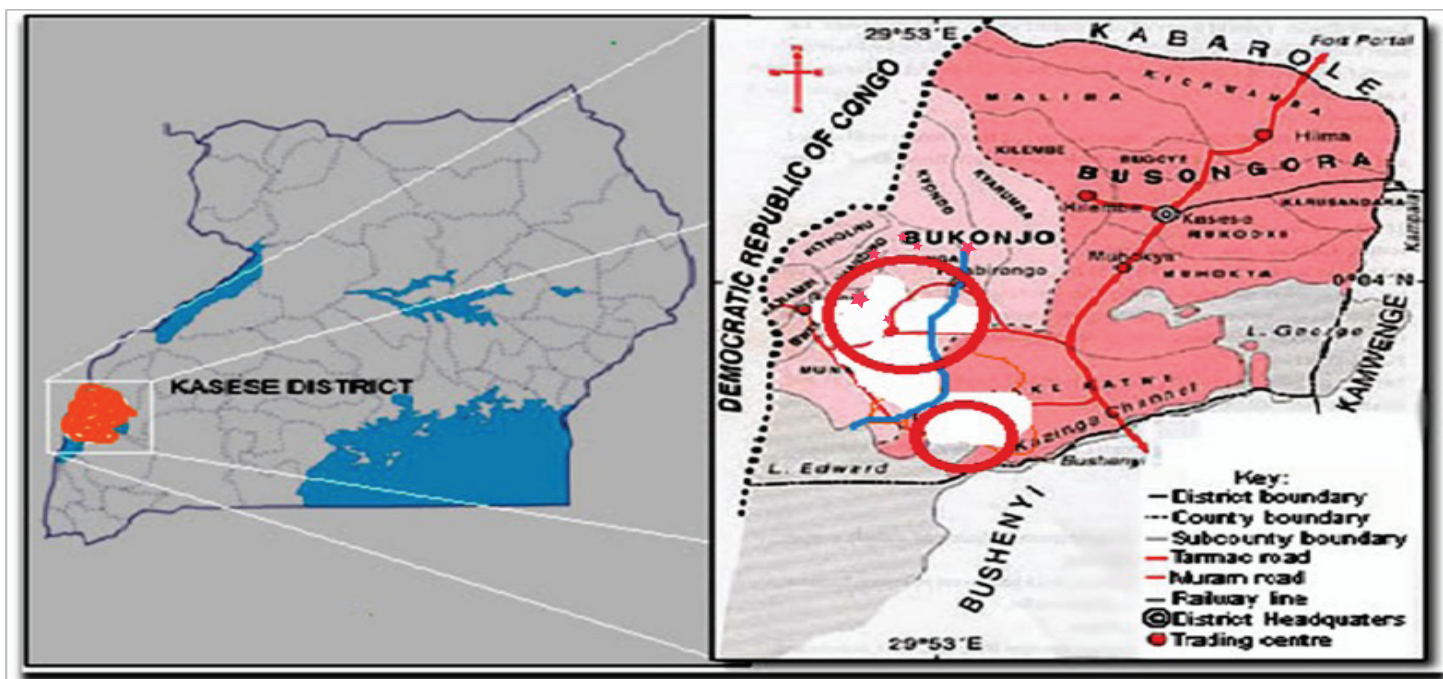


## Introduction

Foot and mouth disease Viruses are endemic in Uganda. Cattle sharing the same livestock wildlife-ecosystem in QENP with buffaloes which are known reservoirs of FMDV, were never reported to be infected with FMDV for the last five years despite the constant interaction that occurs at this interface.

## Objective

- To determine the FMDV status of young unvaccinated calves in apparently healthy herds at the QENP livestock-wildlife interface
- To investigate the FMDV strains circulating in calves in constant interaction with buffaloes at this livestock-wildlife interface.



**Map of the study area**



**Cattle grazing in the same place with buffaloes**

## Methodology

A Cross-sectional study was conducted in Katwe Kabatooro and Nyakatonzi in Kasese District in Western Uganda. 247 6-24-month-old calves were randomly sampled from 12 parishes adjacent to QENP in August 2012. Information about herd structure, vaccination, animal movement patterns and disease occurrence was collected through questionnaires and included in the analysis. Serum was analysed for antibodies against FMDV using Priocheck® FMDV -NS ELISA and serotype specificity of antibodies investigated using SPBE and VNT. Presence of FMDV RNA in probangs from antibody-positive animals was investigated using the real-time RT-PCR. Serotype-specificity by VNT and presence of FMDV RNA in probangs of positive samples investigated using the real-time RT-PCR.

## Results

- 31/248 (12.5%) calves were positive for antibodies against FMDV by FMDV - NS ELISA
- The antibody-positive calves were distributed on 15 of the 24 cattle herds (67%) with prevalences ranging from 2-60%.
- None of the 24 farmers interviewed had observed clinical FMD for the last 6 years in their herds.
- Investigation of serotype-specificity by SPBE of the identified antibodies showed titres above 80 against FMDV serotypes: O (7/18), SAT 1 (4/10), SAT 2 (3/14) and SAT 3 (2/16).
- VNT confirmed antibodies against FMDV serotype O in two samples
- FMDV RNA was present in probangs from five of the 31 seropositive calves.

## Institutions involved

<sup>1</sup> National Animal Disease Diagnostics and Epidemiology Centre, Ministry of Agriculture, Animal Industry and Fisheries, P. O. Box 513, Entebbe, Uganda

<sup>2</sup> Department of Biotechnical and Diagnostic Sciences, College of Veterinary Medicine, Animal Resources and Biosecurity, Makerere University, Box 7062, Kampala-Uganda

<sup>3</sup> Department of Environmental Management, College of Agricultural and Environmental Sciences, Makerere University, P.O. Box 7062/7298, Kampala, Uganda.

<sup>4</sup> National Veterinary Institute, Technical University of Denmark, Lindholm, DK 4771, Kalvehave, Denmark

## Conclusions

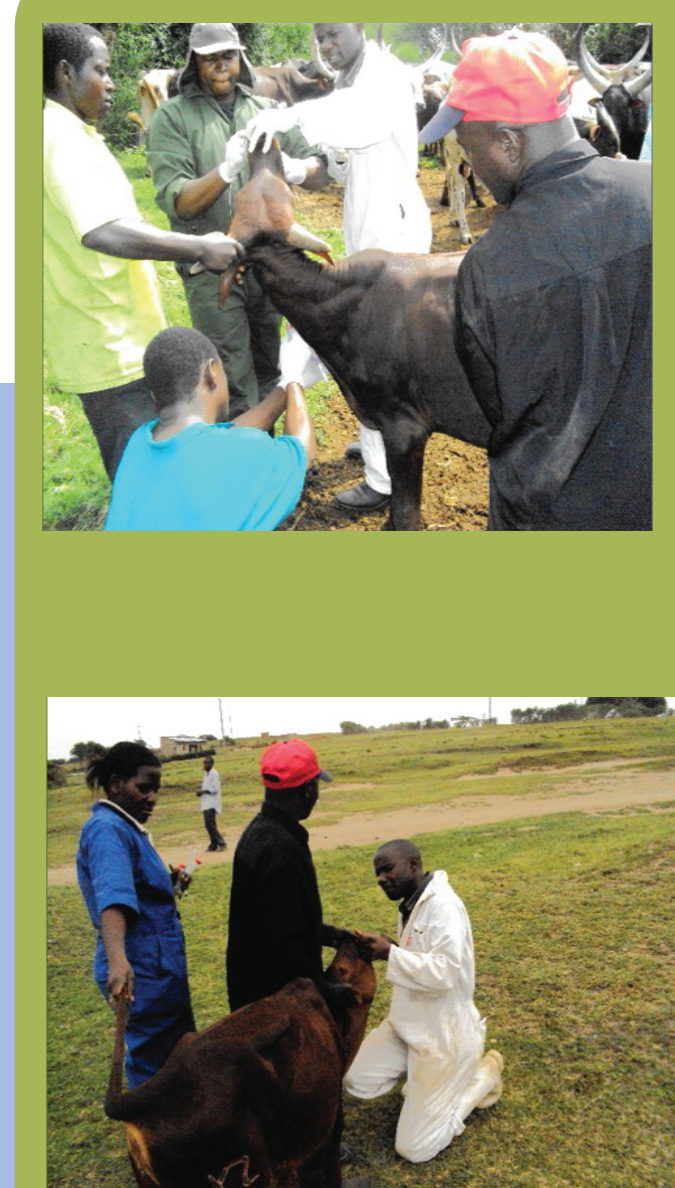
- The presence of calves with antibodies against FMDV NSP demonstrates circulation of FMD viruses at this livestock-wildlife interface area.
- The alleged absence of clinical symptoms of FMD in all 14 herds with seropositive animals is unexpected and calls for further investigation.
- The calves with virus-positive probangs did not show clinical signs of FMD and had antibodies against NSP, and were thus carriers.
- The role of the livestock-wildlife interface at QENP is still not settled.

## Recommendations

- There is need to improve FMD surveillance and virological diagnosis in high risk livestock-wildlife areas to settle if livestock and wildlife share the same FMDV or they are unrelated.
- There is need to conduct repeated sampling of young Ankole cattle in focus villages or subcounties to settle the in-herd and between-herd spread of FMDV in this population. This is currently being done by the DANIDA-funded collaborative TADEA-project in Uganda
- When setting up livestock control zones in Uganda, it should, based on the demonstrated undetected presence of FMDV in two Ugandan subcounties, be considered to enhance livestock movement control by e.g. individual identification of cattle in transit or institution of livestock movement permits



**SAMPLING TEAMS**



**REFERENCE:** Ayebazibwe C, Mwene FN, Balinda SN, Tjornehoj K, Masembe C, Mwanika VB, Okurut AR, Siegmund HR, Alexandersen S (2010) Antibodies against FMD VIRUS in African buffaloes (*Syncerus caffer*) in selected national parks in Uganda (2001-2003). *Transbound Emerg Dis* 57,286-292

# A DANIDA FUNDED TRANSBOUNDARY ANIMAL DISEASE PROJECT IN CONJUNCTION WITH