

A man chasing a swarm of desert locusts in Kenya

21 Locust Impact Tool Kit

For using data to protect threatened food supplies in East Africa and beyond

As the world was doing battle with the coronavirus, another crisis began: massive swarms of desert locusts invading East Africa. Fighting back the bugs—and the threat of human hunger they leave in their wake—requires tracking and predicting where they will hit next. In April, agricultural data analysis firm Gro Intelligence stepped in, launching free data tools to do just that.

The problem began when extreme rains hit the Arabian Peninsula in mid-2018, creating ideal breeding grounds for desert locusts. The famously voracious insects reproduced exponentially (estimated to multiply by as much as 400 times every six months) and migrated across East Africa. Swarms more than three times the size of New York City—an estimated 192 billion insects—were spotted in Kenya, according to the U.N. Food and Agriculture Organization (FAO).

By May the locusts threatened the food security of more than 42 million people across 10 countries, FAO estimated. Even

a relatively small swarm of desert locusts spanning 1 square kilometer (0.4 square mile) will, in one day, eat the same amount of food—from crops to pasture to fodder—as 35,000 people.

Gro founder and CEO Sara Menker had a vivid appreciation of the risks, having grown up in Ethiopia. She turned her organization's formidable data and AI expertise—generally deployed for food companies, agricultural firms and investors—to illuminate the problem. Gro's Locust Impact Model uses pixel-level data to assess changes in vegetative health at 250-meter (273-yard) resolution. The impact is then aggregated to the district level to provide broader insights. The Locust Impact Tool Kit makes the data available publicly, so farmers can proactively apply pesticides and humanitarian groups can better predict food shortages and deliver targeted relief.

The kit took on even greater importance as the locusts spread across the Horn of Africa and the Middle East and then into India and Pakistan. As predictions worsened, Gro expanded its model accordingly. **PM**

▶ Buzz Off

42 million

Number of people facing food insecurity in the Greater Horn region of Africa as a result of locust infestations

10

Number of countries initially impacted by locust swarms

150 kilometers

(93 miles) Distance the desert locust can travel every day on the wind

150 million

Number of locusts per square kilometer (0.38 square mile) in a typical swarm

2,400 square kilometers

(927 square miles) The size of the largest swarms reported during East Africa's locust outbreak

Source: U.N. Food and Agriculture Organization

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