



Climate Variability, Pastoralism, and Commodity Chains in Ethiopia and Kenya

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Research Brief

Adapting Livestock to Climate Change Collaborative Research Support Program

Abstract

Herders must confront difficult decisions during disasters, including choices about selling animals or moving them to distant pastures where they might be able to wait out the dry period without losses. This research brief presents preliminary observations carried out in Borena Zone, southern Ethiopia and Garissa District, northeastern Kenya during the recent drought (2011). Although drought is often seen in monolithic climatic and environmental terms, we argue that several non-climatic factors also constrain herder's and trader's responses during a disaster. We particularly highlight the interrelated decisions that center on land use, mobility, and market choices, all factors with amplified importance during prolonged droughts. We conclude with some practical implications of the preliminary findings. 

Sell or Move: Preliminary Observations About Herder Decision Making During a Prolonged Drought.

Study Background

During 2011, herders of southern Ethiopia and northern Kenya faced a prolonged drought, the third to strike in 8 years. The rainy season of 2010 (March to May) yielded below average precipitation and the yearly short rains (October to November) completely failed. By February 2011 herders of Garissa District, Kenya and Borena Zone, Ethiopia, were experiencing the impacts of the poor 2010 rains, although livestock markets operated reasonably well and animal deaths were limited.

When we re-visited both sites in April 2011, the long rains had still not arrived, animals (especially cattle) were dying in large numbers, and market prices had plummeted. Many herders moved emaciated remaining animals in large numbers to markets where they hoped to unload them. Even with increased market sales at very depressed prices, the result was a large die-off of livestock and a need for imported food aid to support drought-stricken pastoralist families.



Crowded waterpoint, northeastern Kenya (photo: Peter D. Little)

Adapting Livestock Systems to Climate Change Collaborative Research Support Program

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Our Early Observations

Most studies on pastoralists' coping strategies during droughts reaffirm the key roles of mobility and markets in contemporary pastoral risk management (Homewood 2008). Mobility is necessary to find scarce grazing and water, while markets are required for selling animals before they die and for earning cash to buy food. Less attention is paid in the literature to the timing and sequence of decisions that herders make during these events, the ways in which prior decisions constrain later choices, and the difficulties of correcting miscalculations as a disaster worsens.

Concerns about markets and food security, especially the need to sell animals to purchase food, figure prominently into local decisions about "where" and "when" to move livestock. Herders need to maintain closeness to market to sell livestock and buy essential grains. Thus, the location of market centers contributes to decisions about herd mobility and whether to split the household to leave family and animals near a market.

A simplified framework can be constructed that highlights different decision nodes during a drought. In the early stages of a drought two related questions are especially critical: (1) should herders remain in their current home area or migrate animals to dry season or reserve pastures and (2) should they increase livestock sales in anticipation of worsening drought? Once a herder decides not to move and the situation does not improve, he or she is confronted with a plethora of painful outcomes. Herders at our two research sites who opted not to migrate sold excess animals at very depressed prices (< 50 to 75 percent of normal), purchased expensive fodder, and/or lost a large percentage of animals, confirmed by our preliminary findings and interviews conducted between February and June 2011.

The following points summarize our observations and tentative findings, most of which should be interpreted as hypotheses rather than confirmed results.

Mobile phones are used considerably more for market-related information than for weather-related news. We observed only a few cases where herders used mobile technology to seek information about grazing and climate conditions.

Some important questions require further study: do mobile phones improve prices for herders by allowing timely price information to be used in negotiations? Does technology allow the bypassing of local middle persons and brokers? Could a system for dissemination of climate information also be put in place?



Mobile phones charging, Didi Hara, Borena, Ethiopia (photo: Dejene N. Debsu)

Timing: Early decisions about herd movements and sales during prolonged drought are critical. They can help to ensure animals are sold before prices collapse or are moved before they weaken. At both research sites, herds that were not moved or sold early in the drought became too weak to be moved to distant grazing and water or to markets (30+ km

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Effects of Improved Information on Market and Mobility Decisions: Access to mobile phone technology and coverage is considerably greater in northeastern Kenya than in southern Ethiopia, although coverage is improving rapidly in both areas. Mobile phone use is considerably higher among traders than pastoralists, among whom use is still relatively minor (<20 percent at the Ethiopian site and <40 percent in Kenya). A larger percentage of users have access indirectly through a relative or neighbor who owns a mobile phone.

in southern Ethiopia and 200+ km in the northeastern Kenya). Many herders interviewed in February/March 2011 anticipated that the long rains would begin as normal in mid-March. When they were delayed until late April, most herders in the region experienced heavy animal losses. Mahmoud observed several cattle dying at the Garissa market on April 20th, especially those that traveled the longest distances.

Other herders decided not to bother selling their animals because of their poor condition and very low market prices. Herd owners from

Didi Hara, Borena did not move weak cattle to the market because they knew they would not survive the trek. Instead, many of their animals died in the rangeland areas near homesteads.

Enclosures and farms settlements: During the 2011 drought most Borana herders noted a lack of pasture, not water, as the main problem, although water was still an issue for many herders. Many blamed the increased settlement and private enclosures as reasons for feed shortages. None of these processes are inherently harmful, but they can be if land use and tenure policies are not enforced or reformed to account for the consequences of land use changes.

Increased commercialization also leads to an escalated reliance on hired herders who have poor incentives to conserve communal resources and, thus, add to local problems of resource management. In the past, the Borana community restricted human settlements around permanent wells so that the areas could be used as dry season grazing reserves. However, this practice is no longer consistently enforced and further aggravates the impacts of drought and shortages of pasture.

Animal Disease: Reserve grazing areas at both research sites are known to be infested with trypanosomiasis-carrying tse-tse flies. Herders reported that there were high incidences of animal deaths due to trypanosomiasis, but they also said that the severity of the drought forced them to make the move, despite the risk. Those herders who migrated with their herds to infested forest areas did so early on in the recent drought (December-January 2011) because a delay would have made the animals too weak to endure the move. Although we have no data on the most recent drought, findings from the 1999-2000 disaster suggest heavy losses likely resulted from this strategy (McPeak, Little and Doss 2011).



Impacts of 2011 drought, Borena, southern Ethiopia (photo: Dejene N. Debsu)

Implications to study further

The preliminary findings and observations reported above suggest a number of policy and program applications that could be made. These include:

Anticipating land use and ecological effects of increased market activity: Unfortunately livestock marketing policies often do not anticipate the effects of increased commercialization on land and resource bases that are required to produce the marketable commodity, in this case livestock. Since most production in pastoralist areas is still conducted on communal lands, policies need to be implemented that recognize pastoralist rights to land and water and discourage spontaneous private enclosures and farms that jeopardize livestock production. Currently there are no consistent land tenure and land use policies at the Ethiopian or Kenyan site, and this results in localized overgrazing, feed shortages, animal losses during droughts, and shortages of healthy animals for the market.

Improving access to inputs during droughts: Inadequate access to veterinary drugs, feed, and other inputs during droughts is a major problem that constrains herder options and results in heavy economic losses. In remote grazing areas this lack of access is especially a dilemma. Ethiopia has a system of community animal health workers (CAHWs) that can provide veterinary inputs and services if proper incentives are put in place and small-scale suppliers are supported with credit.

The private sector should be encouraged to provide fodder for starving livestock, even if transport costs initially need to be subsidized by the government. In this respect, the possibility of encouraging fodder production near pastoralist areas—rather than relying on supplies from distant sources—could be explored.

Provision of useful market and climate information: There are many possibilities associated with mobile communication for improving market and climate information both for herders and traders during droughts. There is a mobile phone-based (SMS) market

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information system in both Ethiopia and Kenya. The use of SMS technology for delivery of useful climate information for pastoralists is a possibility, as is the delivery of weather forecasts via radio broadcasts. At present, neither of these is used by pastoralists who rely on local indigenous techniques for weather-related information. This raises the possibility that extended cell phone coverage could facilitate better-informed decisions about animal mobility during a drought. 🐄

Further Reading

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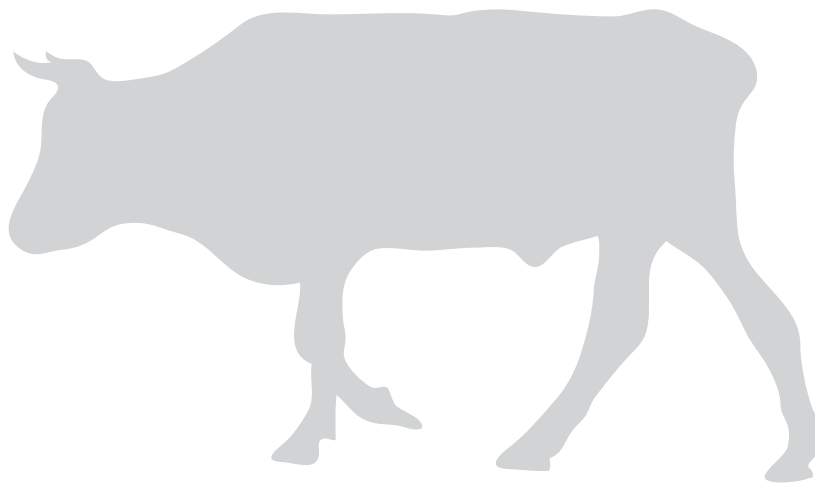
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Climate variability, pastoralism, and commodity chains in Ethiopia and Kenya (CHAINS)

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The CHAINS project was developed to determine: how mobile herders access market chains in remote areas, how weather-related risks affect market access and markets themselves, which producer scales/groups (including women) benefit from different markets and which do not.

This project addresses interactions between climate variability, pastoralism, and livestock marketing from production to final sale. Secondly, it will look at the ways that outbreaks of animal diseases and conflict—indirectly associated with climate variability—negatively impact different of producers and commodity chains. The research design is based on the premise that uncertainty over extreme climatic events and their potential effects on herders, markets, animal disease, and conflict will continue in eastern Africa. In fact, there remains considerable uncertainty over the direction of climate change in the region's drylands, with some models predicting increased incidences of floods rather than drought. The project entails literature and secondary data reviews, participatory field research, community stakeholder meetings, and a research planning workshop in the region. It will employ a benefit/cost analysis that not only addresses herder and trader level benefits/costs but also compare benefits/multipliers (e.g., employment), especially for local economies, associated with different commodity chains. Research sites for the study include: (1) the southern Boran plateau, Ethiopia and the market links up to export markets and Nairobi, Kenya across the border; and (2) the Tana River basin near Garissa, northeastern Kenya and the area's market links to Nairobi and Mombasa (including exports from Mombasa). The study is directly relevant to USAID's pastoralism/value chain programs in both countries. By involving faculty and students at Pwani (Coast) campus of Kenyatta University and from the Institute for Rural Development, Addis Ababa University, the project will build regional capacity in pastoral systems and commodity chain analyses.



The Adapting Livestock Systems to Climate Change Collaborative Research Support Program is dedicated to catalyzing and coordinating research that improves the livelihoods of livestock producers affected by climate change by reducing vulnerability and increasing adaptive capacity.

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