



*Better lives through livestock*

# Digital solutions for monitoring community health and nutrition status

---

Nathaniel Jensen

International Livestock Research Institute (ILRI)

UNSCN Webinar Series - Nutrition in a Digital World

December 3, 2020



IDRC



CRDI

# Challenge

**Nutrition and health are some the most used indicators** for tracking progress against benchmarks, such as the SDGs, for monitoring for humanitarian disasters, and for assessing the impacts of development interventions.

Unfortunately, **conventional methods** for collecting indicators of nutrition and health status require considerable training, **are slow, difficult, and expensive** to collect accurately.

One outcome is that **the available data are insufficient** for many needs. For example, the need for better data is mentioned in the last 4 Global Nutrition Reports.

Such data are particularly sparse among those for whom it is especially expensive or challenging to collect.

- Pastoral communities (Wild et al. 2019; Hassell et al. 2020)
- Conflict & emergency settings (Carrol et al. 2017)
- Pandemics (Griffith et al. 2020; Hassell et al. 2020)



# Project Summary

**Challenge:** Conventional methods for collecting and tracking nutrition and health indicators require considerable training, and are slow, difficult and expensive to collect accurately.

**Proposed Solution:** To develop a mobile-based platform by which caregivers can easily collect, submit, and access information on their and their children's nutritional and health status in near-real time and at extremely low cost.

## Value:

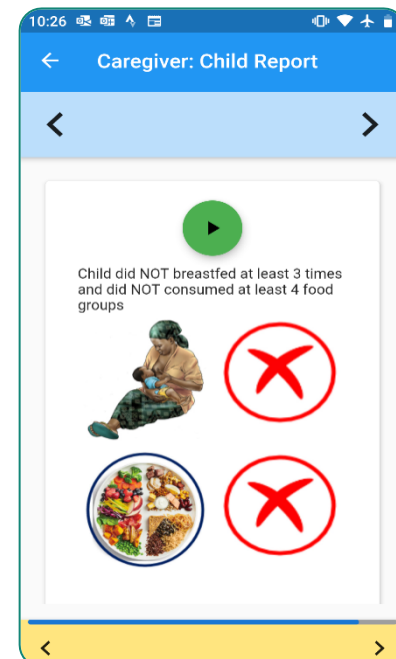
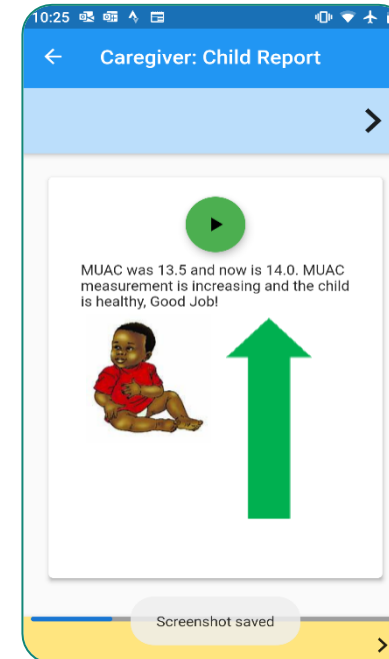
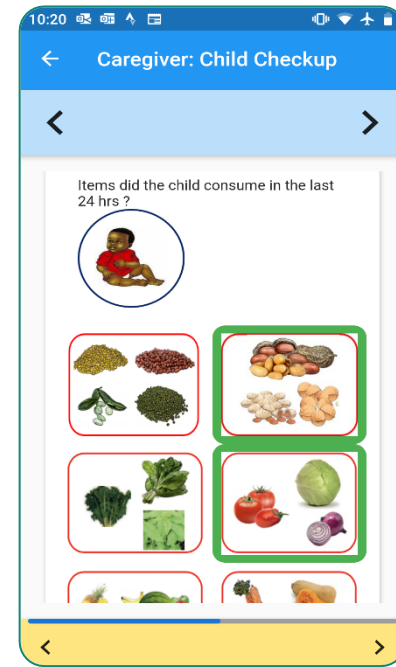
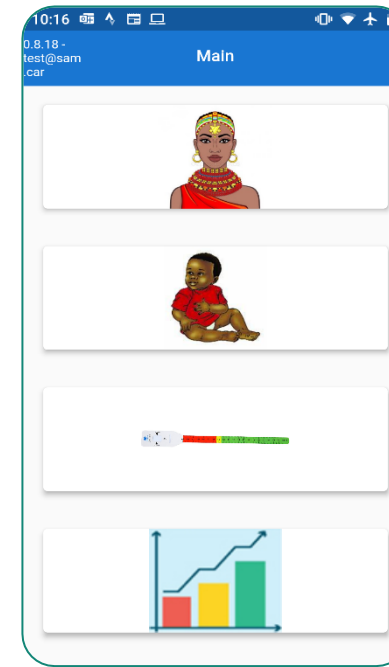
- This work has the potential to **reduce the cost of each data point** dramatically with implications for the extent and frequency with which nutrition and health can be tracked.
- The application will provide caregivers with information on themselves and their children's nutrition status, **improving their access to information related to nutrition decisions.**





# Tool features

- Targets caregivers and the children they care for
- Does not require literacy or numeracy
- Focuses on dynamics over time
- Collects MUAC as an indicator of child malnutrition
- Collects information on the immediate causes of malnutrition (UNICEF 1990)
  - Disease
    - Symptoms of sickness: cough, fever, diarrhea, vomiting
    - Health seeking behavior
  - Consumption
    - Dietary diversity: DDS for children (MDDS) & caregiver (WDDS)
    - Supplements
- Other important variables: Food security (rCSI), water sources and treatment, nursing behavior
- Provides the caregiver with information on performance against benchmarks



# Pilot: November 2019 - November 2020

## Sample

- Pastoral regions of Samburu County, Kenya
- 192 caregivers, each with an index child
- 22 Community Health Volunteers (CHVs)

## Logistics

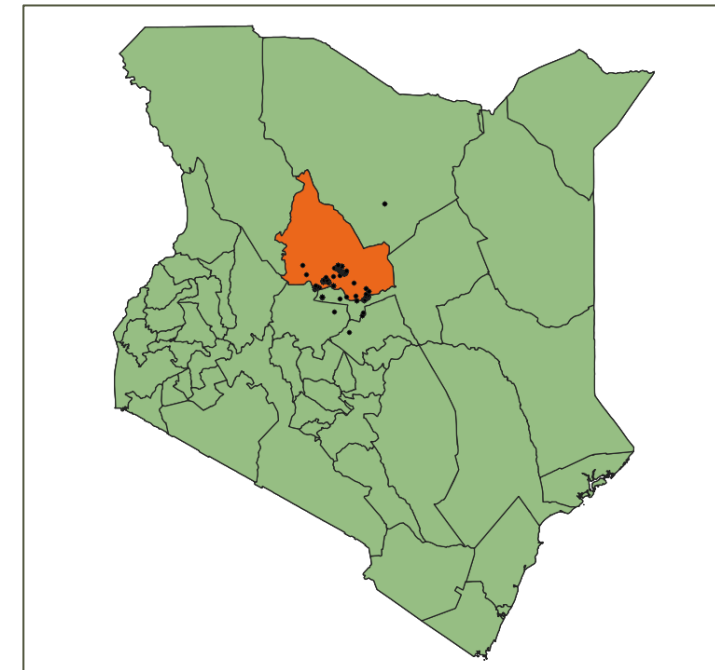
- Project provides phones, solar chargers, and data bundles
- 7-day iterative training process on phone use, nutrition, and tools

## Operations

- Caregivers can participate as much\* or as little as they like
  - \* Max caregiver checkup: 1 every 24 hours
  - \* Max child checkup: 1 every 24 hours
  - \* Max child MUAC: Once every 6 days
- 20KSH (~\$.20) token for each submission

## Validation data

- CHVs visit each caregiver monthly, providing technical support and collecting her monthly-checkup of the caregiver and index child

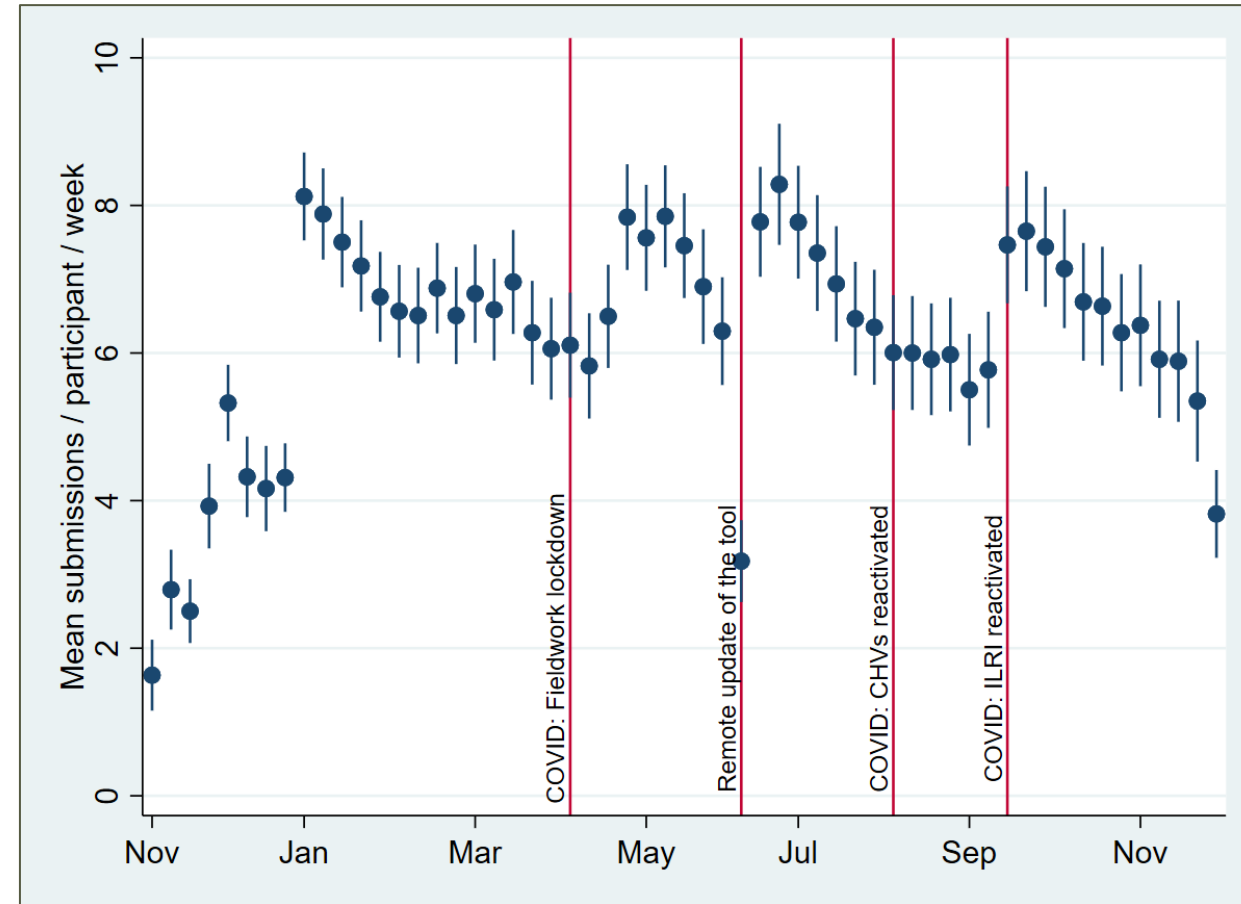


# Pilot: Participation

Caregivers and CHVs have now been collecting data on health and nutrition for nearly 12 months.

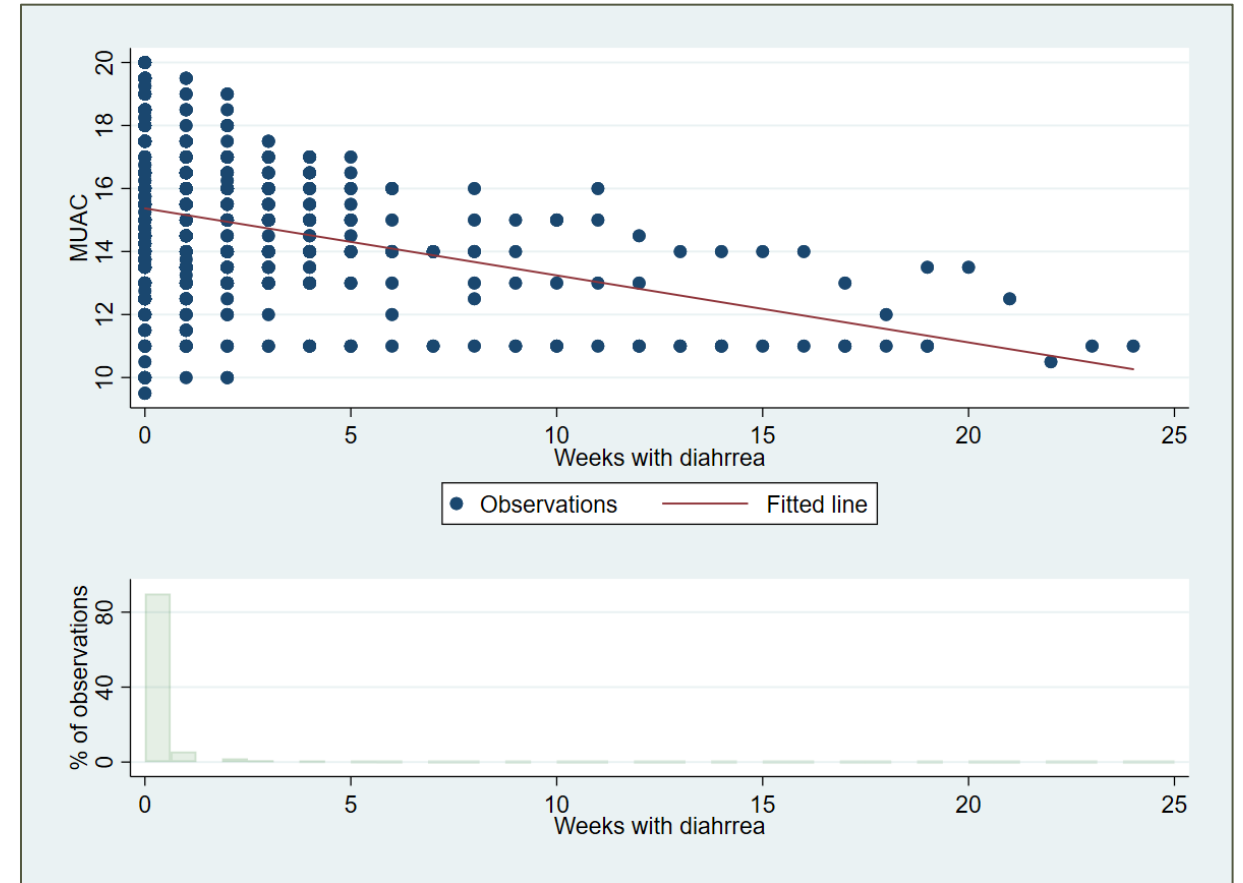
As of December 1, the 192 caregivers have submitted over 65,000 submissions across the three forms.

Caregivers continued to record and submit data even when CHVs and field staff were restricted from visiting.



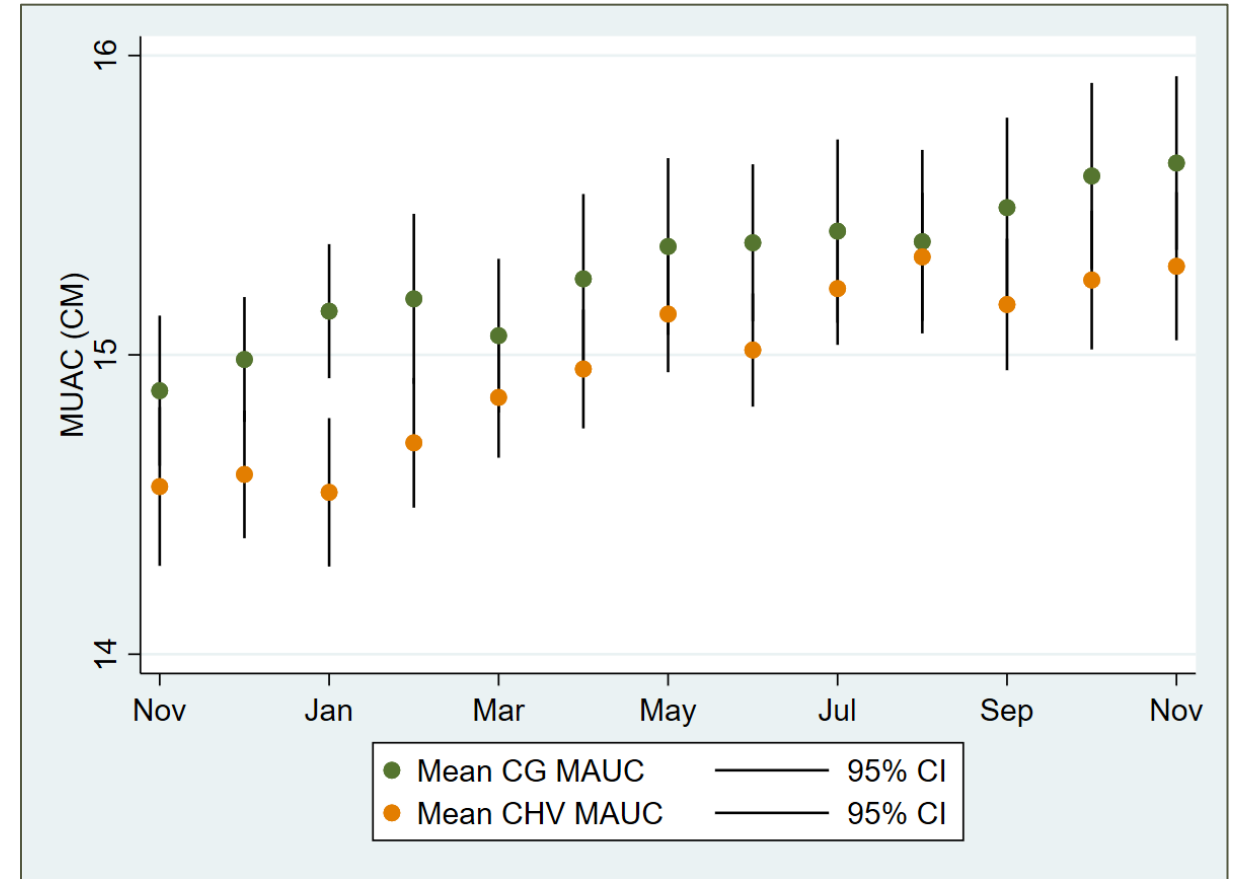
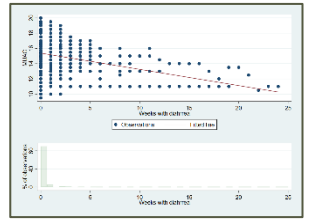
# Pilot: Preliminary findings

- The data seem internally consistent.



# Pilot: Preliminary findings

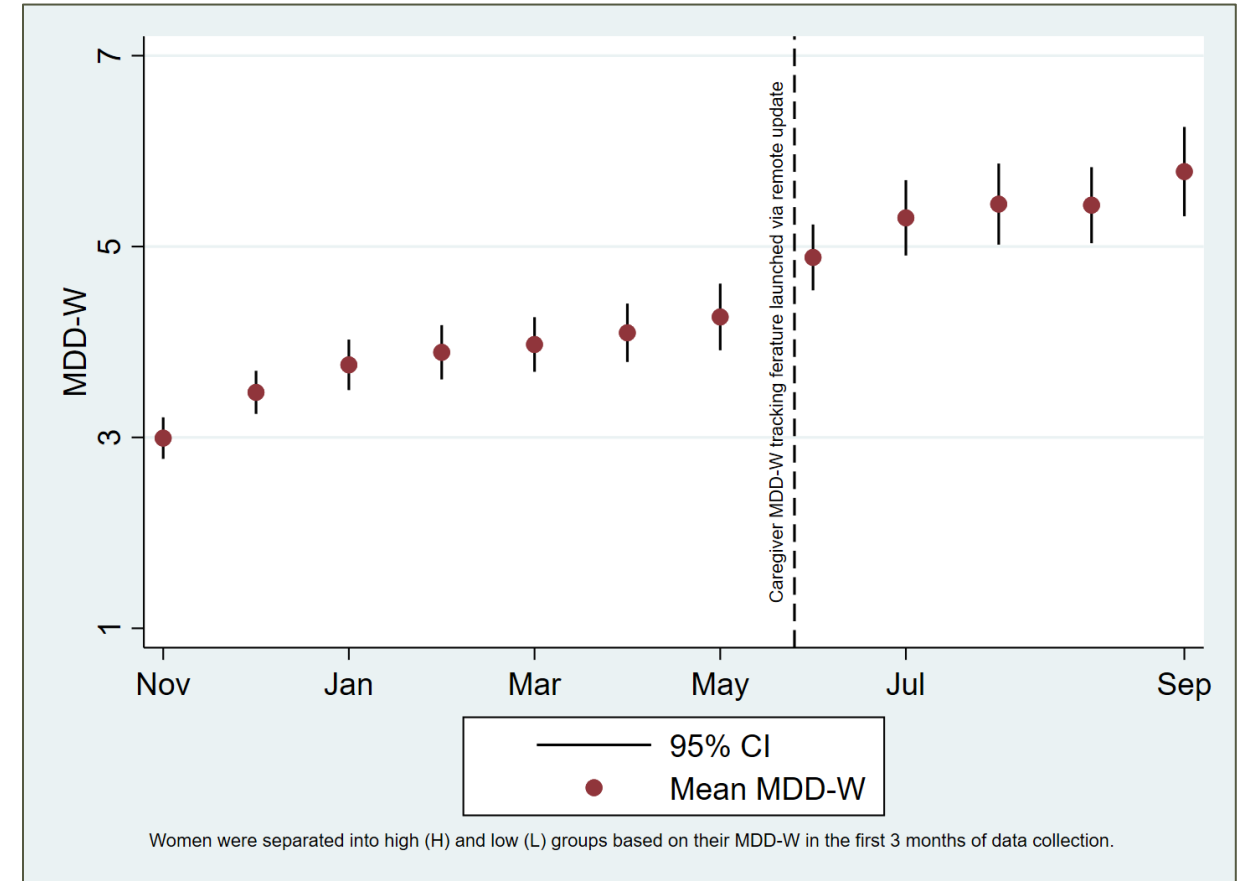
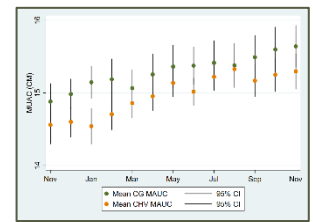
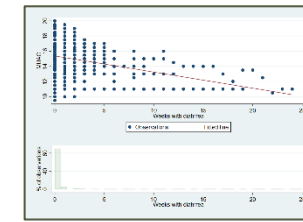
- The data seem internally consistent.
- Caregiver data seems to track CVH-collected data well over time.





# Pilot: Preliminary findings

- The data seem internally consistent.
- Caregiver data seems to track CVH-collected data well over time.
- There are positive signals that the caregiver tracking feature was a success.
- Caregivers reported appreciation for the feature
- Preliminary analysis shows an increase and that most of the increase between May and June came from an increase in consumption of groups included in the messaging, specifically dark green leafy vegetables (t-stat=8.21) orange fleshed fruits & vegetables (t-stat=14.05).



# Summary

There is a great need for (safely collected) data from pastoral regions and this need is even more acute during market/food system/health disruptions (Griffith et al. 2020; Hassell et al. 2020).

Digital platforms can facilitate data collection & dissemination by data generators in pastoral settings.

Our tool provided a resilient two-way channel of communication, with opportunities for tracking event specific indicators or supporting responsive messaging campaigns.








Contact: [n.jensen@cgiar.org](mailto:n.jensen@cgiar.org)



ILRI

The International Livestock Research Institute (ILRI) is a non-profit institution helping people in low- and middle-income countries to improve their lives, livelihoods and lands through the animals that remain the backbone of small-scale agriculture and enterprise across the developing world. ILRI belongs to CGIAR, a global research-for-development partnership working for a food-secure future. ILRI's funders, through the [CGIAR Trust Fund](#), and its many partners make ILRI's work possible and its mission a reality. Australian animal scientist and Nobel Laureate Peter Doherty serves as ILRI's patron. You are free to use and share this material under the Creative Commons Attribution 4.0 International Licence .

*better lives  
through  
livestock*

[ilri.org](http://ilri.org)

## References

- Carroll, G. J., Lama, S. D., Martinez-Brockman, J. L., & Pérez-Escamilla, R. (2017). Evaluation of nutrition interventions in children in conflict zones: a narrative review. *Advances in Nutrition*, 8(5), 770-779.
- Griffith, E. F., Pius, L., Manzano, P., & Jost, C. C. (2020). COVID-19 in pastoral contexts in the greater Horn of Africa: Implications and recommendations. *Pastoralism*, 10(1), 1-12.
- Hassell, J. M., Zimmerman, D., Fèvre, E. M., Zinsstag, J., Bukachi, S., Barry, M., ... & Maples, S. (2020). Africa's Nomadic Pastoralists and Their Animals Are an Invisible Frontier in Pandemic Surveillance. *The American journal of tropical medicine and hygiene*, tpmd201004.
- Wild, H., Glowacki, L., Maples, S., Mejía-Guevara, I., Krystosik, A., Bonds, M. H., ... & Barry, M. (2019). Making Pastoralists Count: Geospatial Methods for the Health Surveillance of Nomadic Populations. *The American Journal of Tropical Medicine and Hygiene*, 101(3), 661-669.