungokwe, Wamba and Archers post are relying on water vendors due to inadequate water sources charging Ksh 20 -30 including of transportation cost. Consumption in agro pastoral livelihood is 15 litres per person per day which is below normal except in Porro and Lodokojek where consumption is 20 litres per person per day. However, in pastoral livelihood consumption was 10 litres per person per day.

Table 10: Distance to water sources, Cost of water, Waiting time and Water Consumption

Livelihood zone	Distance to Water for Domestic Use (Km)		Cost of Water (Ksh /20litres)		Waiting Time at Water Source (Minutes)		Average HH Use (Litres/person/day)	
	Normal	Current	Normal	Current	Normal	Current	Normal	Current
Pastoral	1-5	1-5	5	10	10	10-15	20	15
Agro-pastoral	1-2	1-2	2	5	15	15 -20	15	10

3.2.5 Food Consumption

Milk consumption

The current milk consumption at household level ranges from 1-2 litres (as in normal times) and in agro-pastoral zone in Samburu central sub-county many farmers are hawking milk in the Maralal and Suguta Marmar centres. The current average retail price of milk is Ksh 50 - 70 per litre which is above normal (Table 7). This price has persisted due to low levels of milk supply in the past and the increasing human population in urban areas.

Food Consumption Score (FCS)

SMART survey conducted in June 2019 showed that the proportion of households with poor and acceptable food consumption score remained relatively stable compared to the same period last year. The stable food consumption was attributed to availability of food commodities in the markets with stable prices supporting enhanced food diversity at the household level. The proportion of households with poor and acceptable food consumption were 11 percent implying intake of starch and vegetable daily basis in a week and 69.1 percent indicating diverse dietary such as frequent consumption of starch, pulses, condiments and vegetables in a week compared to 10.6 percent and 68.1 percent respectively in the same period in 2018.

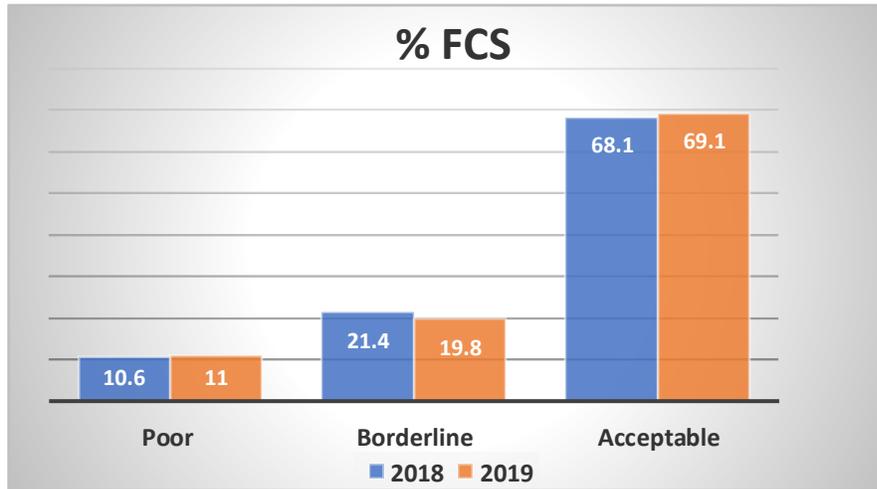


Figure 8: Food Consumption Score

and acceptable food consumption were 11 percent implying intake of starch and vegetable daily basis in a week and 69.1 percent indicating diverse dietary such as frequent consumption of starch, pulses, condiments and vegetables in a week compared to 10.6 percent and 68.1 percent respectively in the same period in 2018.

3.2.6 Reduced Coping Strategy

Reduced coping strategies are food related mechanisms that are applied by households to cope with lack of food or cash. The current mean reduced coping strategy index (rCSI) as per June 2019 SMART survey has reduced to 16.6 from 18.6 recorded in the same period in 2018 indicating improved access to food. The most commonly employed consumption base strategies by households include relying on less preferred and less expensive foods, limiting portion size at mealtimes and reduction of number of meals eaten in a day.

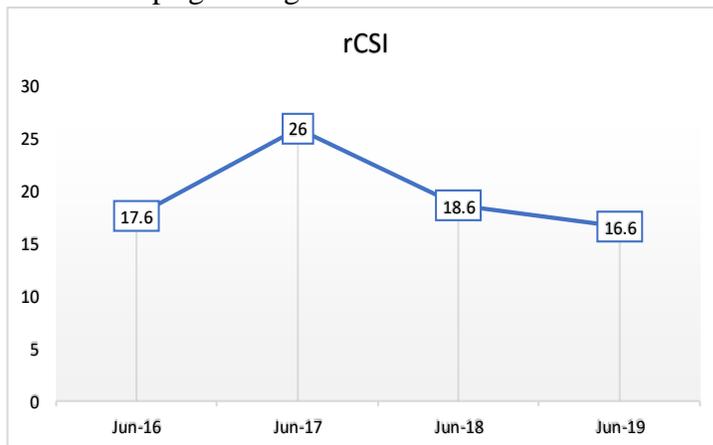


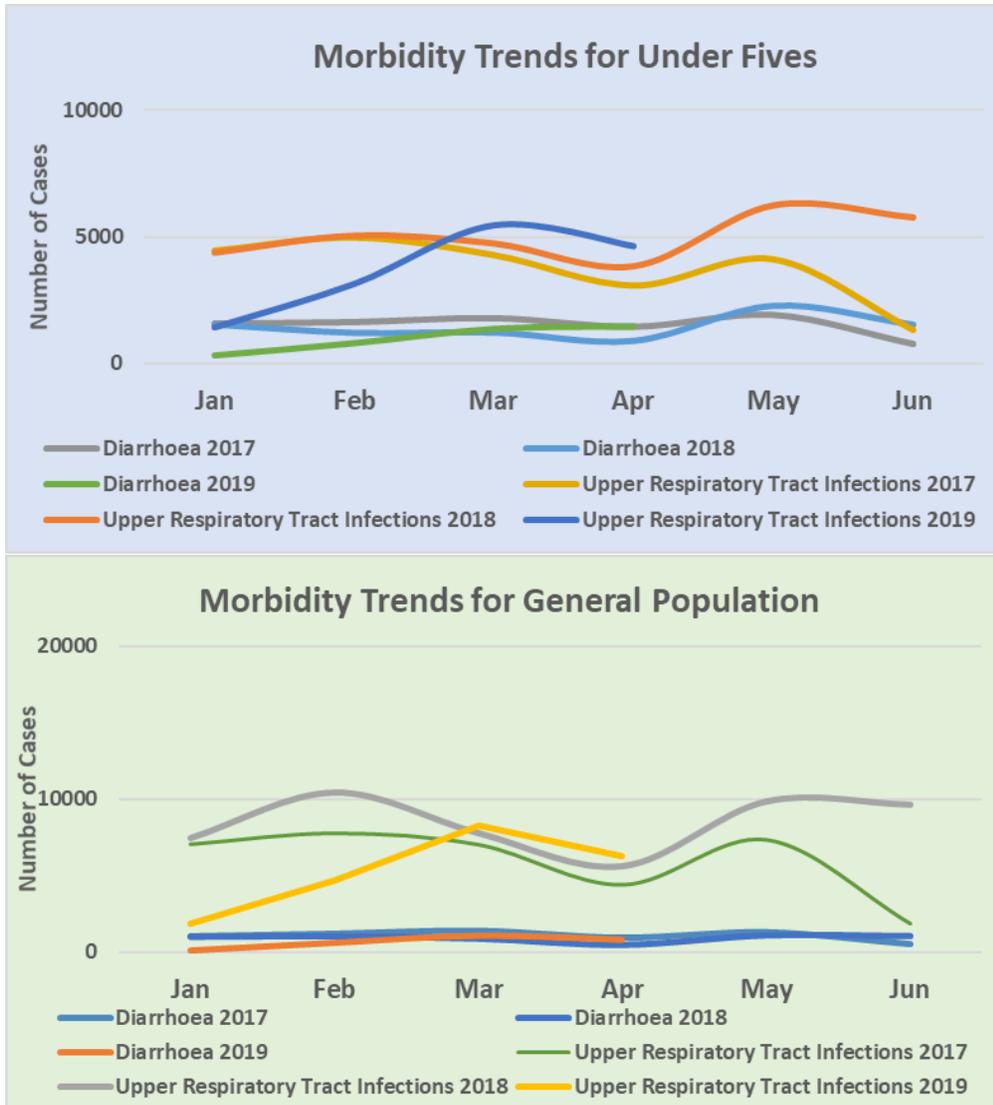
Figure 9: rCSI Trends

The most commonly employed consumption base strategies by households include relying on less preferred and less expensive foods, limiting portion size at mealtimes and reduction of number of meals eaten in a day.

3.3 Utilization

3.3.1 Morbidity and Mortality Patterns

The top three prevalent diseases in Samburu County remained to be Upper Respiratory Tract diseases, diarrhea followed by Malaria. In 2019, Upper Respiratory Tract disease topped the list



followed by diarrhea and Malaria. There is a sharp spike in cases of Upper Respiratory Tract Infections seen around mid-February towards the month of March attributed to the rains received across the county in those months which in turn lead to low temperatures in some pockets in the County most especially Samburu central with hotspots in Loosuk, Porro and Maralal wards that normally experience very low temperatures resulting to

Figure 10: Morbidity Trends for General Population and Under fives

coughs, colds and pneumonia both in children under five years old and the general population. Diarrhea has also been another prevalent disease that closely follows URTI in the list and its cause has been associated to poor personal and environmental hygiene as well as poor water and sanitation practices across the county.

Hand washing stands at 11.8 percent whereas toilet coverage is at 27.4 percent as per June 2019 SMART Survey depicting high open defecation which stands at 76 percent. Cases of tested and confirmed Malaria were also found in the months of January to June, though Samburu County is classified as Low Malaria zone, these cases are attributed to the same rains received which

resulted to stagnant waters that favoured breeding of mosquitoes which are the disease vectors of Malaria.

There is a direct correlation between diseases and nutrition status of the population and food security. Frequent illnesses weaken the immune system and weaken the body which in turn leads to poor appetite due to compromised system followed by weight loss which if not corrected eventually leads to malnutrition. A sick population is a weak population which is not productive and can lead to food insecurity. The mortality rate under five years' and crude mortality rates are at 0.0126/10,000/day and 0.416/10,000/day respectively and were below alert threshold of 1/10,000/day and 0.5/10,000/day respectively (County Births and Death Office).

3.3.2 Immunization and Vitamin A supplementation

The proportion of fully immunized children remained relatively similar compared to same period in 2018. The current number of fully immunized children was below the national target of 80 percent by 44.8 percent. Low uptake of immunization has been linked to long distances to health facilities, illiteracy among the caretakers who don't understand the importance of immunization and health seeking behavior in general as well as movement by the pastoralists from place to place in search of water and pastures for their livestock defaulting for routine immunization. Immunization for OPV1 and OPV3 were 83 percent and 85 percent respectively which was above the national target of 80 percent driven by *Malezi bora* normally undertaken in May and November of every year.

Table 11: Percentage of Fully Immunized Children

Year	Percentage of fully immunized children in the county	Percentage of children immunized against the mentioned diseases in the county
January to June 2019	3813/10835 (35.2%)	1. OPV 1 _83% 2. OPV 3 - 85% 3. Measles - 78%
January to June 2018	3488/10519 (33.2%)	4. OPV 1 93%, 5. OPV 3 90% 6. Measles 84.9%

According KHIS routine data, there was a significant improvement of Vitamin A coverage from the month of January to June from 80 percent to 121 percent for children 6-11 months and 75 percent to 105 percent for children 12-59 months. The improvement was due to upscaling of integrated health and nutrition activities and most especially Vitamin A supplementation during the Month of *Malezi Bora* undertaken normally commemorated in May and November every year. The July 2019 SMART survey indicated an increase of 12 percent and 14.3 percent in Vitamin A supplementation for children 6-11 months and 12-59 months respectively.

Table 12: Vitamin A Supplementation Percentage Coverage

Year	Children 6-11 months		Children 12 to 59 months		Children 6-11 months	Children 12 to 59 months
	Received vitamin A supplementation	Total Population (6-11 months)	Received vitamin A supplementation	Total Population (12-59 months)	Proportion of children Received Vit A	Proportion of children Received Vit A supplementation

	Source: DHIS MOH 710		Source: DHIS MOH 710		supplementat ion in the last 6 months Source: Nutrition Survey	in the last 6 months: Source Nutrition Survey
January to June 2019	6,930 (121%)	5,697	47,986 (105%)	45,578	66.7%	73.6%
January to June 2018	4,421 (80%)	5,531	37,259 (75%)	49,782	54.7%	59.3%

3.3.2 Nutritional Status and Dietary Diversity

Households in the Pastoral Livelihood Zone are consuming 1-2 meals a day while agro pastoral

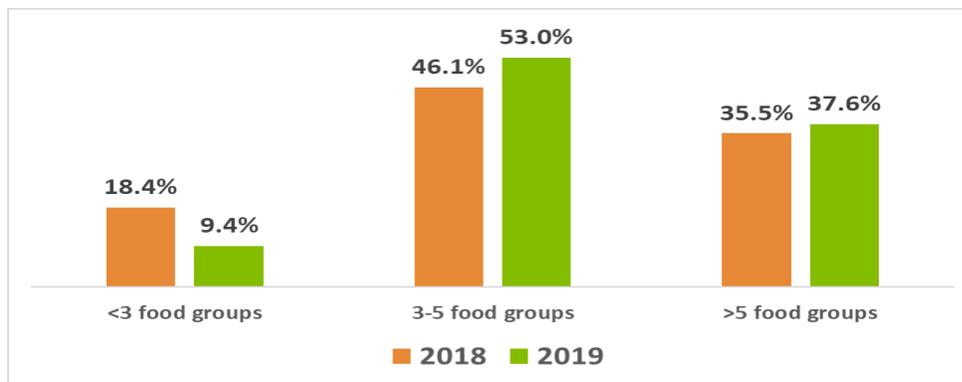


Figure 11: Household Dietary Diversity Score based on 24 hours recall

are taking 2-3 meals in a day which was normal at this time of the year. According to June SMART survey, Household dietary diversity score showed that 53 percent of households access 3-5 food groups which was 6.9 percent increase compared to 2018 SMART survey results, 37.6 percent consumed greater than five food groups and 9.4 percent were taking less than three food groups which was a decline by 9 percent from last year.

The nutritional situation in the county remained Critical but stable compared to June 2018 global acute malnutrition (GAM). According to June 2019 SMART survey, the current prevalence of GAM was 15.8 percent compared to GAM of 15.7 percent recorded in June 2018. Severe acute malnutrition (SAM) and chronic malnutrition (stunting) significantly improved to 2.4 percent from 4.1 percent and to 29.3 percent from 35.5 percent respectively compared 2018 SMART survey in the same period. The improvement in stunting can be linked to leveraging of health and nutrition interventions to a higher level which include facilities offering integrated management of acute malnutrition (IMAM) that was upscaled from 60 percent in 2018 to 95 percent from in 2019 which in turn has increased the coverage of the population reached with nutrition curative programs.

The department also sensitized the legislature and other sectors as well as forming a multi stakeholder platform where health, nutrition and food security issues are well addressed. Other important interventions include taking services at the community level such as baby friendly community initiative which entails support and promotion of Maternal Infant and Young Child Nutrition through sensitizing the community on proper Maternal Infant and Young Child

Nutrition which has been scientifically proven to lower stunting as well as enlightening the community to embrace good water and sanitation practices.

The proportion of children at risk of malnutrition measured by MUAC <135 mm remained high

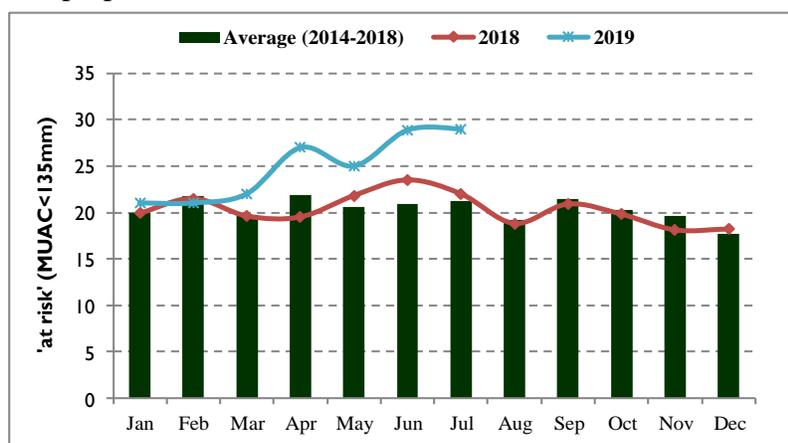


Figure 12: Proportion of Children under-five at Risk of Malnutrition

since March. The gradual increase in prevalence of children at risk of malnutrition is as a result of low milk availability at household level due to dry spell experienced in February to April resulting in migration of livestock to dry grazing areas. The current average rate of children at risk of malnutrition is 36 percent above the five-year LTA and 32 percent above the 2018 average (NDMA June bulletin). The high

malnutrition rates are attributed to poor maternal infant and young child nutrition practices, inadequate health facilities and high prevalence of diseases such as respiratory tract infections and diarrhea.

3.3.2 Sanitation and Hygiene

The main water sources for domestic use are boreholes, traditional river wells and shallow well. Significant improvement was observed in households using protected water sources standing at 45.1 percent compared to 10.2 percent in 2018 with 49.1 percent of the households using unprotected water sources (SMART survey, June 2019).

Table 13: Proportion of households using protected and unprotected sources

Year	Piped System/Borehole/Protected Spring/Protected Shallow Well	River /Spring	Unprotected Dug Well/Laga	Water Trucking / Water Vendor	Unprotected Shallow Well	Earth Pan/Dam	Earth Pan/Dam infiltration well
2019	45.1%	1.8%	15.5%	4.0%	33.6%	No data	No data
2018	10.2%	52.4%	17.8%	0.4%	No data	No data	No data
2017	16.8%	23.5%	31.3%	1%	31.3%	7.1%	0.6%
2016	35%	6.8%	43.2	1%	38.1%	6.9%	6.9%

According to June 2019 SMART survey, only 12.6 percent of the households reported treating water for drinking. The survey also showed that only 27.4 percent used latrine which was relatively stable compared to July to December 2018. High proportion of households practice open defecation (relieving in bushes). Cases of diarrhea can be attributed to low water treatment, high open defecation coupled with high proportion of households using unprotected water sources.

Table 14: Water Treatment Methods and Latrine Coverage

Year	% of HH Treating Water	Treatment Methods				Latrine Coverage (%)		(% Household Relieving Points in Percentage)	
		Boiling	Chemicals	Traditional Herbs	Pot Filters	January to June 2019	July to December 2018	Own Latrine	Open defecation (bushes)
2019	12.6	53%	48.1%	0%	2.6%	27.4%	26%	27.4%	72.6%
2018	16.5	63%	46%	0%	3%				
2017	9.2	81%	13%	13%	2%				

3.4 Trends of Key Food Security Indicators

Table 15: Food Security Trends

Indicator	Short Rains Assessment, Feb 2019	Long Rains Assessment, July 2019
% of maize stocks held by households (agro-pastoral)	20% below LTA	85% below LTA
Livestock body condition	Pastoral: Good - Fair Agro-pastoral: Good - Fair	Pastoral: Fair - Poor Agro-pastoral: Fair
Water consumption (litres per person per day)	Pastoral: 10 Agro-pastoral: 15	Pastoral: 15 Agro-pastoral: 20
Price of maize (per kg)	44.7	53
Distance to grazing	Pastoral: 5 - 10 Agro-pastoral: 1 - 2	Pastoral: 2 - 5 Agro-pastoral: 1 - 5
Terms of trade (pastoral zone)	64	52
Coping strategy index	12.69 (NDMA bulletin)	16.6 (SMART survey)
Food consumption score (%)	Pastoral: Poor 18.5 Borderline 22.8 Acceptable 58.6	County: Poor 11 Borderline 19.8 Acceptable 69.1 (SMART Survey)
	Agro-pastoral: Poor 5.5 Borderline 18.2 Acceptable 76.4 (NDMA Bulletin)	

4.0 Cross – Cutting Issues

4.1 Education

4.1.1 Enrolment

A slight increase was recorded in enrolment both in primary and secondary schools across the county. In primary school enrolment increased by 100 pupils from 52,764 in term one 2019 to 52,864 in term II 2019 attributed to availability of food and community sensitization on importance of education. Enrolment in secondary schools increased by 4.2 percent from 9,871 in term I 2019 to 10,283 in term II 2019 attributed to government capitation and enforcement of 100 percent transition. Enrolment for ECDEs, primary and secondary schools was higher for boys compared to girls because girls mostly remain at home to help in household chores.

Table 16: School Enrolment

Enrollment	Term I 2019			Term II 2019			Comments (reasons for increase or decrease)
	№ Boys	№ Girls	Total	№ Boys	№ Girls	Total	
ECD	22,905	20,639	43,846	22,905	20,639	43,846	
Primary	28,031	24,733	52,764	28,081	24,783	52,864	Government capitation, enforced compulsory free primary education
Secondary	5,924	3,947	9,871	6,107	4,176	10,283	Government capitation, enforced compulsory 100% transition

4.1.2 Participation

School attendance in term II decreased in some schools especially ECDs and lower classes in primary schools due to lack of food in all satellite ECDs across the county and all primary schools in Samburu north sub county. Affected schools recorded low attendance in the afternoon for upper primary schools. In addition, preparations for countywide circumcision of boys which occurs after 15 years has resulted into absenteeism and might eventually result into dropouts.

4.1.3 Retention

Cases of students dropping out of school were minimal for all levels. The few cases that dropped out in ECDEs were attributed to lack of food in Term II in satellite ECDEs, some household not seeing value of education and migration of households in search of pasture and water for their livestock. Dropouts in primary and secondary schools reduced at the same rate by gender. Improvement in dropouts is attributed to sustained community awareness that has seen girls who dropped due to early pregnancies return to schools after delivery and stringent penalties on men who marry young girls. High poverty rates amongst some families also resulted to dropouts since they were unable to afford school fees and uniform.

Table 17: Retention

Indicator	End of Term I 2019		End of Term II 2019	
	№ Boys	№ Girls	№ Boys	№ Girls
Students dropped out from school				
ECD	80	57	96	71
Primary	257	280	211	230
Secondary	67	79	53	69

4.1.4 School Meal Programme

Regular School Meals Program (RSMP) is the only feeding program currently being implemented in schools across the county by both National and County Governments for primary and ECDEs schools. A total of 53,363 pupils in 136 primary schools in Samburu central and Samburu east benefited from the feeding program for term II except 34 primary schools in Samburu north. Also, 25,317 pupils from 391 satellites ECDE benefitted from the feeding program by County Government which was a spill-over from term I 2019 since the county Government did not provide food for ECDEs in term II. Key challenges in implementation of school meals programme include delay in delivery of food in schools, inadequate water for preparation of meals in some schools, limited allocation of funds for school food targeting ECDEs in the county.

Table 18: School Meal Programme

Name of sub-county	№ of schools with school feeding	RSMP		Total Number of beneficiaries
		№ Boys	№ Girls	
Central	89	21,512	18,924	40,436
North	0	0	0	0
East	47	7,155	5,772	12,927
Subtotal		28,667	24,696	53,363

4.1.5 Inter Sectoral links where available

Majority of ECDEs approximately 284 lack functional latrines whereas 301 ECDEs have no access to hand washing facilities as well as safe drinking water. All primary and secondary schools have latrines but are not enough. Growth monitoring and micro-nutrients supplementation for children under-five years is being done in schools. Department of health and nutrition in partnership with Nutrition and Health Program Plus (NHPplus) institutionalized supplementation of vitamin A and deworming to all ECDEs.

Table 19: Latrine and Handwashing Facilities in Schools

Name of sub-county	№ schools with no functional latrine	№ schools with no handwashing facilities	№ schools with no drinking water (functional source within 100m)
Central	133	144	144
North	68	73	73
East	83	84	84
Total	284	301	301

5.0 Food Security Prognosis

5.1 Prognosis Assumptions

- NOAA/CPC seasonal forecast indicates that the 2019 October to December short rains season is likely to be average.
- The reduced area planted for maize and beans over the 2019 long rains season is likely to result into below average crop yields in the Agro Pastoral zone through August.
- Rangeland resources are expected to continue deteriorating in pastoral livelihood zone and in the lowlands of Agro Pastoral livelihood and get depleted in between August and September.
- Maize prices are expected to increase significantly from July through October as stocks get depleted at the household level.
- Infestation of FMD and other endemic diseases in major parts of pastoral livelihood where large numbers of livestock are gathered from within and outside the County in search of forage and water resources is likely to result in deterioration in livestock productivity.
- Livestock prices are projected to significantly decrease below the long-term average from August as livestock.
- Resource based conflict is projected to increase from September aggravated by influx of livestock from Marsabit County into dry grazing zones of Samburu north.

5.2 Food Security Outlook

Outlook for August – October 2019

The projected yields for maize and beans anticipated in October is likely to be below normal. The expected reduction in crop yields in October will likely result into reduced food intake frequency and diversity consequently impacting negatively on food consumption scores. Deteriorating forage and water resource will likely exacerbate deterioration in livestock body condition in pastoral areas. The prevalence of children at risk of malnutrition is projected increase especially in pastoral livelihood zone as livestock migrate to dry season grazing areas thus limiting availability of milk at the household level. Migration of livestock and high cereal prices especially in pastoral areas thus households will likely intensify livelihood coping strategies through October. Majority of pastoral households will intensify coping strategies in the lean season as livestock migrate to dry grazing areas. The county will most likely remain in Stressed (IPC Phase 2) in the Agro Pastoral Livelihood Zone and Crisis (IPC Phase 2) Pastoral All Species Livelihood Zone.

Outlook for November 2019 to January 2020

The expected October - November – December (OND) rains are likely to support regeneration of rangeland thus improving livestock body conditions by mid-November. The long rains yield coupled with imports from the high and medium production areas of Rift Valley and Western Kenya will stabilize maize prices in the markets. Terms of trade are expected to remain unfavourable as livestock price remain low and staple food prices retain high figures. Milk production, food stocks, number of meals taken per day and dietary diversity per households across livelihood zones is expected to increase towards December. The nutrition status of children under-five years is expected to improve following the availability of milk at household

level and traditional green vegetables. The county will likely be in Stressed (IPC Phase 2) across the livelihood zones.

6.0 Conclusion and Interventions

6.1 Conclusion

6.1.1 Phase classification

The county is classified as Stressed (IPC Phase 2) in Agro Pastoral livelihood and Crisis (IPC Phase 3) in Pastoral All Species livelihood zone.

6.1.2 Summary of Findings

Rainfall onset was late by four dekads with major areas of Samburu central and Samburu north recording 90 – 110 percent of the normal. The eastern part of the county received depressed rainfall of 50 – 75 percent of the normal with pockets recording 75 – 90 percent of the normal. Spatial distribution was even while temporal distribution was poor. Area planted for rain-fed crops decreased by 41 percent for maize and 33 percent for cowpeas. Maize stocks held by households are below LTA by 85 percent. Massive in-migration of livestock from Marsabit County to Samburu north was witnessed. The proportion of households with poor and acceptable food consumption were 11 percent and 69.1 percent. The mean coping strategy index reduced to 16.6 from 18.6 in 2018. Upper Respiratory Tract diseases, diarrhea and Malaria were most prevalent diseases. Household dietary diversity score showed that 53 percent of household's access 3-5 food, 37.6 percent consumed greater than five food groups and 9.4 percent were taking less than three food groups. Prevalence of GAM was 15.8 percent compared to GAM of 15.7 percent recorded in June 2018 (SMART Survey, June 2019). Severe acute malnutrition (SAM) and chronic malnutrition (stunting) improved to 2.4 percent from 4.1 percent and to 29.3 percent from 35.5 percent respectively compared 2018 SMART survey.

6.1.3 Sub-County Ranking

Table 20: Sub-county Rankings

Sub Counties	Ranking (Worse to best)	Reasons
Samburu East	1	<ul style="list-style-type: none"> • Poor rainfall • Depleted pastures • Fair browse • Low water recharge • Out-migration and inter-migration to central and north • Increased food prices
Samburu North	2	<ul style="list-style-type: none"> • Poor - Fair pastures • Fair browse • In-migration • Increased food prices • Insecurity, Outbreak of Haemorrhagic <i>sceptemia</i> disease in Camels • Poor livestock prices
Samburu Central	3	<ul style="list-style-type: none"> • High cases of URTI and diarrhoea • Fair pastures and good browse • water easily accessible • Reduced planted acreage

		<ul style="list-style-type: none"> • Below normal projected yields • Deplete food stocks and increased food prices
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5.2 Ongoing Interventions

5.2.1 Food Interventions

The national government through the office of the County Commissioner provided relief food in the month of March and April 2019. The amounts distributed were 2200 bags of 50kg of maize, 600 bags of 50 kgs of beans and 130 cartons of cooking oils across the county. Regular School Meals Program (RSMP) supported by National and County Governments for primary and ECDEs respectively. 53,363 pupils in 136 primary schools in Samburu central and Samburu east benefited from the feeding program for term II except 34 schools in Samburu north.

5.2.2 Non-food Interventions

Intervention	Objective	Specific Location	Cost (Ksh)	No. of beneficiaries	Implementation Time Frame	Implementation stakeholders
EDUCATION						
Growth monitoring	Improved health and nutrition status	ALL ECDEs	1.5 M	43,846 Children	2018/2019	World vision, NHPplus
Provision of food in some schools	Retention in school improved	ALL ECDEs and Public Primary schools in central and east	5 M		2018/2019	County Government, Ministry of Education
LIVESTOCK						
Pasture development	Increased livestock productivity	Loosuk	2 M	200 HHs	2018/2019	County department of Livestock production
HEALTH AND NUTRITION						
Vitamin A Supplementati on	Improved health and nutrition status	Health facility and community units	1.2 M	55,313	Continuous	MOH and Partners
Deworming	Improved health and nutrition status	Health Facility, Community units and ECDEs	1.2 M	55,313	Continuous	MOH, MOE and Partners

5.3 Recommended Interventions

5.3.1 Food Interventions

Sub county	Population in Need (% range min – max)	Proposed mode of Intervention
Samburu east	30 - 35	CT, Food Voucher
Samburu north	25 - 30	CT, Food Voucher
Samburu central	15 - 20	CT, Food Voucher

5.3.2 Non-food Interventions

Intervention	Sub County	No. of beneficiaries	Proposed Implementers	Cost	Available Resources	Time Frame
EDUCATION SECTOR						
Safe water supply	All	98,000	CG and Partners	25 M	0	2019/2020
Provision of 1,944 latrines holes and hand washing facilities	County wide	24,799 girls 28547 boys	County Government, Ministry of Education	38.8M	0	2019/2020
WATER SECTOR						
Water trucking to institutions and communities	Samburu North & East	28 schools, 10 dispensaries 230 HHs	County Government, NDMA, Partners	6.3 M	5 Tankers, staff	July – October 2019
Piping to Legarde primary from Legarde boreholes	Samburu east	420 pupils	County Government, NDMA, Partners	7 M	Technical expertise	July – October 2019
Fuel Subsidy to 11 strategic boreholes	Samburu North & East	11 boreholes	County Government, NDMA, Partners	3.8 M	Technical expertise	July – October 2019
Provision of assorted borehole repairs	Samburu, central North & East	11 boreholes	County Government, NDMA, Partners	2 M	Technical expertise	July – October 2019
LIVESTOCK SECTOR						
Hay harvesting	Samburu central	320 HHs	Department of Livestock production	12 M	None	2018/2019

Vaccination against FMD, CCPP, Sheep & Goat Pox	County wide	GMD-100,000 dose, CCPP – 1,200,000 doses & SGP – 1,200,000 doses	County Government, NDMA, Partners	6 M	Technical expertise	July – October 2019
Capacity build grazing management committees	Samburu central, North and east	2 Group Ranches	Department of Livestock production	6 M	None	2018/2019
Pasture Development	County wide	15 wards	RPLRP, NDMA, DALF, State dept. of Livestock	6 M	Logistics; vehicle & fuel personnel	Aug-Sep 2019
AGRICULTURE						
Water harvesting for irrigation (Mega dam)	Samburu central	Lodokejek	CG, Partners	2 B	Logistics; vehicle & Land	2019/2020
HEALTH AND NUTRITION						
Integrated Community Outreaches	All	18500	MOH, Health Partners	Vehicles, Fuel, Ksh 2175000	Ksh 1750000	February-December.
Mass screening	All	2500	MOH and NHPplus	Vehicles, Anthropometrics, Ksh 145000	Ksh 145000	February-March