

Sierra Leone group helps farmers adapt to changing climate, protect forest



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resilient crops.

- *The landscape around Kambui Hills, a commercial timber reserve, is vital to local communities for agriculture, tourism, cultural significance as well as water conservation and climate regulation; the area is also home to numerous endangered species.*
- *Local farmers are facing changing climatic patterns and declining harvests of their primary crop, rice; SLEM has promoted alternative, more climate-resistant options, such as sweet potato, cassava and yams as well as fruit trees like mango and papaya.*

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For two years, a volunteer organization in eastern Sierra Leone worked to encourage residents of Kenema district to plant trees and switch to more climate-resilient crops. Sierra Leone Environment Matter's 50 members aimed to protect both residents' farming livelihoods, faltering in the face of changing weather, and the Kambui Hills Forest Reserve which has been degraded by illicit logging and mining.

In a phone interview, SLEM's founder, John Kamara, told Mongabay that biodiversity and natural resources that residents depend on in the Kambui Hills reserve have been damaged by deforestation and illegal mining. The hills are vital for local agriculture, forestry, tourism, water conservation and climate regulation, and they also hold cultural significance for local communities.

Kambui Hills is a commercial timber reserve that also serves as a buffer zone protecting the nearby Gola reserve. The landscape around the forest reserve is mature secondary rainforest, a mixture of evergreen and semi-deciduous trees at higher elevations, giving way to bush and thickets — and farms — on the lower plains. The reserve proper consists of the 20,000-hectare (49,000-acre) Kambui North and a smaller 880-hectare (2,175-acre) Kambui South portion, with the main road running between them to the town of Kenema, 10 kilometers (6.2 miles) east of the reserve.

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this region of Sierra Leone — colobus monkeys and critically endangered western chimpanzees (*Pan troglodytes verus*), western crowned cranes (*Balearica pavonina*), melancholy woodpeckers (*Dendropicos lugubris*), numerous hornbill species and an array of insects, reptiles and amphibians. Local residents sell charcoal and bushmeat including bats, monkeys, birds and cane rats in the Kenema market and beyond.

In an interview in the Sierra Leonean capital, Freetown, Abdulai Dauda, project manager for another organization also working to protect ecosystems in the district, the Conservation Society Sierra Leone (CSSL), told Mongabay the main threat to the forest reserve is illegal logging by members of local communities that rely on the forest for firewood, charcoal and timber. Combined with farmers using fire to clear new land to plant, Kenema district's forests are suffering significant degradation and erosion. According to Dauda, the district is also experiencing shifts in rainfall patterns.

This has affected farmers' harvests. SLEM's Kamara, who grew up in the area, said that in recent years, heavy rains have caused severe soil erosion. "We are experiencing unpredictable rainfall patterns, with intense downpours occurring in short bursts, rather than being evenly distributed throughout," he told Mongabay in a phone interview.

"From our community engagement with the local people, they share their experiences and concerns with us that rainfall patterns have become increasingly erratic, with prolonged dry spells and heavy downpours occurring more frequently," he said, and this unpredictability makes it difficult for farmers to plan during the planting season and harvesting seasons, which is leading to crop failures and reduced yields."

In October 2023, at the height of the rainy season, Kenema experienced one of the worst floods in its history, destroying many crops and displacing thousands of people.

The floods also washed away many roads, making it impossible for farmers to bring crops that survived the deluge to Kenema to sell.

Kamara said the dry season that followed has been the longest and hottest in 30 years. Farmers in the district, who grow rice, cassava, sweet potato and maize, have told SLEM they are struggling to find

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droughts, high and irregular temperatures and irregular rainfall are the three major extreme weather events that are contributing to a substantial loss in the yields of the major crop that they grow, in response to the negative effects of adverse weather events.”



SLEM has carried out environmental education in schools in Kenema district, Sierra Leone. Image courtesy Sierra Leone Environment Matters.

SLEM, founded in 2019, had 50 volunteer members. They are dedicated to raising awareness and fostering community engagement to protect this essential ecological area, Kamara told Mongabay.

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includes understanding climate change impacts, and working with them to identify climate-resilient crops that can grow in their communities, and implementing sustainable farming practices.”

Kamara said SLEM’s community gardening program served to demonstrate practical adaptations to the changing climate. He said farmers are facing declining harvests of their primary crop, rice. SLEM’s program steered farmers towards alternative, more climate-resistant options such as sweet potato, cassava and yams, and encouraged them to plant fruit trees like mango and papaya.

The environmental education program included information about crop diversification, producing and using organic fertilizers, and agroforestry practices, to enhance soil fertility and conserve water, and about drought-tolerant crops that help farmers adapt to changing rainfall patterns.

SLEM also set up a tree nursery at one of the villages in the district, Bafawahun. The plan was to enlist residents of Kenema’s villages to begin restoring forest cover to slow soil erosion, improve water quality, and restore wildlife habitat that has been lost.

“In return, these restored ecosystems will play a vital role in mitigating the impacts of climate change and ensuring sustainable food production in the region,” he said. “By incorporating these climate-smart agricultural practices into our programs, we believe we are helping rural farming communities in Kenema adapt to climate change, improve their livelihoods and enhance the sustainability of their agricultural systems.”

CSSL’s Dauda said SLEM’s work has had an impact in the district. “The local communities, especially small-scale farmers, were the ones who benefited the most from SLEM’s work, particularly through the climate-smart agriculture programs.”

Kamara explained that until recently, SLEM’s work has been self-funded, with members paying monthly dues and Kamara paying more for many expenses out of his own pocket. The model has proved difficult to sustain and the organization was forced to close its office in Kenema. But Kamara said the organization has recently reached a partnership agreement with the Global Landscape Forum, allowing them to begin to resume activities in Kenema this month.

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Kenema district, Sierra Leone. Image courtesy Sierra Leone Environment Matters.

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project of the Global Landscapes Forum, is aimed at strengthening local actors by connecting them with knowledge, tools and connections that can enable them to achieve sustainable results.

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Dauda: "SLEM made progress in raising awareness about climate change and tree-planting in 2019 and 2020, but the long break in their operations has reduced the overall impact. They need to come back with more consistent efforts and community education to make their initiatives last."

SLEM's work has contributed to raising awareness about environmental protection in Kenema, attracting increased community participation in initiatives such as tree planting and the adoption of more sustainable farming practices. By incorporating climate education into school curricula and community activities, SLEM has enabled students and local farmers to better understand the impacts of climate change and to take practical actions.