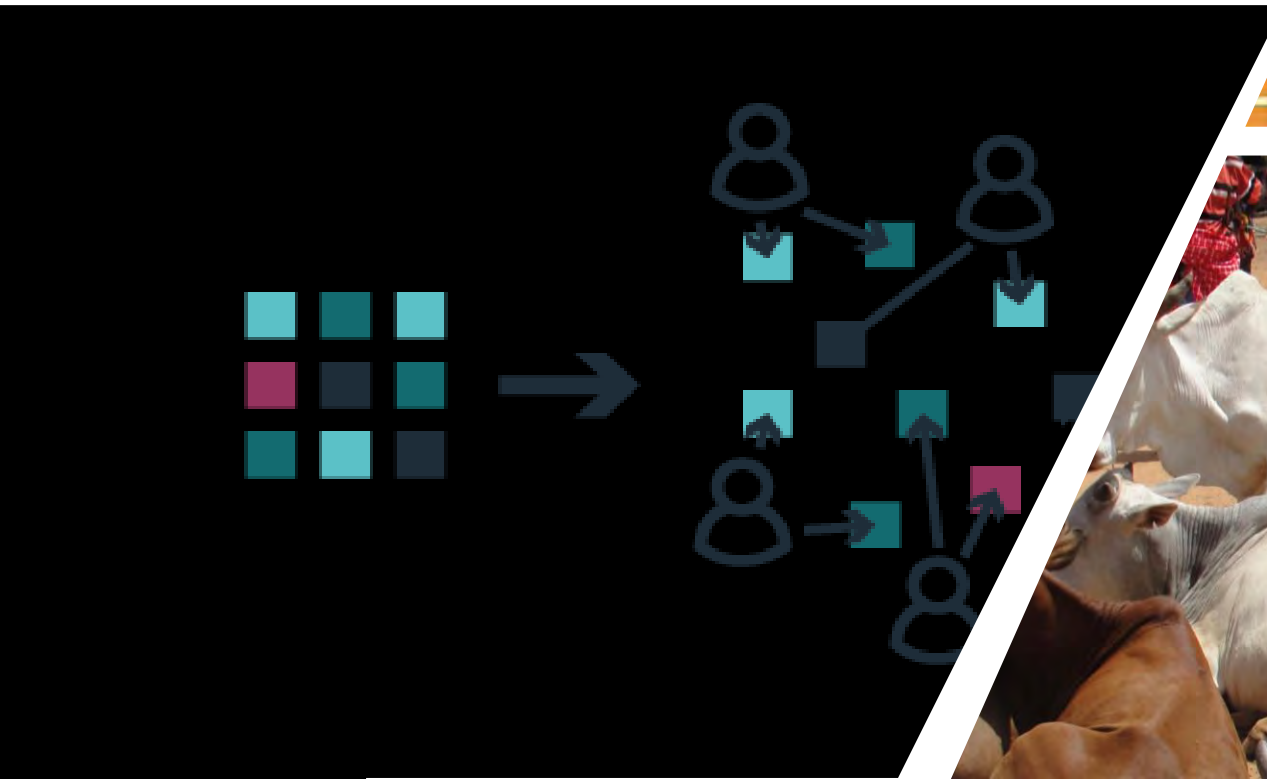


# KAZNET - Collecting and Disseminating Market Information in Drylands of Kenya



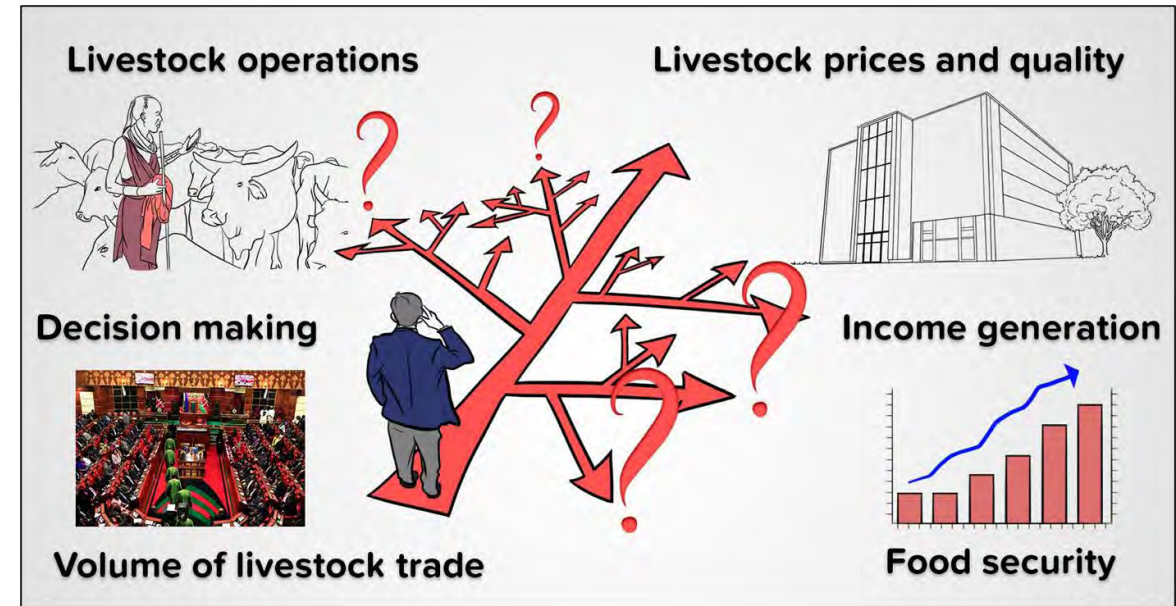
RESEARCH PROGRAM ON Livestock

22<sup>nd</sup> October 2020



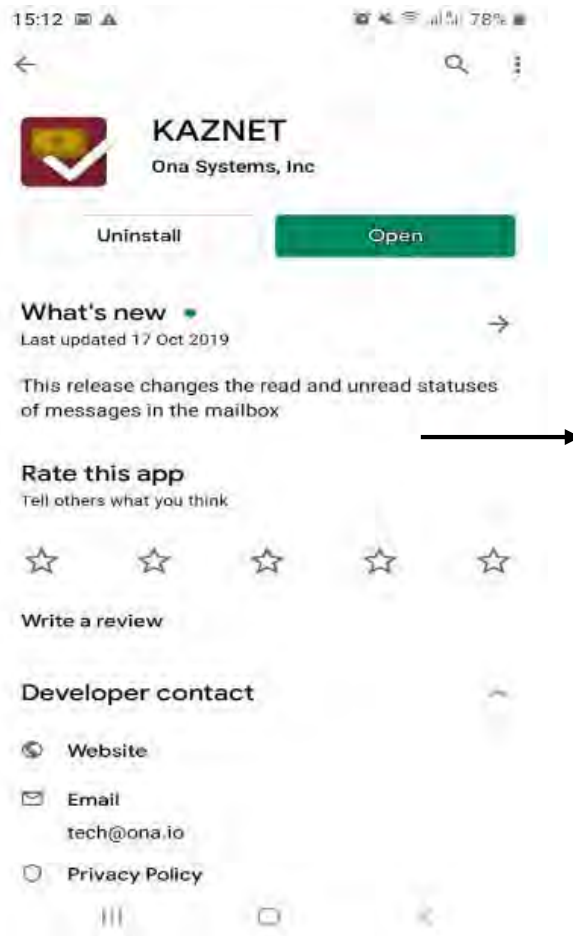
# Motivation

- ❑ Information scarcity is severely limiting the development and resource management of the drylands
- ❑ Lack of credible information constraints support to the livestock sector – governments, development organizations
- ❑ Attempts to collect market information data conventionally - faced with quality and sustainability challenges
- ❑ Need to leverage transformational technologies – improvement and growing access to mobile networks
- ❑ Compliment platform/s related to pastoral production systems - for information collection and dissemination

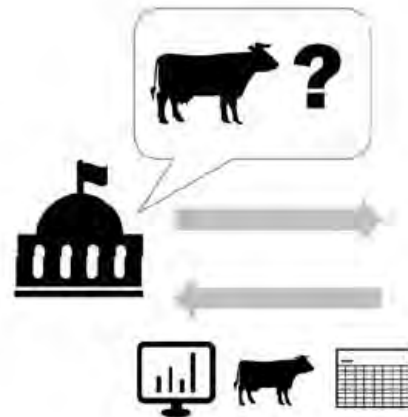


# Crowdsourcing Market information

**System Schematic - The system has the capacity to transform client information demand into observational tasks for contributors and generate insightful analytic outputs from the resulting observations**

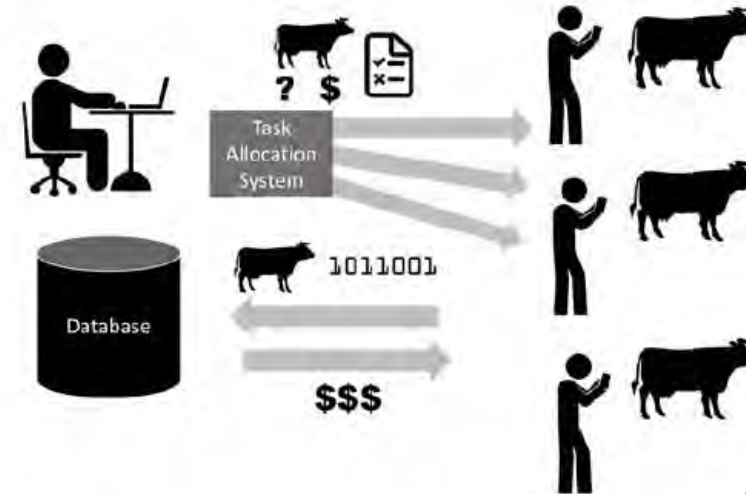


**1. Client with information needs.**



**6.1 Processed data are disseminated to clients**

**2. System administrator develops tasks with rewards (\$) and controls to ensure data quality.**



**5. Data is validated and processed according to clients' needs**

**3. KAZNET pushes tasks to contributors in the field.**

**4. Contributors see a menu of available tasks with related rewards and complete them at will.**

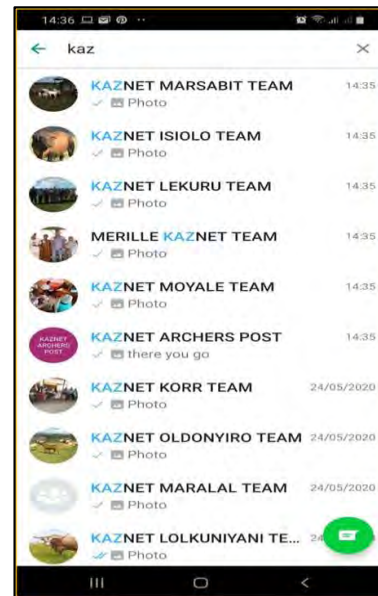
**6.2 Processed data and appropriate rewards are disseminated to contributors.**

# Market Information System (KAZNET) Structure

## Key system attributes:

### Front end:

- Mobile app by which data collection tasks are pushed to trained contributors
- Contributors select and execute on tasks, each of which is attached to a value to incentivize provision

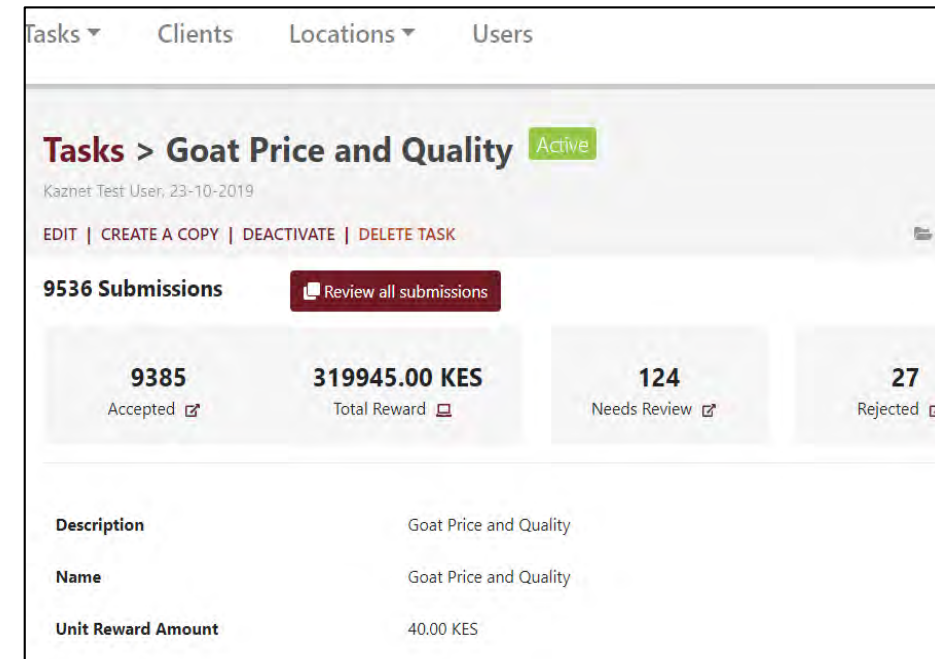


### Back end:

- Task allocation system translating client information requirements into specified tasks and incentives and distributes accordingly
- Submission tracking and validation

### Dissemination platform:

- Clients access information on user-specific dashboards
- Additional support through WhatsApp



CONTRIBUTOR	PAY	MPESA No	PAID
Hassan Hassan	905	254,719,265,819	YES
Jillo Mamad	605	254,720,664,673	YES
Teresa Naoki	965	254,748,127,410	YES
Rahma Gange	825	254,758,407,013	YES
Catherine Loisiodo	875	254,740,083,714	YES
Salma Yassmin	1085	254,705,025,409	YES
Joyce Felista	1005	254,768,441,924	YES
Mohammed Salah	965	254,799,586,807	YES
Florence Lekipila	750	254,745,988,679	YES
Lekangu Lobik	965	254,797,509,820	YES
Mariam Mahad	930	254,708,907,402	YES
Mohamed Hillow	810	254,714,276,610	Done

# Activities and compensation structure

- ❑ Short questions (5-10 questions) called tasks on important market aspects - prices, volumes, milk, livestock quality, etc. are posted on KAZNET
- ❑ Each task is rewarded based on the effort (in terms of time) required to perform the task –ranging between 0.2–0.5 USD per tasks
- ❑ Performance of the tasks is voluntary—following the crowdsourcing logic
- ❑ Tasks performed by individual are aggregated over a week for payment
- ❑ Payment is made through MPESA

## Back end snapshot of tasks status and management

Status ▾	Name	Need Review	Created	Expires
Expired	Cattle Price and Quality	13/4132	17-10-2019	19-08-2020
Active	Contributor Profile	14/410	17-10-2019	17-10-2020
Deactivated	Sheep Prices and Quality	16/4259	17-10-2019	17-09-2020
Deactivated	Camel Prices and Quality	2/2277	22-10-2019	20-11-2020
Deactivated	Market Information Access	0/212	21-02-2020	21-02-2021
Active	Current Events	30/987	03-05-2020	12-05-2021
Active	Goat Price and Quality	124/9536	23-10-2019	23-10-2020
Active	Livestock Trade	26/1084	24-03-2020	24-03-2021
Active	Welfare of Pastoralists	34/4259	17-10-2019	17-10-2020
Active	Essential Market Commodities	23/1749	05-11-2019	05-11-2020
Deactivated	KAZNET User Experience	0/180	21-02-2020	21-02-2021

# Collection and Digitization of National Livestock Market Information System (NLMIS) Data

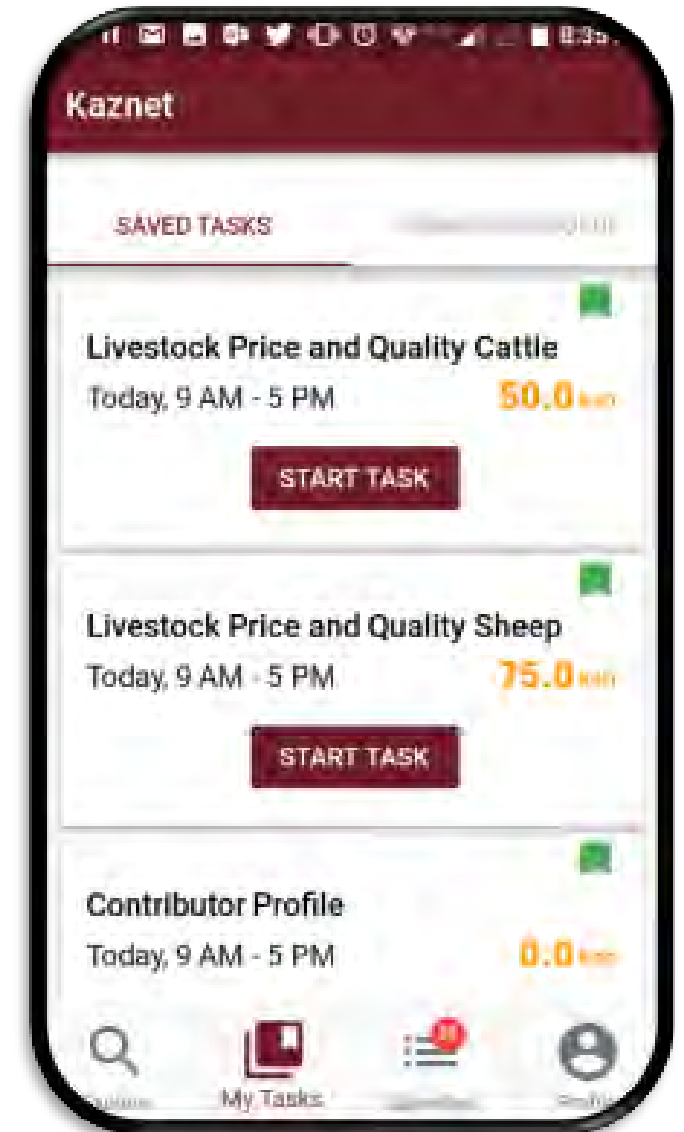


Map: Digitization/Kaznet target markets



# Improve KAZNET functionality and extend to additional markets

- ❑ Previous functionality
  - A browser-based application where administrators can create tasks and accept/reject submissions.
  - A mobile application that presents contributors with a menu of tasks that are geofenced and have rewards. The contributor can use the same application to complete tasks.
- ❑ Recent Improvements
  - Contributor management and data quality:
    - Contributors are profiled on sign-up
    - Contributors must have sufficient qualifications for tasks
    - Tasks can be restricted to contributors with a specific qualification
  - The in-application contributor experience:
    - Feedback on why a task is rejected
    - Summary statistics on total performance



# Choice of market routes

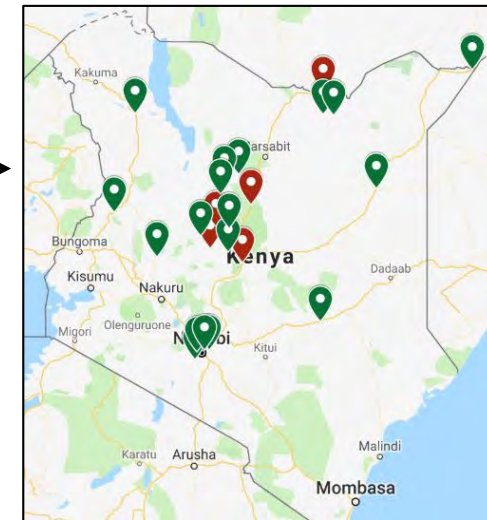
- ❑ Livestock market chains in northern Kenya drylands—feeding to Nairobi terminal markets
- ❑ Areas considered having scarcity of livestock market information and difficult to use conventional methods
- ❑ Livestock supply to urban markets majorly come from these areas
- ❑ Livestock is the major source of livelihood to the pastoral communities - Experience from IBLI for more than 10years in the drylands
- ❑ Major infrastructural improvements have enabled use of digital solution—most markets have network coverage

KAZNET TARGET MARKETS

County	Market	Type
Baringo	Marigat	Intermediate
Isiolo	Kipsing	Feeder
Isiolo	Latakweny	Feeder
Isiolo	Oldonyiro	Intermediate
Kajiado	Kiserian	Intermediate
Mandera	Mandera	Intermediate
Marsabit	Korr	Feeder
Marsabit	Golbo	Feeder
Marsabit	Dabel	Feeder
Marsabit	Illaut	Feeder
Marsabit	Merille	Intermediate
Marsabit	Moyale	Intermediate
Nairobi	Nairobi	Terminal
Samburu	Lekuru	Feeder
Samburu	Wamba	Feeder
Samburu	Lolkuniani	Intermediate
Tana River	Bangale	Intermediate
Turkana	Lodwar	Intermediate
Wajir	Wajir	Intermediate
West Pokot	Chepararia	Intermediate

KAZNET ACTIVE MARKETS

County	Market name
Marsabit	Moyale, Korr, Merrile, Marsabit
Isiolo	Isiolo, Oldonyiro
Samburu	Lekuru, Lolkuniani, Archers Post, Maralal



# Communities Targeted

- ❑ Male and female pastoralist with smart phones can use KAZNET
- ❑ Target 10 markets using 100 contributors - 50 female and 50 male
- ❑ The contributors are people living close to the markets—intention is to provide a complementary source of income
- ❑ Selection is done through consultative process with community leaders - to increase transparency and inclusivity
- ❑ All selected contributors are trained on site - remote follow-ups depending on experience in using KAZNET
- ❑ Private information is not shared to any third party



# Outputs

- ❑ KAZNET platform is running to date –e.g. goat price and quality tasks back-end screen shot (2017 pilot; 2018 onwards implementation)
- ❑ The flexibility of KAZNET demonstrated by data collected on impact of COVID\_19 on markets and environment
- ❑ PhD student working on feasible incentive options for the motivating pastoralist to use KAZNET
- ❑ Collaborations with local and international academic institutions to explore the sustainability options for KAZNET
- ❑ KAZNET principle and infrastructure being used in other related activities such as rangeland monitoring project types

**ILRI PROJECT PROFILE**

## KAZNET- Livestock Market Information System

**Problem**  
Information scarcity on markets and essential services severely limits development and resource management in the drylands. The lack of credible information is especially significant in remote livestock markets, where the aggregation of information and wealth would seem to offer valuable opportunities for monitoring conditions and improving lives, but where governments and development actors have very little information with which to identify and support appropriate interventions. Though several attempts have been made in the past to collect market information, they have faced challenges with data quality and continuity stemming from unsustainable business models and exacerbated by the high cost of collecting information in remote locations.

**The Innovation**  
KAZNET is a flexible and scalable crowd-sourcing mobile based platform for collecting information from participants in remote locations. The platform has the following key features:

- Data collection is in the form of tasks with each task time stamped and GPS located
- Has an offline functionality for ability to work in low network areas
- The initial prototype application includes four categories each with different tasks:
  - Livestock market operation status
  - Livestock prices and quality
  - Volume of livestock trade
  - Unprocessed milk prices and other food commodities.
- Rewards are assigned for each task under each of the categories. The monetary reward amount differs depending on the complexity of the task and time it takes to complete.

**Contributing Project: Feed the Future Kenya Accelerated Value Chain Development (AVCD)**  
KAZNET is currently being piloted under the livestock component of the Feed the Future Kenya Accelerated Value Chain Development project (AVCD) where it is used to collect livestock market information. The overall goal of the livestock component of AVCD is to increase income from

**How the process works**

**Objectives:**

- i. To develop a simple and low-cost system for collecting accurate livestock market information.
- ii. Increase in prevalence and use of market information systems to directly reach 25,000 traders and producers, through the timely and accurate generation and dissemination of livestock market information to increase commercial livestock production and sales.

**KAZNET comes from the Swahili words *Razi* (work) and *kaskazini* (north), and the English words *Network Technology* because it uses technology to leverage networks of people from northern Kenya to perform work.**

**KAZNET's goal is to improve stakeholders' access to livestock market information**

## Pastoralism in the COVID-19 Era



The Center for Effective Global Action

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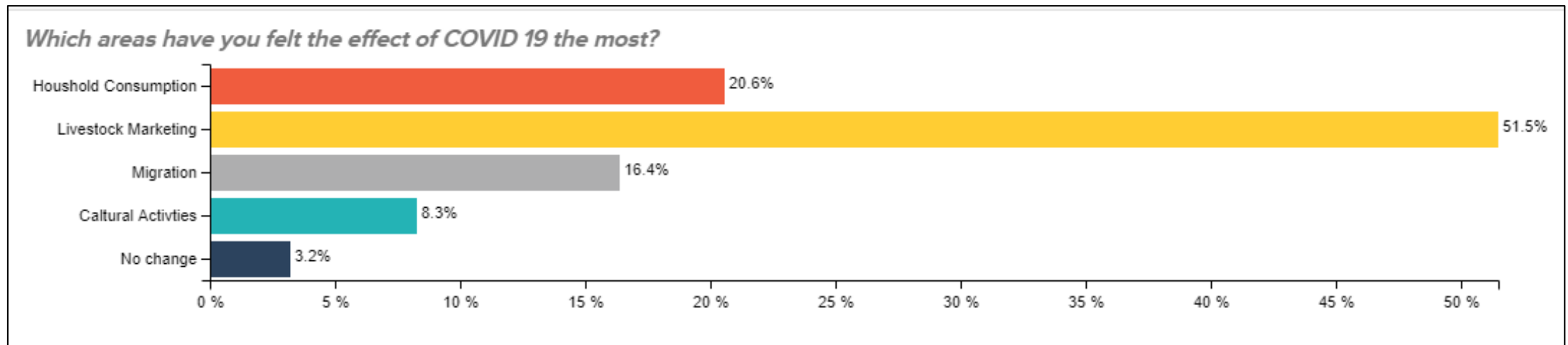
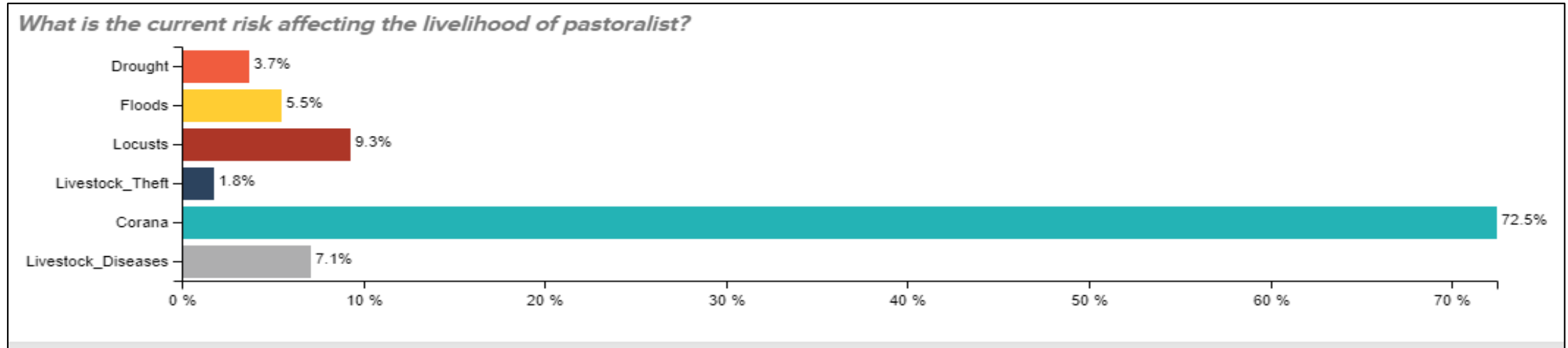


*Pastoralism is a livestock production system that has been carried out for millennia in some of the world's harshest environments, including the vast arid of East Africa. This post, written by [Philemon Chelanga](#), [Indira Tirumala](#), and CEGA affiliated professor [Elizabeth Lyons](#), explains how the coronavirus pandemic is affecting pastoralists in Kenya. This is part of a series of posts highlighting COVID-19 related research being done by CEGA affiliated faculty and CEGA-funded PhD students.*

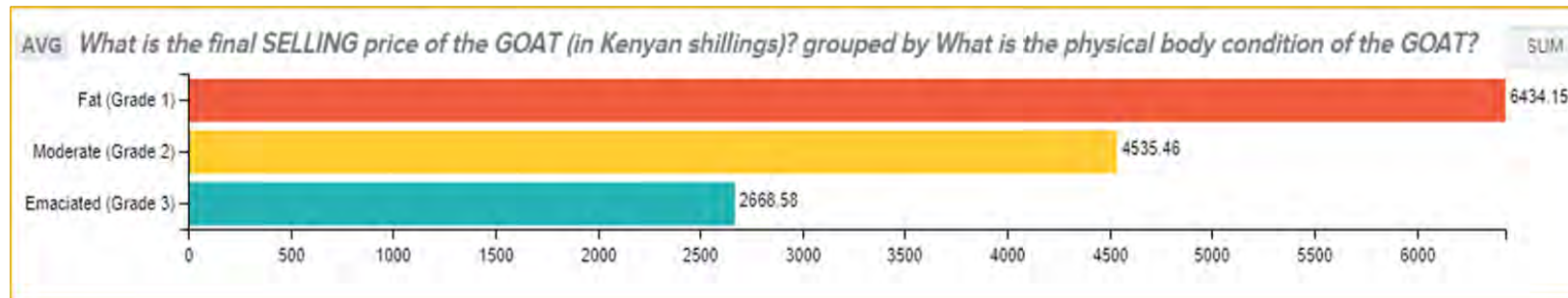
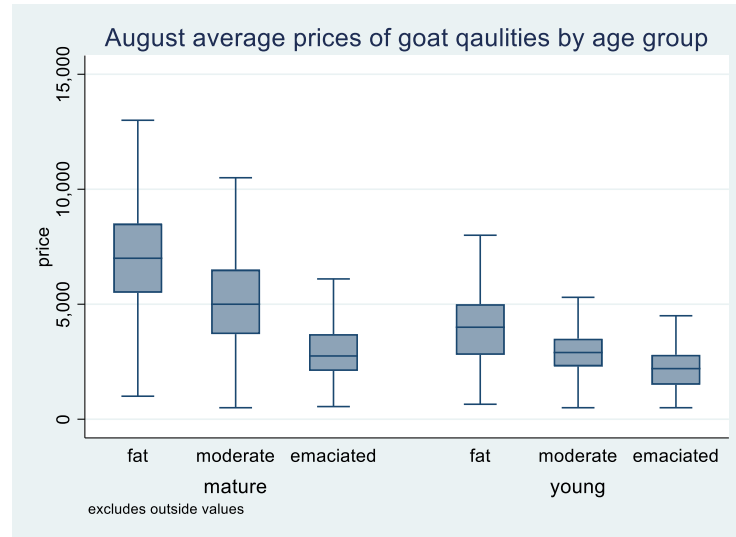
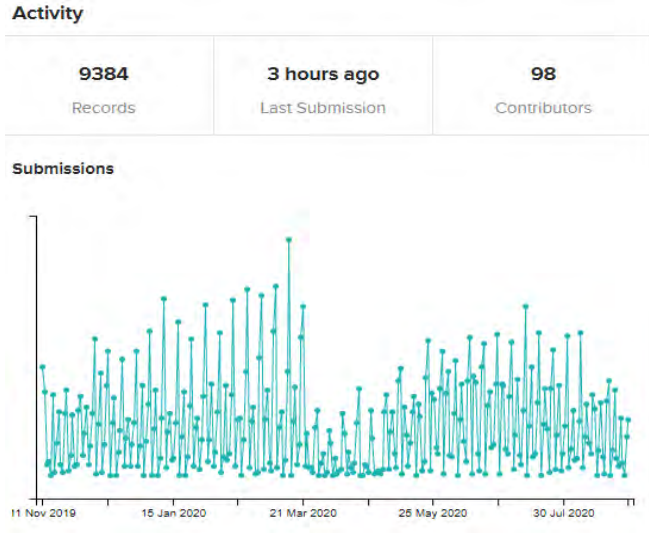


# COVID-19 situation tracking snapshot

- ❑ The data collected provides a fair picture of the current situation---consistent with expectations
- ❑ Serves as additional indicators on the data quality from KAZNET



# Snapshot of some of the data through KAZNET



Isiolo Goat Prices 6/3/2020				
Age	Sample	Everage price	Minimu m price	Maximu m Price
Mature	45	5,886	2,000	9,000
Young	11	3,263	2,500	3,800

Acherspost Goat Prices 7/03/2020				
Age	Sample	Everage price	Minimu m price	Maximu m Price
Mature	49	4,841	2,250	8,500
Young	1	2,000	2,000	2,000

Merille Goat prices 3rd and 10/03/2020				
Age	Sample	Everage price	Minimu m price	Maximu m Price
Mature	43	4,467	2,000	10,000
Young	14	2,300	1,700	3,000

# Exploring incentives for sustainability

- ❑ Participation of contributors drawn from two experimental groups - comparison of five market each
- ❑ Both groups incentivized using money attached to each task performed for six weeks - market price information was given to one group (treated group) and participation level were compared
- ❑ Explanation how data they collect increases the accuracy of information disseminated was provided in week 13

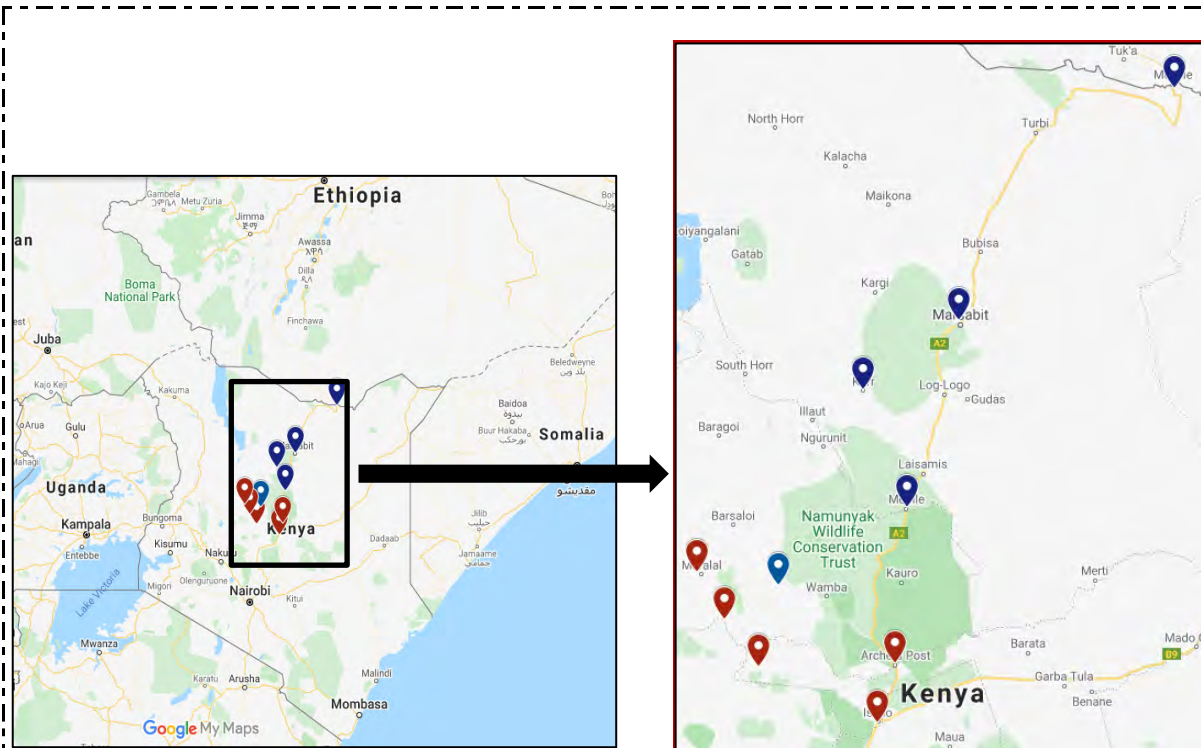
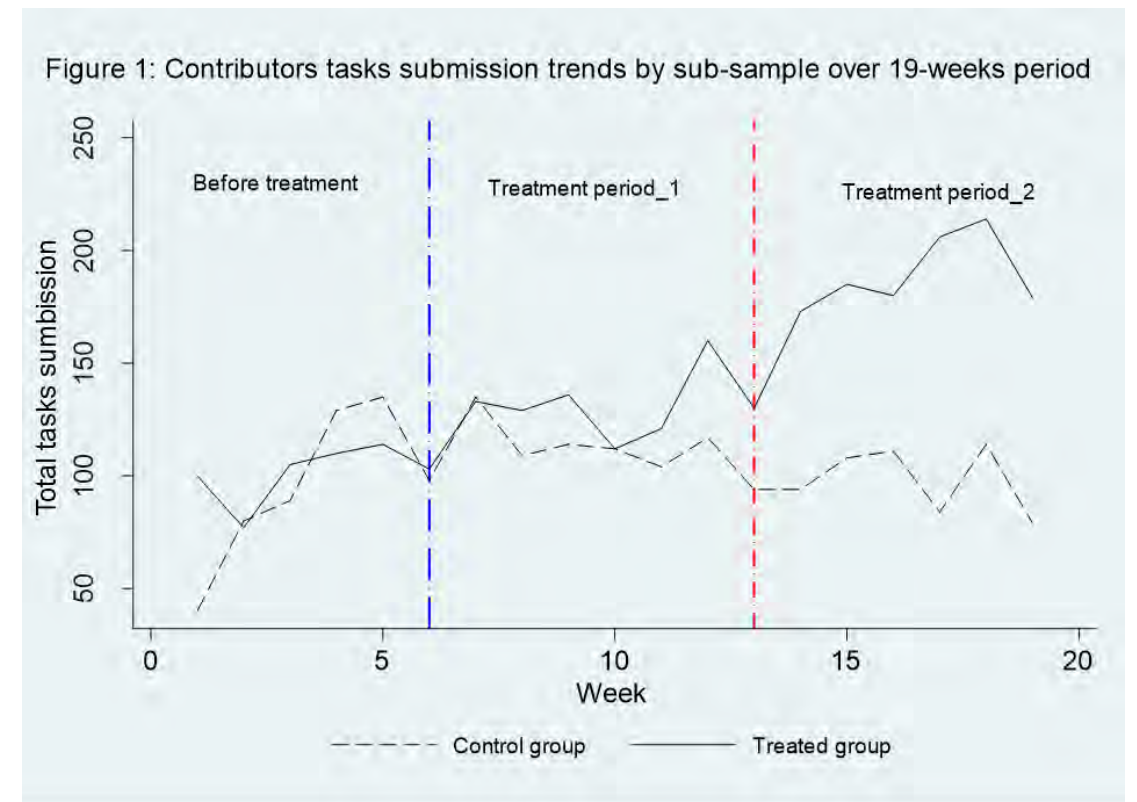
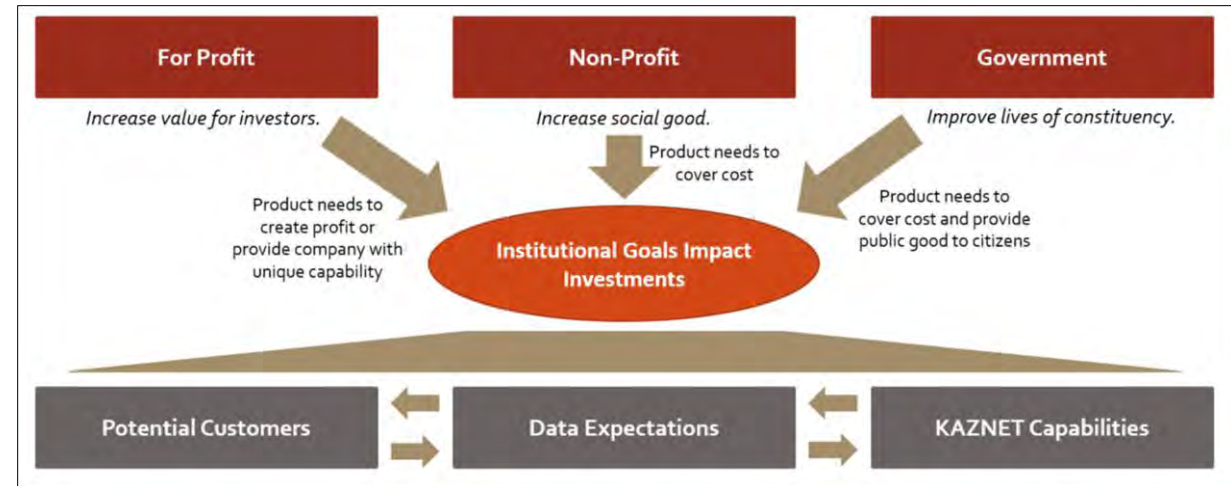


Figure 1: The location of study areas (markets) in northern Kenya



# Way Forward

- ❑ Improvement of KAZNET functionalities to compliment NLIMS for better information management and quality control – e.g. incentives, motivation and constant engagement of contributors
- ❑ Increase the scope of KAZNET to provide demand driven data - e.g. along regional and local livestock trade routes
- ❑ Work through the Technical Working Group to deepen LMIS and KAZNET initiatives to all the ASAL counties – e.g. capacity development of county extension workers and LMA officials
- ❑ Broaden the Technical Working Group to include relevant private, government bodies and committees – e.g. JAS, Council of Governors, private sector companies
- ❑ Identify models of sustainability through public-private partnerships – stakeholder engagements through the technical working group





Thankyou for your attention!