One Health Platform:
Communities on the move - animal and human health challenges
at the Limpopo National Park

- José Fafetine -

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Introduction

- Southern African countries evolved for new paradigms regarding the protection of wildlife and ecosystems with the creation of Transfrontier Conservation Areas (TFCA)/Peace Parks;

- TFCA are large, protected regions that stretch across international borders in Southern Africa, and where adjoining countries have removed intervening barriers to allow the free movement of wildlife;

- Ultimate goal: establish more effective transfrontier management of biodiversity.

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Kavango – Zambezi TFCA

Great Limpopo Transfrontier Park

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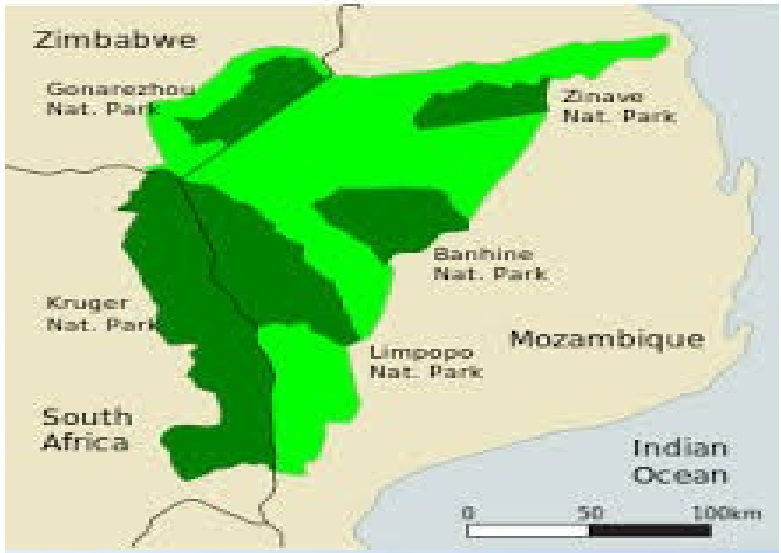
Limpopo National Park

- LNP formally a hunting zone (coutada) was declared a National Park on 27th November 2001;

- Creation of the Great Limpopo Transfrontier Park (GLTP) in December 2002 linking Kruger National Park (KNP) in South Africa, Gonarezhou National Park in Zimbabwe and Limpopo Nacional Park in Mozambique.



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- Considerable ecosystem diversity, is drained by rivers, a dam exists in the vicinity;

- Humans, their livestock and free roaming wild animals share the same rangelands mostly under communal tenure;

- Complex epidemiological relationship involving a diversity of pathogens, circulating in a vast array of hosts, including humans;

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- Interaction between human-livestock-wildlife may contribute for the emergence or re-emergence of various infectious diseases that may affect the species preservation.

- Goal of this platform: to address research questions with direct impact on the health and livelihood of resource constrained communities and contribute for better biodiversity management.

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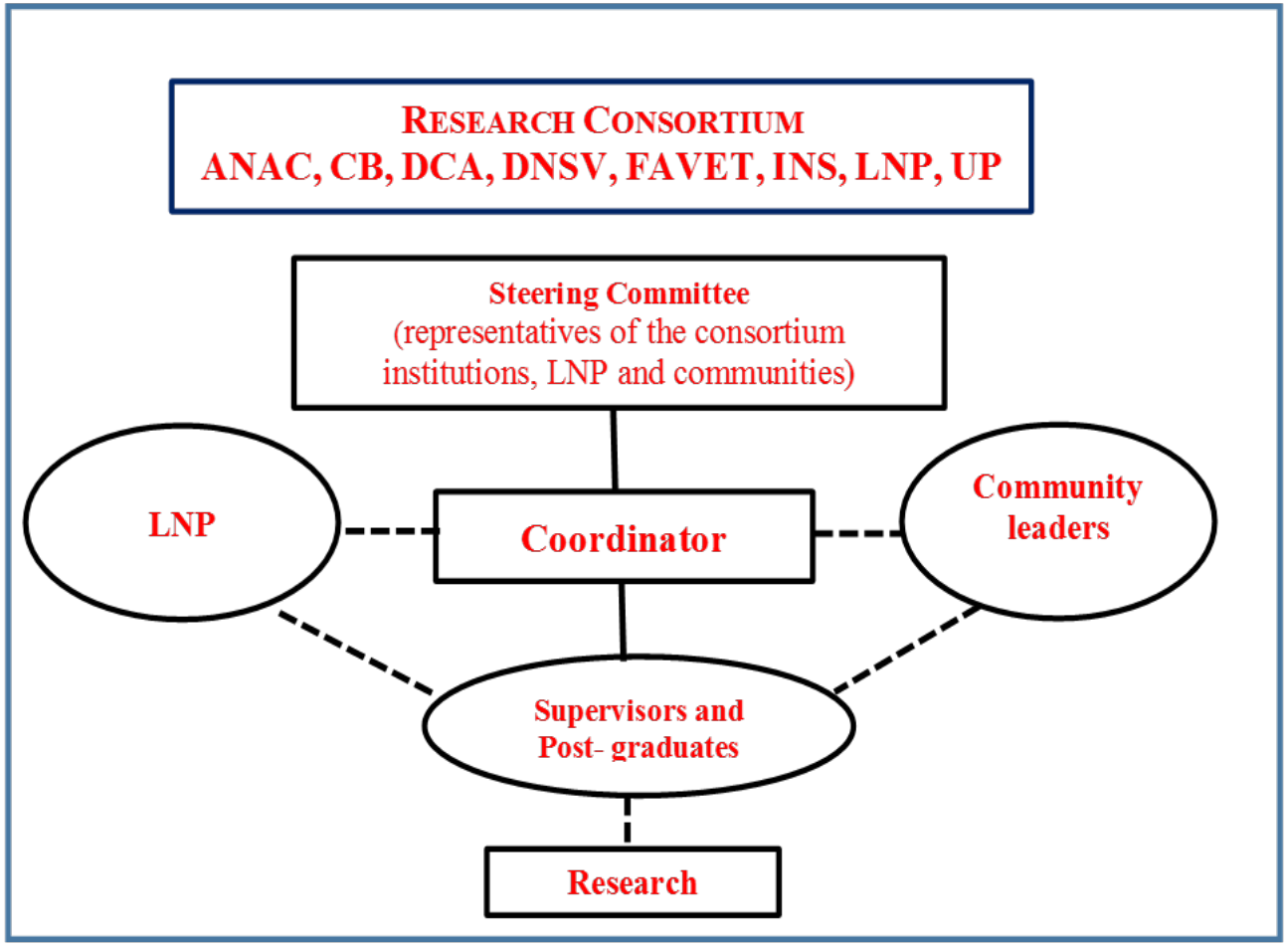
The research consortium

Research with impact on health and livelihood

Main management body

1. Coordinate and harmonize
2. Relationship LNP,

Conduct the research activities



EXPECTED RESULTS

(1) Better understanding of the epidemiology of selected zoonotic diseases

(2) Better preventionand control methods

(3) Improved health and well-being of the communities

(4) Trainned stuff and infrastructure upupgrading

(5) Better biodiversity management

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Activities

- Meetings
- Registration of six post-graduate students
  - 4 PhD
  - 2 MSc
- Research protocols presentation
- Field work
- Laboratory
- 2 BSc student

Village	Rivers	Nr. of Cattle	Nr. of Goat	Nr. of Sheep	Nr. Of Dogs
Bingo	Xingueze	2402	1219	358	63
Macaringue	Limpopo	1994	263	199	126
Munhamane	Limpopo	1041	728	187	56
Madingane	Elefantes	1564	349	416	81
Malhaule	Elefantes	807	291	147	57
Chibotana	Elefantes	1686	755	138	118
Machamba	Xingueze	1627	993	262	64
Macuachane	Elefantes	1495	884	197	57
Cunze	Limpopo	1488	582	180	63
Chipandzo	Limpopo	731	171	128	26
Maconguele	Limpopo	2088	773	243	58
Chimangue	Xingueze	1790	1447	587	53
Mavoze	Xingueze	3641	2627	1911	147

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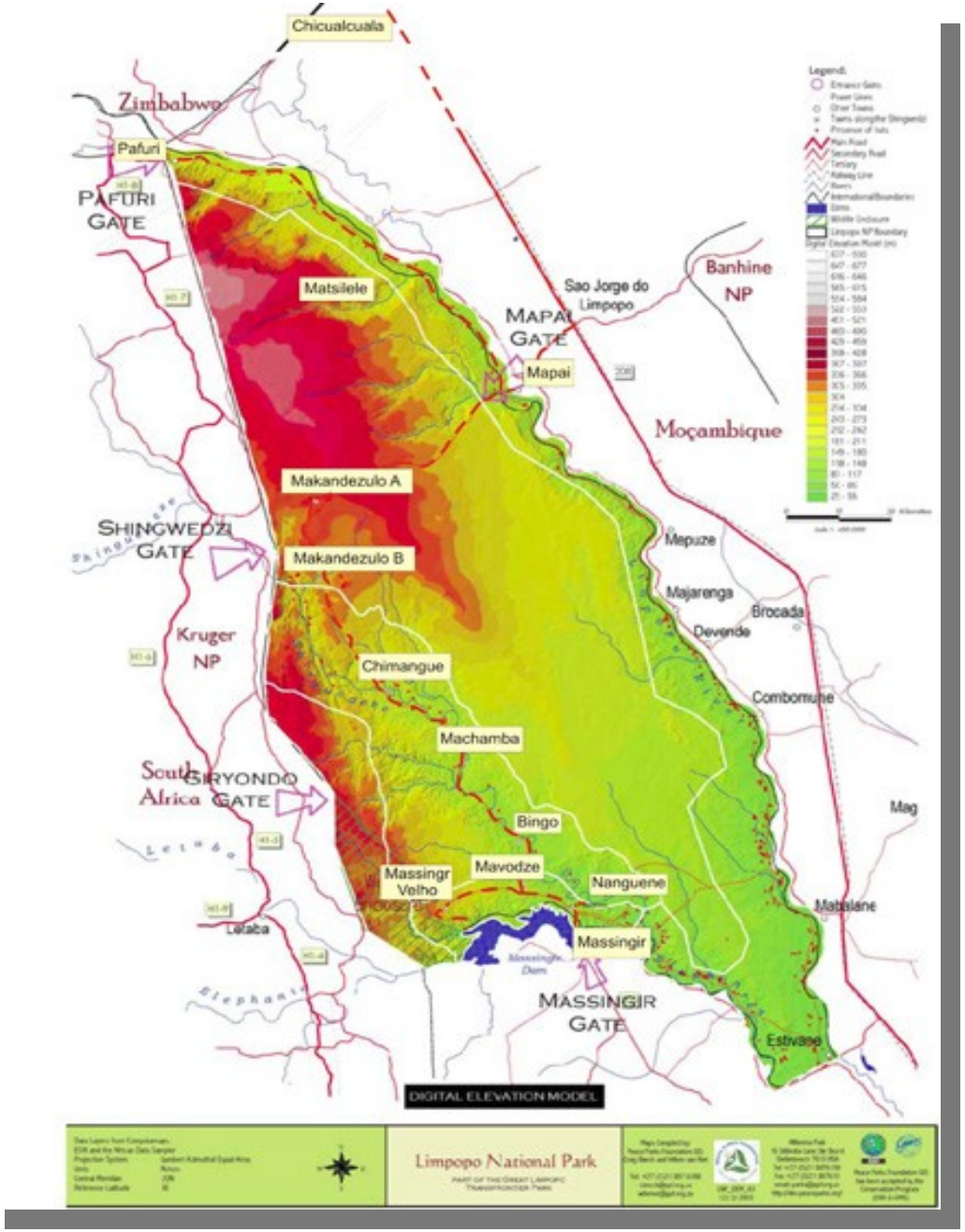

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An assessment of the constraints and opportunities of existing livestock production systems at the wildlife-livestock interface in the Limpopo National Park, Mozambique – Ana Zandamela

Aim:

- To identify constraints and opportunities of the livestock production and health management system as perceived and experienced by animal owners;

- To identify perceived challenges related to wildlife-livestock compatibility in the LNP;

- To assess the possible impacts the risks identified may have on animal production, disease control, local livelihoods and the conservation system in order to provide an integrated approach to possible solution.

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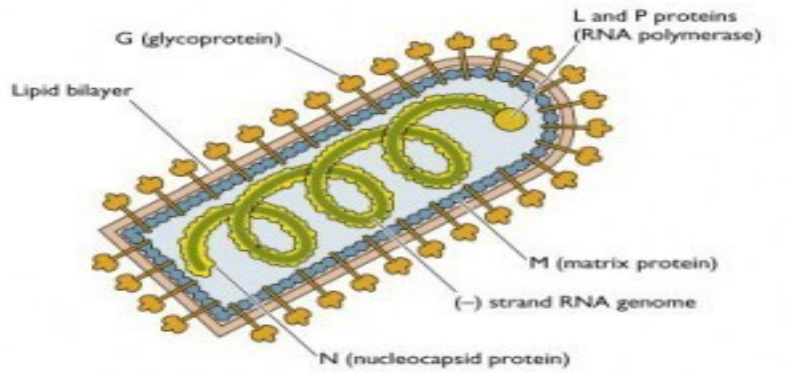
Epidemiology of rabies at the Limpopo National Park – Milton Mapasse

Aim:

- To measure the KAPs regarding rabies among households and general health practitioners
- To evaluate the levels of neutralising antibodies in the dog population
- To identify and characterize rabies virus in wildlife (bats) and in domestic
- To evaluate the coverage achieved following a vaccination campaign in dog population



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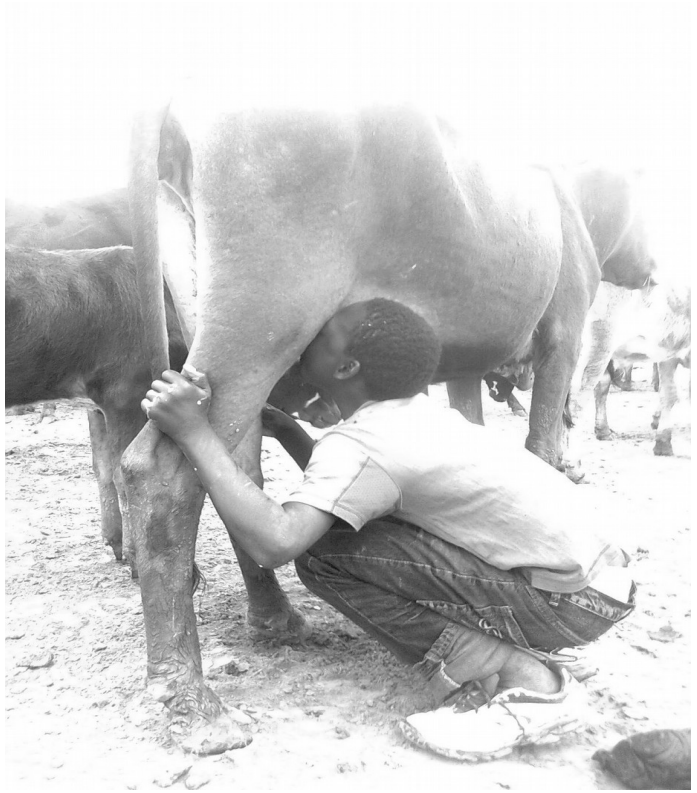
Survey on bacterial diseases of zoonotic importance in cattle, goats and humans in the Limpopo National Park – André Nhambir

Aim:

- To know the prevalence of tuberculosis in cattle and goats;
- To determine the prevalence of brucellosis in cattle and goats;
- Questionnaire survey of human health and risk factors associated with the prevalence of bovine tuberculosis and brucellosis in livestock and humans.



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Cattle

Class	n	bTB	Brucellosis
Cow	431	17	57
Bull	182	6	21
Heifer	101	1	11
Calf	62	1	8
TOTAL	776	25	97
%		**3.2 %**	**12.5 %**

Goats

Class	n	bTB	Brucellosis
Doe	120	3	14
Doeling	24	1	3
Buck	22	2	3
Buckling	18	1	2
TOTAL	184	**7**	**22**
%		**3.8 %**	**11.9 %**

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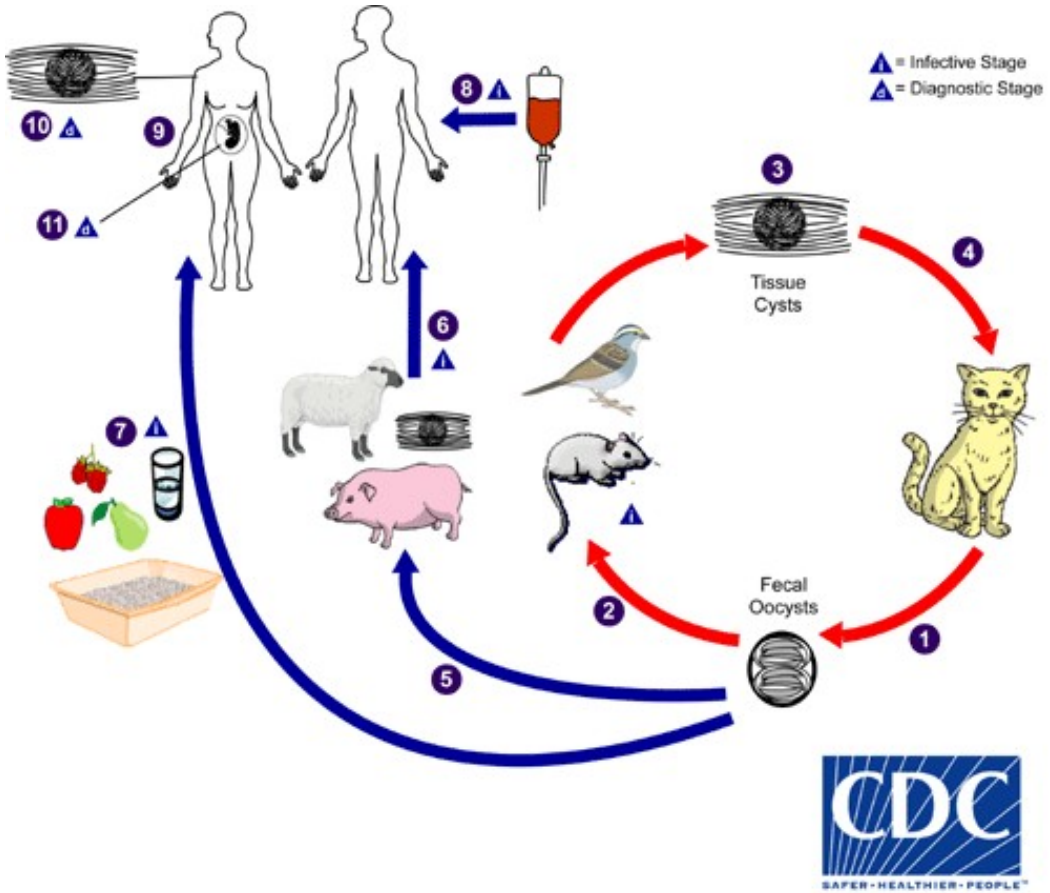
Wild Rodents Diversity and Toxoplasmosis Ecology at Limpopo National Park – Iara Gomes

Aim:

- Initiate a small mammal species inventory and provide suitable protocols trapping;
- Describe species microhabitats preferences within LNP, model their geographical distribution and access adaptation to habitats changes at LNP;
- Characterize genetically the rodents' population at LNP and catalogue their molecular barcodes in the Barcode of Life database (BOLD);

Screen for *Toxoplasma gondii* antibodies, Cysts and DNA in sera, muscle, liver and brain tissues.



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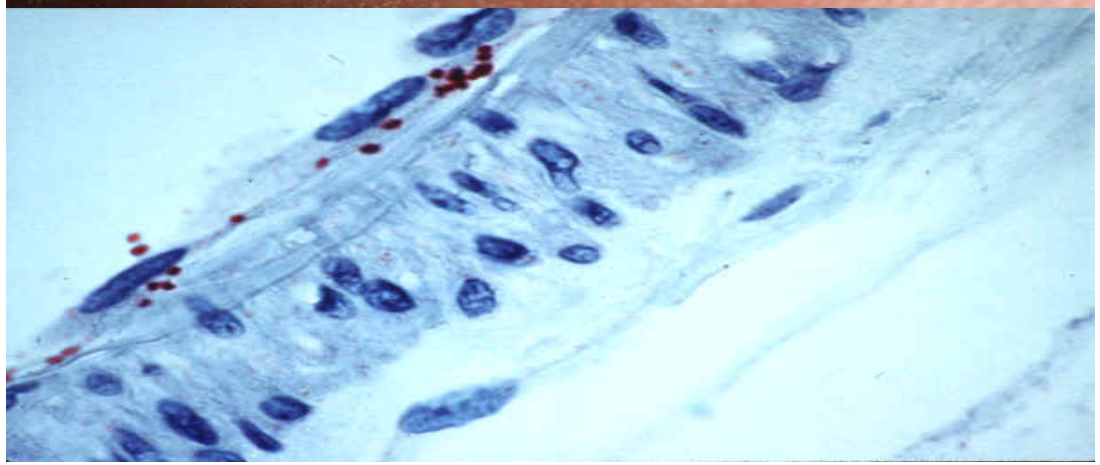
Study of Rickettsia of zoonotic importance at Limpopo National Park, Massingir District – Vlademiro Magaia

Aim:

- To characterize *Rickettsia spp*. detected in rodents, ticks and domestic animals at LNP;
- To evaluate the role of other ticks species, different from *Amblyomma hebraeum*, that occur at LNP, to harbour and transmit *R. africae*;
- To determine the seroprevalence of the spotted fever *Rickettsiae* group in humans in different age groups, living at LNP.



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Village	Tick species	Number of species	Positive (%)	Negative (%)	Primer tested
Madingane	*Amblyomma hebraeum*	30	6 (20%)	24 (80%)	CS239/CS1069, gltA
Bingo	*Amblyomma hebraeum*	30	4 (13.3%)	26 (86.66%)	CS239/CS1069, gltA

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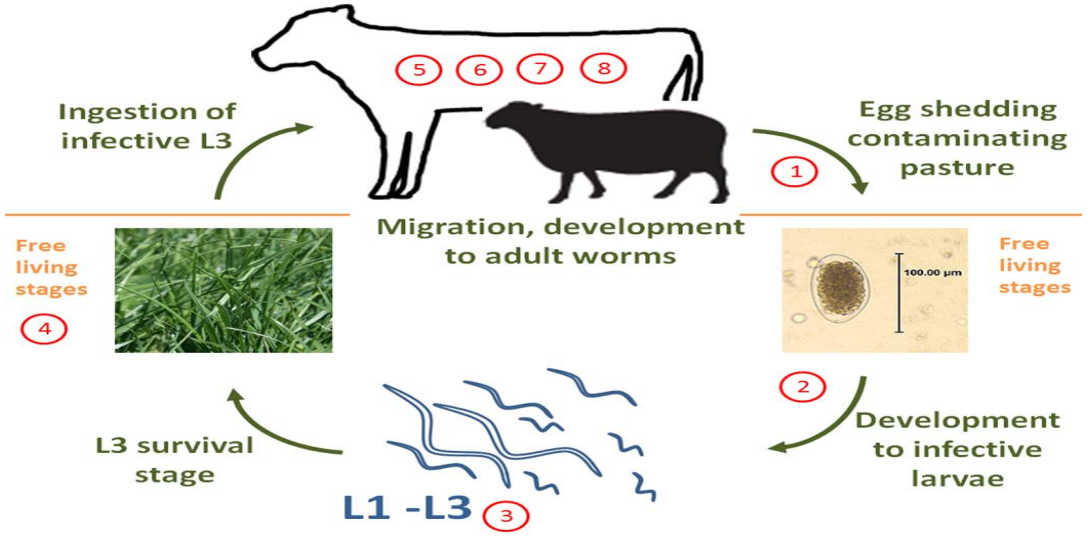
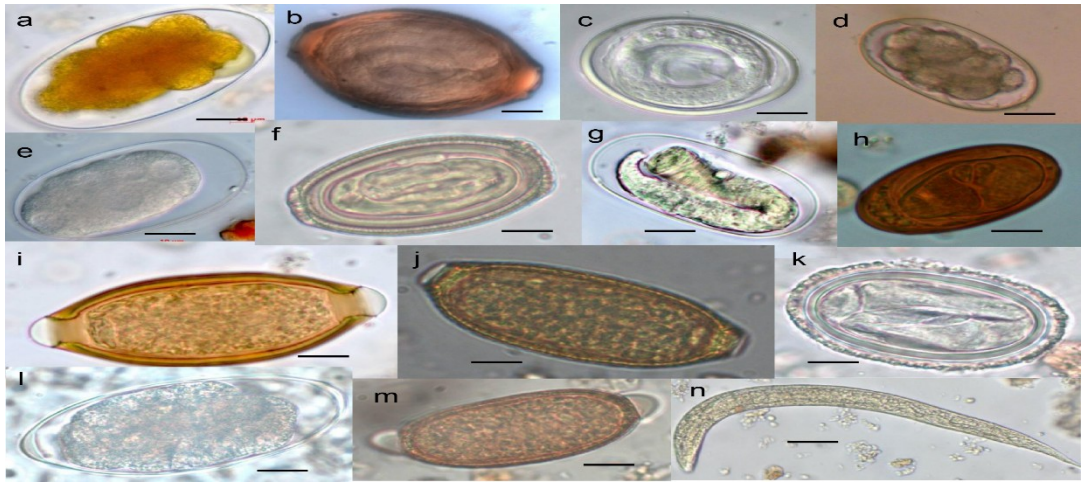
Prevalence of gastrointestinal parasites in cattle, sheep and goats – Calisto Macaringue

Aim:

- To know the prevalence of gastrointestinal parasites in cattle, sheep and goats at the Limpopo National Park.





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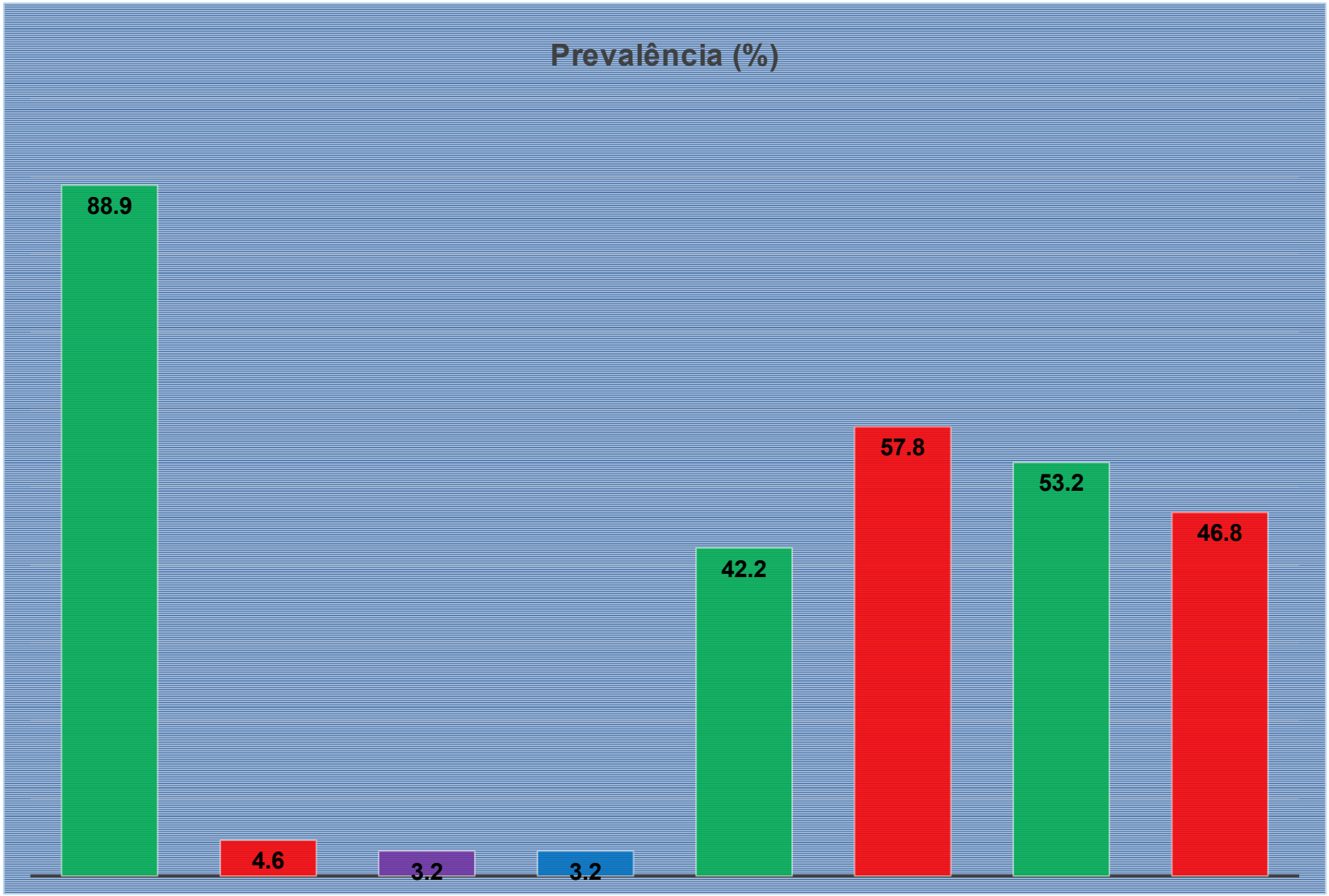

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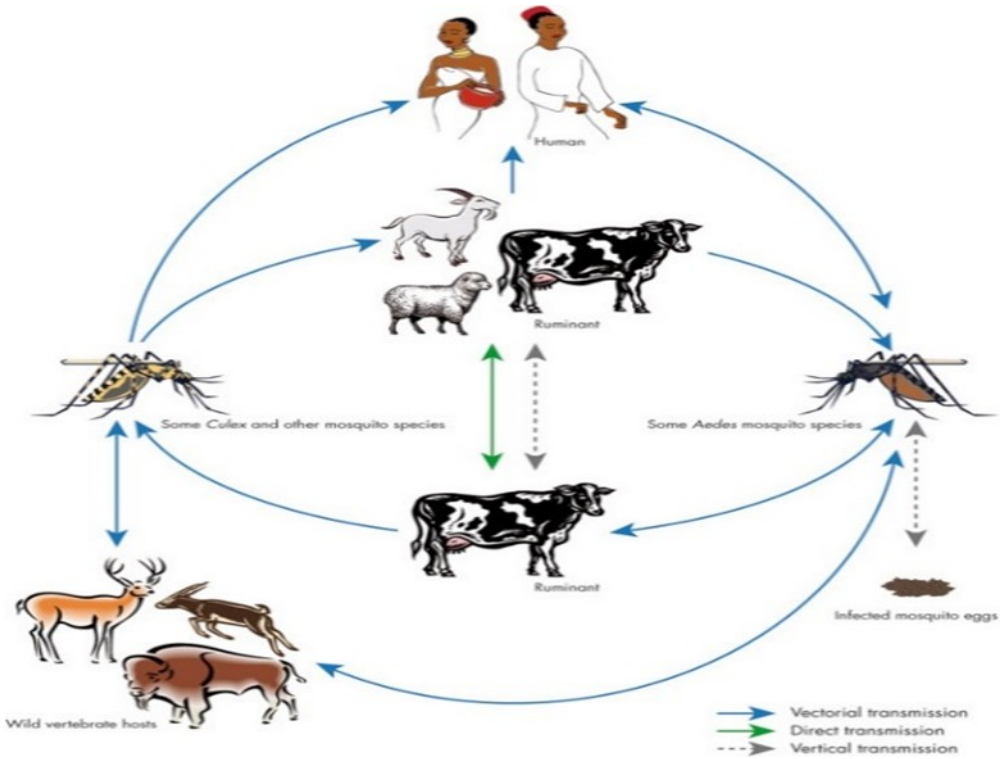
Epidemiology of Rift Valley fever virus in livestock at the Limpopo National Park – Ofélia Nhambirre

Aim:

- To understand the drivers of RVFV persistence during the inter-epidemic periods and the drivers of emergence of RVFV infection in livestock after the inter-epidemic periods in LNP.



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Villages	Total of animals	Nr of positives	Nr of doubtful	Percentage of positives
Mavodze	102	6	-	5.8
Bingo	107	0	-	0
Machamba	130	1	-	0.7
Munhamane	100	9	-	9
Macaringue	97	24	1	24.7
Malhaule	99	5	3	5.05
Madingane	100	4	2	4
Cunze	98	4	-	8.6

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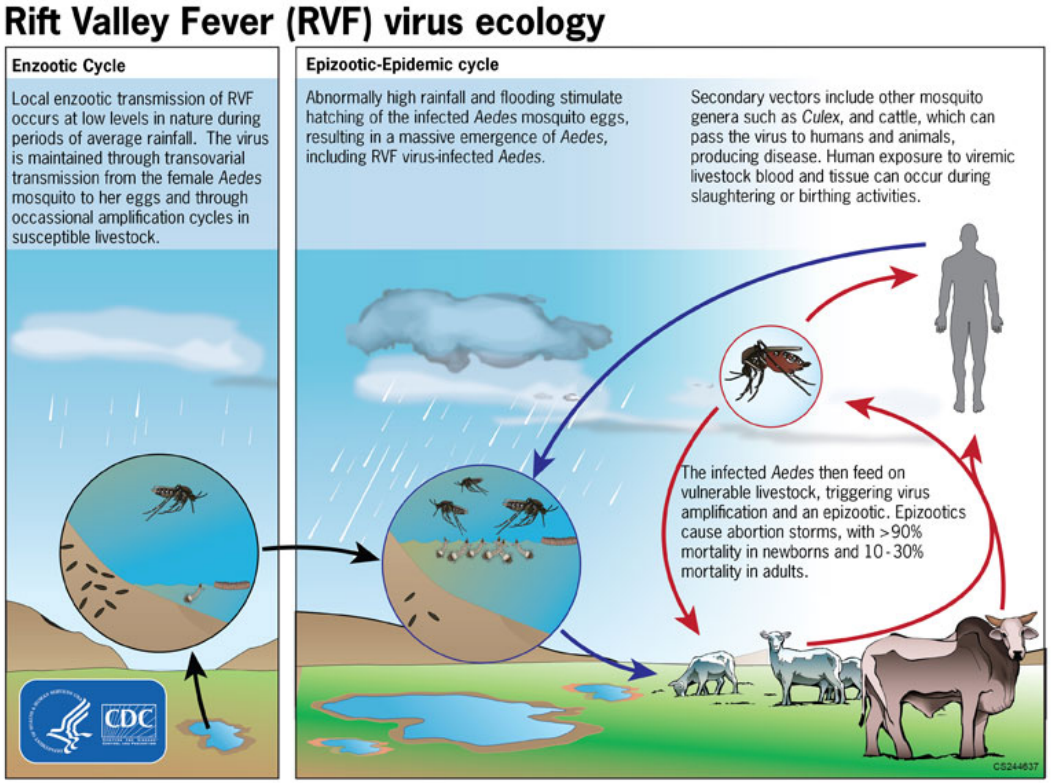
Seroepidemiology of zoonotic and vector borne infectious diseases among acute febrile patients in Limpopo National Park - INS

Aim:

- To screen serum samples from acute febrile patients for the presence of antibodies against several zoonosis and mosquito borne infectious diseases such as Rift Valley fever, Dengue, Chukungunya, West Nile Virus, Leptospirosis and others.



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Newsletter

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Quarterly Newsletter of the WDA AME

One health approaches to Conservations management: Developing a holistic research program in Limpopo National Park, Mozambique

Drs Michael D. Kock, Luis Neves and Jose Fafetine






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Thank you!

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