**ABSTRACT**

Ijara district in Kenya was one of the hotspots of rift valley fever (RVF) during the 2006/2007 outbreak which led to human and animal deaths causing huge economic and public health losses. The main constraint in the control and prevention of RVF is inadequate knowledge on its occurrence during the interepidemic period. This study was aimed at understanding the occurrence of RVF in cattle in Ijara to enable the development of improved community-based disease surveillance, prediction, control and prevention.

Six herds each 700ó1000 cattle were identified with participatory involvement of locals and project technical team of the project. One animal per herd was tagged with global position system (GPS) collar to enable follow up. Sero-surveys were conducted periodically to understand the herd's movement through various ecological zones and risk of exposure to RVF virus. Sixty animals less than 3 years old from each herd were randomly selected each sampling time and sero-surveyed for RVF four times (September 2012, December 2012, February 2013 and May 2013) during the study period and along the nomadic movement route. The serum samples collected were subjected to RVF inhibition ELISA test to detect if there was exposure for RVF virus (RVFV). The RVF inhibition ELISA positive samples were subjected to IgM ELISA test to determine if the exposures were current or recent (within 14 days).

The result of the survey indicated that 13.1% (183/1396) of cattle sero-surveyed had RVFV antibodies by inhibition ELISA test while 1.4% (18/1396) was positive for IgM ELISA test. The highest RVFV circulation was detected after herds pass through bony forest between Lamu and Ijara and Halei forested areas. These forested areas also had the highest IgM detections. The findings indicate that even limited rainfall was able to initiate RVFV circulation in Ijara region with highest circulation detected within forested areas with potential to become epidemic if rains persist with extensive flooding. There is need to carry out regular participatory disease surveillance in domestic animals and other host systems to identify risk locations in hotspot areas and carry out community awareness and focal vaccination campaigns against RVF for preparedness, prevention and control. Additionally, monitoring of environmental conditions in risky ecological zones to detect enhanced rainfall and flooding should be prioritized for preparedness.