Conflict and Climate Collide to Create an Acute Hunger Crisis for an Unprecedented 345 Million People

Howard Larkin

This March, a young mother arrived with 3 children at Dollo Ado in southeastern Ethiopia, where 5 refugee camps currently serve more than 200,000 displaced Somalis.

There, 2 of her children were admitted to a clinic for severe acute malnutrition. Another 2 had died on the more than 10-day walk from their home in Somalia, Iris Bollemeijer, MSc, a nutrition advisor for International Medical Corps, a relief organization based in Los Angeles, told JAMA in an interview.

“She lost 2 of her 5 children just because they were not able to eat or drink anything along the way,” said Bollemeijer, who is based in the Netherlands and supports International Medical Corps nutrition programs across eastern Africa. “These are stories that you hear a lot in the refugee camps. It’s heartbreaking.”

While conflict remains the major driver of global hunger, it was not the primary reason these particular refugees left Somalia, Bollemeijer said. Since 2020, parts of Ethiopia, Kenya, and Somalia—countries in the Horn of Africa—have experienced record drought, with rainfall far below average going into a fifth consecutive rainy season. Failed harvests and dead livestock, along with lost income and, ultimately, lost life, have resulted. Without immediate assistance the region may tip into famine.

“They are not fleeing conflict—they are fleeing climate. They are climate refugees,” Bollemeijer said. “We need to focus on building the resilience of these communities, so they can adapt to the new situation. Climate change is not going to stop. It will only get worse.”

Rising Hunger

On November 7, 16 international agencies including the World Health Organization (WHO), the Food and Agriculture Organization (FAO) of the United Nations (UN), and the UN World Food Programme (WFP) issued a joint statement calling for “immediate global action” to avert famine in the Horn of Africa. The drought alert described the situation bluntly: “a humanitarian catastrophe is occurring now, and more funds are crucial to save lives.”

According to the WFP, the overall world population facing an acute hunger crisis reached an unprecedented 345 million this year, more than quadrupling from about 80 million in 2014 and increasing from 135 million in 2019. Of these, nearly 50 million people in 45 countries are in hunger emergencies, one step away from famine.

Worst off, “about 1 million are in famine-like conditions in Yemen, Afghanistan, Somalia, Ethiopia, Nigeria, South Sudan, and now, most likely, Haiti,” Arif Husain, PhD, chief economist and director of research, assessments, and monitoring at the WFP, said in an interview from Rome.

The most catastrophic manifestation of food insecurity, famine is defined by the Integrated Food Security Phase Classification (IPC) scale as an area in which 20% of households face an extreme lack of food, 30% of children experience severe acute malnutrition, and 1 in 5000 people die daily from starvation or disease related to food deprivation. Recent UN-declared famines occurred in Somalia in 2011, when 260,000 people died, and South Sudan in 2017, when an influx of aid averted many deaths.

The numbers for chronic food insecurity are even higher, Husain said. Defined by IPC as an ongoing inability to consume a diet that supports a healthy, active life, chronic food insecurity affects about 828 million people worldwide. About 3.1 billion people...
lack a diet that includes enough calories, macronutrients, and micronutrients needed to stay healthy, he added.

As a result, 45 million children are severely underweight for their height, a condition known as wasting, and 149 million are affected by stunting, meaning they’re short for their age, said Husain, who coauthors periodic reports on hunger with the FAO. The organization’s Hunger Hotspots report for October 2022 to January 2023 identifies up to 222 million people in 53 countries and territories requiring urgent food assistance, including 19 countries and regional clusters in Africa, Asia, the Caribbean, Central America, and the Middle East where conditions are expected to deteriorate in the next 3 months.

The number of people forcibly displaced also reached a new high in 2022, exceeding 100 million—a doubling from 2014 and over 11 million more than at the end of 2021, Husain said. He shared another portentous statistic: 2022 marks the first year that more people were forcibly displaced by climate conditions than by conflict. According to a UN report, 95% of persons displaced in their own countries in 2021 and 78% displaced internationally came from “countries that are highly vulnerable to the impacts of climate change.”

“The trends are the same for acute and chronic hunger, forced displacement, and child stunting and wasting—they are all moving in the wrong direction,” Husain said. “That should be alarming in the 21st century. There is something fundamentally wrong with our world.”

**Interconnected Drivers**

Husain and others described food insecurity as a complex problem with multiple, interrelated causes. While climate shocks are growing in importance, war and political conflict remain the most significant driver, affecting about 70% of people requiring urgent nutritional assistance.

Wars and armed civil conflicts are growing more protracted. Internal conflicts in South Sudan stretch back to its independence from Sudan in 2011. At 63%, the proportion of South Sudan’s population needing immediate food relief is the highest in the world, amounting to 7.7 million people. Nigeria, where nearly 20 million people, or 12%, are in hunger crisis, has seen conflict since 2014. “If you are in trouble at year 1 why not in year 11 if you haven’t addressed the root problem?” Husain said.

And although the war in Ukraine is relatively young, it’s already gone on months longer than expected. In addition to its direct effects on the nation’s people, the conflict has disrupted grain exports from Ukraine and Russia, which normally make up about 30% of the world’s wheat exports and 20% of its maize. The war also has increased global oil and fertilizer costs. The resulting inflation is making food unaffordable and reducing crop yields in many lower-income countries, said Husain, who sees economic marginalization as another major cause of food insecurity: “If you are a poor country, if you have high debt, if you import your food, your fuel, or your fertilizer, you are in trouble.”

Conflict also impedes relief efforts, compounding the problem. In Nigeria, for example, about 1 million people facing the most critical hunger conditions live in conflict-affected states without access to humanitarian aid. Prolonged conflict also severely limits access to aid in Ethiopia, Somalia, and South Sudan, according to the Hunger Hotspots report.

Climate shocks are another major hunger driver, affecting food security in many ways. Elizabeth Robinson, PhD, professor and director of the Grantham Research Institute on Climate Change and the Environment at the London School of Economics and Political Science, said in an interview. These include direct destruction of crops and livestock by drought and flooding, which are currently affecting countries throughout the Horn of Africa as well as Afghanistan, Pakistan, and Yemen.

Climate change also is shortening growing seasons, Robinson noted, and more days of extreme heat are reducing agricultural workers’ hours and productivity. These factors further reduce crop yields and income, making it harder for workers to afford food and purchase agricultural supplies such as seeds and fertilizers. Warmer weather and floods also increase pests that destroy crops, she said.

And although increasing carbon dioxide in the atmosphere may boost crop yields by acting as a fertilizer, it may also reduce the nutritional value of some grains, added Robinson, who coauthored the food insecurity section of the 2022 Lancet Countdown report on health and climate change. Warming sea waters, meanwhile, are affecting fisheries that supply much of the world’s protein.

Extreme weather also hampers relief efforts. For example, record floods plaguing northern South Sudan have made many health and nutrition facilities inaccessible, Bollemeijer said, forcing staff to travel to the nearest accessible point to provide nutrition services.

“We have canoes, and we follow up with acutely malnourished children on a weekly basis, providing counseling and specialized food commodities,” Bollemeijer said. But delivering services by boat and on foot requires extra staff. “It’s more expensive, and it takes longer,” she said.

World market conditions exacerbate the effects of both climate and conflict, Robinson added. With just a handful of countries supplying most of the world’s food exports, lower-income importing countries experience repeated price shocks. “In 2008, in 2010 to 2011, in 2022—each time somewhere in the world a breadbasket country has been affected by climate change or invasion, it affects the supply chain around the world, making it increasingly hard for people who spend a lot of their income on food,” she explained. She noted that the COVID-19 pandemic also drove up food insecurity. Restrictions on movement meant that many people, including agricultural workers, lost their jobs in 2020 and 2021. This reduced harvests and earnings and, in turn, access to food.

**Malnutrition and Disease**

Zambia-based Chalilwe Chungu, MMED, MBChB, of the Catholic Relief Services in southern Africa, described the profound and diverse health effects of food insecurity in an interview. They involve not only malnutrition but a range of other diseases such as malaria, dengue, severe diarrhea, and HIV and other sexually transmitted infections (STIs). Chungu emphasized the need for a holistic approach, including both emergency response and prevention, to reduce malnutrition and food insecurity.

“Malnutrition in itself is a very complex process,” he said. “It is a political, social, and economic issue that manifests medically.”

Much of his agency’s food and nutrition work is guided by the United Nations Children’s Fund (UNICEF) conceptual framework for maternal and child nutrition. Adequate nutrition in the first 1000 days of child development, from pregnancy through the child’s second year, is critical to heading...
off lifelong physical and cognitive problems, Chungu said. Globally, 45% of deaths among children aged 5 years or younger are associated with malnutrition, according to the World Health Organization.

The UNICEF framework highlights adequate diet and appropriate care for women and young children as the immediate determinants of nutrition, but it also cites underlying factors like proper food preparation and hygiene practices. In addition to providing direct support such as food and micronutrient supplements and treatment for severe acute malnutrition, holistic nutrition solutions also incorporate access to clean water and sanitation facilities and handwashing training, Chungu explained.

"These behaviors curb diseases that have the potential to tip a child into malnutrition, for example diarrhea," Chungu said. Conversely, he added, malnutrition increases susceptibility to childhood diseases.

Acute food insecurity also drives people into maladaptive survival behaviors, according to Chungu. To earn money or food, young women and girls may engage in sexual relations with older men, putting them at risk for HIV and other STIs. Lost livelihoods due to COVID-19 restrictions and resulting hunger slowed or reversed progress on containing HIV in many low-income settings.

Chungu said that preventing hunger involves building food and economic resiliency—by planting household gardens, introducing food preservation technologies that don't require refrigeration, and offering microfinance and savings programs, for example. "Once you empower a woman economically," he said, "she doesn't have to engage in maladaptive behaviors, and this can also protect unborn babies from getting infected with HIV."

Jeremy J. Hess, MD, MPH, calls climate change a "threat multiplier" for food insecurity and health. How climate change interacts with disease depends on the specifics of the environment and the underlying demographics and health of the population, said Hess, who is professor of environmental and occupational health sciences, global health, and emergency medicine at the University of Washington and director of the school's Center for Health and the Global Environment.

For example, floods and rising temperatures can increase vector-borne diseases including malaria and dengue. "Warming amplifies almost everything about mosquitoes that transmit dengue," Hess said in an interview. "There is more reproduction in a given season and more over-winter survival, so you start with a larger population the next season." He also noted that people with malaria are often anemic, making them more susceptible to malnutrition.

"Ultimately, we are talking about grave threats to health from multiple pathways," he said. "Sometimes it is starving to death, sometimes it is greater vulnerability to disease, and sometimes it is migration—a lot of people die on those trips," said Hess, who contributed to the Lancet Countdown report and the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.

Disease also makes it harder for people to consume food and provide care for others, according to Bollemeijer, who said that malaria, measles, cholera, dengue fever, and acute diarrhea all are increasing in the populations she serves in eastern Africa. "Children are not likely to eat as much as they should, or parents are not able to care for their children if they are themselves sick," she said.

**Preventing Famine**

As the November multicountry alert made clear, more money for emergency relief is the most immediate need. For every country requiring humanitarian aid, the UN prepares an assessment and a relief plan that outline requirements for nutrition, health, water and sanitation, and protection, as well as the necessary funds. But these funding targets are rarely met.

In South Sudan, only 40% of the funding requirements for 2022 have been raised. "It means some of our health and nutrition staff are just overwhelmed with the burden they are facing...[W]e cannot provide the services for all those people," Bollemeijer said.

Globally, WFP funding has doubled from about $5.9 billion in 2017 to more than $11 billion this year. Husain especially credits the US government for increasing its contributions. However, the amount raised is still far short of the identified goals. "We are about 50% funded," Husain said. "The needs are ballooning so fast [that] the money gap is bigger than it was 5 years ago."

Similarly, Hess said, reparations from resource countries to buy food, fertilizers, and other supplies to address urgent nutritional needs. And political action is essential to end conflicts that drive disease and starvation.

Difficult as these steps may be, Husain said he believes that world leaders are finally recognizing the severity of the world's hunger problem and coalescing on solutions.

There is also historical precedent, he said: "If you look at today's G7, at the end of World War II they were where Afghanistan and Syria are today. The citizens of Italy, Japan, and France were totally devastated. But there was full commitment, so there is hope. As an economist, not only do I see this as a moral imperative, I see it as a wise economic decision. When you let these things fester, you end up paying a thousand times more."

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**Note:** Source references are available through embedded hyperlinks in the article text online.