



World Food Programme



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# Unprecedented drought brings threat of starvation to millions in Ethiopia, Kenya, and Somalia

*Climate change and La Niña have caused an unprecedented multi-season drought, punctuated by one of the worst March-to-May rains in 70 years*

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## KEY MESSAGES

- **Rainfall deficits during the recent March-April-May 2022 rainy season have been the most severe in at least the last 70 years** in Ethiopia, Kenya, and Somalia. The ongoing, four-season drought has been the **most extensive and persistent event since 1981**. Grave concerns are raised by **elevated risks of a fifth below-average rainy season in October-November-December**.

- This **exceptional four-season drought, amplified by exceptionally warm air temperatures and increased evaporative demand and desiccation**, has been devastating to livelihoods and produced repetitive, debilitating and cumulative shocks to herds, crops, water availability, and household incomes.
- More than seven million livestock have died and **millions of people face the threat of starvation**. The impacts of the severe drought on livelihoods will intensify rapidly in the coming months due to the effects of the extremely poor March-April-May rains.
- At present, humanitarian response plans are massively under-funded. The Somalia 2022 Humanitarian Response Plan for food security is only 20 percent funded to date. Only 34 percent of the required USD \$139.5 million for the October 2021-March 2022 period of the Kenya Drought Flash Appeal was met and funding requirements for April-October 2022 period have risen further to USD \$180.7 million. **Immediate action is required to scale-up and sustain humanitarian assistance** through at least mid-2023 to prevent rising levels of acute food insecurity and malnutrition, mitigate the loss of life, and avert the Risk of Famine (IPC Phase 5).

## **Overview: Convergent analyses indicate exceptional dryness and drought impacts that now threaten millions of people with starvation**

This statement reflects the view of current conditions and the likely evolution of the situation in East Africa shared by major actors involved in global and regional meteorological forecasting, food security monitoring and early warning including: The IGAD Climate Prediction and Applications Center (ICPAC), the Famine Early Warning Systems Network (FEWS NET), the Food and Agriculture Organization (FAO), the World Food Programme (WFP) and the Joint Research Center (JRC). Sections 1, 2, and 3 describe, respectively: 1. the exceptionally intense, extensive, repetitive and hot drought; 2. extensive impacts on crop production, livestock and markets; and 3. the extreme levels of food insecurity and malnutrition currently observed across the region.

### **Section 1. Climate**

#### **Section 1.1. Observed Climate Summary: A drought that has been extremely *intense, repetitive, extensive, and hot***

Severe droughts can be exceptionally intense, repetitive or persistent, extensive, and hot; the current East Africa drought has been extreme in all of these dimensions. Since late 2020, Ethiopia, Kenya, and Somalia have experienced a repetitive sequence of drought shocks in October-November-December (OND) 2020, March-April-May (MAM) 2021, and OND 2021, ultimately

culminating in a historically intense, record-breaking failure of the 2022 MAM rainy season.<sup>1</sup> Combined with conflict, COVID-19, price spikes, and desert locusts, these shocks resulted in an unprecedented level of food insecurity. As discussed in a December multi-agency alert,<sup>2</sup> such a four-season sequence of below-normal eastern Horn of Africa rains has not been seen in at least the last 40 years (i.e., since the beginning of the satellite era). This drought has been **exceptionally persistent**.

Across most of Ethiopia and Somalia, and parts of Kenya, the 2022 MAM rainfall deficits were **exceptionally intense**, with most of the drought region experiencing record low, or close to record low, rainfall (Figure 1A). Specifically, rains were also exceptionally low across eastern Kenya, including areas that coincide with densely populated crop-growing regions or highly food-insecure pastoral areas. Rains have been very low over most of Somalia, including the key crop growing regions in the south. In Ethiopia, almost all of the areas that typically receive MAM rains have been extremely dry, including the heavily populated Great Rift Valley. A time-series of Standardized Precipitation Index (SPI) values (Figure 1B) for the drought polygon in Figure 1A, shows this drought is comparable to the very poor 1984 and 2011 MAM seasons – years of widespread famine conditions.<sup>3,4</sup> Human-induced warming of the western Pacific and frequent La Niña events have helped produce 11 dry MAM seasons in the last 24 years.<sup>5,6</sup> Note the increased frequency of below-normal MAM rainfall since 1999 shown in Figure 1B. Figure 1A,B shows how this combination of intensity and extent make the 2022 MAM the **one of the most severe droughts in the last 70 years**.

The 2022 MAM drought is widespread, expanding far north through central Ethiopia, over the region where *belg* rains are used for planting both short and long-cycle crops. When the locations in the polygon in Figure 1A are put in order by their SPI for the MAM rains, and each year is plotted, the result is an Intensity-Area-Frequency (IAF) plot (Figure 1C). Each curve on this plot represents all the percent of area (x-axis) associated with different SPI thresholds (y-axis). More than 80 percent of the eastern Horn of Africa received low (SPI < -0.7Z) rainfall amounts. This plot shows that the MAM 2022 rainfall deficits were **exceptionally extensive**. The 2022 IAF curve is markedly lower than signature drought years like 1984 and 2011.

Adding to the stresses associated with low rainfall have been exceptionally warm air temperatures (Figure 1C). This time-series shows NASA GISS January-to-May air temperature anomalies,

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<sup>1</sup> The Climate Hazards Infrared Precipitation with Stations (CHIRPS) satellite-gauge rainfall data set is used to represent 1981-2022 conditions. In Ethiopia and Somalia, CHIRPS is supported by numerous rain gauge observations provided by the Ethiopian Meteorological Agency and the FAO Somalia Water and Land Information Management Project - SWALIM. Rainfall from 1950-1980 is represented with the [Centennial Trends](#) gridded rain gauge archive, which was explicitly designed to be interoperable with CHIRPS.

<sup>2</sup> *The Eastern Horn of Africa Faces an Exceptional Prolonged and Persistent Agro-Pastoral Drought Sequence*.

<https://fews.net/sites/default/files/multi-agency-east-africa-drought-alert-120121.pdf>

<sup>3</sup> Vestal, Theodore M. "Famine in Ethiopia: Crisis of Many Dimensions." *Africa Today* 32, no. 4 (1985): 7-28

<http://www.jstor.org/stable/4186321>

<sup>4</sup> "Mortality among Populations of Southern and Central Somalia Affected by Severe Food Insecurity and Famine during 2010-2012 - Somalia." *ReliefWeb*, 2 May 2013,

<https://reliefweb.int/report/somalia/mortality-among-populations-southern-and-central-somalia-affected-severe-food>

<sup>5</sup> Funk, Chris, et al. "Examining the Potential Contributions of Extreme 'Western V' Sea Surface Temperatures to the 2017 March-June East African Drought." *Bulletin of the American Meteorological Society*, vol. 100, no. 1, 2019,

<https://doi.org/10.1175/bams-d-18-0108.1>

<sup>6</sup> Funk, Chris, et al. "Examining the Role of Unusually Warm Indo-Pacific Sea-Surface Temperatures in Recent African Droughts." *Quarterly Journal of the Royal Meteorological Society*, vol. 144, no. S1, 2018, pp. 360-383., <https://doi.org/10.1002/qj.3266>

averaged over the polygon in Figure 1A. Persistent warm temperatures have contributed to the desiccation of rangelands and crops and weakened livestock. ***The 2020-2022 droughts have been exacerbated by extremely warm air temperatures.*** When air temperatures become very warm, rainfall deficits are amplified because more moisture is drawn up into the atmosphere, away from the land and out plants. Very warm temperatures can also have serious health impacts on people and livestock.

This combination of persistence, intensity, extent, and heat have combined to make this the most severe drought on record. Furthermore, there are concerns about the performance of the upcoming rainy seasons.

## **Section 1.2. Concerns for October-November-December (OND) 2022: A multi-agency assessment finds that below-normal OND 2022 rains are likely**

On May 23<sup>rd</sup>, a multi-agency meeting of 15 groups was held to discuss concerns for the OND 2022 rainy season, with different groups presenting independent analyses examining the potential for yet another dry season. There was consensus that a pessimistic outlook for OND 2022 was warranted, and a joint alert was released.<sup>7</sup> Fueling these concerns were two factors: 1. The current OND 2022 sea surface temperature forecasts indicate well-understood patterns that have been associated with many recent poor OND rainy seasons, and 2. The rainfall simulations from multiple forecast agencies consistently predict low OND rainfall in the eastern Horn of Africa.

These dry forecasts relate to two concerning sea surface temperature gradients: an east-west temperature gradient in the Indian Ocean (the Indian Ocean Dipole, IOD) and an east-west temperature gradient in the Pacific Ocean (the West Pacific Gradient, WPG), associated with La Niña conditions. Separately, both negative IOD and La Niña events increase the chance of poor OND rains. Acting together, they can produce very dry conditions.

Both WPG and IOD forecasts are concerning. The latest assessment of October IOD forecasts anticipates a strong negative IOD.<sup>8</sup> At this long lead time, however, Pacific sea surface temperatures are more predictable. Figure 2A shows West Pacific Gradient (WPG) forecasts. The WPG quantifies the difference between the equatorial eastern and western Pacific. It can be forecast with great skill by the current generation of climate models, is known to be associated with many recent OND droughts, and has been used to predict dry OND seasons in 2016, 2020, and 2021. The OND 2022 WPG forecast value of -1.5Z is therefore very concerning. The confidence intervals associated with this prediction suggest that, given current forecasts, there is a high probability of there being a strong WPG, similar to those seen in 1989, 1998, 1999, 2010, 2016, 2020, and 2021.

Current climate forecasts suggest that La Niña conditions are likely to arise in OND (~60 percent chance).<sup>9</sup> Recent La Niña events have been associated with very frequent dry OND seasons, such as 2020 and 2021. Additionally, since 1999, climate change and frequent La Niña conditions during the OND period have resulted in a ~50 percent chance of below-normal MAM rains<sup>5</sup> over the past 25 years (see box on right of Figure 1B). Furthermore, since 1999, during the 12 years when La Niña conditions

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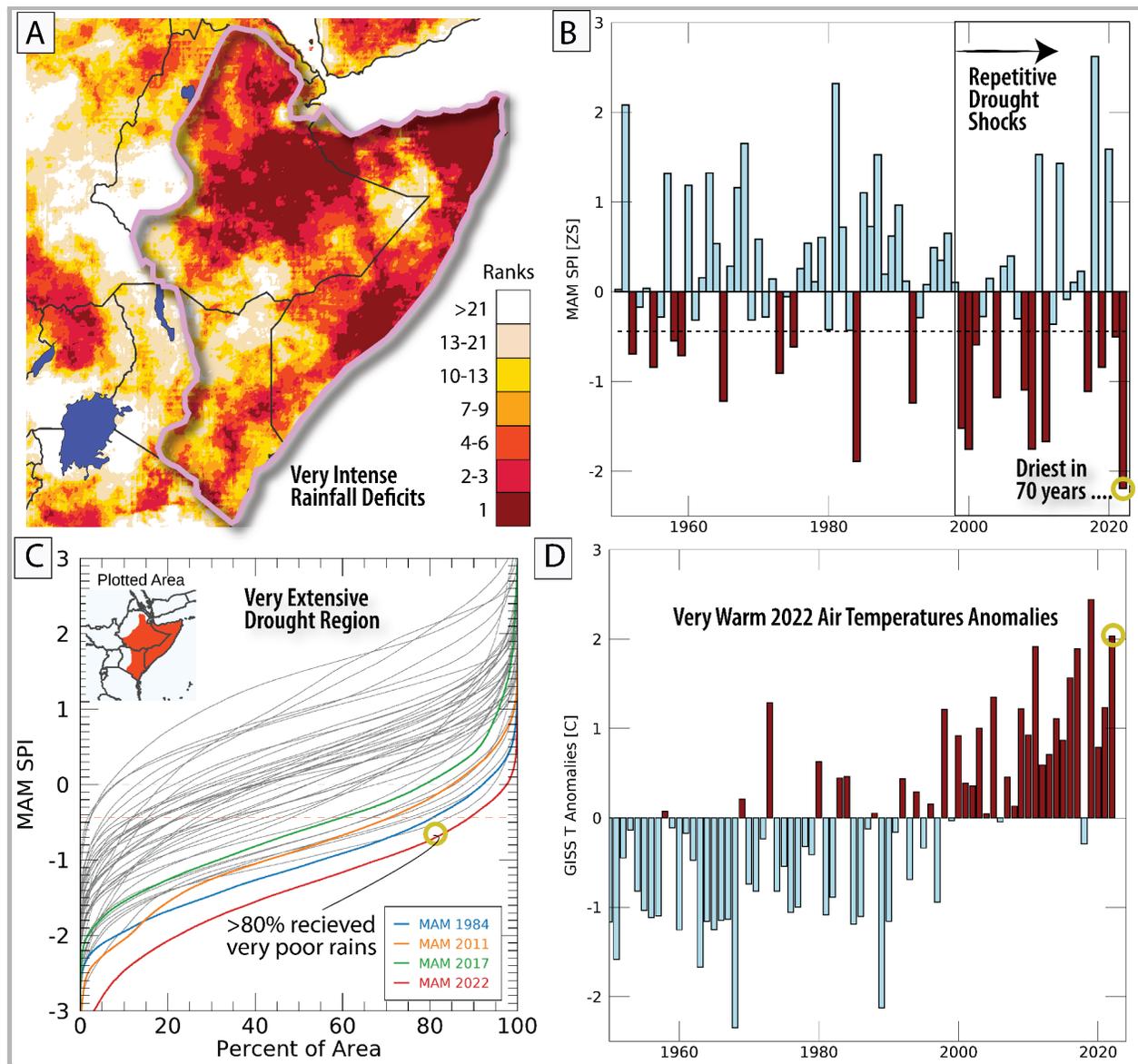
<sup>7</sup> *The Threat of Starvation Looms in East Africa After Four Failed Rainy Seasons* <https://www.fao.org/3/cc0312en/cc0312en.pdf>

<sup>8</sup> Based on analysis from the Australian Bureau of Meteorology <http://www.bom.gov.au/climate/enso/>

<sup>9</sup> Based on the NOAA CPC/IRI forecast <https://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/>

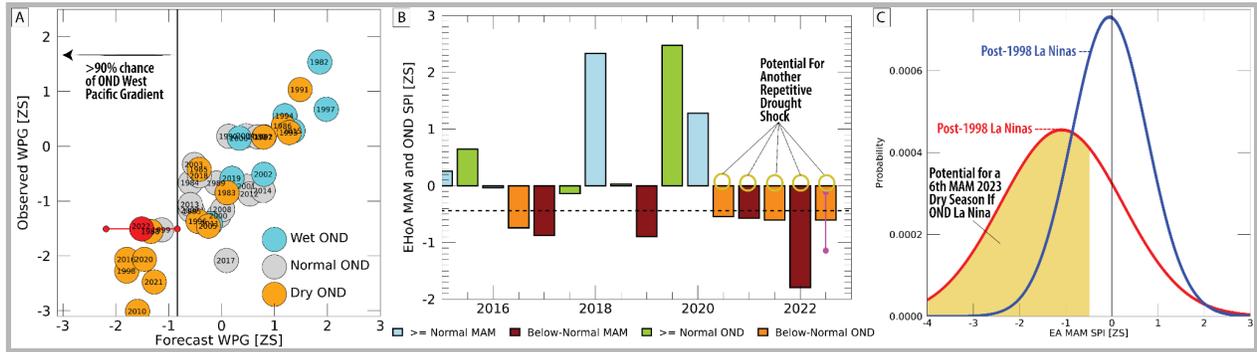
have been present during OND, there has been a strong tendency (~78 percent) for below-normal eastern East African rains during the following MAM season. This propensity is shown in the probability density functions in Figure 2C. **IF** a La Niña arises during this upcoming OND season, a sixth dry season is likely to occur (see Figure 4B in December multi-agency alert).<sup>2</sup>

**Figure 1**



The drought has been extremely intense, repetitive, extensive, and hot. **A.** MAM 2022 rainfall ranks indicate most of the Horn of Africa received record-low rainfall amounts, based on 42 years of CHIRPS rainfall. The purple polygon in Panel A denotes the area of exceptional dryness in MAM 2022. **B.** Time-series of dry region MAM CHIRPS/Centennial Trends rainfall, expressed as SPI. **C.** Intensity-Area-Frequency (IAF) plot shows the most extensive drought in the CHIRPS record. **D.** January-May dry region air temperature anomalies, based on a 1981-2010 baseline.

Figure 2



Concerns for more potential dry seasons in OND 2022 and MAM 2023. **A.** Scatterplot showing NMME-based May forecasts of OND 2022 West Pacific Gradient values. The 2022 forecast is shown in red, along with 80 percent confidence intervals. Below-normal, normal and above-normal OND rainy seasons are denoted with orange, gray and cyan circles (source: FEWS NET CHC). Based on the COLA-RSMAS-CCSM4 NASA-GEOSS2S NCEP-CFSv2 CanCM4i-IC3 and GEM-NEMO NMME Models. **B.** Observed MAM and OND SPI values for the eastern Horn of Africa, along with an OND 2022 analog-based forecast for OND 2022. The MAM 2022 drought follows three poor rainy seasons, and a fifth drought is likely in OND 2022. Orange circles indicate repetitive dry seasons. **C.** Probability density functions for pre- (blue bell curve) and post-1997 (red bell curve) MAM dry region rains in years with La Niñas. If a La Niña event occurs in OND 2022, a sixth dry season in MAM 2023 may be likely (see also Figure 4B in December multi-agency alert).<sup>2</sup> All time-series were standardized with a 1981-2010 baseline.

## Section 2. Crop Production, Livestock and Prices

### Section 2.1. Crop production

In **Ethiopia**, the harvest of the secondary *belg* season crops in southern Tigray, eastern Amhara, eastern Oromiya, and northeastern Southern Nations, Nationalities and People’s Region (SNNPR) will start in July, with about one month of delay. The onset of the rainy season, normally occurring in February, was delayed by 20-40 days. Subsequently, cumulative seasonal rainfall amounts ranged from 20-50 percent below average, with an erratic spatial and temporal distribution. In the SNNPR, only about half of the total seasonal rainfall amounts were received in the second half of April. According to FAO’s Agricultural Stress Index (ASI), as of mid-May, between 40-85 percent of cropland was affected by severe drought. Overall, *belg* production prospects are poor, raising food security concerns for local households who also had a poor harvest last year.

Detailed rainfall assessments, produced in collaboration with the Ethiopian Meteorological Agency,<sup>10</sup> provide detailed assessments of consequential impacts on cropping, as does a recent Crop Monitor Alert.<sup>11</sup> For example, the latest agro-meteorological<sup>10</sup> report shows extremely low SPI running up the very heavily populated Great Rift Valley, and the eastern highlands *belg* season appears much

<sup>10</sup> Belay, Kudus, et al. “Ethiopia Monitoring Report Belg/Long Rains Seasons 2022.” *FEWS NET*, 3 June 2022, [https://data.chc.ucsb.edu/people/diego/Ethiopia\\_dekadal\\_monitoring\\_reports/Ethiopia%20Monitoring%20Report%20Belg\\_Long%20Rains%20dekad%2015%202022.pdf](https://data.chc.ucsb.edu/people/diego/Ethiopia_dekadal_monitoring_reports/Ethiopia%20Monitoring%20Report%20Belg_Long%20Rains%20dekad%2015%202022.pdf)

<sup>11</sup> *Unprecedented 4th consecutive poor rainfall season for the Horn of Africa.* [https://cropmonitor.org/documents/SPECIAL/reports/Special\\_Report\\_20220523\\_East\\_Africa.pdf](https://cropmonitor.org/documents/SPECIAL/reports/Special_Report_20220523_East_Africa.pdf)

drier than any previous dry season since 1981 (slide 9 in reference 10). Assessments of *belg* planting dates indicate widespread delays or no planting across much of the *belg*-receiving areas (slide 10 in reference 10). Extreme drought conditions have intensified in almost all *belg*-receiving areas of the country, resulting in historic dry conditions similar to or worse than 1984. In many places, the rainfall totals are the lowest on record. Land surface temperatures and vegetation imagery indicate severe moisture stress (slides 12 and 16 in reference).<sup>10</sup>

In the Southern Zone of the Tigray Region and in eastern zones of Amhara region, agricultural operations also continue to be affected by insecurity and input shortages due to the ongoing conflict that was coupled with *belg* rainfall deficits.

The main *meher* crop season will begin in June, and adequate rainfall will be crucial, given the negative impacts of the *belg* 2022 and *belg* 2021 seasons, as well as conflict and insecurity conditions. Copernicus multi-model forecasts for July-August-September (JAS) point towards a wetter-than-average main rainy season at this stage.<sup>12</sup> There are concerns, however, that current deficits may lead to a late start to the *meher* growing season and impact highly productive, slowly developing long-cycle crops that are already growing. The most recent Ethiopian agro-meteorological report indicated that some of these regions in western Ethiopia have experienced prolonged dry conditions in MAM, and may experience below-normal March-to-November long rains (Slides 24 and 26 in reference 10).

In **Somalia**, the 2022 main *gu* (April-June) season crops – which are normally harvested in July and account for about 60 percent of the country's total annual cereal output – have been severely affected by poor seasonal rains. In southern key-cropping areas, cumulative precipitation amounts in April were about half the long-term average, hampering planting operations and resulting in germination failures.<sup>10</sup> Farmers also faced difficulties accessing agricultural inputs and labor as high food prices drained household finances, and drought resulted in widespread population displacement. Although above-average rains in early May reduced moisture deficits and allowed planting and replanting of failed crops, crop prospects did not significantly improve, as the rains were late and lasted only a couple of weeks.

As of mid-May, severe drought affected up to 85 percent of cropland in Lower Shabelle Region, which on average accounts for more than 60 percent of Somalia's total national maize *gu* output. Similarly, drought affected up to 70 percent of cropland in the "sorghum belt" of Bay Region, which on average accounts for more than half of Somalia's total national sorghum *gu* output. Vegetation conditions are also currently extremely poor in the "cowpea belt" in Middle Shabelle, Galgaduud, and Mudug regions, where cowpeas are intercropped with sorghum, and up to 95 percent of cropland is drought affected. The 2022 *gu* season cereal production is, therefore, expected to be 40-60 percent of average, representing the fifth consecutive season with a reduced cereal output.<sup>13</sup>

In southeastern<sup>14</sup> and coastal<sup>15</sup> marginal agricultural areas of **Kenya**, the planting and establishment of main long rains (MAM) season crops have been affected by severe rainfall deficits in

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<sup>12</sup> Copernicus C3S Multi-model seasonal rainfall forecast maps adapted for the Anomaly Hotspots of Agricultural Production (ASAP) platform,; [https://mars.jrc.ec.europa.eu/asap/seasonal\\_forecast.php](https://mars.jrc.ec.europa.eu/asap/seasonal_forecast.php)

<sup>13</sup> "Somalia faces Risk of Famine (IPC Phase 5) as acute malnutrition and mortality levels rise." *FEWS NET and FSNAU*, 31 May 2022, <https://fewsn.net/east-africa/somalia/alert/may-31-2022>.

<sup>14</sup> Kitui, Makueni, Meru North, Embu (Mbeere) and Tharaka-Nithi counties.

<sup>15</sup> Kilifi, Taita Taveta, Kwale and Lamu counties.

March and in the first half of April, with cumulative precipitation amounts estimated at 50-85 percent of average.<sup>10</sup> Rains improved during the second half of April and had a positive impact on vegetation conditions, but crop recovery was modest as rains were late and dry conditions established again in mid-May. As of mid-May, in southeastern and coastal areas, up to 70 and 95 percent of cropland, respectively, was affected by severe drought. Cereal production prospects are, therefore, unfavorable, likely leading to a fourth consecutive poor harvest. The Normalized Difference Vegetation Index (NDVI) shows very low values for large parts of central Kenya as well (Laikipia, Samburu, Isiolo, Nakuru, Kajiado, and Meru). Land surface temperature anomalies are also very high in central Kenya. Consequently, suppressed crop production in central and eastern Kenya appears likely.

Below-average and erratic rainfall have also impacted cereal outputs in **Uganda** and the **United Republic of Tanzania**, a source of concern as these countries are the main maize exporters of the East Africa region, and lower exportable surpluses are likely to have a knock-on impact on cereal availability in structurally deficit countries, i.e. countries which rely on imports of food, notably Kenya.<sup>16,17</sup>

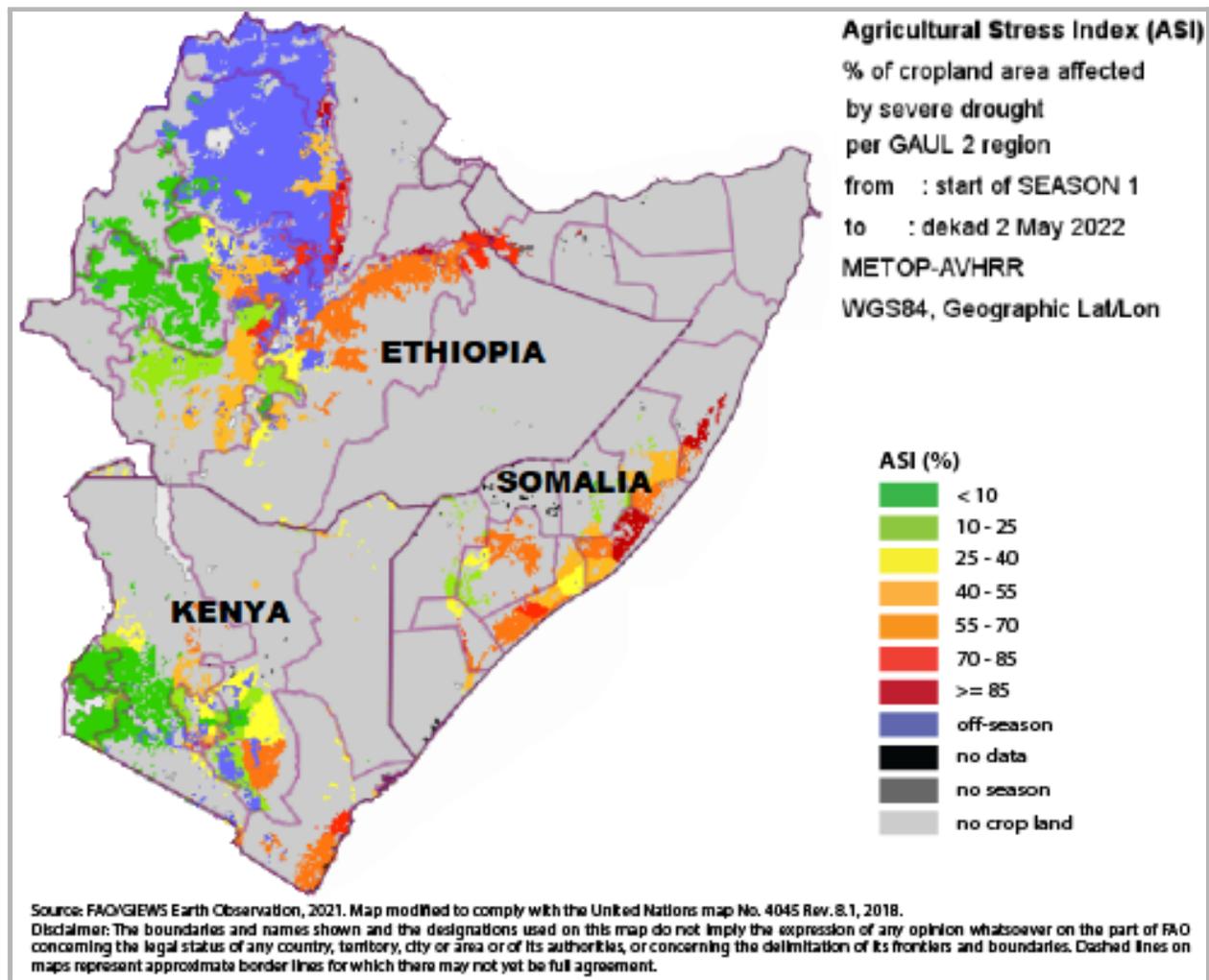
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<sup>16</sup> *Unprecedented 4th consecutive poor rainfall season for the Horn of Africa.*

[https://cropmonitor.org/documents/SPECIAL/reports/Special\\_Report\\_20220523\\_East\\_Africa.pdf](https://cropmonitor.org/documents/SPECIAL/reports/Special_Report_20220523_East_Africa.pdf)

<sup>17</sup> Multi-season drought drives dire food security situation." Food Security and Nutrition Working Group, 10 February 2022, [https://www.icpac.net/documents/506/Final\\_FSNWG\\_Drought\\_Special\\_Report.pdf](https://www.icpac.net/documents/506/Final_FSNWG_Drought_Special_Report.pdf)

Figure 3. Percentage of cropland affected by severe drought in Ethiopia, Kenya and Somalia (Second dekad of May 2022)



Source: FAO-GIEWS

## Section 2.2 Livestock production

The *gu/genna/long rains* season performed poorly in pastoral and agropastoral areas of southern and southeastern **Ethiopia**, southern, central, and northeastern **Somalia**, and northern and eastern **Kenya**, where below-average rains only provided a limited and short-lived respite to a prolonged dry period that has affected rangeland resources since October 2020. In most of these areas, rainfall during MAM 2022 was less than half of the long-term average.

The below-average rainfall amounts hindered the recharge of water sources and, according to the FEWS NET/United States Geological Survey (USGS) water point monitoring system, low levels are reported in most livestock watering points in **Ethiopia, Kenya, and Somalia**. Pasture and water

shortages are causing the deterioration of livestock body conditions to very poor levels, with increasing numbers of livestock deaths due to starvation.

In **Kenya**, various reports suggest nearly 1.5 million livestock, particularly cattle and sheep, have died between October 2021 and March 2022.<sup>18</sup> In northern and northeastern pastoral areas of **Kenya**, milk production in April was estimated to be less than 60 percent of average,<sup>19</sup> with no production recorded in Turkana and Samburu counties.

In southern and southeastern **Ethiopia** (Borena Zone of Oromia Region, southern Somali region), the situation of pastoralists is of great concern. Drought conditions have persisted for over two years and widespread areas have received only 30 percent of typical rainfall during the current *gu* season.<sup>20</sup> Pasture conditions are among the driest on record, with few-to-no migration options. Subsequently, an estimated 2.1 to 2.5 million livestock have died between late 2021 and mid-May 2022, according to regional and zonal government figures, and herd sizes are likely to decline further given very limited livestock births this season and high offtake expected during the upcoming dry season. A drastic decline in livestock-to-cereal terms of trade has also resulted, and pastoralists are engaged in sustained livestock distress sales.

In **Somalia**, livestock emaciation and excess livestock deaths and abortions are reported in central and northern regions and in parts of southern Bakool, Gedo, and Hiraan regions, where livestock mortality rates will likely reach at least 10-30 percent by September.<sup>21</sup> Already, over three million livestock have died since mid-2021.<sup>22</sup> Poor livestock health conditions and the loss of animals have caused a reduction in milk production and pastoral incomes.

## Section 2.3 Markets, prices, and hydropower

In drought-affected areas, cereal prices are at very high levels due to insufficient availability after consecutive poor harvests combined with the global price shocks and macroeconomic difficulties in some countries. These prices are likely to increase due to this failed rainy season, global inflation pressures, and the disruption in crop production and international trade flows due to the war in Ukraine.

In **Somalia**, red sorghum was traded in Dinsoor, a reference market in the “sorghum belt” of Bay Region, at SOS 20,250/kg in April. This price was almost four times its year-earlier value, more than two times and more than 50 percent above the peaks reached during the 2016-2017 drought and the 2008 global food price crisis, respectively, and exceeds the record level observed in 2011, when famine was declared.<sup>23</sup>

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<sup>18</sup>“Crisis in Kenya: Urgent Action Needed as 3.5 Million Face Drought-Induced Hunger.” *Concern Worldwide*, 20 April 2022, <https://www.concernusa.org/press/crisis-in-kenya-urgent-action-needed-as-3-5-million-face-drought-induced-hunger/>

<sup>19</sup>“Emergency (IPC Phase 4) acute food insecurity in northern and northeastern Kenya.” FEWS NET, May 2022, <https://fews.net/east-africa/kenya/key-message-update/may-2022>

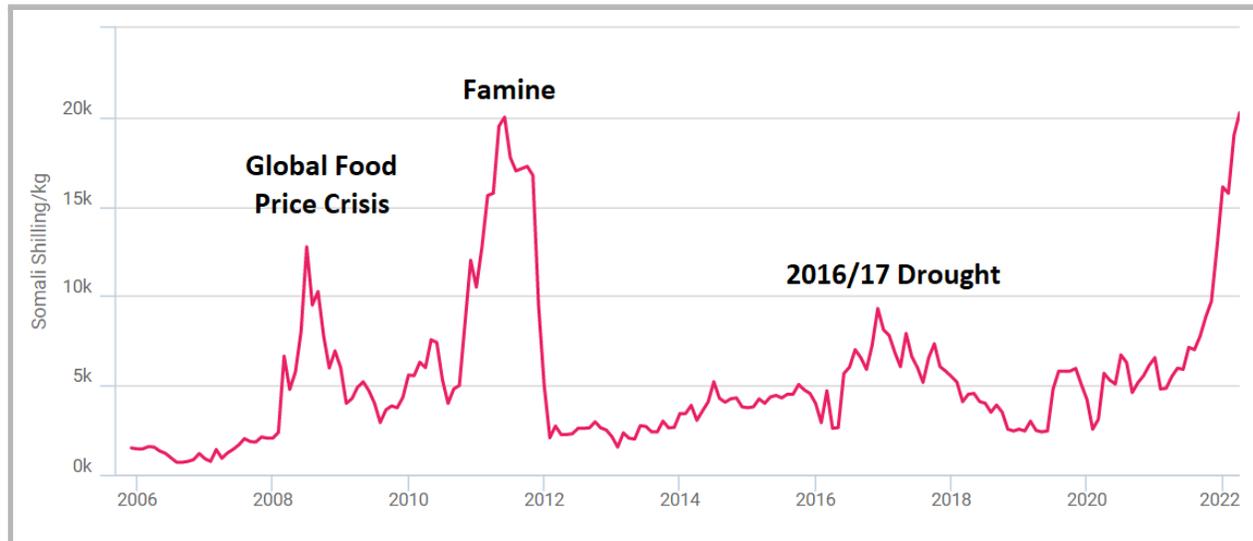
<sup>20</sup>“Increased hunger-related mortality likely due to historic drought and unresolved conflict.” *FEWS NET*, 27 May 2022, <https://fews.net/east-africa/ethiopia/alert/may-27-2022>

<sup>21</sup>“Somalia faces Risk of Famine (IPC Phase 5) as acute malnutrition and mortality levels rise.” *FEWS NET and FSNAU*, 31 May 2022, <https://fews.net/east-africa/somalia/alert/may-31-2022>

<sup>22</sup>“Somalia Faces Increased Risk of Famine as Acute Food Insecurity, Malnutrition and Mortality Worsen.” *ReliefWeb*, 4 June 2022, <https://reliefweb.int/report/somalia/somalia-faces-increased-risk-famine-acute-food-insecurity-malnutrition-and-mortality-worsen>

<sup>23</sup> FAO-GIEWS [EPMA Tool \(fao.org\)](https://www.fao.org/epma/)

**Figure 4. Retail Prices of Sorghum in Dinsoor Market in Somalia (January 2006 - April 2022)**



Source: FAO-GIEWS

In **Ethiopia**, February maize prices in Gode market in Somali region and in Yabello market in the southern Borena zone of Oromia region were 60 and 85 percent higher than one year-earlier, respectively.<sup>24</sup> High food prices in Ethiopia have been mainly linked to macroeconomic challenges that the country has been facing over the past several years.

In **Kenya**,<sup>25</sup> in the northern pastoral Marsabit County, prices of maize in April were about 20 percent higher than one year earlier. By contrast, prices of livestock declined to very low levels due to poor animal body conditions and the fact that there is a rush to market, as households have been engaging in animal distress sales. Lower livestock prices are also driven by low local demand as households often have less income available to purchase livestock. In Marsabit County, for example, prices of goats in April were extremely low. With cereal prices increasing and livestock prices declining, livestock-to-cereal terms of trade for pastoralists – the amount of staple grains that a sold head of livestock can purchase – decreased to very low levels. In Marsabit County, the sale of a goat in April could only purchase 40 kg of maize, compared to 70 kg one year earlier.

It should also be noted that food prices are linked to global markets; Russia and Ukraine are very important wheat suppliers, and the current war in Ukraine is adding to pre-existing supply chain pressures that are driving prices higher, creating global increases in food insecurity.<sup>26</sup> The East Africa region in particular is highly vulnerable to these impacts. For example, Ethiopia, Kenya, and Somalia

<sup>24</sup> "Amid severe food insecurity in Tigray, outcomes are deteriorating rapidly in the south." FEWS NET, <https://fewsn.net/sites/default/files/documents/reports/Ethiopia-food%20security%20outlook-february%202022-final.pdf>

<sup>25</sup> Calculations performed by FAO-GIEWS on Government of Kenya's National Drought Management Authority Data.

<sup>26</sup> Daniel Maxwell. "War in Ukraine Is Pushing Global Acute Hunger to the Highest Level in This Century." *The Conversation*, 29 Apr. 2022, <https://theconversation.com/war-in-ukraine-is-pushing-global-acute-hunger-to-the-highest-level-in-this-century-181414>

normally import the majority of its wheat from Ukraine and Russia.<sup>27</sup> In addition, the exceptionally severe and widespread drought conditions in MAM 2022 (Figure 1) will create regional cereal supply shocks, which will likely impact regional food prices.

Fuel prices are also exceptionally high, which are driving up food transportation costs, leading to a significant increase in the overall cost of living and contributing to rising inflation rates. The increase in fuel prices in Kenya and neighboring countries is the highest since 2010, despite heavy Government of Kenya subsidies intended to maintain current prices at US\$1.28 per liter for petrol. Maize and beans prices in Kenya are 10-50 percent and 6-30 percent above the five-year average, respectively, across the worst-drought affected areas, and these increases are limiting household purchasing power and access to food. High inflation rates have been triggered by a myriad of factors, including the ongoing multi-year drought (2021/22) and high food importation, production, and transportation costs. In Ethiopia, fuel prices have increased from 31.74 Birr (US\$0.72/liter) in December 2021 to 36.87 Birr (US\$0.74/liter) in May 2022, noting that the National Bank of Ethiopia's currency exchange rate has also increased from 1US\$=44.32 Birr in December 2021 to 1US\$=52.00 Birr in June 2022. According to the Central Statistical Authority of Ethiopia, the annual inflation rate in Ethiopia reached 36.6 percent in April of 2022, with food price inflation reaching 42.9 percent in March, the highest point since November 2011.<sup>28</sup> An increase in fuel prices has already affected prices for food, factory products, and services. The outlook is dire and grim with the increased likelihood for higher food and fuel prices into 2023, with limited options for hydropower energy with continued decreases in water levels behind key hydro-dams in Kenya and Ethiopia.

### Section 3. Food Insecurity

Currently, at least 17.8 million people in southern and southeastern Ethiopia, Kenya, and Somalia need humanitarian food assistance to prevent high levels of acute food insecurity (IPC Phase 3+). Millions of households already face food consumption gaps and escalating levels of acute malnutrition across drought-affected areas in the eastern Horn of Africa. The extremely severe and unprecedented drought, coupled with concurrent conflict, macroeconomic challenges, and external supply shocks, as well as population-driven pressures on per-capita food and water supplies, are producing a perfect storm, as compounding shocks combine with chronic vulnerability and exposure.

Widespread Crisis (IPC Phase 3) and Emergency (IPC Phase 4) outcomes are currently being observed across the region, with some households in Catastrophe (IPC Phase 5), particularly in parts of southern and central Somalia where over 213,000 people have been found to be in this phase.<sup>22</sup> An uptick in hunger-related mortality is now occurring across the region, and there is increasing concern that more extreme food insecurity outcomes – marked by Extremely Critical levels of acute malnutrition and high levels of hunger-related mortality – could emerge in mid- to late-2022. In Somalia, for example, the June 2022 IPC analysis found a Risk of Famine (IPC Phase 5)<sup>22</sup> if the current crop and

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<sup>27</sup> "Implications of Ukraine Conflict on Food Access and Availability in the Eastern Africa Region." WFP, 4 March 2022, <https://docs.wfp.org/api/documents/WFP-0000137369/download/>

<sup>28</sup> <https://www.statsethiopia.gov.et/>

livestock production season fails, food prices rise further, and humanitarian assistance is not scaled up to reach those most in need.

Ethiopia, Kenya, and Somalia have already recorded a significantly higher number of severely malnourished children admitted for treatment in the first quarter of 2022 compared to past years, and Extremely Critical levels of acute malnutrition (GAM WHZ  $\geq$  30 percent) are already observed in Mandera County of Kenya (34.7 percent)<sup>29</sup> and Baidoa district of Bay Region, Somalia.<sup>22</sup>

Current levels of humanitarian assistance are quickly being outpaced by the scale and severity of need, as demonstrated by widening food consumption gaps and rising acute malnutrition levels. The forecast of below-average 2022 *deyr* rains suggests food security conditions will not improve until 2023 at the earliest. Large-scale food and livelihood assistance, as well as nutrition, water, sanitation, and hygiene (WASH), and health services, are urgently needed to mitigate the further loss of life and livelihoods.

### Section 3.1. Ethiopia

The population in need of humanitarian food assistance in drought-affected areas of southern and southeastern Ethiopia has reached very high levels in 2022, driven primarily by ongoing insecurity and climate shocks and exacerbated by economic shocks that are likely to result in continued high needs into 2023. According to a recent FEWS NET analysis,<sup>24</sup> widespread Crisis (IPC Phase 3) and Emergency (IPC Phase 4) outcomes are likely ongoing, with increasing concern that more extreme food insecurity could emerge based on the severity of current food consumption gaps, severity of current proxy data on acute malnutrition, and prospects for further deterioration in food security conditions during the upcoming dry season in *gu/genna*-dependent areas. Available data from find-and-treat campaigns conducted by UNICEF, as well as proxy Global Acute Malnutrition (GAM) mid-upper arm circumference (MUAC) levels collected by the CDC,<sup>30</sup> suggest that acute malnutrition levels are within the 'Critical' (GAM 15-29.9 percent) range in Oromia and Somali regions.

In southern and southeastern Ethiopia, many pastoral households have increasingly limited access to livestock to sell for income with which to purchase food, due to the loss of financial assets through livestock deaths (an estimated 2.5 million livestock have died) and significant reductions to livestock productivity among the remaining herd. In Gode market, the sale of one goat purchased only enough maize in March 2022 to meet the minimum calorie needs of a household of six people for around seven days, compared to March 2020 when the sale of a goat would have covered around 23 days of food – a 65 percent reduction.<sup>20</sup> Given poor livestock body conditions, milk production is also minimal, further limiting households' access to food and income.

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<sup>29</sup> "A delayed onset of the rains increases the likelihood of a deterioration in an already dire food security, WASH, health and nutrition situation across the eastern Horn of Africa." *Food Security and Nutrition Working Group*, 5 April 2022, [https://www.icpac.net/documents/529/FSNWG\\_Drought\\_Alert\\_5\\_April\\_2022.pdf](https://www.icpac.net/documents/529/FSNWG_Drought_Alert_5_April_2022.pdf)

<sup>30</sup> "Ethiopia: Mobilize Urgent and Flexible Funding for Sufficient and Timely Delivery of Key Lifesaving Interventions, May 2022." *ReliefWeb*, 3 June 2022, <https://reliefweb.int/report/ethiopia/ethiopia-mobilize-urgent-and-flexible-funding-sufficient-and-timely-delivery-key-lifesaving-interventions-may-2022>

In *belg*-cropping areas, which are predominantly in southern and central Ethiopia, households face a significant reduction in food and income from own-produced crops, crop sales, and agricultural labor given significantly below-average prospects for *belg* and long-maturing *meher* crops. While forecast above-average rainfall from June to September in *kiremt*-receiving areas may permit some recovery in agricultural production, the rainfall deficits incurred from March to May have already reduced the planted area and yields of long-maturing crops that will be harvested at the end of the *meher* season in October-December.<sup>10</sup> As a result, crop production shortfalls are still expected to result in food consumption gaps for many households, according to FEWS NET.<sup>20</sup>

### Section 3.2. Somalia

The population in need of humanitarian food assistance in Somalia has reached record levels in 2022 at an estimated 7.1 million people<sup>22</sup> amid an exceptionally severe drought, soaring staple food prices, and heightened conflict and insecurity. This figure represents nearly half of the country's total population and is inclusive of more than 2.1 million people projected to be in Emergency (IPC Phase 4) and more than 213,000 people likely to be in Catastrophe (IPC Phase 5). Most regions in Somalia (13 out of 18) have populations in Emergency (IPC Phase 4), reflecting the widespread impacts on household food security due to livestock emaciation and death, low cropping levels, and extreme declines in household purchasing power.

Representative survey data collected by FSNAU and WFP in 11 areas<sup>31</sup> in late April/early May also indicate an alarming increase in child acute malnutrition and child and adult mortality levels in southern Somalia – above the Emergency (IPC Phase 4) and Crisis (IPC Phase 3) thresholds – with more than 15-29 percent of children under the age of five experiencing acute malnutrition – despite the delivery of food assistance and community support during Ramadan and Eid. The situation in Bay region is extremely concerning as the global acute malnutrition threshold for Famine (IPC Phase 5) (GAM  $\geq$  30 percent) has been breached in Baidoa district, while adult and child mortality levels are indicative of Emergency (IPC Phase 4). As a result, there is a Risk of Famine (IPC Phase 5) if crop and livestock production fails, food prices rise further, and food aid does not reach populations in need.<sup>22</sup>

In pastoral areas, household income from livestock production has drastically declined due to excess livestock deaths (over three million livestock have died), poor to emaciated body conditions that render livestock unsalable, and low milk productivity. Pasture and fodder are scarce, and most households can no longer afford to purchase grains to hand-feed weak livestock. In instances where a poor household in southern Somalia may still have a goat that is healthy enough to sell, the amount of cereal they can purchase with that income has dropped by 50-75 percent.<sup>21</sup> While purchasing power has fallen less sharply in north-central Somalia, many households have low livestock holdings and lack healthy livestock to sell.

In southern agropastoral and riverine areas, farmers are expected to face a fifth consecutive below-average cereal harvest in July. In comparison, during the recent 2011 and 2017 drought

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<sup>31</sup> Data was collected in agropastoral areas in Bay Region; pastoral areas in central Somalia (specifically, Addun Pastoral and Hawd Pastoral livelihood zones); riverine cropping areas in Gedo Region and Beletweyn district of Hiiraan Region; and IDP settlements in Galkacyo, Beletweyn, Mogadishu, Baidoa, Dolow and Kismayo.

emergencies, the poor *gu* cereal harvest was only the second and third consecutive below-average harvest, respectively. Area planted and crop growth are far below normal due to the poor rains, the displacement of households away from their farms, and farmers' reduced ability to afford seeds, irrigation, and other inputs. Reduced demand for agricultural labor has also driven down wages by as much as 25-35 percent for poor households who typically rely on this income source.<sup>21</sup>

### Section 3.3. Kenya

According to the IPC, 3.5 million people are expected to need humanitarian food assistance in Kenya through June.<sup>32</sup> Widespread livestock deaths, minimal livestock productivity, very low cropping levels, and sharp declines in purchasing power are creating large food consumption gaps and high levels of acute malnutrition among millions of households in eastern and northern Kenya. According to the Government of Kenya's National Drought Management Authority, as of April, out of the 23 counties located in the Arid and Semiarid Lands (ASALs), nine counties were in "drought alert phase",<sup>33</sup> while eight were in "drought alarm phase".<sup>34</sup> The counties in drought alarm phase were Turkana, Marsabit, Samburu, Mandera, Wajir, and Isiolo counties, located in northern pastoral areas, and Laikipia and Baringo counties, located in central agro-pastoral areas. While ongoing government and humanitarian assistance is currently mitigating the severity of acute food insecurity in some areas, Crisis (IPC Phase 3) outcomes are widespread and hundreds of thousands of people are in Emergency (IPC Phase 4).

Households across Kenya's ASALs face another below-average to failed harvest and poor rangeland resource recovery, reducing access to food and income. In pastoral areas, low household milk production and consumption is driving increased malnutrition rates, as evidenced by the Extremely Critical (GAM  $\geq$  30 percent) prevalence recorded in Mandera in a UNICEF SMART Survey in March 2022 (34.7 percent).<sup>35</sup> SMART surveys in Isiolo, Wajir, and Garissa Counties in January 2022 also all showed rising levels of malnutrition, with record levels of GAM in Garissa (24.7 percent) and the highest GAM prevalence since 2011 in Wajir.<sup>36</sup> Food insecurity continues to rise, driven by declining goat-to-maize terms-of-trade as staple food prices increase, deteriorating livestock body conditions, declining herd sizes, and distressed livestock sales.

In marginal agricultural areas, household food stocks have already depleted due to the poor past seasons, and household incomes from agricultural labor are lower than usual due to a drop in demand. Normally, poor households in these areas rely on long rains crop production to cover about ten percent of their annual food needs, while the sale of crops, agricultural wage labor, and the sale of livestock and livestock products provide income to purchase food. In addition to low labor demand, the

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<sup>32</sup> Kenya: Acute Food Insecurity Situation February 2022 and Projection for March - June 2022.

<https://www.ipcinfo.org/ipc-country-analysis/details-map/en/c/1155510/?iso3=KEN>

<sup>33</sup> The "drought alert phase" is triggered when meteorological drought indicators (Vegetation Condition Index and Standard Precipitation Index) move outside seasonal ranges.

<sup>34</sup> The "drought alarm phase" is triggered when the meteorological drought indicators and at least three production indicators out of five (livestock body conditions, crop conditions, milk production, livestock migration, livestock mortality rates) move outside seasonal ranges.

<sup>35</sup> FSNWG, Drought Alert, 5 April 2022. FEWS NET, Kenya Food Security Alert, 9 May 2022.

<sup>36</sup> Multi-season drought drives dire food security situation." Food Security and Nutrition Working Group, 10 February 2022, [https://www.icpac.net/documents/506/Final\\_FSNWG\\_Drought\\_Special\\_Report.pdf](https://www.icpac.net/documents/506/Final_FSNWG_Drought_Special_Report.pdf)

amount of maize that a household can purchase with a daily wage has fallen. Livestock-to-cereal terms of trade have also declined. More specifically, maize and bean prices are 10-25 percent above average, contributing to goat-to-maize terms of trade that are 5-50 percent below average.<sup>19</sup>

Furthermore, despite projections of above-average February to August rains in the western unimodal areas, high fuel and fertilizer prices are raising production costs, which is likely to result in below-average national long-rains production, putting further upward pressure on food prices.

## Summary

As discussed and detailed in the three sections above, the extremely severe, protracted, and unprecedented drought, combined with crop production, livestock and price shocks, as well as concurrent conflict, macroeconomic challenges, and external supply shocks, are driving record-breaking levels of extreme food insecurity that are rapidly increasing. Millions of households already face the threat of starvation.

At present, humanitarian response plans are massively under-funded. The Somalia 2022 Humanitarian Response Plan for food security is only 20 percent funded to date. Meanwhile, only 34 percent of the required USD \$139.5 million for the October 2021-March 2022 period of the Kenya Drought Flash Appeal was met, and funding requirements for April-October 2022 period have risen further to USD \$180.7 million.

Immediate action is required to scale-up and sustain humanitarian assistance through at least mid-2023 to prevent rising levels of acute food insecurity and malnutrition, mitigate the loss of life, and avert the Risk of Famine (IPC Phase 5).