

CLIMATE

The New York Times

Hotter, Drier, Hungrier: How Global Warming Punishes the World's Poorest

By Somini Sengupta

March 12, 2018

KAKUMA, Kenya — These barren plains of sand and stone have always known lean times: times when the rivers run dry and the cows wither day by day, until their bones are scattered under the acacia trees. But the lean times have always been followed by normal times, when it rains enough to rebuild herds, repay debts, give milk to the children and eat meat a few times each week.

Times are changing, though. Northern Kenya — like its arid neighbors in the Horn of Africa, where Secretary of State Rex W. Tillerson paid a visit last week, including a stop in Nairobi — has become measurably drier and hotter, and scientists are finding the fingerprints of global warming. According to recent research, the region dried faster in the 20th century than at any time over the last 2,000 years. Four severe droughts have walloped the area in the last two decades, a rapid succession that has pushed millions of the world's poorest to the edge of survival.

Amid this new normal, a people long hounded by poverty and strife has found itself on the frontline of a new crisis: climate change. More than 650,000 children under age 5 across vast stretches of Kenya, Somalia and Ethiopia are severely malnourished. The risk of famine stalks people in all three countries; at least 12 million people rely on food aid, according to the United Nations.



A woman washed near a water distribution point in Kakuma. Four droughts have hit the region in the last 20 years. Joao Silva/The New York Times

A grandmother named Mariaio Tede is among them. Early one recent morning, on the banks of a dry stream, with the air tasting of soot and sand, Ms. Tede stood over a pile of dark embers, making charcoal. A reed of a woman who doesn't keep track of

her age, she said she once had 200 goats, enough to sell their offspring at the market and buy cornmeal for her family. Raising livestock is traditionally the main source of income in the region, because not much food will grow here.

Many of her goats died in the 2011 drought, then many more in the 2017 drought. How many were left? She held up five fingers. Not enough to sell. Not enough to eat. And now, in the dry season, not even enough to get milk. “Only when it rains I get a cup or two, for the kids,” she said.

The most recent drought has prompted some herders to plunder the livestock of rival communities or sneak into nature reserves to graze their hungry droves. Water has become so scarce in this vast county — known as Turkana, in northwestern Kenya — that fetching it, which is women’s work, means walking an average of almost seven miles every day.

Ms. Tede now gathers wood to make charcoal, a process that is stripping the land of its few trees, so that when the rains come, if the rains come, the water will not seep into the earth. On the roadside stood what were once sacks of food aid, now stuffed with charcoal, waiting for customers.

Charcoal for sale along the main road in Turkana County. Production is stripping the land of its few trees.
Joao Silva/The New York Times

Further along that same road, in a village blessed with a water pump, a herder named Mohammed Loshani offered up his ledger of loss. From 150 goats a little over a year ago, he had 30 left. During the 2017 drought, 10 died one month, a dozen the next.

“If we get rain I can build back my herd,” he said. “If not, even the few I have will die.” He knew no one who had rebuilt their herds to pre-2011 drought levels.

“If these droughts continue,” Mr. Loshoni said, “there’s nothing for us to do. We’ll have to think of other jobs.”

Women near Kakuma. Food is hard to grow in the region, so raising livestock is the main source of income.
Joao Silva/The New York Times

Poor Rains and You're 'Done'

When Gideon Galu, a Kenyan meteorologist with the Famine Early Warning Systems Network, or FewsNet, looks at 30 years of weather data, he doesn't see doom for his country's herders and farmers. He sees a need to radically, urgently adapt to the new normal: grow fodder for the lean times, build reservoirs to store water, switch to crops that do well in Kenya's soil, and not just maize, the staple.

Rainfall is already erratic. Now, he says, it's getting significantly drier and hotter. The forecast for the next rains aren't good. "These people live on the edge," he said. "Any tilt to the poor rains, and they're done."

His colleague at FewNet, Chris Funk, a climatologist at the University of California, Santa Barbara, has linked recent drought to the long-term warming of the western Pacific Ocean as well as higher land temperatures in East Africa, both products of human-induced climate change. Global warming, he concluded, seems to produce more severe weather disruptions known as El Niños and La Niñas, leading to "protracted drought and food insecurity."

Jessica Tierney, a paleoclimatologist at the University of Arizona, took the longer view. By analyzing marine sediments, she and her colleagues came to the conclusion that the region is drying faster now than at any time in two millenniums and that the trend may be linked to human activity. That rapid drying in the Horn of Africa, she wrote, is "synchronous with recent global and regional warming."

A woman collected water from a pit dug in a dry riverbed near Kakuma. Joao Silva/The New York Times

It falls to James Oduor, the head of Kenya's National Drought Management Authority, to figure out what to do about the new reality. "In the future," he said flatly, "we expect that to be normal — a drought every 5 years."

Mr. Oduor keeps a postcard-size, color-coded map of his country to explain the scale of the challenge: dark orange for arid zones, light orange for semiarid zones, and white for the rest.

More than three-fourths of the land, he points out, is dark or light orange, which means they are water-stressed in the best of times and during droughts, dangerously so. "The bigger part of my country is affected by climate change and drought," he said. "They're frequent. They last long. They affect a big area."

Water is so scarce in Turkana County that fetching it means walking almost seven miles every day, on average. Joao Silva/The New York Times

Ethiopia is even worse off. FewsNet, which is funded by the United States government, has warned of continuing “food security emergency” in the country’s southeast, where rains have failed for the last three years in a row and political conflict has displaced an estimated 200,000 people.

In Somalia, after decades of war and displacement, 2.7 million people face what the United Nations calls “severe food insecurity.” During the 2017 drought, international aid efforts averted a famine. In the previous drought, in 2011, nearly 260,000 Somalis died of hunger, half of them children, the United Nations reported.

Women waited in the the shade in Turkana Country as an aid group evaluated children for malnutrition.
Joao Silva/The New York Times

'Five Are Dead, Then 10'

I traveled across Turkana and neighboring Isiolo County in northern Kenya last month. Off the main highway, sandy paths led through sandy plains. A cluster of round twig-and-thatch huts emerged. Dust whipped through the air.

Pastoralists have walked these lands for centuries. The older ones among them remember the droughts of the past. Animals died. People died. But then the rains came, and after four or five years of normal rains, people living here could replenish their herds. Now, the droughts are so frequent that rebuilding herds is pretty much impossible.

“You wake up one morning and five are dead, then 10,” said David Letmaya, at a clinic in Isiolo County where his family had come to collect sacks of soy and cornmeal.

Drawing water in Turkana County. Joao Silva/The New York Times

These days, shepherds like Mr. Letmaya range further and further, sometimes clashing with rivals from Turkana over pasture and water, other times risking a confrontation with an elephant or a lion from the national park next door.

Almost every night, park rangers can hear gunshots. Herders raid each others' livestock to replenish their own.

At the Isiolo health center, everyone kept precise count of their losses. One woman said she lost all three of her cows last year and was left now with only three goats. A second said her husband was killed a few years ago in a fight with Turkana herders over pasture, and then, last year, the last of her cows died. A third said she lost 20 of her 30 goats in the last drought.

It was a blazing afternoon, with no respite in sight. One by one, hauling boxes of soy and cornmeal bearing a World Food Program stamp, the women walked back home across the dry plains and the dry riverbeds, resting sometimes under an acacia heavy with nests that weaver birds had made from the dry brush.

[Follow @NYTClimate on Twitter](#)

A version of this article appears in print on March 12, 2018, on Page A1 of the New York edition with the headline: Fastest Drying in 2,000 Years Imperils Millions

[READ 92 COMMENTS](#)