

STRUCTURED SUMMARY CROWDSOURCING DATA CAN HELP MONITOR DROUGHT IMPACTS ON FOOD SECURITY IN PASTORAL AREAS

Evidence from Ethiopia and Kenya

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Motivation

Experience from food security interventions in sub-Saharan Africa's (SSA) pastoral areas shows early warning information can help households better prepare and respond to drought. Providing early warning, and monitoring indicators of resilience in the drylands, is hampered by limited ability to gather data using conventional methods. Information on subtle changes in livestock productivity, household food consumption, and coping strategies in pastoral systems is missing, yet crucial to understand the way drought affects food security. Crowdsourcing data can help represent remote, difficult to reach, and fragile locations when monitoring shocks and evaluating their impacts on food security.

Purpose

We assess the impact of drought on household food security in the drylands of Kenya and Ethiopia, and the mechanisms by which drought affects food security.

Approach and methods

Sentinel sites were established in Marsabit, Samburu, and Isiolo counties in Kenya, and Meyu Muluke district and Hargelle woreda in Borena zone, Ethiopia. Every week, local informants monitored 11 livestock markets, 48 transect sites, and 156 households in Kenya; and 23 livestock markets, 132 transect sites, and 396 households in Ethiopia. This crowdsourced data was gathered on the KAZNET platform.

Forage conditions reported from the sires was compared to remotely-sensed imagery summarised as a normalized difference vegetation index (NDVI).

Findings

Drought increased food insecurity mainly through two channels: reduced livestock productivity; and, higher food prices. An improvement in forage conditions by 10% reduced the likelihood of a household experiencing food insecurity by 11 percentage points.

Policy implications

Two priorities for policy emerge. First, there is need to store high-quality biomass harvested in seasons of abundance, to develop better feeding systems that plan for drought, to manage animal health and breeding cycles to cope with and avoid periods of low pasture availability, and to strengthen market linkages.

Second, high frequency data is valuable to analyse impacts of drought. Investing in digital-based monitoring that cuts costs by crowdsourcing data can help.

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