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Supporting (agro) pastoralists' resilience through real-time monitoring of drought in Kenya and Ethiopia

This report examines if crowdsourcing app KAZNET can be used to collect data on drought impacts and improve early warning systems and index-based drought risk financing and insurance products.

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Promoting innovative solutions Supporting livelihoods and markets Understanding land and conflict Working in a changing climate Gender equality and social inclusion Africa Ethiopia Kenya
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Addressing climatic shocks and building resilience of food systems are key national priorities in sub-Saharan Africa. To improve drought monitoring and index-based drought risk financing and insurance (IBDRFI) products, data must be collected from the field to calibrate model parameters and verify their accuracy.

In this report, we addressed the following research questions:

- How are the impacts of drought transmitted to households?
- Can crowdsourcing be used to collect high frequency data on drought impacts?
- Can crowdsourced ground truthing data be used to improve early warning systems and IBDRFI products?

We collected data through weekly monitoring of markets, rangeland transects, and households in Marsabit, Samburu, Isiolo, Wajir, and Garissa counties in Kenya and East Hararghe, Borena, and Afder zones in Ethiopia. Descriptive statistics were computed to understand trends in key indicators and econometrics were used to test causal relationships.

Findings

- A 10% improvement in forage conditions is associated with an 11 percentage point reduction in household food insecurity, an 8% decrease in the duration of food deficits, and a 23% increase in daily milk production.
- Pastoralists participating in the Drought Index-insurance for Resilience in the Sahel and Horn of Africa (DIRISHA) KAZNET initiative (KAZNET is a ‘crowdsourcing’ mobile phone app for collecting data in remote pastoral regions of East Africa that was scaled by the SPARC-DIRISHA project) were 15 percentage points more likely to use crowdsourced information, increased the number of people with whom they shared information by 27%, had 11 percentage points higher likelihood of adopting improved livestock management practices and 4 percentage points higher probability of choosing more profitable selling markets for goats and sheep, and experienced a 55%

increase in livestock income.

Policy implications

- Investments in fodder production and storage, market access and linkages, and rangeland management are good options for mitigating the impacts of drought on food security.
- Crowd-sourced information can provide early warning about drought and inform anticipatory action. Including women as data contributors helps gather information that male contributors might find challenging to collect.
- Designing crowdsourcing data in ways that combine digital innovation with information sharing within social networks will likely make them successful.



Drought in the Samburu region of Kenya - Image by Brooke Bierhaus - CC BY-SA 4.0 - Wikicommons images

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