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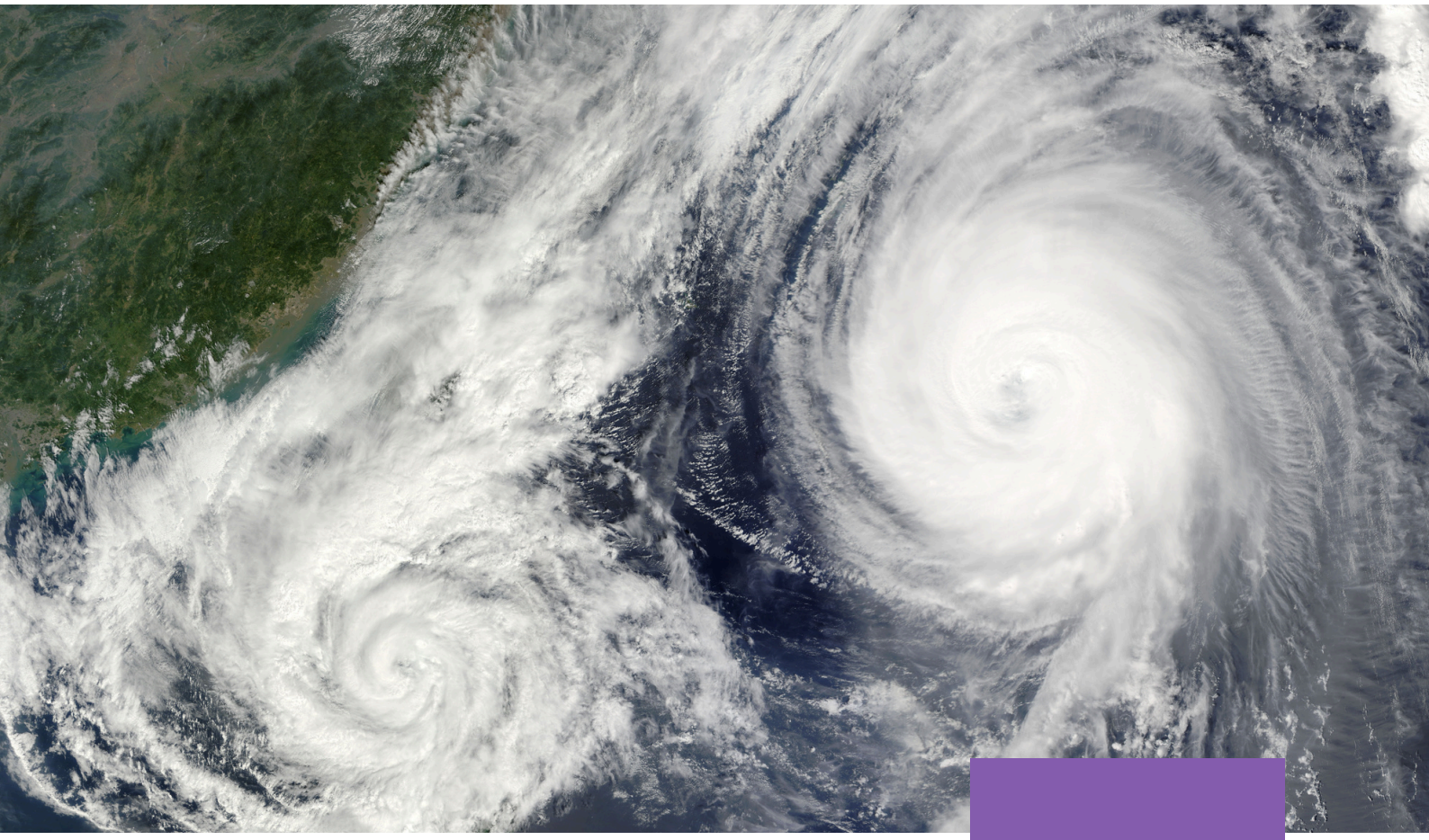
THE FORECAST IS NOT ENOUGH

Putting Farmers at the Centre of Climate Information



BY ASHLEY MUNGU

INTRODUCTION

The Kenya Meteorological Service Authority's (KMSA) latest seasonal forecast offers cautious optimism for Kenya's agricultural sector. Despite projections of near-average to below-average rainfall in several regions between July and September, agricultural production is expected to remain stable following favourable rainfall received during the March-May season.

For policymakers, this may signal a relatively secure harvest. For farmers, however, the forecast highlights a more pressing issue: in an era of climate uncertainty, access to timely and actionable weather information may be just as important as access to seed, fertilizer, or irrigation.

As climate shocks become more frequent and severe, weather forecasts are increasingly becoming an essential agricultural input. Yet for many Kenyan farmers, particularly smallholders, the challenge is whether they can use them to make better farming decisions.

AGRICULTURE'S DEPENDENCE ON THE WEATHER

Agriculture remains the backbone of Kenya's economy, contributing approximately 33% of GDP directly and indirectly and employing more than 40% of the total population and over 70% of rural residents (Government of Kenya, Agricultural Sector Transformation and Growth Strategy, 2019-2029).

Despite its importance, the sector remains highly exposed to climate variability. According to the Ministry of Agriculture, only about 3% of Kenya's cultivated land is under irrigation, meaning the overwhelming majority of farmers rely on increasingly unpredictable rainfall patterns.
The consequences are significant. The 2020-2023 drought, the worst in 4 decades in parts of the Horn of Africa, left an estimated 4.4 million Kenyans facing acute food insecurity and caused substantial losses to crops and livestock (WFP, 2023). Less than two years later, widespread flooding affected more than 400,000 people across the country, destroying farms, homes, and infrastructure (OCHA, 2024).

For smallholder farmers, these events are not isolated disasters; they are becoming recurring risks that directly affect livelihoods and food production.

THE MISSING LINK BETWEEN FORECASTS AND FARM DECISIONS

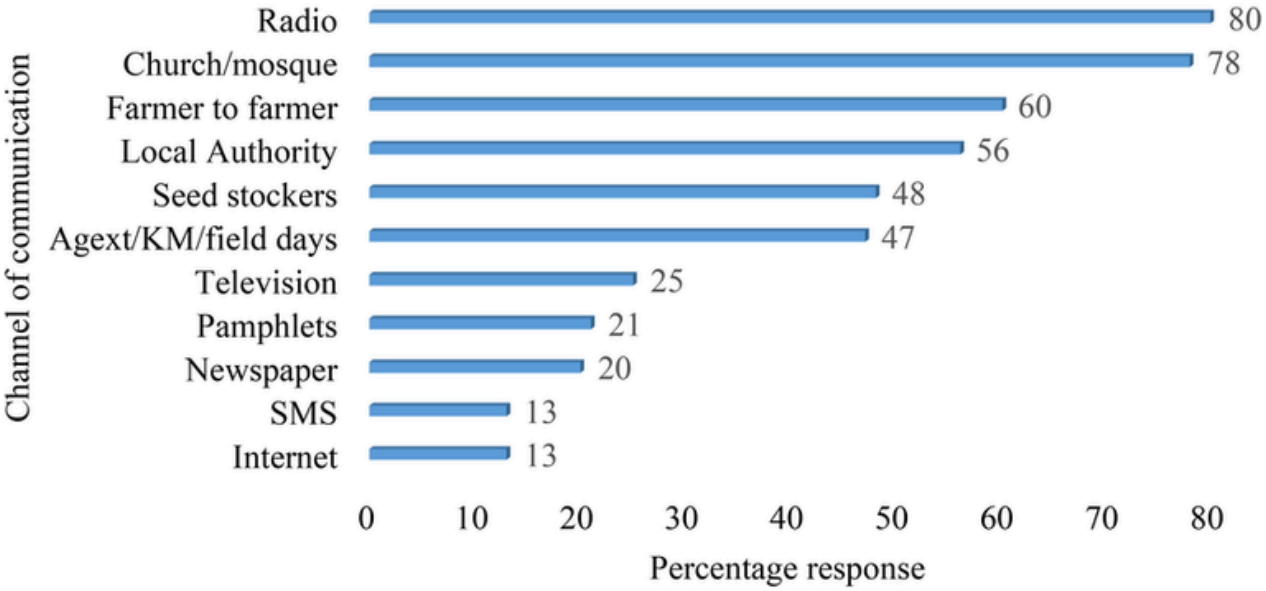
Kenya has invested considerably in meteorological forecasting. Seasonal climate outlooks, county-level advisories, and early warning bulletins are routinely produced. However, there remains a gap between the production of weather information and its practical application at farm level.

A forecast predicting below-average rainfall may provide useful information, but farmers need more than weather predictions. They need guidance on what actions to take. Should they plant drought-tolerant crops? Delay planting? Reduce input investments? Harvest earlier?

Research consistently shows that access to climate information improves agricultural outcomes. A study by the Food and Agriculture Organization (FAO) found that farmers who receive and use climate information services can increase productivity by up to 30% while reducing losses associated with weather-related risks (FAO, 2020).

Yet access remains uneven. According to the 2024 Global Findex Database, while mobile phone ownership and digital connectivity have increased across Africa, significant gaps remain in access to information among rural populations, women, and low-income households. These are often the same groups most vulnerable to climate shocks.

The issue, therefore, is not merely the availability of forecasts but their accessibility, relevance, and usability.



Dissemination channels of climate information (Matere et al., 2023).

WHAT KENYA CAN LEARN FROM RWANDA

Kenya is not the only country grappling with the challenge of making weather information useful for farmers. Rwanda offers an instructive example of what can be achieved when climate information is integrated into agricultural support systems.

Through collaboration between the Rwanda Meteorology Agency, agricultural extension services, local governments, and community radio stations, weather forecasts are translated into practical advisories tailored to specific farming activities. Farmers receive information on planting dates, crop management, and anticipated weather risks through SMS services, radio programmes, and extension officers.

A report by the CGIAR Climate Services for Agriculture programme found that farmers receiving climate advisories in Rwanda were significantly more likely to adopt climate-smart agricultural practices and improve farm planning compared to those without access to such services (CGIAR, 2019).

The lesson is not that Rwanda has solved climate risk. Rather, it has recognized that weather information creates value only when it influences decisions

WEATHER INFORMATION AS AN AGRICULTURAL INVESTMENT

Traditionally, agricultural policy has focused on increasing access to physical inputs such as fertilizer, improved seed varieties, and mechanization. These investments remain critical. However, climate change is transforming information into an equally important input.

The World Bank estimates that every dollar invested in hydrometeorological and early warning services can generate between four and ten dollars in socio-economic benefits through improved planning, reduced losses, and enhanced resilience (World Bank, 2021).
For farmers, those benefits can be substantial. Better forecasts can improve planting decisions, reduce crop losses, optimize input use, and strengthen preparedness for extreme weather events.

Despite this, climate information services often receive less attention than other agricultural interventions. Extension systems remain under-resourced, localized advisories are not universally available, and many farmers still lack access to timely information in a format they can easily understand and act upon.

CONCLUSION

The latest KMSA outlook demonstrates that favourable weather conditions can help sustain agricultural production. But good weather alone cannot guarantee food security. Climate change is increasing uncertainty, and uncertainty carries costs. Building resilience therefore requires more than forecasting the weather; it requires ensuring that farmers can act on that information.

This means investing not only in meteorological capacity but also in extension services, digital advisory platforms, farmer organizations, and localized communication systems that translate forecasts into practical recommendations. For a country where agriculture remains central to livelihoods and economic growth, empowering farmers with actionable weather information may be one of the most cost-effective climate adaptation investments available.

The real question is not if Kenya can provide accurate weather forecasts but if the farmer who will plant maize in Trans Nzoia, beans in Bungoma or sorghum in Kitui has the necessary information to make the right decisions at the right time.

As we already know, climate change requires a timely action plan for resilience to the forecast does not end when the forecast has been made; it represents the first step that must be taken by farmers after receiving their forecast.

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