

## Western Kenya preps for lightning strikes

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Kisii County director of Environment Samson Bokea

Elizabeth Mokeira and her colleagues had just left Masabo village in Nyaribari Masaba, when it started drizzling.

They decided to shelter under a tree to change their muddied clothes before heading home. Then she heard a sharp, loud bang.

“I didn’t know what had happened because I was thrown some metres from where I was changing my clothes,” she says. They had been struck by lightning.

Mokeira later learnt that her workmates Patricia Moraa Omanga, 70, Yunike Moraa Ongwae, 81, and 14-year-old pupil Mogiti Okindo, had died.

That was September last year. Mokeira and other survivors are already panicking now because most strikes occur between September and December during the short rains season. This is the most dangerous time to be in Western Kenya.

But experts have identified why the region is so susceptible to lightning strikes and are battling to stop the deaths.

The latest strike happened two weeks ago at St Luke Lumakanda Secondary School in Tekoa village, Kakamega County.

A group of children were playing when it started drizzling, forcing them to seek shelter under a tree. And then a blaze of lightning descended. It killed five children instantly, and a survivor was rushed to the Moi Teaching and Referral Hospital in Eldoret.

Lightning kills about 30 people each year in Kenya, and nearly all of those deaths occur near Kisii.

But what happens when someone is struck by lightning?

Most industrial shocks generate 20-60 kilovolts of energy, but a bolt of lightning generates 300kV.

In addition to the 300kV of energy coursing through you when lightning strikes, the power of the strike heats the surrounding air to 27,000 degrees Celsius, causing third degree burns at the bolt's entry and exit points. It can also burst blood vessels and blow people clear out of their shoes. The damage is worse if one is holding a metal object because doing so increases the likelihood of being struck in the first place.

Kisii County director of Environment Samson Bokea says lightning occurs when a positive charge builds up on the ground beneath the cloud, attracted to the negative charge in the bottom of the cloud.

When the ground's positive charge concentrates around anything that sticks up like trees, lightning conductors, even human beings and animals, it connects with the negative one and a spark of lightning strikes.

"Explaining what causes lightning is a little bit tricky but scientifically the same occurs when a positive charge builds up on the ground beneath the ground and then attracted by the negative charge in the bottom of the cloud," Bokea says.

"Objects on the ground, like trees, and the earth itself, become positively charged—creating an imbalance that nature seeks to remedy by passing current between the two charges."

He reveals more people are struck by lightning in western Kenya - particularly in Kisii area - more than any other place in the world because their exposure is so high.

It is wedged on an escarpment between the moist, warm winds of Lake Victoria on the west and the cool, high-altitude winds prevailing year-round from the East.

Many residents live on mountains, the population is growing at a world-high rate, and metal roofs are becoming increasingly popular for homes and stores.

Naturally, Bokea says, a lightning strike can cause cardiac and/or respiratory arrest that can be corrected by proper resuscitation.

Head of the department of disaster management and rescue services in Kisii County, Julius Bogonko Tinega, says they have advised all learning institutions in the county to install thunder arresters to avert disaster in case of lightning.

“We have begun to sensitise residents and school managements on how to stay safe in case of thunder,” Tinega said.

#### **HOW TO AVOID being hit**

- Avoid taking shelter under a tree and stay away from other tall things like flag poles and at the same time, avoid open areas and high ground.
- Stay away from metal bleachers and fences because they are good conductors.
- Avoid lying on the ground because the same will increase chances of being struck by dangerous ground current.
- Stay away from concrete floors or walls. Lightning can travel through any metal wires or bars in concrete walls or flooring.
- Avoid water during a thunderstorm
- Avoid electronic equipment of all types since lightning can travel through electrical systems and radio and television reception systems.
- Don't carry an umbrella. You may get soaked if it starts raining, but it's better than dying.
- Find a car and get in it and close windows. Cars are very safe places to be during lightning storms.
- When you hear thunder, go indoors. Find a safe, enclosed shelter. If you can hear thunder, you're close enough to be hit by lightning.