

Tradition meets tech as Kenya's herders adapt to climate change

May 24 2019, by Nick Perry



Traditional Samburu tribeswomen gather their goats to sell at Merille livestock market, some 411km north of Nairobi in Kenya's Marsabit county

For generations, Kaltuma Hassan's clan would study the sky over Kenya's arid north for any sign of rain—some wind here, a wisp of cloud

there—to guide their parched livestock to water.

But such divination has been rendered hopeless by intensifying droughts. Days on foot can reveal nothing more than bone-dry riverbeds and grazing land baked to dust, sounding the death knell for their herd.

"You might go a long distance, and they die on the way... It is a very hard life," Hassan told AFP in Marsabit, a sparse and drought-prone expanse where millions of pastoral families depend entirely on livestock to survive.

Today, she leaves less to chance.

The 42-year-old relies on detailed rainfall forecasts received via [text message](#) from a Kenyan tech firm to plan her migrations, a simple but life-changing resource for an ancient community learning to adapt to increasing weather extremes.

Nomadic livestock herders in East Africa's drylands have endured climate variability for millennia, driving their relentless search for water and pasture in some of the world's most inhospitable terrain.

But their resilience is being severely tested by [climate change](#), forcing a rethink to traditional wisdom passed down for generations.



Nomadic livestock herders in East Africa's drylands have endured climate variability for millennia

Kenya endures a severe drought every three to five years, the World Bank says, but they are increasing in frequency and intensity, and temperatures are rising too.

With conditions ever-more unreliable, Hassan no longer relies on warriors she once dispatched to scout for suitable grazing land for her cattle.

"They wake up very early in the morning and they look at the clouds, they look at the moon, to predict. I use this now," she said, scrolling through customised weather updates on her phone, sent via SMS in

Rendille, a local language.

The service uses advanced weather data from US agricultural intelligence firm aWhere to provide subscribers with rain and forage conditions for the week ahead in their locality.

The forecasts are sent as text messages, so they are compatible with basic phones often used by pastoralists in [remote areas](#).



A traditional Samburu man haggles for a goat with a woman from the same community at Merille livestock market

Kenyan IT firm Amfratech, which launched the SMS service earlier this

year, has also rolled out a more advanced app-based version. They hope to eventually sign up tens of thousands of pastoralists.

Dry skies

Rainfall—the difference between feast and famine in East Africa and the Horn—is more erratic than ever, arriving late or not at all.

A long dry spell can set a pastoral family back years and erode their capacity to handle future shocks, the UN's Food and Agriculture Organization said in a 2018 report.

A second blow in quick succession can leave them teetering on starvation.



Herders in Kenya have to relentlessly search for water and pasture in some of the world's most inhospitable terrain

Such a crisis is already brewing in Kenya's pastoral country to the north and over its borders in neighbouring arid regions.

This year's so-called long rains failed to arrive, putting millions at risk. The Famine Early Warning Systems Network has warned that hunger in pastoral areas will worsen in coming months.

"It doesn't rain like it once did," said Nandura Pokodo, at a dusty livestock market in Merille, an outpost in Kenya's northern pastoralist heartland. Nobody wants his drought-weary animals, so he will return home empty-handed.

"It's harder to find pasture... year after year."

As the rains failed, Pokodo, 55, wandered for days between March and April in search of grazing land but found nothing. He lost 20 goats and sheep—a ruinous outcome for nomads whose fortunes are intertwined with their beasts.



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"Even if you have a million shillings but have no goats or sheep or camel, they consider you very poor," said Daniel Kapana, the head of Merille market, and an intergenerational herder himself.

Turn to technology

The text messages have also helped Samuel Lkiangis Lekorima protect not just his livestock, but the safety of his community.

Longer, harsher droughts have stoked intense competition between pastoralists for ever-scarcer water and pasture. A feud between two groups over a watering hole near Ethiopia left 11 dead in May, local media reported.

Lekorima, a 22-year-old herder from Marsabit, said advance knowledge of rainfall helped keep his people wandering far, and avoid any potential tensions with distant clans.



Map locating the town of Merille in Kenya.

"When I get that message, I phone people (and) tell them... don't go far away, because there is rain soon," he told AFP.

Other modern interventions are also playing a part, helping protect not just pastoralists but a sector that contributes more than 12 percent to Kenya's GDP, according to the World Bank.

The Nairobi-based International Livestock Research Institute uses satellite imagery to determine when pasture levels are critically low—a portent of livestock death.

Some insurance products are linked to this index and issue payments before drought hits, so pastoralists can buy enough fodder for lean times ahead. Tens of thousands of herders have signed up, industry groups say.

"A drought should no longer be an emergency," said Thomas Were, of CTA, an EU-funded institution that is driving a pastoralist-resilience project in Kenya and Ethiopia.



A livestock insurance agent for Takaful Insurance has a kiosk in the northern Kenyan town of Merille

Helima Osman Bidu, a traditional herder and mother-of-three, has joined a women's collective that invests in non-livestock related enterprises, another approach to drought-proofing the family finances.

"It is good to have something on the side," she told AFP, nodding to a padlocked metal box nearby containing the group's seed money.

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