

THE GreenPulse

Telling Africa's Climate Story

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October - December 2025 Edition

Climate Adaptation

How local communities are adapting to climate change

INSIDE>>



Restoring mangroves and livelihoods in Kilifi



Blending indigenous knowledge & science in weather forecast



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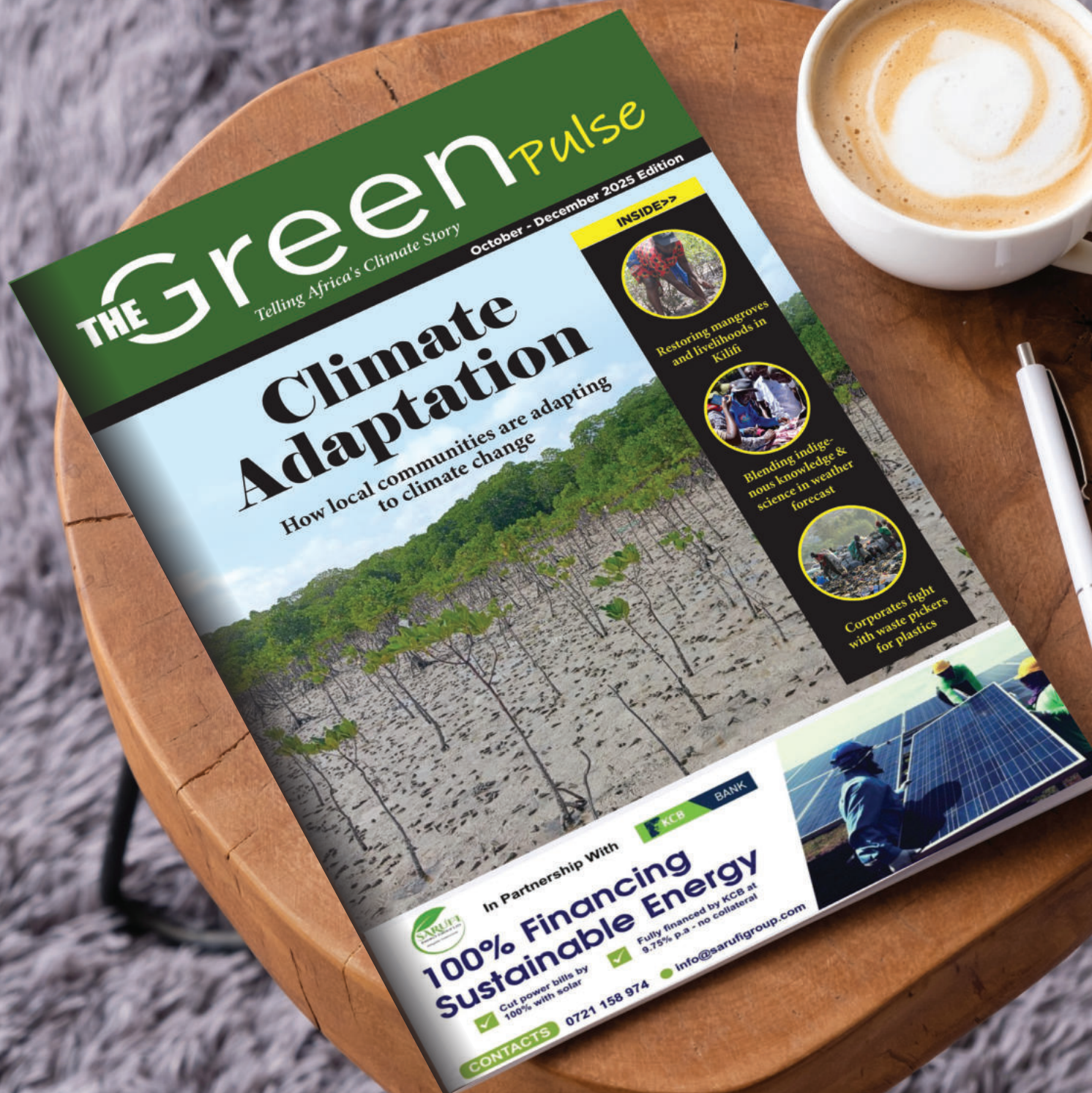
By harnessing the sun's power, schools can now prepare meals sustain-



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At ECOBORA we are cooking for change, one school, one community, one tree at a time.



Telling Africa's Climate Story

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Welcome to a greener conversation



Peter Ngare

In the age of climate reckoning, where every drought, flood, and vanishing forest tells a story, there arises a need for voices that do more than echo alarm. Voices that must inspire action, clarity, and hope. It is in this spirit that we introduce "Green Pulse" magazine, a quarterly publication dedicated to telling Africa's unfolding story of climate, environment, and conservation with depth, accuracy, and vision.

Our continent stands at the crossroads of crisis and opportunity. Africa contributes least to global emissions yet bears some of the harshest impacts of climate change. But beneath the familiar narrative of vulnerability lies another one of resilience, innovation, and quiet revolutions taking place in our communities, farms, innovation hubs, and boardrooms. This magazine exists to illuminate those stories, to connect policy with practice, and to give visibility to the ideas and people shaping Africa's green future.

Each issue will unpack the forces driving the climate conversation from the ground up. From policy and governance, where we follow the commitments and contradictions of leaders and institutions; to green finance, where money meets sustainability in ways that can redefine Africa's economic landscape.

We will explore the growing promise of renewable energy from solar and wind to geothermal and biogas, as communities light up their homes and futures. We will track the evolving carbon markets, separating potential from greenwashing, and spotlight regenerative agriculture, where farmers are restoring soils, protecting watersheds, and rebuilding food systems that work with nature.

We will also delve into the transformative power of waste management and the rise of eco-business, the new frontiers where innovation meets circular economy. From recycling startups to sustainable fashion, from e-mobility ventures to green manufacturing, we will showcase how African entrepreneurs are redefining value and creating livelihoods in harmony with the planet.

Beyond these pillars, this magazine will give voice to community adaptation stories, the local heroes of climate action. Whether it is women in arid regions leading water harvesting projects, youth turning waste into wealth, or traditional custodians reviving indigenous conservation practices, we will celebrate the power of agency that thrives even in the face of adversity.

We believe that credible, evidence-based journalism is as essential to climate action as innovation and policy. Facts alone do not move people, but stories rooted in those facts can.

Our editorial approach blends rigorous reporting with compelling storytelling, drawing from science, lived experience, and African wisdom.

As we launch this inaugural issue, we invite you our readers, partners, policymakers, and communities to walk with us in this journey of rediscovery and regeneration. This magazine is not just a publication, rather it is a platform for dialogue, a bridge between experts and ordinary citizens, and a call to rethink our relationship with the natural world.

The work ahead is vast, but so is the promise. Every quarter, we will bring you insights, data, and inspiration to help navigate the complex terrain of sustainability. Together, let us nurture a narrative that does not end in despair but begins in possibility.

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BULLETIN

Men's love affair with *nyama choma*, cars drive their carbon footprint to the roof

Men's love affair with *nyama choma* and their liking for cars are driving their carbon footprints to soar 26% higher than those of the average woman. Red meat, mostly beef and mutton, is the delicacy most preferred by men, and conversely it is the most carbon intensive of all foods.

It has also been established that married women tend to have more carbon footprint than their single counterparts, as they are willing to adapt their food preferences to align with their husbands, leading to an increase in red meat consumption. Both single men and women were found to have lower carbon footprints.

On transport, the research explains that men are more likely to take work-related trip including



daily commutes, leading to their substantial portion of their carbon output. On the other hand, women, especially those with children, are less likely to be found in the office grind. This reduces their work-related carbon emissions.

This is according to a study in France by the Grantham Research Institute on Climate Change and the Environment at the London School of Economics (LSE) and the Center for Research in Economics and Statistics (CREST).

Tana Delta faces a salty future as Indian Ocean rush inside to welcome R. Tana

More than 15,000 residents in Tana Delta Subcounty are staring at a humanitarian crisis as rising Indian Ocean tides pushes seawater further inland, poisoning fresh water, farmland, and livelihoods.

Across the delta, from Chara to Kone Masa, Ozi, Kilelengwani, and Dide Waride, farmers, herders, and fishermen are witnessing their life-line fade.

"The sea is eating the river," says Hassan Galgalo. "We can't farm, we can't fish, and even our animals are suffering. The water is bitter."

What began more than two decades ago as a seasonal intrusion of seawater during unusually high tides has now become a full-blown crisis. Fish that once thrived in fresh water have vanished. Rice, maize, tomatoes, and watermelon farms lie abandoned, their soils too saline for crops. Residents trek over 20 kilometres in search of drinkable water, while livestock die along the cracked banks of a dying river.

During a visit to Kalota Brook, where the sea has breached the



riverbank, the sight is heartbreaking. A group of men and women work under the blazing sun, filling sacks with sand and piling them into makeshift barriers.

"We've been here for ten days, trying to stop the sea ourselves," says Galgalo. "But we can't fight this alone. We need help."

Experts have long warned that Tana Delta, which is a flat, low-lying wetland network of river channels, mangroves, and floodplains is among the most vulnerable ecosystems in East Africa to climate change.

The combination of sea-level rise, reduced river flow from upstream dams, and degraded mangroves has left the region exposed.

Coffee farmers score big as Kenya passes EUDR test

Kenyan coffee farmers and exporters will continue to have easier access to European Union's (EU) market after the country was classified as low-risk for deforestation under its Deforestation-Free Regulation (EUDR), set to take effect December 30, 2025.

EUDR is a legislation aimed at reducing deforestation and forest degradation driven by EU consumption. It requires businesses to demonstrate that certain products including coffee, oil palm, rubber, cocoa, timber, beef, and soybeans are not linked to deforestation before placing them on the EU market.

Agricultural expansion drives almost 90 % of global deforestation, with more than half of forest loss being due to conversion of forest into cropland, whereas livestock grazing is responsible for almost 40 % of forest loss.

The long-awaited first list of country risk classifications under the EUDR marks a critical milestone in the road towards the regulation's implementation.

Being classified as low-risk for countries like Kenya, Uganda, Tanzania, Rwanda and other coffee and cocoa producing African countries means they face simpler due diligence, cutting paperwork and costs for producers.

However, it is not all smooth sailing. Globally, small farmers in places like Africa and Southeast Asia are struggling with EUDR's traceability rules, which require geo-location data for every shipment. This means traceability down to the land where coffee was grown, demanding GPS coordinates and proof that no deforestation occurred after December 2020.

Smallholder farmers, who produce 80% of the world's coffee, often lack the resources for geolocation mapping and



CONTINUED ON PG 6 >>

Coffee farmers score big as Kenya passes EUDR test

CONTINUED FROM PG 5 >>

documentation, making compliance difficult. This will require exporters and cooperatives to invest in digital systems and audits, increasing costs that may be passed down the supply chain.

Deforestation and forest degradation are taking place at an alarming rate across the world. The Food and

Agriculture Organization of the United Nations (FAO) estimates that 420 million hectares of forest, about 10% of the world's remaining forests have been lost worldwide between 1990 and 2020.

Deforestation and forest degradation contribute to the global climate crisis in multiple ways. Most importantly, they increase greenhouse gas emissions by permanently removing

carbon sink capacities, decreasing the climate change resilience of the affected area and substantially reducing biodiversity and resilience to diseases and pests.

Deforestation alone accounts for 11 % of greenhouse gas emissions as stated in the Intergovernmental Panel on Climate Change (IPCC) special report on climate change.

UN project Kenya coffee farms could become barren by 2050



4

Kenya's world-renowned coffee industry faces an existential threat, with United Nations projections revealing that up to 90% of the country's prime coffee-growing lands could become unsuitable by 2050.

The stark warning comes from the Food and Agriculture Organization's (FAO) newly released 2025 Global Deforestation Report, which blames rising temperatures, erratic rainfall patterns, and widespread deforestation for amplifying climate vulnerabilities in East Africa's coffee heartlands.

Smallholder farmers, who produce over 70% of the country's annual coffee output, stand to lose the most. "This is a wake-up call," says FAO Director-General Qu Dongyu. "Deforestation is stripping away the natural buffers that protect coffee from climate extremes, turning fertile highlands into barren zones."

Kenya's coffee thrives in the cool, misty altitudes of regions like Nyeri, Kirinyaga, Kiambu, Murang'a and Kisii, where temperatures hover between 15-24°C and consistent bimodal rains sustain the arabica bean's delicate growth cycle.

But FAO climate models, integrating data from NASA satellites, IPCC scenarios, and on-ground deforestation metrics, forecast a dramatic shift. By 2050, under a moderate emissions pathway, average temperatures in these zones could surge by 2-3°C, pushing beyond the 30°C threshold, which is lethal to coffee plants.

Alarm as scientists find microplastics lodged in human brains

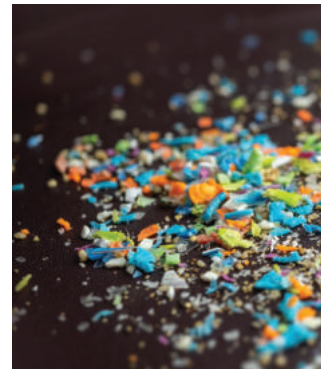
A new study published in Nature Medicine has found traces of microplastics lodged in human brains. In some cases, they estimated up to 10 grams, about the weight of a crayon, could be present in a single brain.

Animal studies already suggest that microplastics can block brain cells, trigger blood clots and strain the heart.

For humans, evidence is still thin, but scientists are warning that the risks could include heart attacks and strokes.

The World Health Organization says it's too early to declare plastics a direct health hazard, but experts agree that the sheer spread of plastic pollution makes reducing exposure urgent.

The environmental crisis is already visible. Fish pulled from Lake Victoria show signs of plastic contamination. Coastal communities in Tanzania complain of clogged nets and plastic-filled catches.



Money meant to protect forests, ocean and wildlife is not reaching local communities

Money meant to protect forests, oceans and wildlife is not reaching the people who live closest to nature, a new study has found. The International Institute for Environment and Development (IIED), a United Kingdom-based policy research organisation, along with partners in five countries, conducted a detailed analysis of biodiversity funding from the Global Environment Facility (GEF).

The research shows that a major reason for the funding gap is GEF's reliance on large international agencies, development banks, and national government offices to distribute the money.

The 'implementing agencies' and 'operational focal points' often make decisions without involving the communities the funds are meant to support. This system creates confusion, delays and often locks out small community groups.

The findings also highlighted that communities were often brought into projects after they had been designed and approved, giving them no real say in them.



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Climate change takes extreme toll on African countries - UN reports

By Peter Ngare

Extreme weather events and the impacts of climate change are greatly affecting every facet of socio-economic development across Africa.

United Nations World Meteorological Organization (WMO) in "State of the Climate in Africa 2024 Report," indicates that these disruptions are undermining agricultural productivity and energy supplies, worsening food and water insecurity, and risking the health and education of millions.

Highlighting Africa's particular vulnerability to the warming planet, WMO said that floods, heatwaves and droughts forced thousands out of their homes across the continent last year.

Another report by the Internal Displacement Monitoring Centre showed that these weather events are driving increasing displacement across the continent, with the number of internally displaced people now six times higher than 15 years ago.

The Center for Global Development (CGD) warns that more than 200 million people across Africa could face extreme hunger and undernourishment in the long run as extreme weather events impact crop yields and farmland value.

CGD says that droughts are likely going to push more than 50 million people into water distress, while agricultural production in Africa could experience losses of up to 2.9% by 2030

50%

Zimbabwe suffered the worst, with yields 50 per cent less than the five-year average. The yields were below average by 43 per cent in Zambia.

and 18% by mid-century, while the value of farmland will drop between 36% and 61%.

According to WMO, between March and May 2024, floods and landslides triggered by exceptional rainfall killed hundreds of people and displaced more than 700,000 in Kenya, Tanzania, Burundi and other parts of East Africa.

Further, East Africa's experienced first-of-its-kind cyclone that brought more torrential rain and high-speed winds to the already heavy-battered region by floods, resulting in further casualties and displacements. Conversely, the same region received less than average rainfall between October and December, raising food security concerns.

In southern Africa, widespread and prolonged drought conditions led to the worst electricity blackouts in living memory in Zambia in October, with neighboring Zimbabwe and Malawi also badly affected.

In Lake Kariba, the world's largest artificial lake located along the border between Zambia and Zimbabwe, waters last year reached critically low levels, affecting hydroelectric power generation and triggering prolonged blackouts and economic disruptions.

The aggregate cereal yields for southern Africa countries dropped 16 per cent below the five-year average. Zimbabwe suffered the worst, with yields 50 per cent less than the five-year average. The yields were below average by 43 per cent in Zambia.

In northern Africa, extensive drought was witnessed with some countries such as Morocco's agricultural output dropping 42 per cent below the five-year average as the country grapples with a six-year-long drought.

WMO said heatwaves are also a growing threat to health and development and Africa, noting that the past decade has also been the warmest on record. Blistering temperatures already impact children's education, with schools closing in March 2024 in South Sudan as temperatures reached 45°C.

Beyond education, rising temperatures across the continent are making Africa more water-scarce and food-insecure, with North African countries the hardest-hit. North Africa recorded the highest temperature change at 1.28°C above the 1991-2020 average, making it the fastest-warming sub-region of Africa.



CLIMATE CHANGE

By Ellys Mugunda

Kenya has emerged as a rare success story in the fight against deforestation, posting a net forest gain of 173,000 hectares since 1990, according to the United Nations' Food and Agriculture Organization's (FAO) Global Forest Resources Assessment (FRA) 2025 report released October 21.

The gains have come against the backdrop of the East Africa region shedding 157 million hectares annually in the latest period, with Tanzania destroying 469,000 hectares yearly, which is third-worst globally, due to mining and shifting cultivation. Uganda lost 28,100 hectares per year and Ethiopia's 26.7 million hectares mainly for teff farming and eucalyptus plantations.

Home to 16% of global forests (662.6 million hectares in 2025), Africa lost 116.9 million hectares since 1990, an 15% erosion rate double the world's 4.7%. Africa's deforestation, at 3.45 million hectares yearly, is largely agricultural as smallholder farms and commercial plantations clear primary forests.

Once plagued by annual losses of 28,800 hectares between 2000 and 2015 fueled by charcoal production, farming encroachment, and droughts, Kenya has reversed course dramatically.

Forest cover climbed 1.47% yearly in the past decade, reaching 3.914 million hectares in 2025, up from 3.741 million in 1990. This equates to about 6.7% of Kenya's land area, a modest but critical buffer against climate woes in a country where forests underpin water security and generate livelihoods for millions.

Experts credit Kenya's turnaround to

Kenya registers marginal gains in fight against deforestation



ambitious policies like the 2016 National Climate Change Action Plan and the 10% tree cover target under Vision 2030, bolstered by community-led initiatives. These include agroforestry and mangrove restoration along the coast and planting of millions of seedlings annually through government, civil society and community initiatives.

In the Aberdare and Mau forests, Kenya's water towers, reforestation has reclaimed degraded lands, helping to reduce soil erosion and boosting carbon sequestration.

Mangroves, which are part of the global 15.5-million-hectare network that gained 65,900 hectares yearly, now shield coastal communities from rising seas and storms.

Moreover, Kenya's 37.2 million hectares of other wooded land, ranking ninth globally, provides non-timber resources like honey and medicinal plants, sustaining rural economies without

felling mature trees.

However, charcoal remains a thorny issue, with illegal logging in dryland areas threatening fragile acacia woodlands.

According to the report, there has been a slowdown in global annual forest loss to 4.12 million hectares, the lowest in decades. Earth's forests span 4.14 billion hectares, or 32% of land surface, down marginally from 4.20 billion hectares a decade ago, with net losses halved since the 1990s thanks to afforestation and reduced tropical clearances.

Globally, deforestation dipped to 10.9 million hectares annually in the latest period, offset by 6.78 million hectares of expansion through tree planting and natural regrowth.

However, deforestation hotspots persist, particularly in the tropics where 88% of losses occur, driven by agriculture, logging, and urbanization. Primary forests, which are vital biodiversity reservoirs, shrank by just 1.61 million hectares yearly, a 59% improvement from 2000 levels, while planted forests increased to 312 million hectares worldwide.

The FRA report notes that disturbances like fires scorched 76 million hectares globally in recent years, with Africa bearing 60% of the brunt.

Still, with 23% of its forests protected, Kenya is poised to exceed its restoration pledges under the Bonn Challenge, aiming for 5.1 million hectares by 2030.

Globally, the FRA 2025 signals cautious optimism. Carbon stocks stabilized at 714 gigatons, with forests absorbing 35% of emissions via 247 gigatons in aboveground biomass. Biodiversity hotspots, like 813 million hectares in protected zones (up 251 million since 1990), shield endangered species, though 29% of forests remain primary down 110 million hectares overall.



CLIMATE CHANGE

By Peter Ngare

The future of coffee production in East Africa hangs in the balance, teetering under the weight of climate change. However, the declining production in the region is not an isolated case, as the effects of climate change are also taking a toll on other regions where one of the most widely consumed beverages globally is grown.

According to the Global Coffee Report in May, coffee growers in Kenya entered the 2024-25 harvest season with high hopes of bouncing back to a production level of 750,000 bags. However, by mid-February this year, those dreams had faded.

A report released on January 28, 2025, by Swiss coffee merchant Sucafina projected that Kenya's coffee volumes were to drop by 10 to 15 percent.

While regulatory hurdles played a role in this downturn, the specter of climate change loomed larger. A 2024 survey by the Fairtrade Foundation found that a staggering 93% of Kenyan coffee farmers are already feeling the heat of climate change.

8

Coffee trees thrive in specific climatic conditions, requiring just the right mix of humidity and rainfall to flourish. Unfortunately, the changing climate is disrupting these delicate conditions and intensifying the spread of diseases that threaten coffee plants. These include the coffee leaf miner, a bug that destroys coffee leaves, and coffee berry disease, a fungal infection capable of decimating over 80% of crops.

In a desperate bid to combat disease and pests' outbreaks, farmers are turning to herbicides and insecticides, which, while effective in the short term, can wreak havoc on soil quality and degradation and pose long-term health risks to farming communities and consumers.

And as temperatures rise and rainfall patterns become more unpredictable, coffee farmers in East Africa are facing a shrinking water supply. According to a BBC report last year, producing a single cup of coffee requires up to a staggering 140 liters of water. With the skies refusing to cooperate, many farmers are increasingly turning to river water to quench their crops' thirst. But this growing dependence on river water is putting even more pressure on an already strained water resource.

In various regions of Kenya, farmers are lamenting declining harvests due to pro-

Extreme weather spell doom to coffee production in East Africa



93%

According to Fairtrade Foundation, 93% of coffee farmers in Kenya are feeling the heat of climate change.

According to Fairtrade Foundation, 93% of coffee farmers in Kenya are feeling the heat of climate change.

longed droughts, sweltering heat, and insufficient rainfall. The hot, dry weather is causing trees to shed their leaves due to defoliation. When trees lose a significant portion of their foliage, at least 50% of the energy that would typically go into producing fruit is redirected to growing new leaves just to keep the tree alive.

"The weather here in Kenya and much of East Africa is getting drier and hotter every year, just like we have seen in so many other parts of the globe," a coffee manager recently shared with Global Coffee Report. "Today, we are witnessing regions in Kenya where there is not even a fly crop left."

Fly crop is the second smaller harvest typically harvested from April to June, and has traditionally accounted for between 20 and 25 per cent of total annual coffee production in East African region.

"Last year, we faced a drought that left our coffee in dire straits. This year, the trees have shed a lot of leaves due to the lingering effects of that drought, resulting in a disappointing yield of coffee beans," a grower from the Mount Elgon Coffee and Honey Cooperative in Western Uganda told Global Coffee Report.

To add insult to injury, water shortages in Uganda's coffee-growing zones are exacerbating the situation. Farmers, predominantly women, find themselves spending countless hours hunting for water instead of nurturing their coffee crops. On top of that, they must gather firewood and food supplies, all while squeezing in two to four hours of labor on the farm and managing household duties.

Meanwhile, in Tanzania, the story takes a different twist: "With climate change, it is a game of extremes – too much rain or too little. Here, we have been on the soggy side of the spectrum. Our rainfall has actually doubled, and last year, we only managed to harvest a mere 25 percent of our usual crop," shared a coffee estate manager from the Kilimanjaro region.

In other parts of the world, the story is the same as in East Africa. In Indonesia the situation is similar to Tanzania, where coffee production in 2023/24 declined by 16.5 per cent year-on-year on the back of excessive rains in April-May 2023 that damaged coffee cherries. Exports dropped by 23 per cent.

On the other hand, Vietnam and Brazil are facing similar problems being experienced by Kenya and Uganda coffee farmers. In Vietnam, prolonged dry weather caused a 20 per cent drop in coffee production in 2023/24, with exports falling by 10 per cent for the second consecutive year as was in Brazil, where dry and hot weather conditions prompted successive downward revisions to the 2023/24 production forecast.

CLIMATE CHANGE

Melting glacier, vegetation loss and invasive species threaten the resilience of Mt Kenya

Half of the vegetation in Mt Kenya Forest will disappear over the next 15 years due to climate change and human activities.

According to findings of new research about the impacts of climate change in the Mt Kenya forest ecosystem, 49–55% of vegetation cover across the forest areas will be lost by 2040, with the most pronounced losses likely in lower zones, which are more sensitive to climate-induced vegetation stress.

This comes as other studies projects that Mt. Kenya's remaining glaciers could vanish entirely by 2030, erasing a natural marvel that has stood tall for generations. Melting glaciers increase the risk of glacial lake outburst floods, endangering lives and property.

Mount Kenya forest is critical in carbon sequestration, water regulation, and biodiversity conservation, supporting endemic species. Additionally, the forest ecosystem serves as a major water tower, supplying freshwater resources that are essential for hydroelectric power, agriculture, and urban consumption.

"Despite its ecological significance, Mount Kenya's forest is increasingly vulnerable to climate change and anthropogenic pressures. Rising temperatures and shifting precipitation patterns have altered forest dynamics, vegetation composition, and species distributions, leading to reduced forest resilience.

"Moreover, human activities such as ille-

By Dan Kaburu

gal logging, agricultural encroachment, and unregulated grazing exacerbate forest degradation, further threatening ecosystem stability," the study on vegetation loss indicates.

According to the research, high-elevation ecosystems such as Mt Kenya are particularly sensitive to warming trends, with species migrating downslope in search of favorable conditions. This migration disrupts existing ecological gradients, leading to potential species loss and altered carbon cycling.

Furthermore, the study argues, the rapid retreat of Mount Kenya's glaciers, primarily attributed to rising temperatures, has intensified hydrological imbalances, reducing water availability for both human and ecological needs.

"Significant widespread vegetation loss and bare soil exposure was observed between 2010 and 2020. This observed decline correlates with increased deforestation, agricultural expansion, and the impact of climate extremes such as erratic rainfall and rising temperatures. changes may compromise the Mt Kenya Forest ecosystem's ability to provide critical ecosystem services such as carbon storage, habitat connectivity, and hydrological regulation," it shows.

The study highlights the importance of adaptive conservation strategies and

their implications for forest management and conservation within the Mt. Kenya Forest Ecosystem, recommending that conservation efforts of the forest must be tailored to enhance ecosystem resilience and maintain biodiversity.

"On the ground, sustainable land-use planning can be operationalized through zoned agroforestry, payment for ecosystem services (PES), and stricter regulation of encroachment and charcoal production. Policies such as the Participatory Forest Management (PFM) regulations and the National Climate Change Action Plan (NCCAP) can be leveraged to align conservation with livelihood needs, ensuring both ecological integrity and socio-economic sustainability," the study recommends.

And as Kenya's tallest mountain loses vegetation and glacier, a new invasive species is choking Lake Ellis, a breathtaking alpine lake. At the lake's outlet, where water exits and enters an underground tunnel believed to form a river flowing east toward Tharaka-Nithi County, an invasive plant is slowly spreading. The plant, a mix of green, brown, and purple hues, is floating on the water and gradually creeping back toward the lake itself.

So far, no scientific research has identified the species or assessed its ecological impact. A Google search offers no confirmation either. Environmentalists and mountaineers now worry that if unchecked, the weed could eventually cause the lake to dry up.

By Juliet Akoth Ojwang

The scorching afternoon sun stretches across the semiarid landscape of Marereni, in Kilifi County, where salt and sea shape both the land and the lives that depend on it.

Known for its extensive salt mining operations, this remote settlement lies at the heart of the country's north coast salt belt.

Yet beyond the glint of salt pans, Marereni is also home to one of

A Kenya marine biodiversity credit program restores mangroves and livelihoods

the coast's most vital ecosystems: a mosaic of fringing, estuarine and creek mangrove forests that support rich biodiversity. This is the stunning backdrop to the site of restoration projects aimed at both revitalizing these important mangroves and the communities that tend to them.

In recent years, Marereni's mangroves have been disappearing due to conversion pressure for solar salt works, aquaculture and human settlement, according to information



The establishment of mangrove nurseries and involvement in restoration activities, such as planting, have become valuable sources of income for many women in Mida Creek and Marereni. Image by Juliet Ojwang.

from the Kenyan government's National Mangrove Ecosystem Management Plan 2017–27.

The plan underscores that the loss of mangrove cover significantly weakens coastal protection, leaving shorelines more susceptible to erosion, storm surges and rising sea levels. This not only heightens the vulnerability of inland areas and infrastructure to climate-related risks, but also disrupts vital marine ecosystems, degrading crucial breeding and nursery grounds for fish, crustaceans and other species, leading to declining fish stocks and reduced biodiversity.

For coastal communities, such as those in Marereni, the loss of mangroves threatens their very livelihoods. Many depend on mangrove ecosystems for fisheries, fuelwood, construction materials and a range of other vital services. As the mangroves vanish, so do economic opportunities, exacerbating poverty and food insecurity in

these communities.

Since 2022, a California-based nonprofit organization called Seatrees has been working with communities in Marereni to restore and protect coastal and marine ecosystems as a natural solution to climate change. This follows similar work the organization began in 2020 in Mida Creek.

Most of Seatrees' projects globally have been funded through traditional means, including corporate and individual donations and grants. But in 2024, Seatrees started offering donors the option of buying \$3 "biodiversity blocks," each of which represents a single tangible conservation action, planting one mangrove tree on site in Marereni.

Seatrees touts these "blocks" as part of the world's first marine biodiversity credit program, designed to restore and protect natural marine ecosystems that historically have been relegated to the sidelines of conservation funding.



ADAPTATION

The concept of marine biodiversity credits comes on the heels of recently developed land-based biodiversity credit programs, which fund projects such as forest conservation and species habitat restoration.

They work by assigning financial value to measurable conservation outcomes, allowing buyers to support specific biodiversity gains in exchange for standardized biodiversity credits. These credits can then be used by companies or individuals to meet voluntary environmental targets or demonstrate a commitment to biodiversity stewardship.

When asked, Kevin Whilden, co-founder and director of Seatrees, says the goal of their project is to shift conservation financing away from one-time donations and toward a long-term, scalable model.

On the ground in Marereni, so far, Seatrees has issued 300,000 marine biodiversity credits totaling \$900,000, mostly through individual buyers and small companies. A Seatrees count earlier in 2025 showed they had already planted 190,000 mangrove trees, with 30,000 new trees planted each month.

Restoring Marereni's mangroves

Muyu wa Kae is an area within the Seatrees restoration site, which covers 600 hectares (1,483 acres). The work here is carried out in partnership with a local NGO called Community Based Environmental Conservation (COBEC). Seatrees sends funding to COBEC, which implements projects on the ground.

COBEC's approach goes beyond just planting trees. The organization works directly with local communities, ensuring they benefit from restoration efforts. "You cannot implement conservation projects without community participation," says Edward Mwamuye, COBEC's



Juvenile mangrove trees flourish at a Seatrees restoration site in Mida Creek, Malindi sub-county, Kilifi. Image by Juliet Ojwang.

program manager. "We invest in livelihood enhancement programs such as smart agriculture, beekeeping and small businesses."

Community members form their own groups and turn mangrove restoration into a livelihood by establishing and maintaining mangrove nurseries. COBEC and Seatrees support the groups by providing some materials used in growing propagules, which group members nurture over the course of several months until they are ready for planting.

COBEC then purchases the saplings for its Seatrees project sites, where mangroves have been degraded from tree cutting for fuel and home construction, sand deposition or livestock grazing. The nurseries also sell to other organizations. With the income earned, some groups are able to start small side businesses such as goat rearing.

Currently, there are more than 30 project groups in Marereni involving 640 community members (218 men, and 422 women). These groups cultivate four species of mangrove native to the Kenyan coast: Rhizophora mucronata, Avicennia

marina, Ceriops tagal and Bruguiera gymnorhiza. This initiative has become the primary income source for participating community members.

Zena Hamisi, chairperson of the Neema Muslim Women Group in Marereni's Mto wa Mawe Creek, says the project has uplifted her and her fellow members. "COBEC has held our hand and supported us to a point where we now earn income," she says. Each sapling sells for KES 20. Half the earnings are shared among group members and the other half go into a savings account for other income-generating projects.

One strategy Seatrees and COBEC use to address illegal deforestation, a major obstacle to mangrove restoration, is COBEC's Treeduction Scholarship Fund. The initiative offers 300 scholarships over 10 years to members of local communities, aiming to support school fees and the establishment of woodlots to grow non-mangrove trees that could be cut as an income source, helping to shift the logging pressure away from mangrove forests.

Emmanuel Gona, a Muyu wa Kae fisherman, says that before the restoration efforts, fishers barely caught fish worth KES 500 shillings per day, but now they can make between KES 900 and KES 1,000. Research has proven that mangroves often support rich fish and crustacean communities.

Globally, despite widespread investment in mangrove restoration, survival rates remain low, according to a 2022 study, due to inappropriate site selection, limited community engagement and planting in unsuitable hydrological or sedimentary conditions.

<https://news.mongabay.com/2025/07/a-kenya-marine-biodiversity-credit-program-restores-mangroves-and-livelihoods/>

ADAPTATION



Clarice Moipoi, a member of the Nadupoi Women Group, tends to African nightshade plants. Image by Juliet Ojwang for Mongabay.



The resilient spirit of Maasai women defy traditions and drought

Beekeeping is a vital source of income for the Nadupoi Women Group. The project has however been affected by changes in climatic conditions. Image by Juliet Ojwang for Mongabay.

By Juliet Akoth Ojwang

In the heart of Ololokitosh village, just 30 kilometers south of Nairobi, the mid-morning sun casts a golden glow over a vibrant scene.

At the village's borehole, a lifeline for this pastoralist community, livestock crowd around water pans, drinking deeply, while nearby, a group of Maasai women gather, not just for water, but for something far greater: connection, resilience, and hope.

Welcome to the world of the Nadupoi Women Group, a collective of 28 women, mostly elderly, who are rewriting the rules of tradition and defying the harsh realities of climate change.

In a region where unpredictable weather and prolonged droughts threaten their way of life, these women are embracing "climate-smart" agriculture and innovative projects to secure a sustainable future. Their story is one of courage, unity, and transformation.

At the helm of this inspiring movement is Rebecca Koising'et, a mother of 11 whose vision for change took root in 2013: "I started this group to unite women and help each other during challenging times," she says, her voice steady with purpose.

In Maasai culture, women have traditionally been sidelined, with property and decision-making power resting firmly in the hands of men.

Despite Kenya's 2010 Constitution guaranteeing equal property rights, rural communities like Ololokitosh remain steeped in tradition, leaving women dependent and voiceless.

For many, the only income comes from

selling milk, a livelihood decimated by recent droughts that have wiped out herds and left families struggling.

Widows, in particular, face dire circumstances, with no husbands to provide support and mounting expenses like school fees. Rebecca's mission was clear: create a platform for women to gain independence and tackle these challenges together.

A hub of innovation

On a 3-hectare plot granted by the Kajiado county government, the Nadupoi Women Group has turned vision into action. Their initiatives that include fish farming, crop cultivation, and beekeeping are a testament to their adaptability.

When a brutal drought from 2020 to 2022 threatened their fish farming project, the group secured support from the Safaricom Foundation, which installed a solar-powered pump to draw water from an underground reservoir. The result? Four successful fish harvests, with tilapia, a Kenyan delicacy, fetching KES 250 Kenyan shillings per kilogram at market.

"We sold around 200 fish per harvest, earning a modest profit," says Jane Parletuan, the group's secretary, her pride evident despite the challenges of dwindling water levels that sometimes suffocate the fish.

The women have also embraced climate-smart agriculture, using drip irrigation and crop diversification to grow beans, kale, and indigenous vegetables like African nightshade.

Beekeeping, another venture, produces honey sold in branded 400-gram tins, though drought poses a constant threat. "Without water or nectar from flowers, the bees can't survive," says group member Clarice Moipoi. Yet, when

conditions allow, the profits are shared equally, transforming lives.

Beyond agriculture, the Nadupoi Women Group is a lifeline of mutual support. Through their table banking system, members contribute KES 1,800 monthly, with a lower option of KES 800 for those in need.

Loans, offered at a 5% interest rate, help cover urgent expenses, while KES 1,000 from each member's contribution is saved in a group account, and the rest rotates among members in a merry-go-round system. Remarkably, no one has ever defaulted on a loan.

For widows like Maria Kitiyo, a mother of 11, the group has been a game-changer. "If it weren't for this group, where would I have gotten the money to pay my children's school fees?" she asks.

Hellen Makui, another widow with nine children, echoes this sentiment: "Whenever one of us has a problem, we help each other out." From medical bills to school fees, the women have created a safety net rooted in solidarity.

Challenges and dreams

Despite their successes, the road isn't easy. Crop theft, due to the lack of fencing around their land, remains a persistent issue. The absence of basic infrastructure, like toilets at their meeting point, complicates gatherings.

Yet, the Nadupoi Women Group stands as a beacon of hope. Their name, meaning "to prosper" in Maasai, is more than a label. It's a promise.

The article has been republished from Mongabay: <https://news.mongabay.com/2024/12/from-bhutan-to-nigeria-kenya-women-endure-climate-change-differently-than-men/>

ADAPTATION

Greening the desert: Wajir farmers lead in climate resilience

By Neville Ng'ambwa

Wajir County is part of Kenya's vast Arid and Semi-Arid Lands (ASALs) that cover roughly 80 % of the country's landmass, and host some 16 million people. This region has long been dismissed as barren and unproductive. Temperatures often hover around 40 °C, rainfall is scant, making pastoralists confront repeated droughts that kill livestock, eroding both wealth and tradition.

The climate has only worsened. Since 1980, arid zones have expanded from roughly 72 % to 81 % of Kenya, an increase of around 50,000 km², intensifying drought stress.

The Horn of Africa drought from 2020 to 2023 claimed nearly half of the livestock and pushed the region into a national emergency. In 2022 alone, over 11 million animals died across Kenya with northern ASALs baring the heaviest toll.

Such losses ripple through communities. Milk yields drop, incomes vanish, grazing traditions collapse, and families cut spending, often sending children to herd instead of attending school or pushing underage girls into early marriage.

Faced with these challenges, a quiet revolution is underway in Wajir County.



Solar-powered pump with water tank in Wajir Abdi's Farm | Photo by Neville Ng'ambwa.



Abdi Billow Wajir farmer making a difference in unprecedented region of the country | Photo by Neville Ng'ambwa

Abdi Billow turned 30 ft of solar-powered well irrigation into a thriving fodder farm and dairy operation. In a land long labelled infertile, Abdi's fields are now lush, his dry hay stocks buffer animals against drought, and his Friesian cow yields nearly 40 liters of milk daily under zero-grazing, a sharp departure from traditional pastoral methods.

Abdi's model proves that strategic irrigation and green fodder can defy harsh climatic conditions and foster food security.

A few kilometers away, Muktar Maalim is pioneering fish farming. His solar-shaded, elevated pond challenges expectations in a desert county and promises dietary diversity and local commerce otherwise reliant on distant imports.

These innovators represent Wajir's resilience. They leverage climate-smart agriculture of irrigation, solar pumps, and storage to deal with rising temperatures and water scarcity, trends driven by climate change over recent decades.

Their efforts align with national strategies to turn ASALs into engines of productivity. Kenya's ASALs hold 50 % of the nation's livestock, sustain 90 % of the meat consumed, and contribute nearly 13 % of GDP despite receiving less than 1 % of land under irrigation.

Abdi and Muktar illustrate how climate resilience arises from transformation, not retreat. Their successes suggest a shift by showing that with well water, solar power, and adaptation, ASAL communities can nurture crops and livestock amid extreme heat. Their farms provide fodder, milk, fish, and hope where desert once held dominion.

72% - 81%

Since 1980, arid zones have expanded from roughly 72 % to 81 % of Kenya, an increase of around 50,000 km², intensifying drought stress.

ADAPTATION

By Gilbert Nakweya

Salina Chepsat and a neighbor are loading tomatoes into a vehicle in the scorching midday heat. Chepsat picked the produce earlier that morning from her farm in the remote village of Lo-boi, a stone's throw from Lake Bogoria. From there, it is headed to the market in the town of Marigat, 30 kilometers away.

Amid the overlapping challenges facing her community in largely semiarid Baringo county, repeated droughts, badly degraded land, and conflict between and among ethnic communities, the 49-year-old widow and mother of three is prospering as a farmer.

This season's bumper harvest is special to her, because she plans to use the proceeds of her labor to roof and plaster a new house she has been building for the past two years.

"When I settled here, I was mainly planting maize, beans and millet. Although I was earning income to sustain me and my children, I was not making enough to construct a good house like the one I am building," she says. "Unpredictable rainfall has been a limiting factor, especially for maize."

Chepsat learned to farm from her parents and grandparents. But for those older generations of Indigenous Endorois, agriculture was usually a sideline to herding livestock. For Chepsat, it has become a more central concern.

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She still keeps some chickens and goats, but for her livelihood she grows tomatoes, spinach, chili peppers, beans and bananas, as well as maize, millet and sorghum on the 2.5-acre plot she bought five years ago.

Chepsat credits her recent success to training she received from a local community-based organization, the Indigenous Women and Girls Initiative (IWGI), focused on women, helping them to establish and improve seed banks and kitchen gardens, and plant fruit and other trees.

The training prompted Chepsat to diversify the range of crops she plants and introduced her to techniques to make her own organic pesticides and fertilizer. She prepares soil-enriching compost from her goats' droppings, weeds she pulls up from around her farm, and organic household waste.



Alongside staples like maize and sorghum, Salina Chepsat grows lucrative produce like tomatoes, spinach, bananas, and passion fruit her small farm. Image by Gilbert Nakweya for Mongabay.

Permaculture promises peace, food and gender equality in Baringo



Making compost on a farm in Baringo County: the Indigenous Women and Girls Initiative's is training women — and some men — to make organic fertilizer and pesticides. Image by Gilbert Nakweya for Mongabay.

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The use of pesticides has been very rampant in many farms.

To protect her vegetables from voracious white fly, she soaks a mixture of ash and chili for two or three days, then carefully applies the paste to the plants' leaves.

"When I harvest food from my farm, I am confident what I am eating is safe. I don't get scared that it could be contaminated with chemicals," she says. "My farming is purely organic, my grandparents did not use pesticides but practiced crop farming successfully."

Monica Yator, the founder and leader of IWGI, says she's pleased the initiative's training has raised awareness of the potential hazards of agrochemicals among farmers around Marigat.

"The use of pesticides has been very rampant in many farms around here, and we are telling our farmers to avoid using them," she says. "They are acquired without any knowledge of use, and sometimes tomatoes are harvested the same day they are sprayed. This is a risk to the health of our people and the soils."

Awiti says low rainfall in this region means the land is not really suitable for farming. But the techniques being advocated by Yator's IWGI may play an important role in the future flourishing of Ilchamus and Endorois in this landscape. IWGI is offering practical support to pastoralist communities here to turn to agriculture to produce food, and to grow fodder for their livestock.

"We have to make good use of our farms," Yator says. "We are telling the pastoralists that even with degraded land, we can restore them and make them arable for crops and pasture for their animals."

The answers, he says, include thinking about more than just production, and accounting for access to land, fodder for animals, and affordable food for people.

The article was first published by Mongabay: <https://news.mongabay.com/2025/09/permaculture-promises-peace-food-increased-equality-in-kenyan-county/>

ADAPTATION

How the coconut tree sustains people, planet



Locals enjoying 'mnazi', one of the products derived from coconut.

By Velma Pamela

As night settles over Tezo, a town along Kenya's sandy shoreline, villagers gather beneath towering coconut palms. Here, news is exchanged, stories retold, and futures imagined. For centuries, these trees have been more than sources of food or drink. They are symbols of resilience, heritage, and, increasingly, conservation.

Across Africa, the coconut palm is a lifeline. According to the Food and Agriculture Organization (FAO, 2023), nearly 10 million households in Sub-Saharan Africa depend on coconut-related livelihoods. Its fruits, husks, sap, and fibers fuel economies, nourish families, and preserve cultural traditions. But beyond this, the coconut tree is proving to be a powerful ally in the fight against climate change.

"Coconut trees help prevent soil erosion, promote biodiversity, and act as a carbon sink," explains Lucky Kazungu, an environmentalist from Ganze in Kilifi County. "If we expand planting beyond the coastal belt, we not only improve farmers' income but also strengthen our defenses against land degradation and climate change."

The deep-rooted palms stabilize fragile coastal soils, shielding them from erosion caused by rising tides and heavy rains. Their leafy canopies provide habitats for birds and insects, fostering biodiversity in regions where forests are dwindling.

Research suggests that a mature coconut palm can absorb up to 25 kg of CO₂ annually, a small but significant contribution when multiplied across millions of trees.

For farmers like Ronnie Ngetsa of Tezo, the coconut palm is both heritage and hope. He began cultivating coconuts in 2010, inspired by his father's work dating back to 1963. Over time, he recognized that the future of this resource depended not just on harvesting, but on renewal.

"I don't just farm coconuts for business," says Ngetsa. "This tree is part of who we are. If we take care of it, it will continue to take care of future generations."

Through his nursery business, Ngetsa produces and distributes high-quality coconut seedlings across Kilifi and even to inland counties. By replanting degraded areas and supplying young farmers, he ensures that coconut farming traditions, and the ecological services the trees provide, remain intact.

Coconut farming is increasingly viewed as a sustainable, community-driven model of agriculture. Unlike crops that require heavy chemical inputs, coconut palms thrive with minimal intervention, making them an eco-friendly option for smallholders. Their versatility while producing oil, fiber, timber, and food, ensures that nearly every part of the tree has a use, minimizing waste.

Young farmers like John Chome Kiponda are embracing this vision. After planting 10,000 coconut seedlings for a private project in 2015, he realized the potential of conservation-linked farming. "That was when I knew this was the business," he recalls. "It helped us through tough times, and at the same time, we were restoring land."

Experts argue that Kenya's reliance on coconuts as a coastal crop underestimates its potential. With careful adaptation, coconuts can be grown inland, particularly in semi-arid zones where they can rehabilitate degraded soils and provide climate-resilient livelihoods.

Challenges remain. Erratic rainfall patterns and prolonged droughts, made worse by climate change, threaten yields. Farmers still face limited access to markets, credit, and technical support. Yet the resilience of the coconut tree mirrors the determination of the communities who depend on it.

The article has been republished from Bird Story Agency: <https://www.bird.africanofilter.org/stories/coconut-trees-fuel-family-livelihoods-through-farming-and-palm-wine-in-coastal-kenya?locale=en>



A section of a coconut tree farm in Tezo, Kilifi County, Kenya, April 2025. Photo: Velma Pamela, bird story agency.

ADAPTATION

**By Neville
Ng'ambwa**

In the heart of Kenya's Central Highlands, the lush green fields of Murang'a hum with the quiet rhythm of tea picking, sorting, and drying. A livelihood that supports thousands of smallholder farmers across the region.

But behind the scent of freshly processed tea leaves lies a lesser-known story of sustainability, resilience, and a community that understands its place in the global climate puzzle.

Kenya's tea sector is the largest in Africa and a major foreign exchange earner. In Murang'a, the KTDA managed tea factories form the backbone of this economy, processing millions of kilograms of green leaf each year.

ers to allocate portions of their farms, often the less productive edges for tree planting.

These "tea-adjacent forests" are transforming the landscape, one sapling at a time. Every rainy season, the factories supply thousands of tree seedlings to farmers, ensuring that tree planting is not a one-time campaign but a continuous climate-smart practice embedded in tea farming culture.

"We are fully aware of our energy needs and the environmental consequences. That is why we have taken deliberate steps to grow what we use. It is not just about tea. It is about tomorrow," said one factory manager during a recent visit.

While many have asked why tea factories are not switching to cleaner fuels like solar or biogas, factory managers across Murang'a are clear-eyed about the technical limitations. Steam generation for industrial tea processing requires continuous, high-heat output, something that current clean energy options in Kenya are not yet able to reliably deliver on large scale.

"We have looked at alternatives, but none have matched the consistency we need to process thousands of kilos of leaf daily," one energy supervisor remarked. "We cannot afford downtime as it means lost income for farmers and factory workers alike."

This cautious realism does not mean stagnation. On the contrary, these factories are actively exploring hybrid models that could combine improved energy efficiency, cleaner combustion techniques, and future solar thermal integration, once the technology matures.

What makes Murang'a's story even more compelling is that tea is one of the crops most sensitive to climate variability. Shifting rainfall patterns, rising temperatures, and extended droughts are already being felt in the highlands.

This makes tea farmers both contributors to and victims of climate change. And therein lies the moral imperative: tea factories that depend on firewood are also among the most vulnerable to deforestation, water scarcity, and land degradation. That is why their efforts to mitigate climate impact are not just noble, but also deeply strategic acts of survival.

Tea farmers in Murang'a embrace reforestation to safeguard livelihoods, environment

The process, though, is energy-intensive with withering, oxidation, drying, and packaging, being heavily dependent on firewood. At face value, this dependency might seem at odds with climate action. After all, biomass combustion contributes to greenhouse gas emissions.

But Murang'a's tea factories are not blind to these implications on the environment and climate. In fact, they are among the most proactive players when it comes to climate mitigation, revealing a nuanced relationship between energy use and environmental responsibility.

Understanding the double-edged sword of firewood dependency, the factories have invested in long-term, community-driven reforestation programs. The model is elegant in its simplicity and powerful in its reach.

Each factory owns and maintains hundreds of acres of land set aside solely for growing trees intended for harvest. This creates a renewable source of firewood while relieving pressure on indigenous forests. Through deliberate outreach, factories have encouraged farm-

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“We are fully aware of our energy needs and the environmental consequences. That is why we have taken deliberate steps to grow what we use. It is not just about tea. It is about tomorrow,



ADAPTATION



Asili fertilizer granules.

On the outskirts of Kabati town, 14 kilometre from Thika town, smoke rises from metal kilns, not the choking haze of pollution, but the quiet breath of innovation. Inside these furnaces, waste wood and macadamia husks are reborn as biochar, a fine, carbon-rich material that promises to heal both the planet and the soil beneath Kenyan farmers' feet.

At the heart of this revolution is Bio-Logical Green, a young climate-tech company co-founded by Philip Hunter and Rory Buckworth, whose mission is as ambitious as it is urgent: fighting climate change on a global scale while building resilience among Kenya's smallholder farmers.

"Kenyan farmers are some of the worst affected people in the world when it comes to climate change," Buckworth says. "And yet they have done nothing to cause it."

Bio-Logical's answer to that injustice is biochar carbon removal. The process begins with waste biomass – wood from eucalyptus processing, Mathenge tree and macadamia husk left behind after pulp extraction. Instead of burning or dumping this waste, the company feeds it into high-temperature pyrolysis kilns.

"We heat the biomass to about 350 degrees," Buckworth explains. "That releases carbon monoxide and methane, which we reuse to fuel the process. The result is a stable form of carbon called biochar, which can lock up carbon for up to 1000 years."

Once cooled, crushed, and blended with compost manure, the biochar becomes an organic fertilizer sold to smallholder farmers at subsidized rates, thanks to proceeds from Bio-Logical's carbon credit sales.

Sponsored Content

How Bio-Logical is using biochar to fight climate change and empower Kenyan farmers

By Peter Ngare and Dan Kaburu



Rory Buckworth

The impact is two-fold: carbon is sequestered underground, and soil health is dramatically improved.

"Biochar balances soil pH, boosts water retention, and enhances microbial life," Buckworth says. "Farmers see better yields and more resilient crops, even in harsh conditions."

Behind the quiet hum of the kilns is an intricate supply chain. Waste is aggregated from timber mills and fruit processors across the region, providing a steady stream of raw material and an income for local suppliers.

Each kiln processes about a tonne of biomass per cycle, producing biochar after roughly 10 hours. Once quenched, crushed, and mixed with compost, the material becomes part of Bio-Logical's organic fertilizer, Asili, a product now spreading steadily across Kenya's farms.

"Farmers are naturally cautious about new products," Buckworth admits. "They don't have the luxury of experimenting too much. That's why we do field demonstrations and work with partner organizations to prove that our solution actually works."

Beatrice Nyambura, a farmer in Kandara has been using Asili fertilizer for the past two years. She attests that since she switched from chemical fertilizers, she has seen significant increase in maize and vegetables production in her farm.

Two years since beginning operations, the company sells around 5,000 bags of fertilizer per month. Demand is rising as farmers see results that include improved soil structure, higher yields, and reduced dependency on expensive synthetic fertilizers.



George Kamunya

Continued on Pg 20 >>



Bags of Asili fertilizer delivered to a farmer in Juja, Kiambu County.

ADAPTATION

<< Continued from Pg 19

How Bio-Logical is using biochar to fight climate change and empower Kenyan farmers

Healing the soil from the inside out

For George Kamunya, Bio-Logical's Head of Commercial, the company's work is about more than just products. It is more about restoring a broken ecosystem.

"We want to empower and uplift smallholder farmers," Kamunya says. "That starts with bringing down the cost of production, and the biggest cost for most farmers is fertilizer."

Kamunya paints a vivid picture of what is at stake. "30 years ago, you would find worms and healthy bacteria in most farm soil," he says. "Today, those worms are gone because we have interfered with the ecosystem of the soil, killing the good bacteria and worms mainly because of overuse of chemical fertilizers."

"Number two, we have overlooked the element of organic matter in our soils. Organic matter provides a very good home for good bacteria and living organisms that are beneficial to both the soil and the crop. Lack of organic matter interferes with the soil structure, which in turn leads to depleted soil health and lowers the production of the crop in the long run."

"So ideally, the reason as to why we use biochar in the soil is because biochar tries to restore that and we charge that biochar with organic compost which again addresses the element of organic matter in the soil," Kamunya explains.

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Biochar, he further explains, is a kind of "biological charcoal" that helps restore that balance. Unlike ordinary charcoal, it is produced in a clean, controlled process that removes impurities and stabilizes carbon.

"I usually tell people: biochar is charcoal that has gone to school," Kamunya laughs. "It's high-quality, high-carbon, and environmentally friendly."

The science is compelling. "Under a microscope, biochar's porous structure looks like a honeycomb," Kamunya describes. "This allows it to store water and nutrients, keeping them accessible to plant roots rather than letting them wash away or be leached. Its neutral pH helps correct Kenya's increasingly acidic soils, making nutrients more available to crops."

"A 50-kilo bag of chemical fertilizer, only about 30 kilos are usable by plants, and half of that gets leached away," he says. "Biochar keeps the nutrients where the roots can reach them. It keeps crops greener for longer and greener means more photosynthesis, more food, and higher yields."

Building a climate-resilient future

As the world searches for scalable climate solutions, Bio-Logical's model stands out for combining carbon removal with social impact. Their facility in Kabati, which is Africa's largest biochar plant, can produce up to 5,000 tonnes of biochar and 24,000 tonnes of compost annually. But that's just the beginning.

"We want to expand to become the biggest biochar company in the world," Buckworth says. "We're planning new projects in southern Kenya near Magadi, and also in South Africa, Uganda, Tanzania, and Mozambique."

Their goal? To sequester one million tonnes of Carbon every year by 2030, while helping farmers across Africa restore degraded soils and increase yields sustainably.

<https://youtu.be/Ff1PL328Zvw?si=fU-1l6PcubEo60DH>

For business inquiries call 0798614744

ECO-BUSINESS



Nelly Gesare posing with a her eco-friendly tote bag from Green Thing Kenya. Photo courtesy: Green Thing Kenya.

How Nelly is minting millions from waste

By Bonface Orucho

Entering one of Nelly Gesare's eco-conscious retail stores is like walking into a world in transformation. Glass bottles, once discarded as waste, are now sleek drinking tumblers and jars. Scraps of fabric, saved from landfills, have been stitched into desirable shopping bags and reusable dish sponges.

Every shelf tells a story, not of waste but of renewal. This is now the world of the former journalist who has turned the challenge of waste into a thriving business.

"I use Greenthing Kenya to tell the story of sustainability and the opportunities therein. My goal is to break down sustainability and show that it's not just about the environment, but it's about a broader systemic shift," she explains in an interview.

"We focus on eco-friendly home care, recycled materials, and sustainable textiles. Some of our work involves white-label manufacturing for other brands," she added.

Greenthing Kenya is one of a number of up-cycling brands that include Ecandi, EcoSafi, MokoMaya and others, that operate in Nairobi.

The rise of eco-brands in the region signals



Some of the products Nelly makes from recycled materials.

a growing consumer preference for sustainable products, according to Cynthia Atieno, a sustainability expert at the United Nations Environment Programme (UNEP).

"It is incredibly encouraging to see brands like Greenthing Kenya gaining market success. It reaffirms that sustainability is not just a trend but a thriving market with real demand and long-term potential," she explains.

The trend is also in expansion mode well beyond major cities like Nairobi. Dennis Ondari, a 26-year-old entrepreneur from Kisii town, who has been running a glass bottle waste business since December 2024, cites the rising demand for eco-friendly products as "the biggest motivator" behind launching his venture there.

"Before starting 'Chupa Zone', I worked for an ecoproduct business in Nairobi for three years. I witnessed the growth; that is why I decided to replicate the model here," he explains.

However, Gesare revealed that she did not set out to be a sustainability entrepreneur when she began her venture a decade ago: "As a journalist, my primary goal was always to make information accessible and digestible for both the general public and younger audiences."

"Back in 2012, sustainability was still a very new concept. To raise awareness, I created a TV series and pitched it to media houses I had previously worked with. However, the challenge was that the content wasn't being prioritized. That's when I decided to take matters into my own hands."

The journey was hardly uneventful. Her first

business attempt included manufacturing reusable metallic straws, a venture that hit a roadblock when local production costs soared to an unsustainable KES 1,500 shillings per straw. But instead of giving up, she found a new way forward.

"A turning point came. I lost everything. With the little I had left, I launched a product and it sold out in two days. That experience showed me the power of sustainability-driven business," she explains.

Years later, Gesare has created not just an



Nelly Gesare with a bamboo toothbrush and toothpaste tablets. Photo courtesy: GreenThing Kenya

eco-brand for selling a range of products, but also a glowing example for like-minded individuals committed to turning waste into businesses. Hers is a model that not only helps clean up the environment but also empowers local communities.

The company works with women waste pickers, offering them fair wages while dignifying their role in the circular economy, proving that sustainability solutions must also be people-centered.

Today, Greenthing Kenya transforms discarded glass, fabric, and plastics into a diverse range of eco-friendly items, from biodegradable cleaning supplies to up-cycled textiles like reusable dish sponges and makeup removers.

The company also operates a solar-powered stitching station, ensuring that even the production process aligns with its sustainability ethos.

Gesare continues to expand her business, defying the formidable hurdles that African entrepreneurs, especially women, encounter from securing funding to navigating global economic uncertainties.

"For many women in business, funding is often evaluated based on risk rather than potential. To this day, I have never received a grant. And yet, I've grown from a solo entrepreneur to employing more than ten full-time staff members," she expressed.

The funding challenges that face women-led startups in Africa are perhaps best captured in a 2023 report by startup funding tracking organization, Africa: The Big Deal. According to the tracker, in 2023, startups with solo or all-female founders secured just 2.3% of total African startup funding. This rises to 15% for teams with at least one female founder.

This is despite Africa having the highest rate of female entrepreneurship globally, according to the African Development Bank.

A 2023 study by the Organisation for Economic Co-operation and Development found that more than a quarter of all businesses were either started or run by women.

By comparison, in Europe, entrepreneurial activity among women is just 5.7 percent, according to figures from the European Investment Bank.

Entrepreneurs like Gesare highlight the resilience of African women in business.

"I'm now diversifying my revenue streams

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<< Continued from Pg 21

Making millions from waste recycling: The story of Nelly Gesare

through exports. As of this month, we've started exporting glass products," she said.

Research by Development Reimagined suggests that between 1994 and 2021, global trade in environmental goods grew significantly, yet the distribution remains highly imbalanced. With China dominating with 17.3 percent of global exports. Africa contributes only 1 percent, with South Africa accounting for over half of that share, suggesting that Africa has plenty of untapped opportunities in the trade of eco-products.

Gesare's product line serves as a testament to the viability of the industry domestically, with thousands of customers now choosing biodegradable over plastic, proving that business can be both profitable and responsible.

Greening Kenya's current revenues are from three product categories: eco-friendly hotel products, eco-friendly home care products, and non-toxic cleaning products.

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Sustainability is not just about the environment, rather it's about a broader systemic shift.

Some of its most popular products, such as glassware, received an overwhelmingly positive market response. In its first month of operation, the company generated over 200,000 shillings (more than 1,500 US dollars) in glass product sales. Today, it processes more than 4,000 bottles each month.

The company is now expanding beyond Kenya. Greening recently entered the export market, shipping glassware and eco-friendly home care products to international buyers. To sustain this growth, Gesare is collaborating with universities on cutting-edge sustainability research and investing in improved packaging to meet global standards.

For aspiring green entrepreneurs, her message is clear: "You have it in you to make it possible. When one thing doesn't work, it's often a redirection to explore what you can do with the resources available to you."



Some of the items she creates

ECO-BUSINESS

How one Genz is using fashion to manage marine waste

By Velma Pamela

Cynthia Kabibi documents waste scattered among the mangroves at Mazingira Beach, in Kilifi. Photo: Cynthia Kabibi, bird story agency



Along sections of the East African coastline, discarded fishing nets lay in knots among the rocks. Plastic bag remnants cling stubbornly to seaweed, their colors barely distinct from the surrounding marine flora. Cigarette butts, bottle caps, and candy wrappers litter the beach. The waste blends into the surroundings, and beachgoers often overlook it as the tide sweeps it back out to sea.

28-year-old Cynthia Kabibi grew up on Kenya's northern coast. Spending time at the beach was a regular part of her life, and it influenced the direction of her work.

"I love the beach so much," Kabibi says. "But every time I go there, I see it is very dirty... plastic, cigarette butts, candy wrappers, and other discarded items. Being an environmental student, I knew this wasn't how things should be."

While studying environmental science at Pwani University in 2017, she worked as a fashion model and began making crochet items for students and other models.

Initially, she purchased her raw materials from local secondhand shops. But after frequent visits to the beach, where plastic and other garbage were usually present, she started picking up and storing the discarded items. Over time, she began experimenting with the materials in her designs.

The idea for Kabibi's Touch began to take shape in 2020 during the COVID-19 lockdown. With more time on her hands and fewer distractions, she focused on expanding her skills and turning her passion into something bigger.

Her technique begins with collecting waste from the beaches. She collects mosquito nets, abandoned plastics, ropes, and fishing nets, which are then cleaned and repurposed for use.

In an era that is increasingly conscious of environmental degradation, an increasing number of artists are using their work to address ecological challenges. One of them is Cynthia Kabibi Baha, who is using fashion to tackle one of Kenya's most prominent environmental issues: marine litter.

Other types of marine debris commonly found on the shoreline include toothbrushes, broken plastic crates, Styrofoam pieces, and single-use packaging and consumer waste that moves from inland or is swept ashore by the waves.

"I don't like to start before I have an idea," she says. "I'll draw it, write notes, see what materials I have, then I start creating."

She has created stunning evening gowns adorned with reworked fishing nets, corsets crafted from reused mosquito nets, and accessories such as earrings and belts made from bottle caps, beads, and ropes. One of her most remarkable designs is a dramatic, layered dress made from colorful plastic bits, with wings transformed into something resembling ocean waves.

Her initiative contributes to Africa's developing circular fashion movement. According to the African Development Bank (2022), the continent's green and creative industries are growing as promising areas for innovation and youth employment. In Kenya, initiatives to promote sustainable fashion and repurposing of waste are gaining momentum, with more designers adopting upcycling and eco-friendly production methods.

When the designs are complete, she models them herself or works with other models, photographers, and stylists. Many of her most notable works are national or cultural costumes tailored for beauty pageants, bold, statement-making pieces that combine traditional African aesthetics with

modern, eco-conscious themes.

The 2023 TUZA Awards nominated Kabibi for Mijikenda Youth Ambassador, and in March, 2025, she joined the panel to discuss sustainable entrepreneurship in the fashion industry. TUZA Awards, held annually in Kilifi County, celebrate individuals and organizations driving innovation in sustainability, eco-fashion, and marine conservation across Kenya's coast. In 2024, a model wearing one of her designs won the Miss Fashion Kenya Creative Wear crown.

Kabibi's work has also influenced young creators. Musembi Odanga, a 20-year-old crochet artist and close friend, views her brand as part of a broader effort to promote sustainability in African design.

What sets Kabibi apart, she said, is her eco-consciousness. "The value proposition of Kabibi's Touch is that she uses eco-friendly materials; everything she uses to make her outfits has to be sustainable," she explains.

"She goes and picks her raw materials from the ocean and makes valuable art. She gives the ocean a new life."

Although Kabibi creates her designs from recycled materials, people frequently question their pricing.

"People don't understand why it's expensive." But it's not just a price tag; it's the time, the effort, the message," she explained. "I like to say it's not expensive; it's costly."

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How one Genz is using fashion to manage marine waste



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The value proposition of Kabibi's Touch is that I use eco-friendly materials.

The marine ecosystem adds so much value to our environment. Through fishing, communities earn a livelihood. It's a huge industry that must be safeguarded, from policy development to addressing direct environmental hazards.

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Kelly Robert Banda, an advocate for the High Court of Kenya and an environmental consultant, points out the broader importance of maritime protection.

"The marine ecosystem adds so much value to our environment," says Banda. "Through fishing, communities earn a livelihood. It's a huge industry that must be safeguarded, from policy development to addressing direct environmental hazards."

Banda highlights the often-overlooked consequences of plastic pollution, not only on marine life but also on human health. "You can imagine you are taking fish, and this fish has eaten plastic waste that maybe you deposited in the sea. Then it comes back, and you eat it. That has serious health implications," he warns.

This issue is not unique to Kenya. Coastal nations across the continent are dealing with the growing problem of marine pollution. According to the Nigerian Conservation Foundation, in a statement made on June 3, 2023, poor waste management in coastal towns like Lagos significantly contributes to ocean pollution, putting both marine life and public health at risk.

Banda believes that individual action must be paired with robust regulatory frameworks to ensure accountability, especially within industries such as shipping.

He also acknowledged the creative sector's role in addressing the crisis. "There are people who pick up waste and turn it into something beautiful,

Cynthia Kabibi wearing some of the creations she make from marine waste.

Photo: Cynthia Kabibi, bird story agency

something that can sell, like sandals or artifacts. So as much as there's economic value in repurposing that waste, we must remember that prevention is just as important as innovation."

Kabibi uses media and public speaking to convey how environmental deterioration impacts both nature and people, particularly in coastal towns. She has utilized local radio stations to raise awareness about the risks of plastic pollution and textile waste.

Beyond fashion, she wants to use her brand to help others. She envisions creating spaces for young people and women to learn skills that can support them financially and emotionally.

"This isn't just fashion. This project is transformation," Kabibi concludes.

This article was originally published by Bird Story Agency: <https://www.bird.africanofilter.org/stories/the-designer-using-ocean-waste-to-create-sustainable-fashion-pieces-1?locale=en>



CONSERVATION

Drones usher new dawn in taming human-wildlife conflict in Amboseli



By Dan Kaburu

As the sun dips below the horizon, casting a golden glow over Africa's majestic Mt. Kilimanjaro, darkness sweeps across the plains of Kimana in Kiambu County.

In the chilly night, a patrol team from Big Life Foundation races through villages, their truck's powerful spotlights slicing through the gloom. They have received an urgent call about elephants that have invaded a local farm, threatening crops, lives and livelihoods.

Nestled at the foothills of Kilimanjaro, Kimana's farmers face a relentless challenge as elephants, drawn from nearby Amboseli National Park and surrounding conservancies, frequently trample through fields, leaving devastation in their wake.

"Earlier this year, four elephants destroyed half an acre of my maize crop," says Joel Mulinga, a farmer in Kimana. "Help came from Big Life Foundation that stopped further destruction."

For years, farmers like Joel have battled these gentle giants, their hard-earned harvests reduced to rubble in hours.

But hope is rising in Kimana, thanks to an innovative initiative by Big Life Foundation

Joel Mulinga,
a farmer in
Kimana.
Photo/Dan
Kaburu

that is using drones equipped with cameras and lights, capable of operating day or night. These high-tech sentinels are transforming the fight against human-wildlife conflict, offering a safer, more effective way to protect both farmers and elephants.

A game-changer in the night sky

On this night, the drone team springs into action. High above the farm, their drone buzzes to life, its lights pinpointing the elephants' location with precision.

"The drone's noise irritates the elephants, driving them away from the farms," explains David Ntinina, a ranger and drone operator with Big Life Foundation. "Before, we had to chase them on foot, putting ourselves in danger. Now, we can manage from a safe distance."

Electric fences, once a go-to solution, are no longer enough. Elephants, intelligent and adaptable, have learned to bypass them.

Since the program began, farmers have reported fewer invasions, allowing them to sleep soundly instead of standing guard with flashlights.

Joel is optimistic. "We're seeing a difference," he says. "I hope to harvest my tomatoes this season." For a community long plagued by crop losses, this is no small victory.

A fragile balance in the Amboseli ecosystem

The Amboseli ecosystem, spanning Amboseli National Park and surrounding areas like Kimana Wildlife Sanctuary, is home to an estimated 1,600 to 2,000 elephants, according to the Amboseli Trust for Elephants and Big Life Foundation. These elephants roam vast distances in search of water and pasture, often wandering into human settlements. With such a large population, conflict is inevitable.

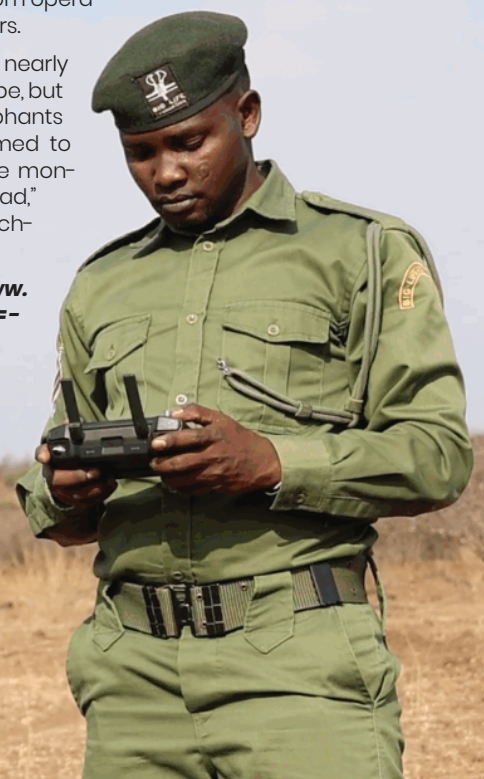
Big Life's drone program, though limited to just two units, is a lifeline for Kimana's farmers. "Two drones are not enough to cover this vast area, but it is better than nothing," says

Abraham Ngao, a radio room operator at Big Life's headquarters.

The drones' effectiveness, nearly 100% so far, has sparked hope, but questions linger. Will elephants eventually grow accustomed to the drones' buzzing? "We're monitoring trends to stay ahead," Ngao says. "For now, this technology is working."

Watch video: <https://www.youtube.com/watch?v=JajlHjruX9Q&t=1s>

Dron operator,
David Ntinina.
Photo/Daniel
Kaburu





A pancake tortoise in the wild.

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The True Guardians of Kenya's Rare Pancake Tortoise

By Neville Ng'ambwa

Over 95% of the world's Pancake Tortoise population is found on private and community lands across Kenya's arid and semi-arid regions. This startling fact, recently shared by the Kenya Wildlife Service (KWS), underscores the critical role that local communities and landowners play in the survival of this uniquely adapted and critically endangered species.

The Pancake Tortoise (*Malacochersus tornieri*) is unlike any other tortoise. It possesses a flat, flexible shell that allows it to slip easily into narrow rock crevices to escape predators. This evolutionary trait gives it an agility not typically seen in tortoises, enabling it to move faster than most of its relatives.

Native to East Africa, its range in Kenya includes counties such as Marsabit, Samburu, Isiolo, Laikipia, Kitui, Meru, Embu, Tana River, and Tharaka Nithi. These rocky outcrops, hills, and kopjes are the last strongholds of this species, and they are all situated outside protected areas.

“Kenya's Pancake Tortoise is more than a conservation curiosity—it is a symbol of how biodiversity and local communities are deeply intertwined.

The Pancake Tortoise's distinct appearance and rarity have unfortunately made it a prime target in the international illegal pet trade. The demand for exotic pets continues to threaten their existence, placing additional pressure on already fragile wild populations. Despite its protected status under both Kenyan and international laws, including CITES, which restricts trade in endangered species, illegal collection persists, often fueled by poverty and lack of awareness.

What makes this situation especially urgent is that the vast majority of the Pancake Tortoise's habitat is unprotected. Unlike wildlife in national parks, these tortoises depend entirely on the stewardship of communities living among them. These communities, many of whom are already battling the effects of climate change, land degradation, and limited resources, hold the key to the species' future.

Conservation efforts must therefore go beyond official wildlife sanctuaries and embrace community-led strategies. Education, habitat preservation, responsible land management, and local enforcement are essential tools. Supporting these guardians through sustainable livelihoods, incentives, and conservation partnerships can empower them to protect this remarkable species.

Kenya's Pancake Tortoise is more than a conservation curiosity—it is a symbol of how biodiversity and local communities are deeply intertwined. With the right support and awareness, communities can continue to serve as the frontline defenders of one of nature's most peculiar and endangered reptiles.

CLIMATE JUSTICE

Britain's KES 500 million payout fails Loldaiga fire victims and biodiversity



British soldiers in Loldaiga during the 2021 fire tragedy.

In March 2021, a routine military training exercise by the British Army Training Unit Kenya (BATUK) turned catastrophic in the Loldaiga Hills Conservancy, a biodiversity hotspot in Laikipia County.

What began as a controlled burn escalated into an inferno that ravaged over 12,000 acres of protected land, displacing wildlife, choking communities with toxic smoke, and leaving a trail of environmental ruin.

The fire, sparked by British soldiers, highlighted the precarious intersection of foreign military presence and fragile ecosystems. Four years later, the UK government, on August 22, announced a \$3.9 million (KES 500 million) compensation payout to 7,723 affected Kenyans, framing it as a resolution for "smoke nuisance."

But as environmentalists and locals scrutinize the settlement, questions loom on whether this sum truly addresses the profound ecological damage, or is it a mere band-aid on a gaping wound.

The environmental toll of the Loldaiga fire was staggering, transforming a thriving conservancy into a charred wasteland.

Loldaiga, spanning rolling hills and acacia woodlands, is home to endangered species like African elephants, black rhinos, and Grevy's zebras. The blaze destroyed critical habitats, incinerating vegetation that supported these animals and disrupting migration patterns.

Reports indicate that fences were obliterated, leading to increased human-wildlife

By Ellys Mugunda

conflicts as animals fled into nearby communities, trampling crops and heightening risks for residents.

An environmental assessment commissioned after the fire revealed widespread soil erosion, loss of biodiversity, and contamination from unexploded ordnance left behind by military exercises.

Beyond visible destruction, the fire's carbon footprint was immense. According to Declassified UK, the inferno released emissions equivalent to 7% of the British military's annual greenhouse gas output, exacerbating global climate change.

Toxic fumes blanketed the area for days, causing respiratory complications, eye damage, and other health issues among locals.

"Many struggled with sickness brought on by the fire," noted campaigners from Declassified UK, who documented cases of hunger and illness in the aftermath, including a child fainting from malnutrition as grazing lands turned to ash.

The conservancy's role in carbon sequestration was compromised, with thousands of trees vital for mitigating climate impacts destroyed. Regeneration efforts, such as the UK's distribution of 100,000 seedlings, have been criticized as insufficient, given the slow recovery of mature ecosystems.

While announcing the compensation package, the UK failed to admit liability, emphasizing it as a "generous and fair" settlement based on a "rigorous assessment."

Lawyer Kelvin Kubai, representing the victims, confirmed the payout covers smoke-related nuisances but lamented the no-sue clause that bars future claims.

Analysts and locals argue that the compensation is a drop in the ocean. "My payment is peanuts," one resident told the Associated Press, echoing widespread disappointment that the sum fails to account for lifelong health issues or ecosystem restoration costs.

Environmental groups point out that valuing nature's services such as water purification and carbon storage far exceeds KES 500 million.

A 2023 report by the Organized Crime and Corruption Reporting Project (OCCRP) detailed how the fire's legacy includes ongoing dangers from unexploded devices, with victims like schoolchildren facing daily perils.

This payout also raises broader questions about accountability in military-environmental interactions. BATUK's presence in Kenya, rooted in colonial-era agreements, has long been contentious, with allegations of rapes, murders, and environmental negligence.



Waste pickers cry as big corporates rush for plastics

By Benard Ogembo, Conor McGlone and James Wakibia

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At the sprawling Dandora dumpsite in Nairobi, the air is thick with the smell of decay and the cries of scavenging marabou storks. They perch like sentinels on mountains of trash, watching men, women, and children pick through the heaps.

Here, survival is a daily gamble, with the value of your labour measured in the weight of plastic bottles, scrap metal, and whatever else can be sold. But for waste pickers like Solomon Njoroge, even that fragile survival is slipping away.

"We used to pick. Now we're just searching," says Njoroge, 35, chairperson of the Nairobi Recyclable Waste Association. He has been at Dandora since he was eight years old. "The best plastic is gone before it gets here," he says.

By "best," he means the plastics that actually fetch money, mostly PET bottles from soft drinks and bottled water. Thanks to private waste companies that are now collecting the "best plastics" directly from high-end estates, supermarkets, and hotels.

As a result, what is nowadays making it to Dandora is largely worthless, soiled, damaged, or flimsy single-use plastics. The twist? Big private firms are now profiting from a new global "solution" to the plastic crisis – plastic credits.

What are plastic credits?

Globally, more than 460 million tonnes of virgin plastic are produced annually, with 428 million tonnes made from fossil fuels. Around 353 million tonnes become waste, yet only 9% is recycled. The rest lingers for centuries, clogging rivers, choking marine life, and breaking down into microplastics that have been found everywhere – from Arctic ice to human body. Despite this, global plastic use is projected to triple by 2060.

Plastic credits, modelled on carbon offsets, are marketed as a fix. Companies fund plastic collection or recycling projects, often in the Global South, and claim that as compensation for the plastic they produce. In theory, this encourages clean-up. In reality, critics say it's a loophole that lets

corporations keep producing plastic while polishing their eco-friendly image.

One of the biggest players, Verra, known for setting carbon credit standards, launched its plastic credit programme in 2021, partnering with Nestlé, Danone, and petrochemical giants like Shell, Dow, and Exxon-Mobil. Kenya, India, and Thailand have all hosted Verra-backed projects.

In August when UN negotiators met in Geneva to deliberate a global plastics treaty, Verra was lobbying to have plastic credits included in the final agreement. Activists warned that could derail real solutions, shifting the focus from reducing production to merely offsetting it on paper.

"There are solid systems like Extended Producer Responsibility (EPR) that make polluters pay for the waste they create," says



Solomon Njoroge, a waste picker at Dandora dumpsite in Nairobi.

WASTE MANAGEMENT



Waste pickers goes about their business at Dandora dumpsite. Photo/
Bernard Ogembo

Gerance Mutwol of Greenpeace Africa. "Plastic credits are usually more of a greenwashing tactic, helping companies to run away from responsibility."

The controversy mirrors the carbon credit sector. In 2023, The Guardian, Die Zeit, and SourceMaterial revealed that 94% of certain rainforest carbon credits certified by Verra had not actually resulted in extra conservation. Companies like Shell and Disney had used those credits to brand themselves "carbon neutral," even as deforestation continued.

Verra's CEO at the time, David Antonioli, strongly rejected the findings of the investigation and defended Verra's impact on the conservation of rainforests. However, he stepped down just months later, and did not give a reason for his departure.

Critics also say that the expanding market for plastic credits risks undermining the livelihoods of informal waste workers, like the pickers at Dandora, as companies step in between trash bins and dumpsites to extract the most valuable plastic.

They also argue that the plastic credits system could generate glossy sustainability reports without changing the amount of plastic entering the environment. And in Kenya, it's already

TakaTaka and Bentley Motors deal

One of Verra's first plastic credit projects



Waste pickers goes about their business at Dandora dumpsite. Photo/
Bernard Ogembo

is in Nairobi. TakaTaka Solutions, the country's largest waste management company, sold credits earlier this year to luxury carmaker Bentley Motors. The sale allows Bentley to claim it is "net zero plastic to nature." The deal was supported by the Alliance to End Plastic Waste, which is incidentally funded by oil majors producing plastics on an industrial scale.

TakaTaka says the revenue helps improve pay and conditions for workers. But at least 10 waste pickers interviewed for this story say they have not seen benefits.

"They're cutting us out," Njoroge says. "They take the 'good plastic' straight from the source and leave us with scraps."

Nairobi's informal waste pickers, numbering in the thousands, are the backbone of Kenya's recycling system. They sort and prepare materials that machines cannot handle, keeping tonnes of plastic out of the environment every day.

But as private firms intercept valuable waste earlier in the chain, pickers like Gisore Nyabuti, chair of the Kenyan National Waste Pickers Welfare Association, say they are being edged out.

"TakaTaka is not helping," Nyabuti says. "They recycle what is profitable and dump the rest. That is not a real solution."

In a statement, TakaTaka's CEO, Daniel Paffenholz, insists over half of their plastic comes from buyback centres that work with informal pickers, and that collecting from residential areas is "safer and healthier" than working at dumpsites.

But critics like Neil Tangri of the Global Alliance for Incinerator Alternatives (GAIA) remain unconvinced: "They promise social benefits but deliver little."

At the heart of the plastic credit debate is "additionality" whether the credits pay for new work that wouldn't have happened anyway.

A 2024 Fauna and Flora report found Verra's rules allow credits to be issued for past recycling activities. This means companies can claim immediate environmental benefits for work already completed months or even years earlier.

"Waste pickers are already collecting everything saleable," Tangri says. "Now these companies come in and take credit for what's already being done, then sell that as guilt-free plastic to consumers in the West."

South Pole, the consultancy that brokered Bentley's purchase, insists the TakaTaka project is compliant and manages all waste responsibly. But South Pole itself faced a credibility crisis in 2023 for selling millions in carbon credits from a Zimbabwe forest project later deemed largely worthless.

Other Kenyan companies are eyeing the plastic credit market. Mr Green Africa, partly owned by Dow Chemical, is seeking Verra registration, saying credits could help it expand operations and improve pay for workers.

But activists warn that without strict oversight, these schemes could deepen inequality, funneling profits to multinational corporations while cutting out the informal workers who do most of the hard labour.

Used diapers become an environmental menace

By Dan Kaburu

It is a normal day for Virginia Nduku, a 53-year-old mother of 3 children at the Dandora landfill, one of the largest landfills in the continent of Africa. On the other side of the dumpsite, smoke billows from age-old mountains of garbage, filling the blue skies of Dandora estate and surrounding estates where thousands of Nairobians live.

Nduku, like hundreds of other women, men, and youth involved is sorting waste at the site once it has been brought in from all corners of the city, and scavenges through the waste looking for valuable items like plastics for sale. Every arrival of a truck loaded with waste brings together those sorting waste, marabou stork birds, and livestock, each struggling to survive from the waste.

Nduku says that in recent years, a new pollutant is taking over from the single-use plastic bags that littered the environment before it was banned in 2018 – diapers.

"There are a lot of diapers currently at the dumpsite, it is not easy to recycle because they are oily, unlike plastics", said Virginia Nduku who has been sorting waste at the dumpsite for more than 20 years.

According to Nduku, the challenge is not diapers only but also sanitary towels: "We are exposed to all manner of hazards when sorting waste, you come across a sanitary towel which you can accidentally touch, thus exposing yourself to infections", added Nduku.

Established in 1975 with funding from the World Bank, the dumpsite was deemed full in 2001. Despite this, 24 years later, it continues to receive over 2000 tons of waste every day from estates in and around Nairobi County.

"When we come across sanitary towels, we fear to touch them, feels like once you touch them that day you will not make money," says Simon Kuria, a young man involved in sorting waste at the site. Tens of trucks enter the dumpsite each day carrying all manner of unsorted waste from the city. Those involved in waste sorting at the site say that diapers are slowly taking over space at the site. According to Kuria, the rate at which diapers are being dumped at the site, soon Nairobi residents will view a huge mountain of waste from a distance, given that the diapers are not decomposing and that they are not recyclable. "If there is a way, we could be shown how to recycle diapers, we will be very happy, that means job creation and thus putting money in our pockets, we want to make money", says Kuria.

According to Eva Muhia, a commissioner



WASTE MANAGEMENT



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The challenge is real. A lot of used diapers are ending up in water sources posing danger to the people.

at the Nairobi Rivers Commission, accessibility and affordability of diapers and sanitary towels for children and women have almost been achieved, however, there hasn't been a good framework when it comes to their disposal.

Samuel Koko, chairman of the Dandora dumpsite says to deal with the problem, sanitary towels and diapers should be made from material that can be recycled: "Diapers are just forming mountains here at the site. There should be a way of manufacturing diapers that can be recycled. At the same time, the national or county government should come up with a way of recycling the existing ones. This will create jobs for many youths here who are jobless", says Koko.

The diapers have become a big challenge to handle to the extent that you will find them dumped in every available bush around towns across the country.

Catherine Mbaisi, Deputy Director in charge of education at the National Environment Management Authority (NEMA) confirmed that diaper disposal is

a major challenge even to the authority. "The challenge is real, a lot of diapers are ending up in water sources posing danger to the people. We are however looking into how best to deal with its disposal", said Mbaisi

Miles away from the Dandora dumpsite in Kiserian, Kajiado County, and southwest of Nairobi, the only dam that serves surrounding towns is in a sorry state. Heavily polluted water which has turned green is what the communities in Kiserian, Rongai, and other towns in this region rely on.

Upstream of the dam, fresh diapers and sanitary towels are dumped in bags in streams that drain into the dam. With the onset of long rains, pollution of the Kiserian dam is expected to rise from all manner of pollution after a long dry season.

Bushes around the dam have not been spared either. Livestock feeds next to the diapers and later drinks water from the dam. According to NEMA, this exposes them to microplastics found in diapers, which have somehow found their way into the water or pastures that they feed on.

As of June 2021, Kenya had 7 diaper manufacturing companies that were allowed to import raw materials for diaper production, which are largely plastics, to make it affordable. In 2019, Kilifi County on Kenya's coast was advocating for a total ban on diapers, saying that it was a major polluter of the ocean.

However, in Korogocho, at the banks of Mathare River one of the most polluted rivers in Nairobi, a group of youth who were once involved in crime, drugs and substance abuse is recycling diapers using them to plant trees at a community recreation park.

"We realized that diapers were not recycled and that they were all over in the environment, we came up with an idea of using them to plant trees as a way of recycling," Joab Oluoch, chair of the group says.

The process involves digging holes, placing a used dipper into the hole then putting a seedling, and latter covering it with the soil. Given that the diaper has human waste, the waste acts as a fertilizer. It also has the ability to retain water for a long time. With that, it helps in water conservation for the project.



Increasing flood incidents poses health risks from disturbed heavy metals

By Peter Ngare

In the heart of Nairobi's bustling slums, families like that of Mama Aisha have long battled the relentless cycle of Kenya's floods.

When the skies opened in April 2024, the Ngong River swelled into a raging torrent, swallowing homes and displacing over 200,000 people across the city and along the Athi River basin.

But as the waters receded, the floods left behind more than mud and debris. They stirred up legacy pollutants such as heavy metals from river sediments, industrial sites, and mining zones. This poses serious risks to ecosystems, food systems, and public health.

"Floods are already a recurring hazard in Kenya, affecting regions like Budalangi, the Tana River delta, and urban areas such as Nairobi," says Dr Paul Recha, a climate change scientist at the International Livestock Research Institute (ILRI).

"Beyond infrastructure damage, floods stir up sediments contaminated with heavy metals such as lead, mercury and arsenic from mining residues, industrial effluents, and agricultural runoff. These pollutants contaminate water sources, farmlands,

and food chains," adds Dr Recha.

Imagine dipping a bucket into the Mathare River for daily chores, only to unknowingly pull up a cocktail of arsenic, cadmium, lead, mercury, and persistent organic pollutants (POPs). This is the daily gamble for residents in Nairobi's informal settlements, where floods disturb sediments laced with industrial waste from decades ago.

These contaminants bioaccumulate in fish and crops, leading to health risks such as cancers, kidney damage, and neurological disorders, particularly affecting low-income communities reliant on these water sources.

This grim reality is at the core of a new United Nations Environment Programme (UNEP) report, *The Weight of Time: Facing a New Age of Challenges for People and Ecosystems*, released as part of UNEP's *Frontiers* series.

Inger Andersen, UNEP's Executive Director, captures the human stakes: "We must be prepared for the risks these impacts pose, especially for society's most vulnerable."

The UNEP report warns that without adaptation, flood damages could balloon 20-fold by 2100, exacerbating this remobilization across flood-prone regions like the Lake Victoria basin.

For people like young fisherman Juma in Kisumu, the consequences are person-

al and profound: "The fish we catch now make our children sick with rashes and stomach pains," he shared in a recent community forum.

The report calls for urgent monitoring, wetland restoration, and flood defenses to prevent these toxins from cascading into public health epidemics, emphasizing nature-based solutions that could empower communities to reclaim their rivers.

"Kenya's flood-induced heavy metal contamination is an urgent but addressable challenge. National agencies, regional research institutions, and communities must work together to prevent further harm. Proactive measures now will protect ecosystems, safeguard public health, and enhance resilience to climate change," Dr Recha advises.

He recommends mapping and assess pollution hotspots in flood-prone areas, especially near industrial and mining zones, and also strengthen NEMA's monitoring of heavy metals in water and soils before and after flood events.

Dr Recha also calls for investment in nature-based solutions such as wetland restoration and riverbank vegetation to trap sediments and improvement of waste management regulations for industries and mining companies to reduce toxic legacies.



CLIMATE CHANGE & HEALTH

By Peter Ngare

In a world where we often take our everyday conveniences for granted, it turns out that the very materials we use daily, plastics, might be playing a devious role in thwarting the dreams of fatherhood for many men worldwide.

Research suggests that certain chemicals found in plastics, like phthalates and bisphenol A (BPA), are not just harmless additives. Instead, they may be wreaking havoc on male fertility, potentially reducing sperm quality and quantity.

So, while you are busy sipping your drink from that trendy plastic bottle or munching ugali or matumbo in a plastic container, remember that you might be unintentionally putting your paternal aspirations on the back burner.

Scientists are increasingly linking this predicament to a relationship between climate change, environmental toxins and declining male fertility. They predict that sperm counts worldwide could fall to near-zero levels by 2045, meaning that the implications of plastics, chemicals, and fertility are not just a matter of personal concern, but a pressing issue for the survival of humanity itself.

The scientific interest in assessing reproductive risk from contaminants is of particular concern in light of the reproductive emergency, especially in males, particularly in the areas where the environmental pressure is highest.

A study published in "Science Direct" journal states: "Male reproductive system appears particularly susceptible to pollutant. Environmental pollutants, such as heavy metals are playing an effective role in the decline of sperm quality in humans, even if the exact mechanisms of action are not clearly understood.

Although the root cause of this worrying decline in fertility has not yet been pinpointed, evidence from ongoing animal studies shows that microplastics represent a potentially critical threat to reproduction."

While researchers have yet to reach a definitive conclusion, they propose that environmental changes, worsened by climate change and exposure to pollutants and endocrine-disrupting chemicals, are key players in this alarming decline. The main suspects for the decline in male fertility are microplastics and nanoplastics that poses a serious threat not only to the environment but also to human health.

Microplastics are everywhere in oceans, rivers, groundwater, sediments, soil, sewage, and even the very air we breathe. They are the unwelcome guests at the party of life,

Plastics are the new enemy for men in their quest for fatherhood

“

Male reproductive system appears particularly susceptible to pollutant.

generated by the breakdown of larger plastic products and have been detected in various human tissues, including the liver, spleen, milk, lungs, placenta, urine and semen.

Microplastics can break down even further into nanoscale sizes, demonstrating similar characteristics and biological effects. However, nanoplastics tiny dimensions grant them a sneaky advantage of exhibiting greater biological mobility and bioavailability. This means they can slip through biological membranes with ease, acting as a transport medium for hazardous substances often used as additives in plastic production.

Micro and nano plastics sneak into human bodies through digestion, inhalation, or even skin absorption from personal care products and cosmetics.

According to the Plastic Pollution Coalition (PPC), the accumulation of microplastics in men's testicles is alarmingly high, ranking among the most significant concentrations found in any human body part just second to the brain.

In a recent study commissioned by PPC, researchers discovered microplastics lurking in every single testis they analyzed. The most prevalent was Polyethylene, the notorious plastic that is the primary material in single-use bags and bottles. Hot on its heels was polyvinyl chloride (PVC), a versatile plastic found in everything from

food packaging to car interiors and even building materials like water pipes.

The findings showed that higher concentrations of certain microplastics especially PVC correlated with reduced sperm counts and diminished testis weight. Smaller testicles can lead to a decline in sperm production, which could spell trouble for fertility.

Experts are also raising eyebrows over a potential link between microplastics and erectile dysfunction in men.

Despite these grim findings, experts say there are ways to decrease our exposure to harmful micro- and nanoplastics, as well as the common additives that amplify their effects. One of the recommended ways is to pay special attention to the ingredient lists for contaminants such as Phthalates that are typically found in items like cosmetics and hair care products.

To avoid Bisphenol A (BPA), a chemical used to manufacture certain plastics and epoxy resins common in food storage containers and water bottles, it is recommended to avoid plastic bottles in favor of glass or stainless-steel bottles.

They also recommend avoiding wearing fast fashion, as these garments are comprised of synthetic textiles made from plastics like nylon and polyester.

Also Avoid food wrapped in plastics, and never eat food cooked in the microwave inside plastic containers, even if it says they are microwave safe as they leak plastic chemicals into your food, and then into you.

So, gentlemen, let us get serious about cleaning up our act, because the future of fatherhood may depend on it! Let's raise a toast, preferably in a non-plastic glass, to healthier choices and a brighter future for aspiring dads everywhere!



By Neville Ng'ambwa

A new study has revealed a disturbing link between climate change shocks and rising mental health issues among rural women in Kenya.

The research, led by experts from the Brain and Mind Institute in collaboration with Aga Khan University, found that droughts, heatwaves, and erratic rainfall are contributing to an alarming increase in depression and suicidal thoughts among women, especially those living in informal settlements without access to basic amenities.

The study analysed data collected between 2010 and 2024 in Kaloleni and Rabai sub-counties of Kilifi County. Over this period, Kilifi experienced repeated droughts, prolonged dry spells, extreme heat, and most recently, devastating floods in 2024.

"We've always known that climate change affects livelihoods and food security," said Dr. Cyprian M. Mostert, the lead researcher and Assistant Professor of Global Health Economics. "But what we're now seeing is a mental health emergency quietly unfolding among the most vulnerable populations, especially women."

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The study surveyed 14,801 women from two types of households: informal, slum-like rural homes lacking running water and toilets, and more stable rural homes with basic services. The research focused on women due to their key role in family care and income generation, and because men were often unavailable during data collection.

Women in informal settings were found to be 10.8 percentage points more likely to suffer from depressive symptoms than those in better-equipped households. The ripple effects of poor mental health, researchers warn, stretch beyond individuals and threaten the social and economic stability of entire families.

"Many of these women are the breadwinners," Dr. Mostert said. "When they are mentally unwell, the consequences are felt across the household. Children miss meals, farming is disrupted, and the family's income suffers."

According to the findings, reduced rainfall led to a 28.7% increase in suicidal thoughts; heatwaves contributed to a 14.9% rise in suicidal ideas; droughts were linked to a 36.7% increase in suicidal thoughts and that the combined pressure of drought and high food prices triggered a 48.3% rise in suicidal thoughts among women in informal settings.

"These numbers are not just data points," Dr. Mostert said. "They represent real wom-

Climate Change fuels mental health crisis among rural women in Kenya, study finds



en suffering quietly, without access to psychological care, while carrying the full weight of climate and economic stress."

In Kaloleni and Rabai, most residents depend on rain-fed subsistence agriculture. Yields are unreliable and contribute little to the local economy. Housing is substandard, clean water is scarce, and basic infrastructure such as schools to health clinics is inadequate.

"Even before climate shocks, these communities are already stretched thin," said Rachel Kazungu, a community health volunteer based in Kaloleni. "When the rains fail or food prices spike, the emotional toll is unbearable. We have seen women cry for hours because they have nothing to feed their children."

The area's challenges are compounded by high unemployment and the absence of mental health support systems.

Despite increasing coordination between Kenyan government agencies and international donors to address climate impacts, mental health has been largely missing from climate adaptation strategies.

"There is a glaring gap," said Dr. Mostert. "In countries like India, we're seeing models that combine food relief with mental health support after climate disasters. Kenya

needs to adopt similar approaches."

Currently, mental health services in rural areas like Kilifi are virtually nonexistent. Facilities are few, mental health professionals are scarce, and stigma remains high.

The researchers are calling for urgent integration of mental health services into climate response efforts. They recommend combining psychosocial support with distribution of food, agricultural inputs, and cash transfers after climate-related shocks.

"Addressing the emotional and psychological distress caused by climate change is not a luxury. It is a necessity," Dr. Mostert emphasized. "You cannot expect people to rebuild their lives if they are mentally broken."

Experts also advocate for community-based interventions, including training local health workers to provide psychological first aid, establishing peer support groups for women, promoting mental health awareness to reduce stigma and incorporating mental health education into existing climate and disaster risk reduction programs.

Long-term solutions, the researchers say, must focus on empowering women economically and socially to cope with future climate shocks.

INDIGENOUS KNOWLEDGE

Dressed in shukas and wielding ceremonial walking sticks, the elders from Samburu community and weather forecast scientists gather beneath the shade of an acacia tree in Loruko village of Isiolo County. This is not just an ordinary meeting, but a convergence of tradition and science, where indigenous wisdom meets modern meteorology.

The two groups have converged to compare notes, as a first step towards harmonizing the two approaches in an effort to cultivate community's confidence and reliability against the backdrop of forecasting uncertainties brought about by changing climate.

The assignment at hand is to predict weather trends, and when the eagerly awaited outcomes were presented on the third day, scientific prediction and traditional weather pattern indicators were in agreement.

The elders revealed that in making predictions, they rely on knowledge passed through generations which relies on observing plants and animal behavior, insect movements, the moon, stars and clouds. While some "advanced" prediction is a reserve of a few families and the talent passed on to offspring, the majority in the pastoralist community are weather experts in their own right.

By merely observing changes in their immediate environment, the community is able to tell with a high degree of accuracy when rain or drought is expected: "A green coloured fly landing on cow dung is a sign of an impending severe drought while massive flowering of acacia munipelas precedes a season of heavy rains. Presence of dragonflies also heralds a rainy season," explains John Lengirnas, an elder.

The elder adds that the acacia flowers appear about a month to the onset of the rains, with a set of new flowers appearing every week. When the tree sheds off the last set of flowers by the fourth week, the rains begin.

Only a few individuals are known to have the ability to forecast the future through

Community elders' traditional methods match science in providing accurate weather forecasts

By Ellys Mugunda

observation of the stars. The celestial, specifically the positioning and time of appearance assist in predicting rains and drought.

"For the short October to December rains (Ntumurek in Samburu language), we observe the seven sisters stars we call Ngakwa (Pleiads). If they are stuck together and appear in the sky early like before 8.00pm, it shows that the rains are near and will be heavy. But if the stars delay and come after the expected time, it's a sign that the rains will be below average," explains Mzee Lese-pen.

Another prediction, which is a reserve of a few, is use of goat's intestines. Once a goat is slaughtered, an elder studies the appearance of the offal's and is able to tell if there will be rains, drought, a raid by rival community to steal livestock, diseases, or death in a particular manyatta (home-



Elders studying goat intestines

stead comprising families from same clan).

During the gathering in Isiolo, three goats were slaughtered and by observing the offal's, the expert in this field, Mzee Pesika Lere-te gave the same verdict each day that rains were expected in a few days but the wet season would not last long.

By observing the tone of blood veins in the offal, resembling rivers and tributaries, Mzee Lerete was able to tell the intensity of the expected rains.

Pattern and movement of migrating wild animals that roam freely in the region has over the years also helped the nomadic community make decisions on which direction to head in search of pasture and water. "One of the reasons why we have concluded that the rainfall we are expecting this season will be inadequate is that elephants are migrating from Isiolo moving towards Laikipia highlands. It is common knowledge amongst us that the huge mammals are capable of 'smelling the rain' and naturally head in that direction," said Nicholas Lesokoyo, a senior elder.

Mzee Lesokoyo says the integration of indigenous and modern ways of weather prediction would inspire confidence among the community to diversify to other sources of income like apiculture or poultry keeping in an effort to move away from overdependence on livestock adversely affected by droughts that are becoming more frequent and lasting longer due to climate change.

Elders and scientists during a knowledge sharing meeting in Isiolo





Solar for learning institutions help cut bills by upto 95%

Electricity and cooking fuel costs remain two of the heaviest burdens for Kenya's learning institutions. From classrooms and ICT labs to dormitories, kitchens, and water pumping systems, schools and colleges spend millions every year just to keep operations running. Rising tariffs, the high cost of firewood and LPG, and frequent blackouts make this worse, forcing administrators to divert resources away from academics and student welfare.

At Sentimental Energy Company Ltd, we believe no institution should have to choose between basic utilities and education. That's why, through our Solar for Learning Institutions Program in partnership with KCB Bank, we are helping institutions of learning slash their energy expenses by up to 95%, while securing clean, reliable power.

Proven impact in learning institutions across Kenya

As of August 2025, over 50 schools across the country are already benefiting from Sentimental Energy's solar solutions. Among the notable installations are:

- Friends School Kamusinga – 88kWp hybrid solar system with 100kWh battery storage. The school now saves up to 88% in terms of power bills translating to power bills reduced from Kes. 350,000 to just about Kes. 30,000 per month, with savings of over Kes. 2.7 million annually.
- Butere Girls High School – 116kWp hybrid solar system with 215kWh battery storage. The school now saves up to 85% in terms of power bills, with costs reduced from about KES 500,000 to just KES 67,764 per month, translating into annual savings of over KES 4.6 million.
- Kilgoris Boys High School (Kilgoris) – 27.8kWp hybrid solar system with 50kWh ESS Battery system. The school now meets 95% of its energy needs from solar, reducing reliance on both the grid and diesel generators. Power costs that previously averaged about KES 77,379 per month (grid and genset combined) have now dropped to just KES 3,869 monthly,



delivering savings of over KES 882,000 annually.

- Lugulu Girls High School – 100kWp hybrid solar system with 200kWh battery storage. The school now generates 95% of its power needs from solar, reducing monthly electricity bills from about KES 460,000 to just KES 17,500. This translates into annual savings of nearly KES 4 million, with the school poised to be a model school for solar electric cooking in the coming weeks.
- Other notable projects: Early Bird (Machakos), Naikuru Secondary (Kisii), Rophine Group of Schools (Nairobi), Al Maktoub Girls (Kajiado), Senende High School (Vihiga), and Daystar University, one of our first solar projects for institutions of higher learning.

Each of these institutions has not only saved millions but also secured a reliable energy supply that directly improves the learning environment.

Financing that works for learning institutions

Through KCB's Clean Energy Financing Programme, institutions of learning can access financing at just 9.75% interest for:

- ☑ Solar power systems (lighting, ICT labs, water pumping, bakeries, posho mills, and refrigeration)
- ☑ Solar water heating systems
- ☑ Solar electric cooking solutions

Unlike conventional loans, this



model is structured as a substitution of existing electricity or cooking fuel expenses. Learning institutions simply redirect what they already spend on power, firewood, or LPG into repaying their solar system.

- **Repayments:** Made **termly** (January, May, September), aligned with fee collection.
- **Savings:** Up to **95% reduction in energy costs** once repayment ends.

The model is not about adding a new expense. It simply substitutes what the learning institution currently spends on electricity bills with payments toward owning a solar system. From day one, the institution enjoys instant savings and, once the system is paid off, the school is left with nearly free energy, saving up to 95% every year on power. This means cleaner kitchens, smoke-free environments for cooks and students, and freedom from rising firewood and gas costs.

An exciting opportunity for institutions of higher learning and public institutions

The opportunity doesn't stop at primary and secondary schools. Tertiary institutions, Teachers Training Colleges (TTCs), TVETs, Hospitals and universities can also benefit from KCB's Clean Energy Financing Programme:

- Concessionary Rate: 9.75% interest.
- Financing amount: Minimum



KES 3 million, maximum KES 500 million.

This enables institutions of higher learning to sustainably power ICT labs, lecture halls, hostels, libraries, cafeterias, and water pumping systems, while freeing resources for academics, research, and innovation.

At Sentimental Energy, we know that transforming education goes beyond installations. That's why we've invested in Corporate Social Responsibility (CSR) initiatives that directly touch students and schools:

- **LED Tube Distribution:** We have donated energy-efficient fluorescent LED tubes to institutions such as Archbishop Njenga Girls and Friends School Kamusinga, reducing their lighting costs even further.
- **Student Sponsorships:** Sentec has supported bright but needy students, ensuring access to quality education for the next generation.
- **STEM & Energy Management Symposiums:** We successfully launched this initiative at Kapsabet Girls High School, creating a platform for principals, teachers, and students to learn about energy efficiency. More symposiums are scheduled for next term across Western and Rift Valley.

For business inquiries call: 0713840107



RENEWABLE ENERGY



How renewable energy is bringing down electricity costs in East Africa

By Bonface Orucho

In the quiet evenings of rural Kitui or the bustling outskirts of Kampala, something remarkable is happening as households that once relied on smoky kerosene lamps and noisy diesel generators are now switching on lights powered by the sun.

For families, small businesses, and entire communities across Africa, electricity is becoming more affordable, more accessible, and more reliable than ever before. And behind this transformation is the powerful force of renewable energy.

A new report by the International Renewable Energy Agency (IRENA) largely attributes this transition to the falling cost of renewable energies across the world. According to IRENA, 91% of new renewable energy projects globally are now cheaper than fossil fuel-based alternatives.

"From mini-grids in rural Uganda to large-scale solar farms in Northern Kenya, East Africa is not just adopting renewable energy. We are shaping its future," says Abraham Masiyiwa, a clean energy researcher at Power Energy Futures Lab.

The falling cost of solar panels and wind turbines is only part of the story. In Africa, solar electricity has become significantly cheaper, dropping from 22 US cents per kilowatt-hour in 2015 to just 7 cents in 2024. That's almost on par with global costs.

In places like Nigeria, over 120 solar mini-grids have been installed in recent years, powering tens of thousands of homes and small shops. Local developers say these systems are cutting power costs by up to 60% compared to diesel.

Even in Kenya, where grid connectivity has expanded, mini-grids and solar home systems are making a difference in off-

grid counties like Turkana, Marsabit, and Taita Taveta.

What does cheaper electricity actually mean for ordinary people? For Mama Wanjiku, who runs a tailoring shop in Kwale, it means she can now operate her sewing machines well into the night without worrying about generator fuel. In Lira, Uganda, students are studying longer hours thanks to solar lighting, and farmers in Kajiado are using solar-powered irrigation to grow vegetables during the dry season.

"These changes are transforming lives," says Masiyiwa. "We're seeing more children doing homework, more shops staying open, and more money staying in people's pockets."

In 2024 alone, off-grid solar companies affiliated with GOGLA, the global association for the off-grid solar energy industry, sold over 9 million solar kits and nearly 2 million appliances such as fridges, fans, and water pumps, serving more than 137 million people.

Across East Africa, utility-scale solar projects are also becoming the norm. In Kenya, projects like Gatome Solar Park and Garissa Solar Plant are feeding clean power into the national grid, reducing dependency on expensive fuel imports.

According to IRENA, utility-scale solar installations across Africa now cost 68% less than they did a decade ago.

Despite the progress, the renewable energy story isn't all sunshine as financing is still a major challenge. While equipment costs

have dropped drastically, African developers still face high interest rates of around 12%, compared to just 4% in Europe. This means African projects often end up more expensive to build, even when the technology is cheap.

There are also issues with grid integration. In some countries, national grids are too weak or outdated to handle new solar and wind power sources. Permitting and licensing delays slow down projects, and local supply chains sometimes push up costs.

"We need more investment in transmission infrastructure and smarter energy policies," Masiyiwa urges. "Otherwise, even cheap power won't reach those who need it most."

Luckily, technology is helping to overcome some of these challenges. Battery storage, which allows solar power to be stored and used at night has become much cheaper. Prices for Battery Energy Storage Systems (BESS) have dropped by 93% since 2010, making them viable even in rural African settings.

Hybrid systems that combine solar, wind, batteries, and digital controls are also being used to ensure a more reliable supply. In June 2025, South Africa's Red Sands Project, the continent's largest standalone battery facility, reached commercial close. This 153 MW system will help stabilize the grid and store surplus solar energy.

Masiyiwa stresses that affordability isn't just about hardware but it is also about smart policies and strong partnerships.

Countries like Rwanda and Ethiopia have introduced results-based financing, streamlined licensing, and subsidies for solar systems. These moves are helping to bring down the costs even further.

In Kenya, the government's support for independent power producers (IPPs), tax incentives on solar components, and collaboration with development partners have accelerated the clean energy transition.

All in all, the bigger picture is bright as renewable energy is not just helping Africa go green, but it is helping families save money, farmers grow more food, and schoolchildren study with light.

According to IRENA and the African Development Bank, a full transition to renewable energy could increase Africa's GDP by 6.4%. That means more jobs, more opportunities, and more prosperity powered by the sun and the wind.

The story first published in Bird Story Agency. <https://bird.africanofilter.org/stories/more-africans-are-paying-less-to-access-energy?locale=en>

RENEWABLE ENERGY

Spiro secures KES 13 billion to deploy 100,000 EV motorbikes by year-end



Electric vehicle startup Spiro has announced a landmark \$100 million (KES 13 billion) investment round on October 21, marking Africa's largest-ever funding deal in the two-wheel e-mobility sector.

Led by \$75 million from the Fund for Export Development in Africa (FEDA), the development arm of the African Export-Import Bank (Afreximbank), the eq-

uity raise propels Spiro toward deploying 100,000 electric motorbikes across the continent by December.

The funding cements Spiro's position as Africa's most aggressive electric motorbike company, with operations now spanning seven countries and total capital raised exceeding \$280 million.

"This investment validates our pan-African vision for sustainable mobility," said

Spiro CEO Kaushik Burman in a statement. "We're not just building vehicles; we're creating infrastructure for energy, jobs, and emissions-free transport."

Spiro's Kenyan operations, launched in September 2023, serve as the company's flagship hub and underscore its role in accelerating the continent's e-mobility transition. Headquartered in Nairobi, the firm commands over 52% of Kenya's electric bike market, with more than 8,000 vehicles on roads supported by 200 battery-swapping stations.

The company's Old Mombasa Road assembly plant, opened in September 2024, produces 50,000 motorcycles, 100,000 batteries, and 25,000 chargers annually. The facility sources 30% of components locally and targets 70% within two years, creating over 100 direct jobs and stimulating supply chains for plastics, helmets, and brakes.

Spiro operations in Kenya spans 22 counties, including high-volume deployments in Mombasa, Eldoret, Kisumu, Nakuru, and Kakamega.

Transport companies in Kenya are making significant progress in carbon reduction initiatives through the adoption of alternative fuel solutions. A notable advancement in this area has been made by DHL Supply Chain, in collaboration with Scania, with the deployment of 25 new Euro 5 biodiesel-powered trucks.

It is worth pointing out here that biodiesel is different from renewable diesel. While both are bio-based fuels, they differ significantly in their production process and properties. Biodiesel is produced via transesterification, a chemical reaction involving fats and oils with alcohol, resulting in an ester fuel.

Renewable diesel, on the other hand, is produced through hydrotreating, a process that converts fats and oils into hydrocarbons, resulting in a fuel chemically similar to petroleum diesel.

According to Scania East Africa, this initiative marks a pioneering effort in Kenya and the broader East African region, aligning with the company's commitment to sustainability and its Scope 3 Science-Based Targets, in accordance with the Paris Agreement.

For decades, diesel has served as the backbone of transportation in Kenya. However, as fuel costs fluctuate and environmental concerns intensify, many companies are transitioning to renewable fuels such as biodiesel, biogas, and com-

DHL, Scania deploys biodiesel powered trucks in Kenya



Biodiesel powered Scania trucks.

pressed natural gas (CNG) to mitigate emissions.

Biodiesel, derived from vegetable oils, animal fats, or recycled cooking oil, offers a renewable and lower-emission alternative to conventional diesel. The adoption of biodiesel presents a valuable opportunity to decrease reliance on imported fossil fuels by utilizing locally sourced raw materials. This shift not only stabilizes and enhances the sustainability of fuel supply chains but also fosters new opportunities for local industries, spanning agriculture to waste management.

Biodiesel also presents a significant

opportunity to diminish dependence on imported fossil fuels by leveraging locally sourced raw materials. This approach not only enhances the stability and sustainability of fuel supply chains but also fosters new opportunities for local industries, spanning agriculture to waste management.

Transportation companies are also increasingly investigating the potential of biogas as a renewable fuel. Biogas is generated from organic waste, including agricultural residues, food waste, and sewage. The production process captures methane, a potent greenhouse gas, and repurposes it as a fuel source.

RENEWABLE ENERGY

How refrigerated E-bikes are revolutionizing Africa's food supply

By Bonface Orucho

Kenya's Roam has recently partnered with logistics startup Keep It Cool to roll out an electric cold-chain delivery network, signaling rising demand for low-cost, low-emissions transport solutions in food distribution across African cities.

The collaboration combines Roam's locally assembled electric motorcycles with Keep It Cool's solar-powered cold storage units. Designed for small traders and retailers in urban and peri-urban areas, the model offers an integrated solution, refrigeration and transport in one system.

According to Elijah Gakomo, a sales executive at Roam, "We're proving that the future of logistics in Africa is electric, efficient, and built at home." "This partnership shows how clean transport can drive real impact, reducing emissions, cutting costs, and strengthening local supply chains."

Keep It Cool currently serves more than 4,000 vendors and 40 supermarkets across four cities, moving up to 250,000 kilograms of fresh food weekly. The partnership's first phase integrates five Roam Air motorcycles into the existing cold-chain network.

This latest rollout is part of a broader momentum across the continent, where food delivery platforms and FMCG supply chains are becoming early adopters of electric mobility. Experts attribute the shift to the operational dynamics of the sector: "Predictable routes and high trip volumes make the sector particularly suited to electric models that offer lower running costs and minimal downtime," says Laura Pereira from Stellenbosch University's Centre for Complex Systems in Transition.

"What we're seeing is a systems shift in how cities think about movement, energy, and livelihoods. The real opportunity is in designing transport solutions that are contextually relevant, economically viable, and rooted in local ecosystems," she added. Roam's earlier collaboration with grocery platform Greenspoon in 2024 underscored this potential.

Greenspoon reports that delivery times were cut from three hours to under 100 minutes, while fuel-related logistics costs dropped by 30%. Similar dynamics are unfolding across the continent. In Cape Town,



Green Riders operates a fleet of around 600 electric bicycles for food delivery services.

The company runs on a weekly rental model, mainly supporting migrant workers, who earn an average of US\$1.70 per delivery. Rising fuel prices have pushed more platforms to consider alternatives. Elsewhere, expansion is accelerating. Accra-based Wahu Mobility had deployed over 300 e-bikes by the end of 2024, using a lease-to-own model accessible to couriers and informal traders.

Spiro, the continent's largest electric two-wheeler operator, now has 18,000 e-bikes across six countries. Riders have completed more than 11 million battery swaps, and the company is scaling up production with new assembly facilities in Kenya and Nigeria. In Nairobi, cargo e-bike startup eBee supports over 150 vehicles serving clients like Glovo, Jumia, and Bolt Food. Mo-

mentum is also evident in public delivery systems.

In Addis Ababa, EV manufacturer Dodai donated 40 electric bikes to the city's municipal logistics fleet as part of a pilot backed by local authorities. Also, in Morocco, the national postal service began deploying e-motorcycles in late 2024 and aims to scale to 650 units by mid-2025.

Significantly, the electric shift is expanding beyond two-wheelers. In South Africa, Clicks Group and United Pharmaceutical Distributors (UPD) partnered with Everlectric and Investec Sustainable Solutions to launch the country's first fleet of electric, pharma-compliant vans equipped with solar-powered refrigeration.

These Maxis eDeliver 3 vehicles are tailored for cold-chain logistics, using onboard solar panels and battery systems to maintain temperature control for up to two days without sunlight. What's driving this wave is not just environmental intent but hard economics. Fuel is one of the most volatile cost inputs for delivery firms.

Roam estimates that electric motorcycles—when combined with solar charging or battery-swap networks—can reduce operating costs per kilometre by 25% to 40%. Maintenance costs are also lower, given fewer moving parts compared to combustion engines. A defining feature of the current wave is that the technology is being developed locally.

The article has been republished from bird story agency: <https://www.bird.africanofilter.org/stories/how-locally-built-e-vs-are-powering-africa-s-food-and-pharma-delivery-systems?locale=en>



A greenhouse using Synnefa technology.

Synnefa offers tech solution to farmers

By Wanja Mwaniki



Taita Ng'etich

Technology drives sustainability, paving the way for groundbreaking solutions to environmental, social, and economic challenges. Enter Taita Ng'etich, a young visionary on a mission to revolutionize farming for smallholder farmers facing limited resources, erratic weather patterns, and outdated methods.

In 2014, while studying at the University of Nairobi, Ng'etich took the plunge and founded Synnefa, an agri-tech startup dedicated to equipping smallholder farmers with cutting-edge hardware and software solutions. Their goal? To make farming not only sustainable and profitable but also resilient in the face of the ever-changing climate.

One of Synnefa's star innovations is their lineup of smart greenhouses, FarmShield sensors powered by IoT technology, and Farm Cloud software. The smart greenhouses are designed to optimize the growing environment for various crops, creating ideal conditions for production while reducing dependency on unpredictable weather.

The FarmShield sensors are part of the company's Internet of Things (IoT) offerings, allowing farmers to monitor critical conditions such as temperature, humidity, soil moisture, and more. This data is gathered and transmitted to a centralized system, which can be accessed through Farm Cloud, a software solution that helps farmers maintain detailed farm records, receive crop advisories, and access financing options.



A technician showing farmers how to use gadgets.

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The technology offer insights on agronomy, market linkage and financing

“These technologies offer insights on agronomy, market linkage, and financing, making farming more sustainable and profitable,” says Ng'etich.

Some of the innovative products under Synnefa's umbrella include smart greenhouses, which are priced starting from KES 150,000, depending on their size and customization. The Farm Shield Internet of Things Sensors are sold as part of a package with greenhouses or separately for KES 25,000 each. They can also be rented at Sh 3,250 per month.

Farm Cloud Software subscriptions are free for one farm and one user, while monthly plans start at Sh 2,500 for more farms and users, providing features like farm record-keeping, crop advisory, and access to financing. The Smart Solar Dryers, priced from Sh 100,000, are designed for cooperatives and commercial farmers to reduce post-harvest losses through efficient drying techniques, improving the overall quality and longevity of produce.



Kenya and South Africa banks drive Africa's green finance shift



Banks in South Africa and Kenya are leading Africa in the adoption and reporting of sustainable finance through Environmental, Social and Governance (ESG) integration with aggregate average scores of 50.1% and 43.7%, respectively.

According to WWF's inaugural Sustainable Banking Assessment (SUSBA) for Africa Report 2025, Kenya and South Africa successes are largely due to supportive regulations and growing institutional commitments. T

he Central Bank of Kenya has been instrumental on this front. In April of 2025, CBK released taxonomy and a climate risk disclosure framework as part of green finance tools for the banking sector to promote more sustainable investments and encourage the shift to a low-carbon economy.

Economists say that African economies and their central banks need to transform the financial system to mobilize investments to address the climate crisis, which is expected to hit agriculture, water, energy and tourism in Kenya, denting economic output by more than 7% by 2050 if the country does not take action.

The inaugural sustainable assessment evaluated ESG integration in 25 banks across Cameroon, Gabon, Kenya, Na-

mibia, South Africa, Tanzania, the Democratic Republic of Congo, and Zambia.

The report reveals that most banks in Africa are increasingly embracing regulatory and industry guidelines and hiring more ESG professionals to embed sustainable finance practices and drive a green development and transition amid growing demand for sustainable products.

Despite the increased adoption of ESG integration in sustainable finance, the report shows that while a majority of banks (72%) incorporate sustainability in their core strategies, nearly half (48%) fail to provide commitments to sustainable finance practices. This misalignment between ESG integration and leadership, the report states, is a missed opportunity in sustainable finance for banks and regulators.

It further notes that the financial sector's integration of nature-related considerations also lags behind its progress on climate strategies, with most of the African banks failing to disclose portfolio greenhouse gas emissions and only a few acknowledging nature-related risks. The assessment also found that only 8% of banks have tailored E&S policies in socially and environmentally sensitive sectors.



KCB doubles green loans disbursement to KES 53 billion

KCB Group disbursed more than double the green loans in 2024, emerging among the leaders in the competition among banks to green up their loan portfolios. The lender advanced Sh53.2 billion in the period to December 2024 to different customers undertaking various projects, up from Sh22.1 billion in 2023, a growth of 140 per cent.

Kenyan banks are racing to increase the amount of loans advanced to environmentally friendly projects as the country and the world battle to minimize the impact of climate change by increasingly financing to less harmful projects.

As part of accelerating its climate commitment and increasing climate flows, KCB has committed to directing 25 per cent of the total loan portfolio to green investments by 2025," disclosed the bank in its integrated annual report for the 2024 financial year.

In April, the Central Bank of Kenya (CBK) gave commercial banks 18 months to start disclosing their exposure to climate-related risks from projects and companies they finance.

CBK issued the directive alongside its launch of the Kenya Green Finance Taxonomy (KGFT) and the Climate Risk Disclosure Framework, encouraging banks to adopt more sustainable practices and report on their environmental and social impact.

Following the CBK directive, the Kenya Bankers Association (KBA) is in the process of training its member banks on how to implement the new standards and reporting templates.

Counties struggle to tap green finance for sustainability

Counties in Kenya are struggling to attract significant access to green financing due to multiple barriers, including complex regulatory requirements, limited access to diverse financial instruments, and a lack of capacity to develop investable projects.

This is despite the potential of green finance to help counties unlock funding for environmentally friendly initiatives that

drive socio-economic development and also the existence of regulatory framework to facilitate county-level access to green financing instruments.

According to the Financial Sector Deepening Kenya (FSD Kenya) Trust, the main reason for counties paralysis in unlocking green financing is continued heavy reliance on grants rather than exploring other financing models such as green bonds,

concessional loans, and blended finance.

Additionally, most counties struggle with financial stability and creditworthiness, making it difficult to attract investors. Weak revenue generation and debt management further limit their ability to mobilize the necessary resources for green initiatives.

Continued on Pg 42 >>

Counties struggle to tap green finance for sustainable development

CONTINUED from PAGE 41 >>

Another hurdle facing counties is a lack of adequate expertise amongst county officials needed to structure projects that meet investor requirements. Additionally, most projects lack detailed feasibility studies, environmental impact assessments, and financial models, making them less attractive to investors. Competing priorities and bureaucratic processes at the county levels have also

been cited as barriers to green financing as they delay decision-making, slowing down project implementation.

FSD calls for a multifaceted approach that includes strengthening technical capacity, improving project bankability, diversifying financial instruments, and fostering investor confidence to unlock green finance for counties: "By addressing these critical areas, counties can enhance their ability to secure sustainable

financing, drive climate-resilient development, and contribute meaningfully to Kenya's green growth agenda."

As an initiative to unlock green financing for the counties, FSD has established the county green investment facility to support counties in identifying and preparing investable green projects for investment. It is currently supporting Embu, Kirinyaga, Kisumu, Laikipia, Nairobi City, Makueni, Nandi, Taita Taveta, Vihiga, and Wajir.



Kenyan banks back \$100 billion green finance plan

Kenyan banks have taken a big step in Africa's journey toward a greener future after signing an agreement in Addis Ababa, Ethiopia, to help raise US\$100 billion for green industrialisation. The deal, brings together financial institutions from across the continent to support clean energy, sustainable industries, and climate-smart projects.

For Kenya, this commitment builds on progress already made at home. KCB Group, for instance, has pledged to allocate a large share of its lending portfolio to green projects, while Equity Bank has been financing clean energy solutions like solar kits and efficient cookstoves for households and small businesses. Cooperative Bank has been investing in climate-smart agriculture and offering loans for renewable energy, supporting farmers and rural communities to adapt to climate change.

By joining the Addis Ababa agreement, these banks and others are promising to channel even more money into renewable energy projects—especially geothermal, wind, and solar power, where Kenya is already a continental leader. Today, more than 80 percent of Kenya's electricity already comes from renewable sources, and the banks' involvement will help scale this success even further.

The pact also means Kenyan banks will apply stricter environmental and social standards before financing big industries. This ensures that new factories, transport systems, and infrastructure projects are not only profitable but also environmentally safe and beneficial to communities. At the same time, banks will design special financial products to support small and medium-sized businesses working in recycling, green farming, clean cooking, and conservation.

Another important part of the Addis Ababa agreement is carbon trading. With Kenya already piloting carbon credit projects in forests and renewable energy, banks are expected to create financing models that allow communities and industries to benefit from selling carbon credits on international markets.

This \$100 billion initiative is about more than money—it's about building resilience against climate change. For Kenya, where droughts, floods, and other climate shocks affect millions, the active participation of local banks shows that the financial sector is ready to play its part. By signing this agreement, Kenyan banks are making it clear that they see green growth as the future.

Equity showcase commitment to climate action

Equity Group Holdings PLC, the parent company of Equity Bank has released its fourth annual Sustainability Report, themed "A Sustainable World is a Transformed Africa."

The document spotlights the financial giant's deepening commitment to environmental stewardship and climate action, channeling billions into low-carbon initiatives amid escalating climate threats like severe floods and drought.

At the heart of the report is the Africa Recovery and Resilience Plan (ARRP), Equity's flagship blueprint for fostering climate-resilient economies.

Aligned with the Paris Agreement, UN Sustainable Development Goals, and the African Union's Agenda 2063, the ARRP drives investments in climate-smart agriculture, renewable energy, clean cooking technologies, and nature-based solutions.

"Climate change is no longer a distant concern tied to long-term emission goals. Its effects are now more frequent and disruptive," notes Prof. Isaac Macharia, Chairman of Equity Group. "In 2024, our region experienced severe flooding following a prolonged drought, highlighting the volatility and intensity of climate change."

The Group's environmental agenda is woven into its Tri-Engine business model, emphasizing sustainable finance, robust environmental and social risk management, and operational efficiency.

According to the report, the bank disbursed over KES 26 billion in climate-aligned financing in 2024, pushing cumulative sustainable finance to KES 244.3 billion. This capital has empowered farmers with regenerative practices, businesses with solar installations, and households with clean energy alternatives, reaching 466,975 off-grid and peri-urban families.

On the operational front, Equity is slashing its own footprint.

GREEN FINANCE



A farmer harvesting cabbages.



Maize ready for shelling.

Climate-smart financing help farmers reduce post-harvest losses

By Bonface Orucho

Aisha used to throw away nearly half her tomatoes within three days. Heat, rough handling, and slow markets turned fresh fruit into waste. Today, she pays a small weekly fee for space in a solar-powered cold room two kilometres from Vihiga market. The same produce now lasts three weeks.

"Before the cold room, I would wake up worried that half my tomatoes would rot before I found a buyer," she said. "Now I can keep them for weeks, and that means I decide when to sell, not the heat."

Her shift reflects a wider change in how farmers and traders are managing perishable goods across Africa. Distributed, renewable-powered cold storage is turning refrigeration from a luxury into basic infrastructure that stabilises food systems and makes value chains investable.

"The fee is small, but the peace of mind is big," Aisha says. "Now every crate feels like it counts."

In Africa, post-harvest loss shapes the economics of agriculture. The Food and Agriculture Organisation (FAO) estimates that up to 40% of some fresh crops never make it from field to plate, with fruit and vegetables hit hardest.

The African Post-Harvest Losses Information System places the figure even higher, between 10 and 12%. The World Bank estimates that up to 40% of horticultural produce never reaches the market.

Empower Africa calculates that only about 5% of fresh produce currently passes through a cold chain, contributing to losses of 30 to 50%. Losses shrink when refrigeration enters the chain.

Solar walk-in rooms are prefabricated insulated units fitted with panels and hybrid

backups. Operators add simple tools like crate-by-crate booking, SMS receipts and remote monitoring to guarantee uptime. Business models vary. Some kiosks rent storage per crate or per day.

"For me, paying per crate makes sense," Aisha says. "Some weeks I have few baskets, other weeks more. I only pay for what I use."

She adds: "If I sell fast, I don't pay. If I need more time, I add a small fee. That choice is everything for a small farmer like me."

In Kenya, SokoFresh runs solar-powered cold storage on a service basis for more than 7,000 farmers. In Nigeria, Baridi applies the same model in the meat trade, leasing space to local butcheries. Mid-sized players run subscription lockers for cooperatives and deploy cold trucks for aggregation. At the other end of the spectrum are palletised warehouses serving exporters and processors, combining bonded facilities with logistics.

"Cold rooms are revenue-generating assets with measurable climate benefits. That combination is why funds like ours are stepping in," said Simon Enyadong, a regional investment lead at ColdBox, the startup renting cold storage in Kenya.

Finance is following usage. Local operators are raising capital to scale product lines, while asset managers and climate funds are structuring debt to build larger warehouses.

One recent example is Koolboks, a Nigeria- and France-based company that in September 2025 raised US\$11 million in Series A funding. Founded in 2018, the startup has deployed more than 10,000 solar-powered freezers in 25 countries. It offers pay-as-you-go financing and IoT monitoring to retailers and clinics.

"The raise allows us to deepen our reach, build locally, and put power back in the hands of small businesses," said CEO and co-founder Ayoola Dominic.

By localising assembly in Nigeria, Koolboks expects to cut end-user prices by up to 20 percent, underscoring how cold storage is now seen as infrastructure tied to food, finance and climate resilience.

Kenya's InspiraFarms has followed a similar trajectory, securing US\$1.09 million in new investment in 2024 to expand its off-grid cold storage projects. Earlier funding allowed it to pilot cooling-as-a-service in Zambia, Zimbabwe and Ghana.

ColdHubs in Nigeria has built a network of solar walk-in rooms that now serves thousands of farmers and traders. According to its impact summary, the company saved millions of kilograms of produce from perishing in a single year.

In Uganda, an 8,000-pallet cold-storage warehouse is being built in Namanve Industrial Park, Kampala. The project is backed by a US\$18 million facility from the Africa Go Green Fund and developed under the ARCH Cold Chain Solutions East Africa Fund.

"This financing enables us to build a high-quality cold storage and logistics system," said Suki Muia, a director at Cold Solutions Kazi and ARCH Investment.

Laurène Aigrain, managing director of AGG, added that the facility will strengthen infrastructure and help Uganda manage food supplies and healthcare logistics year-round.

The article has been republished from Bird Story Agency: <https://www.bird.africanofilter.org/stories/how-cooling-as-a-service-is-transforming-africa-s-food-systems?locale=en>

Kenya's launch of REDD+ Registry promises to streamline management of forest carbon projects



Kenya has taken a major step in the fight against climate change by launching Africa's first national REDD+ Registry, a digital system that will track and record all projects aimed at reducing deforestation and restoring forests.

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The registry was officially unveiled alongside REDD+ Nesting Guidelines, which set clear rules for how community, private sector, and government forest projects will fit into the country's overall plan to cut carbon emissions.

The launch, supported by the UK Government and Conservation International, makes Kenya the first country in Africa to have such a transparent and nationally coordinated system for managing forest carbon projects. Other countries that have adopted the system are Indonesia, Peru, and Vietnam.

REDD+ stands for Reducing Emissions from Deforestation and Forest Degradation. It is a global framework that encourages countries to protect forests and, in return, earn carbon credits. These credits can then be sold in international or local markets, bringing in money for conservation and community development.

In simple terms, it means finding ways to keep our forests standing, so they continue absorbing carbon from the atmosphere, while also giving communities alternative ways to earn a living.

Kenya is losing about 12,000 hectares of forest every year due to farming expansion, logging, and charcoal burning. This has reduced forest cover in some regions to as low as 6%, threatening water sources, wildlife, and even food production.

Forests like the Mau, Aberdares, and Mt. Kenya are

By Peter Ngare

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The REDD+ Registry will make it easier to track forest protection efforts and ensure that carbon trading in Kenya is transparent, fair, and beneficial to communities.

The guidelines also require that local communities give their consent, share in the benefits, and have their rights to land and carbon respected.

also key water towers. When they are destroyed, rivers dry up, rainfall patterns change, and droughts become more severe.

The REDD+ Registry will make it easier to track forest protection efforts and ensure that carbon trading in Kenya is transparent, fair, and beneficial to communities.

The new online system will keep official records of all REDD+ projects in the country. It will also prevent double-counting, where the same emission reduction is claimed by two different projects and ensure Kenya meets international standards under the Paris Agreement.

The Nesting Guidelines launched alongside the registry will align small, local projects with the national strategy. Whether a project is run by a community forest association, a county government, or a private investor, it will now be linked to Kenya's central system.

The guidelines also require that local communities give their consent, share in the benefits, and have their rights to land and carbon respected.

For the next two years, the registry will be hosted in the UK as Kenya builds its own local capacity to manage it.

According to the Ministry of Environment, the registry will bring in new climate finance from carbon markets, which can be invested in tree planting, water projects, and alternative livelihoods. It will also,

CARBON MARKET



“

For Kenyan businesses, the REDD+ Registry is a chance to lead in Africa's green economy.

goal to plant 15 billion trees by 2032 and boosting biodiversity in wildlife-rich forests.

Real-world impact: Stories from the Ground

Consider the case of Jane Wambui, a tea farmer in the Aberdares. Her cooperative joined a REDD+ project to restore forest cover around their farms, protecting the water sources critical for irrigation. Through the registry, their efforts are now verified, earning credits that fund solar-powered pumps and training in sustainable agriculture. “This isn’t just about trees,” Jane says. “It’s about our children having water and a future.”

For companies, partnering with such co-operatives, it means access to verified credits and a chance to build community trust—a win-win in a market increasingly valuing ESG (Environmental, Social, and Governance) credentials.

Or take GreenTech Ltd., a Kenyan startup specializing in reforestation drones. By aligning with the REDD+ Registry, they’ve secured contracts to monitor forest projects in Laikipia, earning revenue while helping pastoralist communities drive both ecological and economic resilience.

The potential is immense, but success hinges on execution. Conservation groups warn that equitable benefit-sharing is critical. Communities like Jane’s must see tangible gains, or trust in the system could falter.

Companies will need to invest in training to navigate carbon markets, especially for county governments and local associations new to the game. Strong monitoring and enforcement, as emphasized by experts, will ensure credits are credible, attracting international investors wary of past controversies, like Gabon’s questioned carbon claims in 2023.

For Kenyan businesses, the REDD+ Registry is a chance to lead in Africa’s green economy. By integrating forest protection into their operations, companies can tap into a \$900 billion global carbon market, create jobs, and safeguard vital ecosystems.

the ministry says, protect biodiversity by helping conserve forests that are home to unique wildlife, support the government’s 15 billion tree-planting target by 2032 and provide transparency so the public knows where forest projects are, who runs them, and how benefits are shared.

Environment experts say this move will help Kenya position itself as a leader in climate-smart forestry, attracting both local and international investors.

While the launch has been praised, some conservation groups warn that the success of the system will depend on fair benefit sharing with communities, strong monitoring, and proper enforcement of the rules.

Others have called for more training for county governments and local forest associations so they can take full advantage of the opportunities offered by carbon markets.

If done right, the REDD+ system could turn forests into valuable national assets, providing jobs, protecting water sources, and helping fight climate change, while putting Kenya at the front of Africa’s green economy.

For Kenyan companies, the REDD+ Registry opens a world of opportunity as it sets a transparent, centralized platform to track every REDD+ project, ensuring no double-counting of emissions reductions and aligning with Paris Agreement standards.

The accompanying Nesting Guidelines integrate local projects, whether led by community groups, county governments, or private firms, into a cohesive national strategy, ensuring fair benefit-sharing and respect for community land rights.

Imagine a Kenyan agribusiness in Kericho, partnering with local farmers to reforest degraded land. Through the REDD+ Registry, their efforts to plant native trees or protect existing forests could generate carbon credits, sold to global giants like Apple or Shell, who are already investing in Kenya’s voluntary carbon market.

In 2022, Kenya issued 11 million credits, second only to the Democratic Republic of Congo in Africa. These credits, traded on international or local markets, could fund further tree-planting, irrigation systems, or even community training programs, creating a virtuous cycle of profit and impact.

For example, a Nairobi-based tech startup could develop apps to monitor forest health, tying their services to REDD+ projects and tapping into climate finance. Construction firms could pivot to eco-friendly materials sourced from sustainable forestry, certified through the registry. Even small enterprises, like those producing eco-stoves to reduce charcoal use, could benefit from REDD+ incentives, scaling operations while cutting emissions.

The Ministry of Environment projects that this system will attract significant climate finance, supporting Kenya’s ambitious

Inside the battle for carbon credit billions in Northern Kenya

By Ashoka Mukpo

Under the shade of an acacia tree in the sweltering dry season, a group of elders have gathered to discuss community business in the town of Gotu. Two hours or so from the Isiolo town, the small but bustling cattle town of Gotu is typical of Kenya's northern rangeland.

Rashid Susa, a 70-year-old herder, is explaining his support for a conservation NGO that everyone in this area knows well: The Northern Rangelands Trust (NRT). He lists the benefits it has brought to Gotu in the 14 years it has been operating here: the salaries earned by community wildlife rangers, scholarships distributed out from carbon credit payments and help tracking down stolen livestock after raids by neighboring communities.

The town is part of the Nakuprat-Gotu conservancy, one of 45 NRT "member" conservancies in Kenya and Uganda. At least in this crowd of older men, NRT is popular. The men here are from the Borana ethnicity, but their conservancy is shared with Turkana herders they used to fight with. Violence and cattle raiding between the two communities was once so bad it made the highway that runs through town impassable, but co-managing Nakuprat-Gotu improved their relationship.

In the two decades since its founding by conservationist Ian Craig in 2004, NRT has grown into a behemoth. The



Ian Craig at Lewa Wildlife Conservancy. Image by Ashoka Mukpo/Mongabay.

A herder with his goats in the town of Gotu. Image by Ashoka Mukpo/Mongabay.

conservancies Craig and NRT helped establish now cover more than 10% of Kenya's total area: 6.37 million hectares (15.74 million acres).

Pitched as an alternative to the older fortress-style national park model that's dominated Africa since the colonial era, NRT represents arguably the most successful community conservation experiment in Africa. However, it is now potentially on the brink of collapse.

The stakes are high. This month, Verra, which certifies carbon credits for sale on global markets, put NRT's flagship carbon project under review. Biliqo Bulesa is one of project's participants; last year, its Carbon Community Fund received nearly \$200,000 as its cut of sales, some of which went to scholarships for 550 students living in the area. Overall, in 2024, around \$25 million was disbursed to such funds in the 22 communities that have contributed land to the carbon project.

The past year has been one of turmoil and crisis for NRT, culminating in last week's decision by Verra to suspend approval for a project it manages — for the second time.

The suspension follows a decision by a Kenyan court in a long-running dispute over the legality of two of its biggest conservancies. In January, Kenya's Environment and Land Court ruled that the conservancies had been set up without adequate public participation and were thus unconstitutional.

On top of that, funding from USAID, historically one of NRT's biggest donors, came to an abrupt halt under the current U.S. administration, and last summer Craig himself departed in a very public and acerbic dispute with the organization's board.

It's been a tough stretch for NRT, which has found itself in uncharted waters. And not everyone is rooting for it to find its way through.

A few hours west of Gotu, in the town of Biliqo, Hassan Godena sits cross-legged on a couch in his small home. A decade ago, Godena's wife and daughter were killed in a cattle raid. He blames NRT for their death.

In its two decades, NRT has transformed northern Kenya, helping to establish a sprawling network of community conservancies, carbon projects, tourist facilities, and ranger operations. It's been one of the most significant conservation initiatives in East Africa, with far-reaching impacts on nearly every aspect of daily life here.

Now, it faces the future without one of its keystone donors, in a war of words with its most recognizable face, and in legal limbo over a land rights case that's choking off a critical source of carbon credit funding. How it fares from here will have ripple effects throughout the region, and for community-led conservation in East Africa as a whole.

The article has been republished from Mongabay: <https://news.mongabay.com/2025/05/crisis-hits-community-led-conservation-group-in-northern-kenya/>





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Transforming Kenyan Schools with Solar Energy

Butere Girls High School**Friends School Kamusinga****Kilgoris Boys High School**

In many Kenyan schools, unreliable electricity, smoky kitchens, and ballooning power bills have long been the norm. But a new solar-powered solution is helping institutions break free from these challenges and light the path to a more sustainable, cost-effective future.

Designed to reduce costs, eliminate reliance on firewood, and drastically cut carbon emissions, our solar systems are already lighting over 20 schools, including Friends School Kamusinga in Kimilili, Butere Girls High School in Kakamega, Kilgoris Boys High School in Narok,

Boulevered School in Machakos, Mukuru Promotion Centre in Nairobi, Luoro Mixed Secondary School in Siaya among others.

Already, tangible results are being felt with the solar systems now being the primary source of power, providing over 95% of the schools' energy needs and ensuring that classes, boreholes, bakeries, posho mills and other activities in the school run smoothly — no matter the grid status.

The solar system costs less than the current energy expenses. Schools typically use 50-70 percent of the saved costs to pay off the system, while still pocketing the rest for other

improvements. The solution is 100 percent funded by KCB, and schools can access the facility collateral-free. Public schools can access up to Ksh20 million, while private schools can tap into Ksh10 million, all at a highly subsidised interest rate of 9.75% repayable over four to seven years. No new budgets or capitation are needed.

To install the solar solution in your school, contact Sentec Energy Ltd:
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