**END OF QUARTER FOUR (APRIL-JUNE 2021) TECHNICAL REPORT**

**GRANT NUMBER: CGS/5/39/18**

**PROJECT TITLE:** Diagnostic and control strategies of brucellosis in animals and humans in Karamoja region, Uganda

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## BACKGROUND

Despite the potentially high risk and economic impact of brucellosis in pastoral areas in Uganda the country's diagnostic and control strategy for brucellosis has not been established. This is further constrained by the absence or non-adapted legal framework for control of brucellosis. In addition to these, weak veterinary capacity (laboratory, epidemiology) to adequately diagnose, treat and monitor the disease occurrence, uncontrolled cross-border movement of animals and lack of inter-sectoral collaboration between the veterinary and health departments has complicated control of brucellosis, especially in high risk areas. The primary objective is establishing a diagnostic and control strategy for brucellosis in Karamoja region thereby reducing the prevalence of brucellosis in the region among humans and livestock. The project is using cross-sectional study which has been conducted using a multi-stage cluster sampling approach. Multi-stage cluster sampling is preferred to ensure representativeness of the sample of the variations in livelihood zones (clusters) in Karamoja (agricultural, agro-pastoral and pastoral). The project is being executed in the districts of Amudat, Kotido and Karenga. All data from Amudat district has now been collected. After the inception meetings that took place in Makerere University and at Nabuin ZARDI in September 2019, the first set of data was collected from Amudat district. This included 322 blood samples from cattle, 328 blood samples from goats and 300 samples from sheep. We also conducted 7 focused group discussions (FGDs) and administered questionnaires to 11 key informants (KIIs). From the blood samples, the seroprevalence using Rose Bengal Test (RBT) were 13.4%, 0.9% and 1% in cattle, goats and sheep respectively. This means that cattle is the most important livestock species in the epidemiology of Brucellosis in Karamoja region. It is anticipated that with collection of blood samples and qualitative data from these districts,

a clear picture of prevalence of Brucellosis in the region will be got. We will also document the risk factors leading to the spread of the disease and the practices, knowledge and attitudes of the people in the Karamoja region from the qualitative data that we will collect in the course of the data collection exercise. These will be used to guide us to develop a control strategy for Brucellosis in the region which we will then recommend to be used in the reduction of the prevalence of the disease in Karamoja.

**PROJECT GOAL**

The project goal is to establish a diagnostic and control strategy for brucellosis in Karamoja region.

**EXPECTED OUTPUTS**

- Communities in Karamoja sensitized about the transmission, impact and control of brucellosis
- Seroprevalence of brucellosis in cattle, goats, sheep, camels and humans determined
- Risk factors for brucellosis determined using participatory approaches
- Incidence of brucellosis in humans determined using records from hospitals and health centers
- Brucellin Skin Test (BST) evaluated as additional and cheap test for diagnosis and control brucellosis in Karamoja
- A control strategy for brucellosis established and recommended for Karamoja region and other pastoral areas

**OBJECTIVES OF THE PROJECT**

1. Create awareness among communities about the transmission and control of brucellosis
2. Establish seroprevalence of brucellosis among cattle, goat, sheep and camels in Karamoja
3. Determine risk factors associated with brucellosis in Karamoja
4. Estimate incidence of brucellosis in the human population using records from health centers and hospitals
5. Evaluate the Brucellin Skin Test (BST) as an additional and cheap test to control brucellosis in Karamoja
6. Recommend and establish a control strategy for brucellosis in Karamoja region

## DETAILS OF ACTIVITIES CARRIED OUT DURING THE CURRENT REORTING PERIOD

### Determine risk factors associated with brucellosis in Karamoja

Data on risk factors for both animals and humans from Amudat district was gathered using a mix of structured interviews with questionnaires administered to each super herd. That from each individual tested for brucellosis is yet to be gathered alongside the case control study. This was through semi-structured key-informant interviews, focus group discussions (FGDs) with communities in selected kraals/manyattas. Eight manyattas, each corresponding to one sampled super herd were included in the study in Amudat district. The data targeted included that on contact with livestock (direct contact, contact with animals giving birth and contact at slaughter), contact with wildlife, consumption of raw dairy products, source of water, disease burden, common symptoms associated with brucellosis in the community, management practices and services accessed among others.

## SUMARY OF ACHIEVEMENTS DURING THE CURRENT REPORTING PERIOD

| Specific Objectives | Key Activity | Results | Outcomes |
|---|---|---|---|
| Determine risk factors associated with brucellosis in Karamoja | Analyze data collected and make and determine the major risk factors associated with Brucellosis among pastoralists in Amudat district | From the ranking of the risk factors using different statical methods, Brucellosis was significantly associated with consumption of raw milk, helping animals during delivery which brought humans in contact with fetal fluids and handling and consumption of abortus respectively. | The results will help identify potential preventive measures to minimize the transmission of the disease from livestock to humans and help develop a control strategy for Brucellosis in Karamoja. |

## ON-GOING ACTIVITIES

**Communities in Karamoja sensitized about the transmission, impact and control of brucellosis**

1000 brochures and 50 posters on brucellosis being printed. These will be produced in English, Pokot and Ngakarimojong and distributed to district headquarters, sub county headquarters, schools, community centers to educate the masses on Brucellosis.

Composition of a sensitization message through song by one of the local musicians in Karamojong is in the process

Development of a documentary on brucellosis in the Karamoja region is in progress

**Establish seroprevalence of brucellosis among cattle, goat, sheep in Karenga and Kotido districts**

**Determine risk factors associated with brucellosis in Karenga and Kotido districts**

**Evaluate the Brucellin Skin Test (BST) as an additional and cheap test to control brucellosis in Karamoja**

**Recommend and establish a control strategy for brucellosis in Karamoja region**

## MAJOR CHALLENGES ENCOUNTERED WHILE CARRYING OUT PROJECT ACTIVITIES AND NEW DIRECTION

We are still being held down by the fragile security in the region. This has delayed the data collection from Karenga and Kotido districts. However, with the recent interventions by the security forces, we will be able to finish this off by the second quarter of this financial year.

## LESSONS LEARNT

There is need prioritize working with smaller areas as opposed to very large areas to conduct research.