MAIZE PRODUCTION IN KENYA

Challenges, Opportunities & The Path to Food Security

A Conversation with David Kosgel | 2026

23 of 47	~3 million	18–26 bags/acre	36.8%
Counties face drought	People at hunger risk	Average yield (good season)	Undernourished population

Overview: Maize as Kenya's Staple Crop

Maize (Zea mays) is Kenya's most important food crop and a cornerstone of the country's agricultural economy. Grown across nearly all of Kenya's 47 counties, its production is most concentrated in the fertile highlands of the Rift Valley and the western regions, areas historically known for their high agricultural potential, reliable rainfall, and deep loamy soils ideal for cereal cultivation.

The sector is primarily driven by millions of smallholder farmers who cultivate plots of one to five acres, using a mix of traditional knowledge and modern inputs. Large-scale commercial farms also contribute to national output, but it is the smallholder farmer who forms the backbone of Kenya's maize supply chain from field to household table.

Production Landscape & Recent Performance

A Positive Turn: Subsidized Fertilizer in 2023/2024

The 2023/2024 agricultural season brought encouraging news for Kenya's maize sector. The government's subsidized fertilizer program resulted in measurable improvements in crop yields, giving farmers many of whom had long struggled with the high cost of inputs renewed capacity to plant and produce at scale. In a good season, yields average between 18 and 26 bags of 90 kg per acre, a figure that reflects the significant potential of Kenya's agricultural land when properly supported.

Competing Land Use: The Sugarcane Challenge

A notable structural shift is underway in some of Kenya's highest-potential maize-producing regions. In the western counties and parts of the Rift Valley, farmers have increasingly turned to sugarcane cultivation as an alternative cash crop. While sugarcane offers appealing income prospects, this

shift has led to a significant reduction in the total acreage under maize, with direct consequences for national food availability and price stability.

This land-use transition raises important policy questions about how Kenya balances the income aspirations of individual farmers with the broader national imperative of food security.

Climate Change: A Growing Threat to Food Security

Perhaps no issue is more consequential for Kenya's maize sector than the changing climate. Weather patterns that farmers once relied upon have become increasingly unpredictable, and the consequences are being felt in fields across the country.

Drought in the Southern Rift Valley

Prolonged drought conditions devastated the southern Rift Valley during a recent cropping season, resulting in widespread crop failure. The effects rippled beyond individual farms: of Kenya's 47 counties, 23 experienced severe drought conditions, exposing approximately 3 million Kenyans to serious hunger and malnutrition. Communities that depend entirely on rain-fed agriculture were among the hardest hit.

When the Rains Return: A Double-Edged Relief

Paradoxically, the return of rains has brought its own set of challenges. Torrential rainfall and surface runoff have caused significant crop damage across many farming areas. Flooding, waterlogged soils, and accelerated soil erosion have undermined crops just as they were expected to recover illustrating the precarious balance that smallholder farmers must navigate in an era of climate extremes.

The Hunger Index: Kenya's Global Standing

These climate-related challenges are reflected in Kenya's position on the Global Hunger Index, where the country ranks below position 100 worldwide. Approximately 36.8% of the population nearly 20 million people are classified as undernourished, placing Kenya in the "serious" category. This stark statistic underscores the urgent need for coordinated interventions across policy, infrastructure, and agricultural practice.

Agronomic Challenges: Pests, Disease & Weeds

Beyond climate variability, Kenya's maize farmers contend with a range of biological threats that continue to undermine yields and household food security.

Challenge	Impact & Context
Fall Armyworm (Spodoptera frugiperda)	An invasive pest that arrived in Sub-Saharan Africa around 2016. It feeds aggressively on maize leaves and cobs, causing losses of up to 50% in untreated fields. Early detection and timely pesticide application are critical but remain costly for smallholders.
Maize Lethal Necrosis Disease	A viral disease caused by co-infection of multiple viruses, including Maize Chlorotic Mottle Virus (MCMV). It causes complete crop failure in severely

	infected plants and has no curative treatment. Prevention relies on certified disease-free seed and vector control.
Striga Weed (Witch Weed)	A parasitic weed that attaches to maize roots and extracts nutrients directly from the plant. Striga thrives in nutrient-depleted soils, making it especially problematic for farmers who cannot afford regular soil amendments. Once established, it is extremely difficult to eradicate.
Changing Weather Patterns	Irregular rainfall, shifting seasons, and prolonged dry spells have disrupted traditional farming calendars. Farmers report increasing difficulty in determining optimal planting windows, leading to mismatched planting schedules and reduced yields.

Policy Spotlight: What Needs to Happen

Addressing the multifaceted challenges facing Kenya's maize sector requires coordinated action across government, research institutions, and the private sector. Key areas for intervention include:

- Sustained input subsidies — particularly for fertilizer and certified seed to reduce production costs for smallholder farmers and improve yield consistency.
- Expansion of irrigation infrastructure to reduce dependence on rain-fed agriculture, especially in drought-prone regions of the Rift Valley and arid northern counties.
- Investment in climate-resilient and disease-tolerant maize varieties through national and regional agricultural research centers.
- Strengthened extension services to equip farmers with the knowledge to identify and respond to pests, diseases, and shifting weather patterns.
- Land-use policy dialogue to address the gradual displacement of maize by sugarcane in high-potential production zones, balancing farmer income with national food security imperatives.
- Soil health programs targeting Striga-infested areas through integrated weed management and soil fertility restoration initiatives.

> *"The challenges we are facing in food production due to climate change resonate deeply with the global hunger data. Until we address the structural and environmental vulnerabilities facing our smallholder farmers, millions of Kenyans will remain food insecure."*
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> **— David Kosgel**