SPARC partner publication 13th September 2022

Digital innovations for high-frequency ground truthing and monitoring of household welfare in pastoral communities

This brief presents initial results from data, and summarises lessons learned, of using crowdsourcing techniques to gather data on the impacts of climatic shocks on pastoral systems and livelihoods.

Publisher ILRI
By { "@context": "https://schema.org", "author": { "@context": "https://schema.org", "@type": "Person", "name": "Watson Lepariyo", "url": "https://www.sparc-knowledge.org/about-us/contributors/authors/watson-lepariyo" } } Watson Lepariyo { "@context": "https://schema.org", "author": { "@context": "https://schema.org", "@type": "Person", "name": "Rupsha Banerjee", "url": "https://www.sparc-knowledge.org/about-us/contributors/authors/rupsha-banerjee" } } Rupsha Banerjee { "@context": "https://schema.org", "author": { "@context": "https://schema.org", "@type": "Person", "name": "Vincent Alulu", "url": "https://www.sparc-knowledge.org/about-us/contributors/authors/vincent-alulu" } } Vincent Alulu { "@context": "https://schema.org", "author": { "@context": "https://schema.org", "@type": "Person", "name": "Kelvin Shikuku", "url": "https://www.sparc-knowledge.org/about-us/contributors/authors/kelvin-shikuku" } } Kelvin Shikuku
Promoting innovative solutions Supporting livelihoods and markets Understanding land and conflict Working in a changing climate Africa Ethiopia Kenya

A Saudi returnee with a mobile phone returns to Ethiopia

Pastoralists occupy approximately 40% of Africa’s landmass. A large proportion of this landmass are arid and semi-arid lands (ASALs), regions characterised by low and erratic rainfall. Pastoral systems and livelihoods are vulnerable to climatic shocks. Climatic shocks cause spatial and temporal uncertainty of pasture and water resources.

The adverse impacts of climatic shocks manifest in several forms including livestock mortality, increased food insecurity, malnutrition and conflict. It is estimated that the ongoing drought in the Horn of Africa has claimed over 7 million livestock which in turn has led to almost 7 million children suffering from acute malnutrition.

Despite their harsh environment and climate challenges, pastoral livestock production systems contribute significantly to national and regional economies. For example, livestock contributes an estimated 57% of the regional agricultural gross domestic product (AGDP) in the Intergovernmental Authority on Development (IGAD) countries.

Efforts to enhance and sustain the contribution of pastoral livestock systems to economic development must address the adverse impacts of climatic shocks. A critical step towards this is understanding the mechanisms through which such shocks impact pastoral systems and livelihoods. However, the pathway of impact from climatic shocks to household welfare is not well understood in pastoral settings. One reason for this is the complexity of collecting data in fragile and remote pastoral environments. Clearly there is an urgent need to understand the relationship between climate shocks and the coping strategies available, and the intra-seasonal variability in household welfare. This information could inform anticipatory action and the design of interventions for building resilience of pastoralist systems and livelihoods in the long-term.

To close these gaps, SPARC member organisation the International Livestock Research Institute (ILRI) and partners have been working on innovative prototypes of data collection platforms. Among the specific approaches implemented by ILRI and partners include the use of digital innovations for a near real-time collection of data at high frequency in remote locations. The approach uses crowdsourcing techniques, where data are collected and submitted by pastoralists themselves, and provides a variety of expanded capabilities which in addition to supporting data collection, facilitate feedback provision.

Building on successful pilots of the data collection platforms, sentinel zones have been set up in the drylands of Kenya and Ethiopia, for collection and dissemination of high frequency and multi-dimensional data through the digital platform. Data on key environmental and socio-economic indicators are being collected to inform technical design and quality assessment of initiatives in the region. This brief describes the approach, presents preliminary results from the data, and summarises the lessons learned so far.

Read the brief here.
