Results of a Survey to detect Bovine Tuberculosis , Brucellosis and the status of FMD in buffaloes (*Syncerus caffer*) Tuberculosis in cattle (*Bos indicus)* in the Limpopo National Park and adjacent areas (interface)

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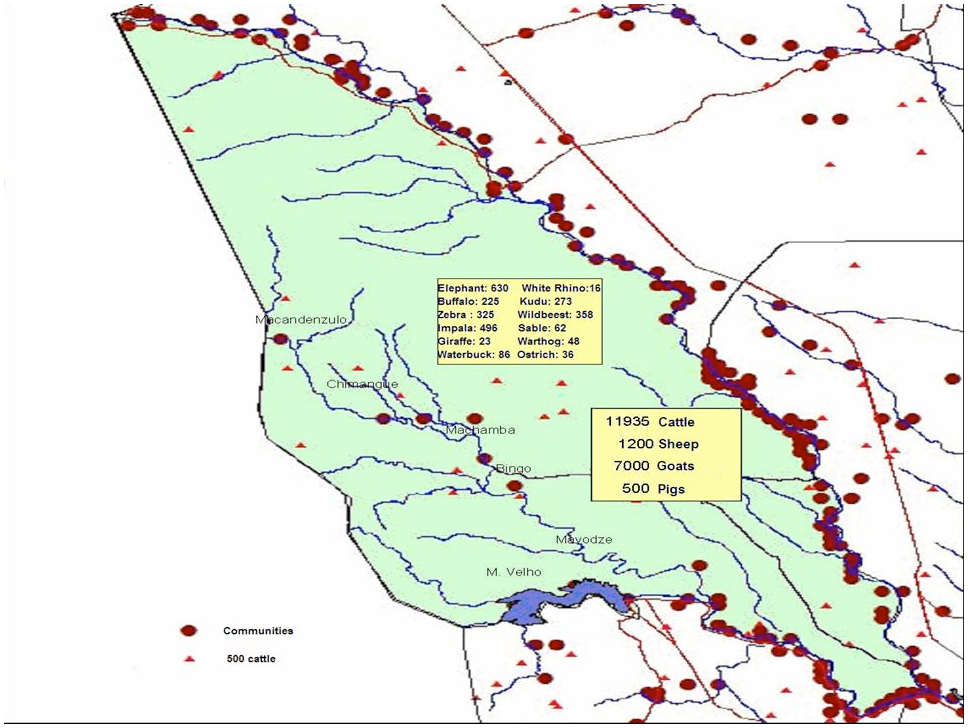
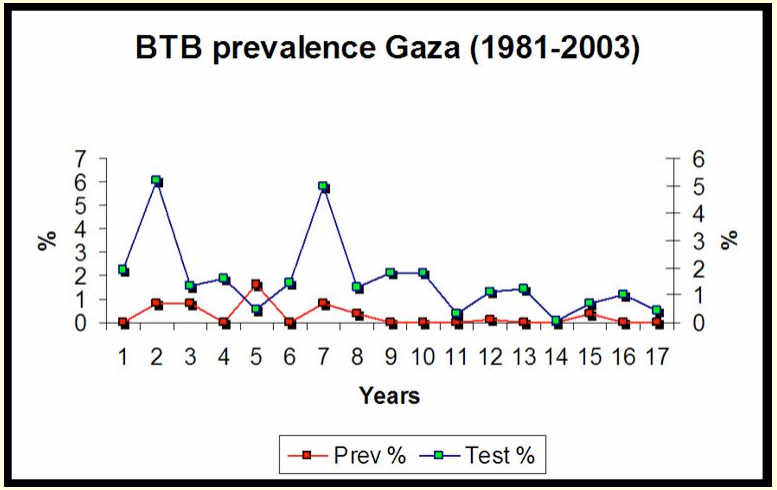
Background

- Wildlife and cattle interface LNP
- BTB Situation in KNP
- BTB Situation in Cattle LNP
- Corridor disease in the South of Mozambique after 1960.
- Protocol May 2006: Survey to determine the infection risk of bovine tuberculosis to the Greater Limpopo Transfrontier Conservation Area.



BTB cattle Gaza Province



Pilot surveys (2004)

- BTB in cattle 1600 tested 3 t+ Northern district of Gaza province in Chicualacuala. Sample fraction 8% .
- November 2004 first pilot survey in resident buffalo in LNP (n=10 from a herd of 30) no positives found.

Location,samples and Population at risk

- Buffaloes immobilized in 2 places (i) 30 animals from 2 groups close to Madonze river 14 km apart from each other / 10 km from 2 localities (Machamba and Chimangue (ii) 1 group 22 animals in the Limpopo Elephant triangle 3 km from the locality of Psitima . Total: 50 animals.Population at risk=150
- Cattle were tested in 13 localities of the 17 existing in the interface with LNP. In 4 localities it was not possible to work because of lack of crush pen. Total animals tested: 4158 of which, 3180 animals (76.5%) from adjacent areas along the Limpopo river and 978 (23.5%) from inside the LNP. Fraction tested = 34.8% , Population at risk= 11935.

Results

- This report: Tuberculosis Brucellosis and Foot and Mouth Disease in Buffaloes and Tuberculosis in Cattle.
- Bovine tuberculosis : buffaloes 54 (36% of the buffalo resident populations).γ interferon + histology/microbiology in the positive animal. 1 positive to γinterferon but negative to histology but awaiting culture results (false positive?) .
- Bovine tuberculosis: Cattle tested 4158 (35% of cattle population in the interface n=11935).Single Tuberculin Skin Test. No positives
- Other studies : Brucellosis 49 animals (Rose Bengal , SAT and CFT) 1 positive (Madonsi River Group of Buffaloes)

Foot and Mouth Disease

- No of animals tested =49
- “Blocking ELISA” , PCR and viral isolation. Proportion of animals with antibodies for NSP greater than 1.6 (n=49)=
- SAT1= 39 (79.6%)
- SAT2 =35 (71.4%)
- SAT 3=38 (77,5%)
- PCR & viral isolation (probangs) negative.

Additional studies

- Theileriosis , Trypanosomosis, Bartonellosis and Rift Valley Fever in buffaloes.

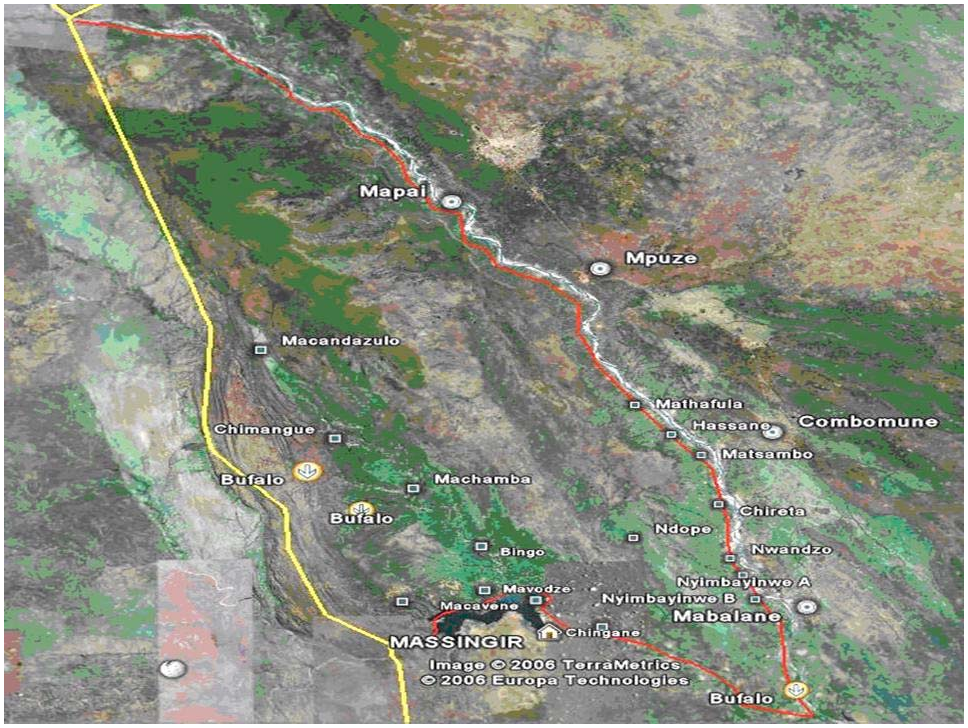
(Report by Dr. Roy Bengis).

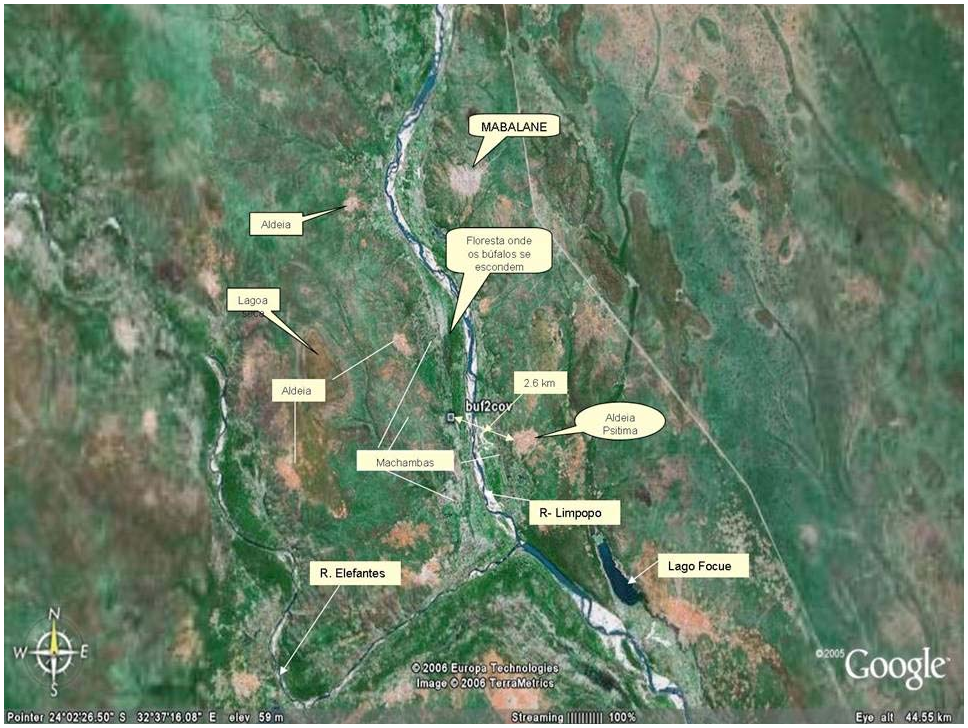
Human-Animal conflict

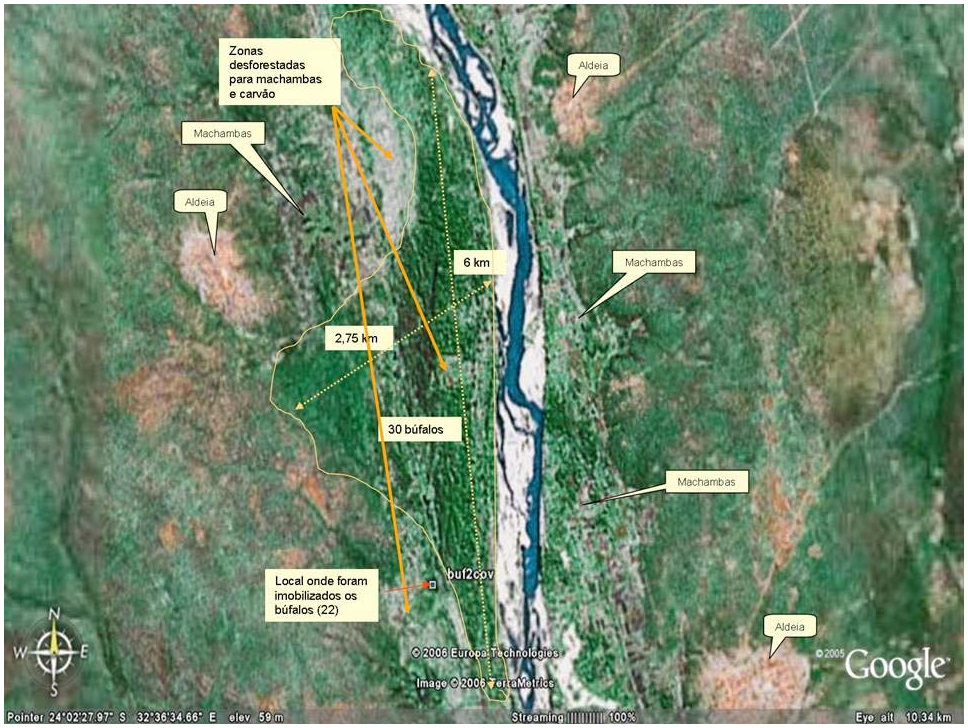
- Buffaloes in the Limpopo/Elephant triangle are in permanent contact with cattle, being poached by members of the communities.
- They survive in a 6x3 km forest which is being destroyed for producing charcoal and for cultivation.
- probably destroying crops of communities.
- probably transmiting FMD and Corridor Disease

Locations and number of animals tested for bovine tuberculosis

Nome da aldeia	Referências	Efectivo	N.º tuberculizado
Matsambo	**S: 23º 29,184 E: 32º 25,905**	**487**	**318**
Hassane	**S: 23º 26,161 E: 32º 22,683**	**674**	**335**
Mathafula	**S: 23º 21,869 E: 32º 18,785**	**989**	**830**
Nwandzo	**S: 23º 44,272 E: 32º 29,053**	**265**	**43**
Ndope	**S: 23º 41,272 E: 32º 18,694**	**675**	**0**
Chireta	**S: 23º 36,371 E: 32º 27,760**	**706**	**670**
Chimangue	**S: 23º 6,722´ E: 31º 6,795´**	**436**	**172**
Nyimbayinwe B	**S: 23º 50,290 E: 32º 31,816**	**1389**	**277**
Nyimbayinwe A	**S: 23º 46,717 E: 32º 30,412**	**676**	**206**
Muvamba	**ND**	**517**	**329**
Cumba	**ND**	**318**	**0**
Chinhezane	**ND**	**415**	**0**
Psitima	**S24 03.677 E32 36.201**	**338**	**0**
Massinsir velho	**S23 50.549 E31 53.942**	**2500**	**204**
Bingo	**S23 42.477 E32 02.421**	**550**	**273**
Machamba	**S23 34.010 E31 55.173**	**650**	**326**
Chimangue	**S23 26.722 E31 46.795**	**350**	**175**
Total		**11935**	**4158 (35%)**







Conclusions(1)

- BTB was not detected in the buffaloes of the resident herds in LNP . This is an indication that BTB is either absent or present at undetectable levels (prevalence <1%) .
- Bovine Brucellosis was detected in one animal (2%) n= 49 from Madonze River.No positives were found in the Limpopo/Elephant triangle location.
- BTB was not detected in cattle inside the LNP or in its periphery (interface) .

Conclusions (2)

- Buffaloes in the triangle Limpopo/Elephants are in permanent high level of conflict with communities.
- Buffaloes in the triangle Limpopo/Elephants are the source of FMD virus and *Corridor disease for cattle in the region which reapeared in the South of Mozambique in 2004 for the first time since 1960.*

Recommendations (General)

- Translocations of buffaloes from KNP to LNP should continue according to the veterinary requirements established by the National Directorare of Veterinary Services i.e after a at least 1 negative test (preferably 3).
- The risk of spreading BTB from KNP trough the opened fence should be determined and a concious decision taken.

Recomendations(specific)

- Buffaloes from Triangle of Limpopo Elephants should be removed ASAP .
- Considering the disease status of BTB and Brucellosis (extremely low or free) the buffaloes should be translocated to Gorongosa National Park. The likelihood of being infected if tranlocated to other part of the Limpopo is greater than if translocated to GNP which aquired recently BTB and Brucella free buffaloes. They will not contitute a risk for cattle (FMD and Corridor) since there is no cattle close to GNP because of tse-tse and trypanosomosis.

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