



Human/animal diseases:from Teramo to Africa and from Africa to Teramo: a bilateral approach to respond to transboundary diseases

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“Exotic diseases”

□ The IZS A&M has been engaged for many years in research and studies designed to increase knowledge and expertise in dealing with “exotic diseases”.

□ Since 1991 IZS A&M is recognized by the Italian MoH as **National Reference Centre** for the study and verification of exotic animal diseases.





“North of the World”

□ To achieve these objectives, it is important to create a **cooperation networks** with laboratories and research organisations.



“North of the World”

□ The market globalisation and climate changes **increase the risk** that some diseases limited to sub-Saharan Africa until a few years ago, will occur in Europe.



“North of the World”

□ Cooperation projects with endemic countries allow:

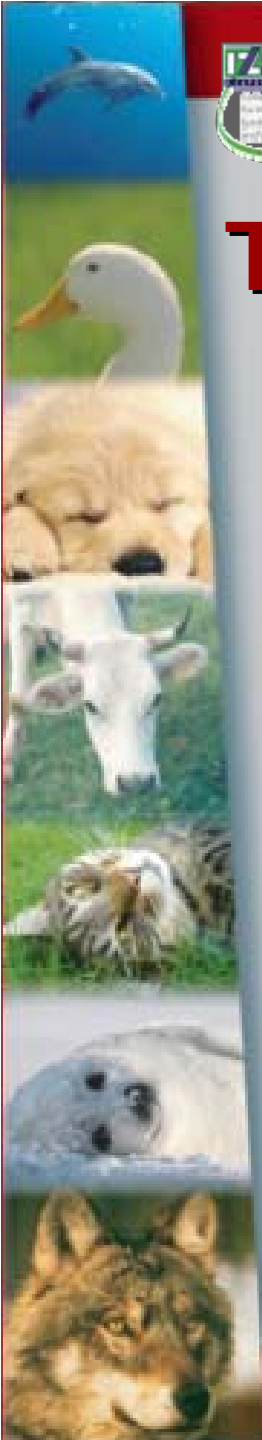
❖ to acquire in-depth **knowledge** of diseases which would otherwise only be studied academically.

❖ to **manipulate pathogens** in the areas in which they are naturally present.



These projects are mutually useful, because:

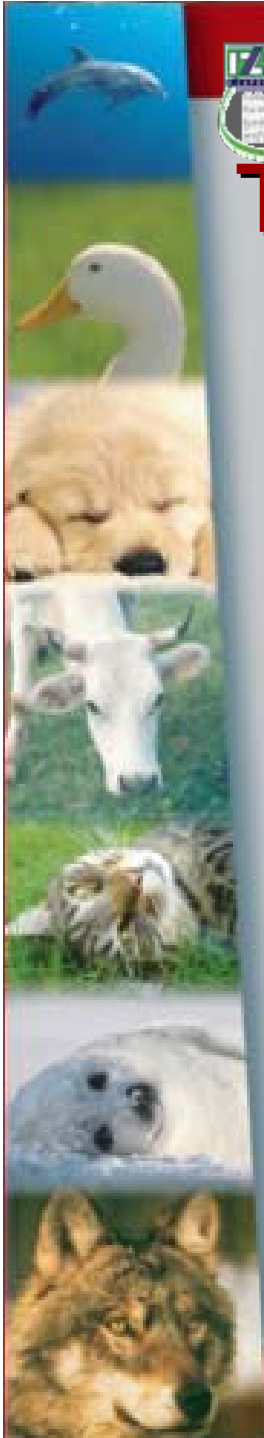
- They improve the possibilities of developing valid, sensitive, specific **diagnostic methods.**





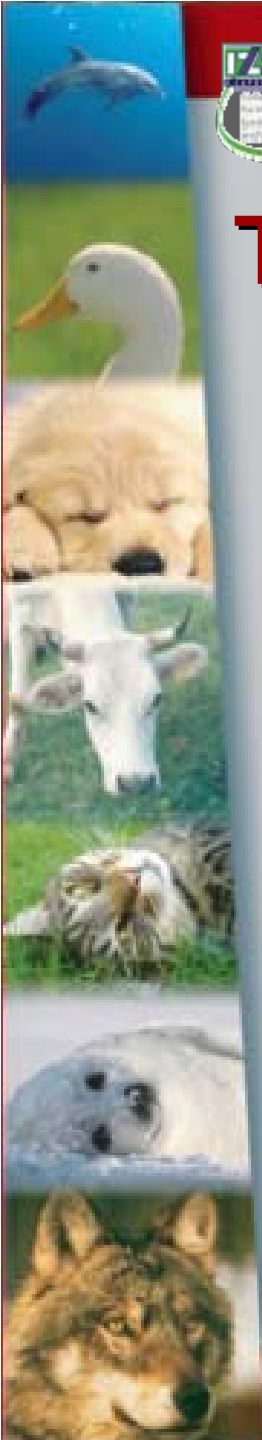
These projects are mutually useful, because:

□ In the southern hemisphere, animal diseases, especially epizootic diseases, cause high rates of morbidity and mortality, **endanger the quality and quantity of animal products**, and discourage private investment in the sector.



These projects are mutually useful, because:

- They allow to assess the efficiency of **vaccination** strategies for the prophylaxis and control of diseases.





These projects are mutually useful, because:

□ They provide technical/scientific contribution for the enhancement of animal products, which is essential for:

- ❖ alleviating poverty;
- ❖ increasing food safety;
- ❖ sustainable development.





IZS A&M 's different approaches for scientific cooperation

- Long term twinning
- Scientific collaboration
- OIE twinning

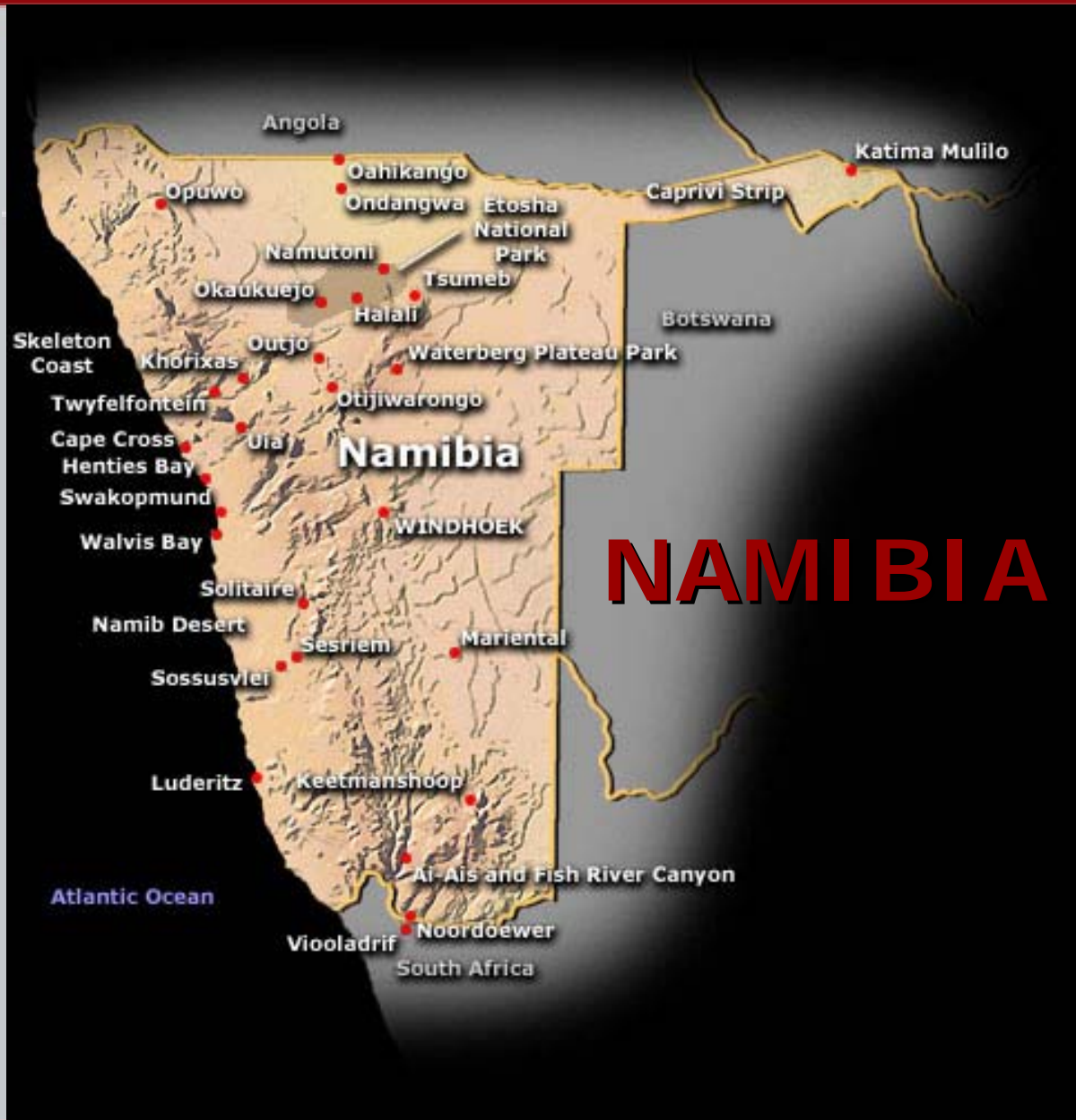
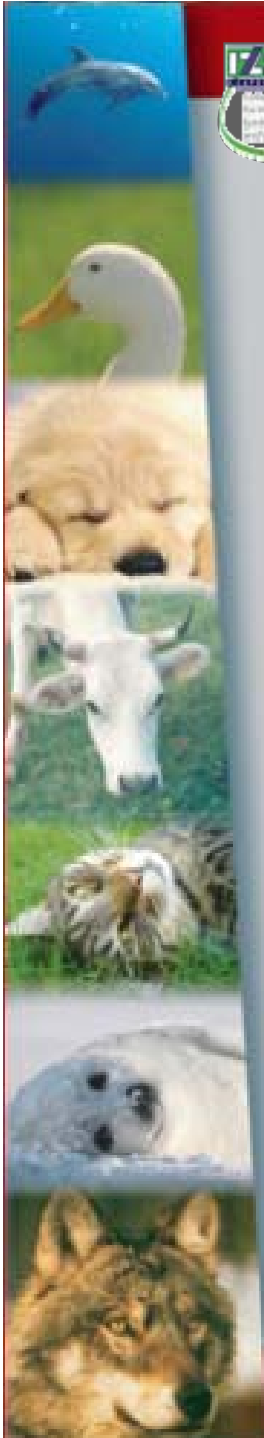




IZS A&M 's different approaches for scientific cooperation

□ Long term twinning

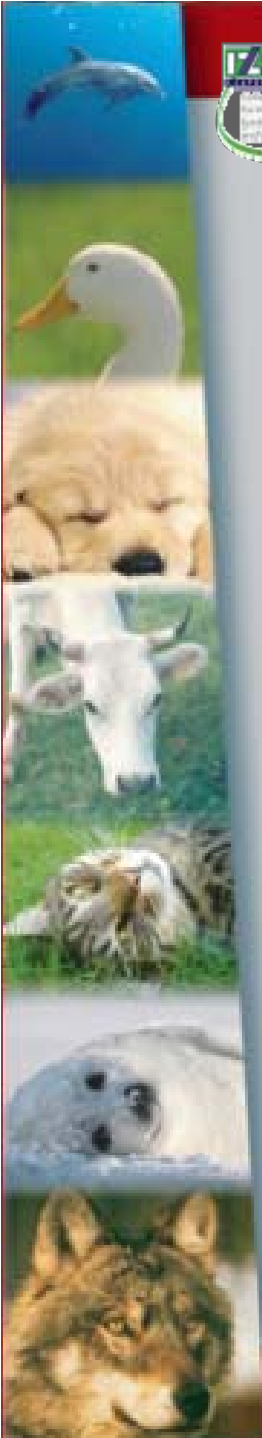






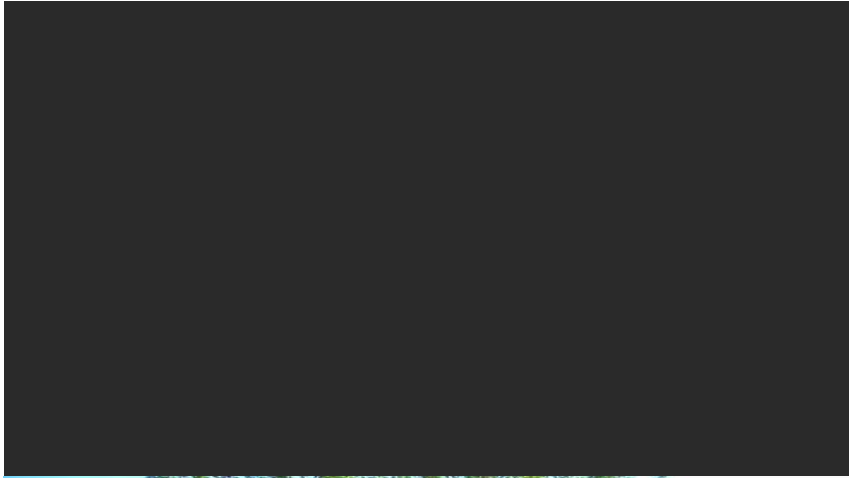
NAMIBIA

□ Around a million inhabitants, half the country's population, earns his living from agriculture.





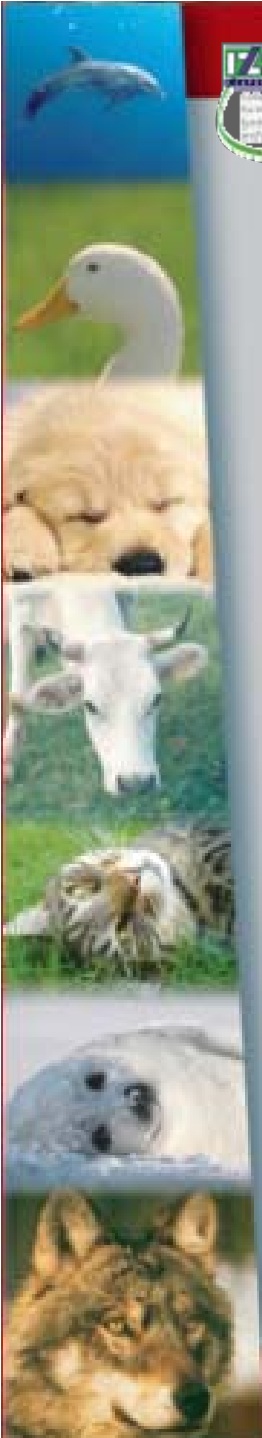


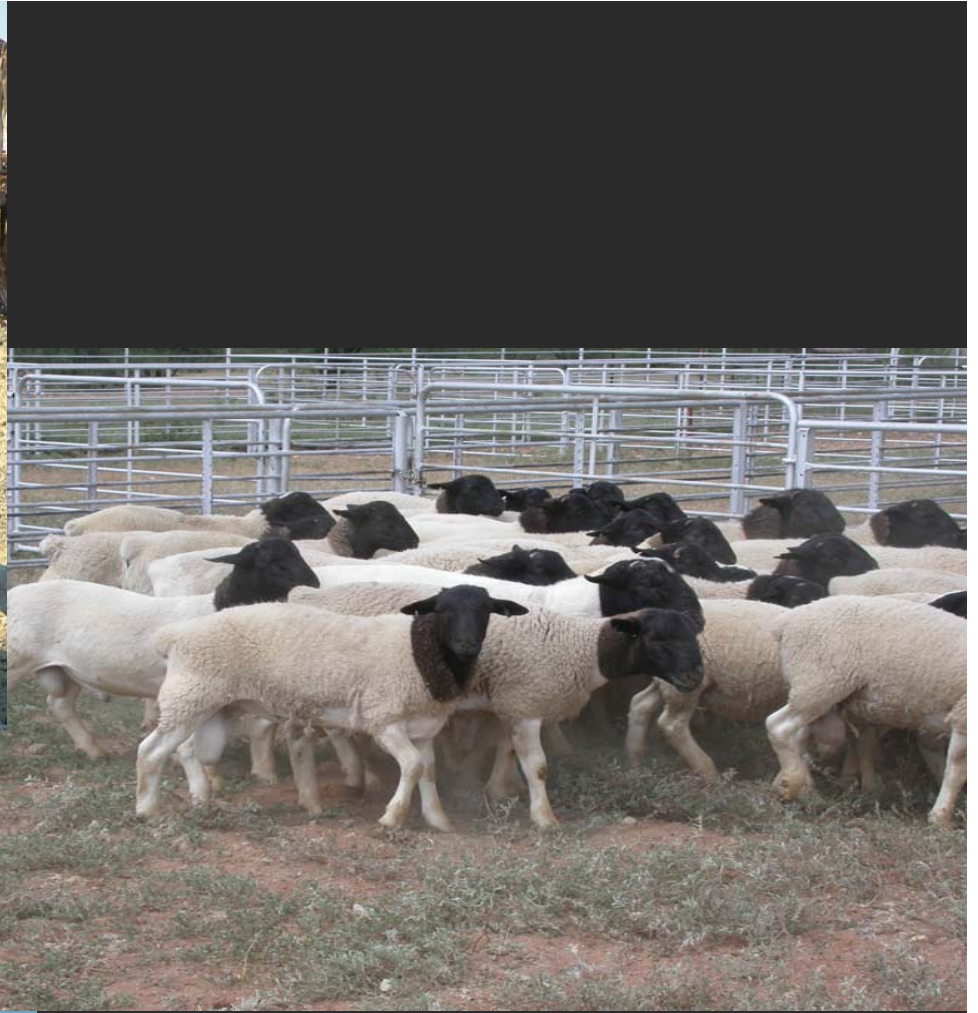


NAMIBIA

Livestock breeding is the most important sector of the economy after mining.

- ❖ Cattle 2.4 millions
- ❖ Sheep 2.7 millions
- ❖ Goat 2.1 millions





NAMIBIA

However, the livestock is under constant threat of epidemics, such as **Foot and Mouth disease** and **CBPP** due to movements of animals from neighbouring countries.





CBPP



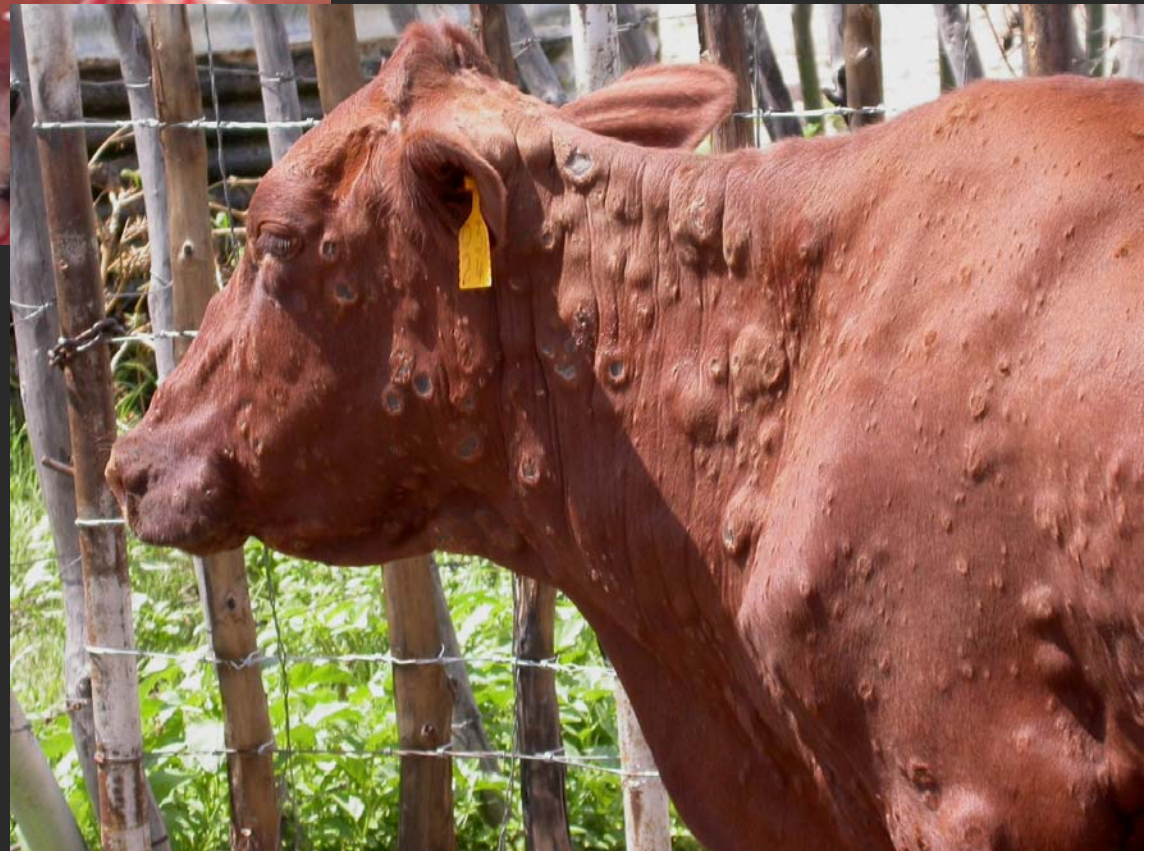


FMD





ASF



LSD



SCIENTIFIC COLLABORATION

□ Officially started in 2005 through a MoU between the MAWF Veterinary Services of Namibia and IZS A&M.

□ In 2007 a scientific cooperation agreement has been signed between the MAWF and the Italian Ministry of Health.





SCIENTIFIC COLLABORATION

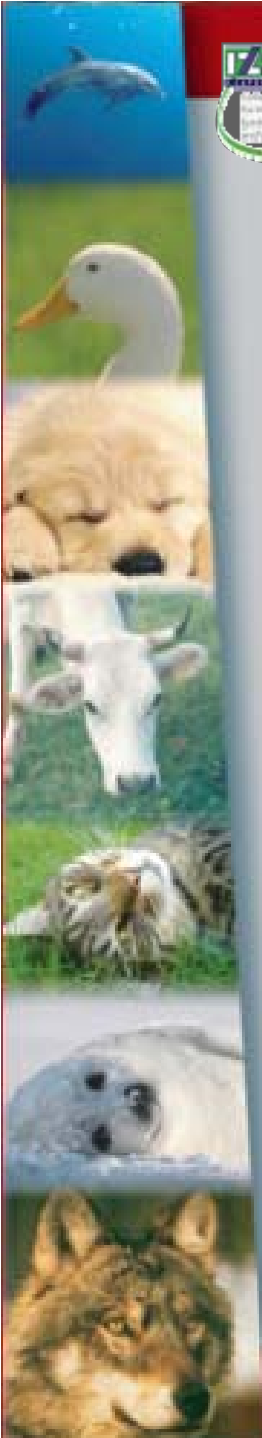
□ This collaboration is also providing:

- ❖ technical/scientific support:

- ❖ guidelines;

- ❖ international directives;

to enlarge the areas authorised to export beef to EU and non-EU countries.





VIROLOGY LABORATORY

□ In 2005, IZS A&M decided to set up a Virology Laboratory at the Central Veterinary Laboratory, where Italian and Namibian personnel, working towards **common goals**, share diagnostic responsibilities and scientific research.





COMMON FOCUS ON DISEASES

Common interests have been focused on diseases such as:

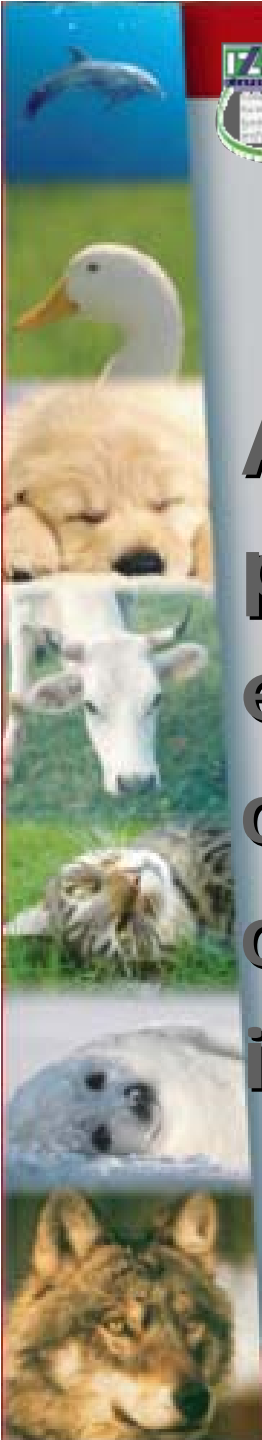
- ❖ African Horse Sickness (AHS);
- ❖ Equine Encephalosis (EE);
- ❖ Rift Valley Fever (RVF);
- ❖ Ephemeral Fever;
- ❖ Lumpy Skin Disease (LSD);
- ❖ Dourine;
- ❖ Heartwater (HWD) .





AHS PRIORITY FOR IZS A&M

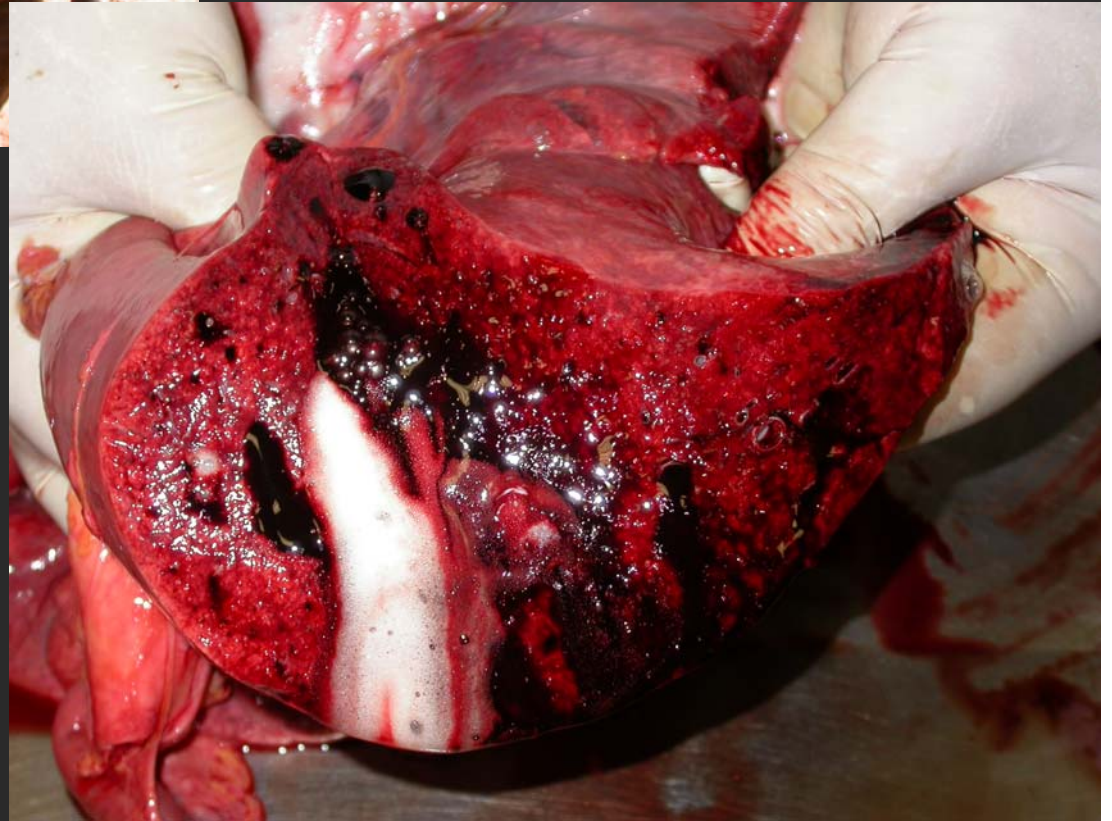
AHS was identified as a priority due to its close etiological and epidemiological correlations with BT and the consequent risk of its introduction in the EU.





AHS

AHS





EE PRIORITY FOR NAMIBIAN VET

EE, identified by the
Namibian veterinary
surgeons as a
differential diagnostic
need from AHS.





DIAGNOSTIC TESTS IMPROVEMENT

Application of **traditional** diagnostic tests such as viral isolation coupled with the development of **innovative** techniques as RT-PCR.



DIAGNOSTIC TESTS IMPROVEMENT

But also PCR for:

- ❖ *Brucella* spp
- ❖ *Chlamydophyla* spp
- ❖ Rift Valley Fever virus
- ❖ *Ehrlichia ruminantium*
- ❖ *Trypanosoma equiperdum*



INCREASE PUBLIC CONFIDENCE

□ The provision of reliable, rapid services has as an outcome an increased clients' confidence in the CVL.

A virtuous circle has thus been created, leading to an increasing supply of samples to be examined.





QUALITY SYSTEM

- All the diagnostic methods provided were validated and subject to the quality standards used at the IZS A&M.
- Standard operating procedures were drafted and the virology lab was managed in accordance with UNI ISO 17025 .





QUALITY SYSTEM

The CVL Quality Manager
has been sent on training
to
IZS A&M for 3 weeks

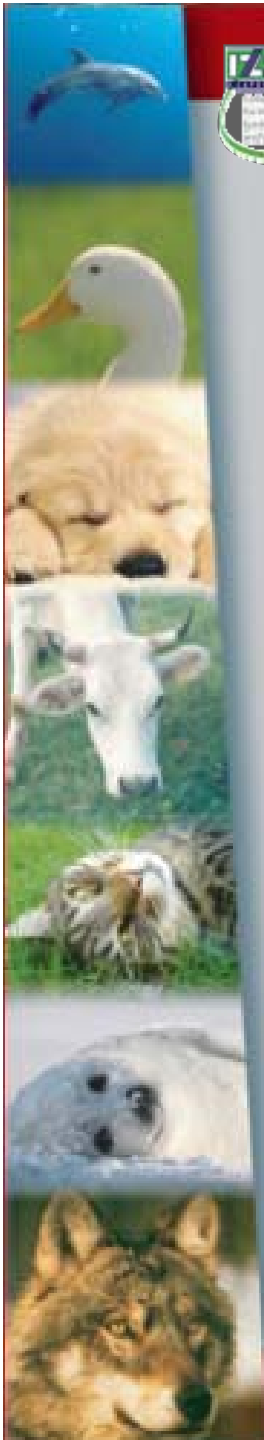




QUALITY SYSTEM

But also

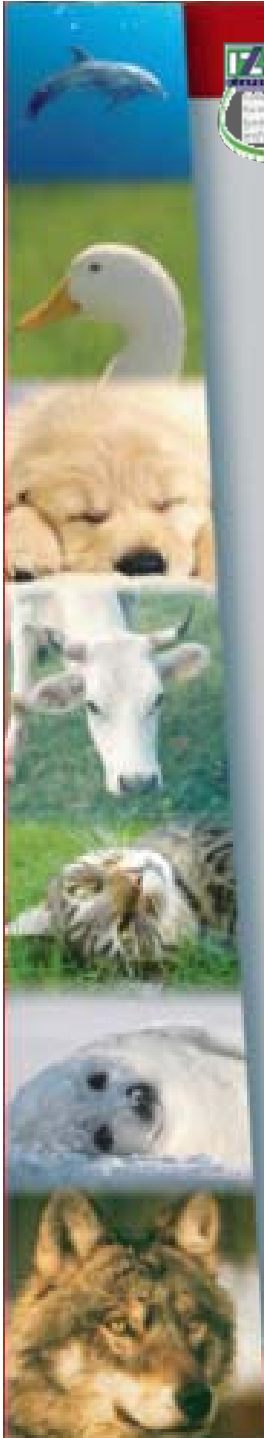
- ❖ Quality System Improvement
- ❖ Validation of diagnostics
- ❖ Certification of reference materials
- ❖ Equipments calibration
- ❖ Organization and Management of Proficiency / Inter-laboratory testing





ACCREDITATION

CVL will apply to the South African National Accreditation System for accreditation in 2010.



REFERENCE MATERIAL PRODUCTION

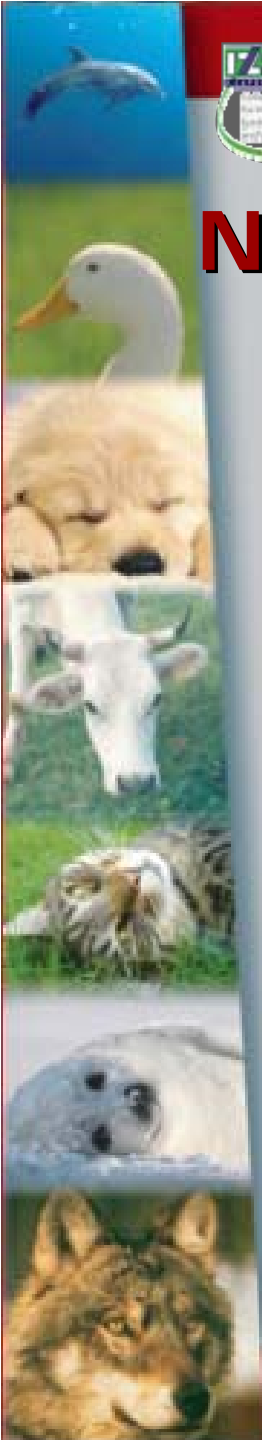
- Moreover, using the CVL experimental farm, hyperimmune sera have been produced for the AHS serotypes, RVF, LSD and HWD.
- These reagents have been and will be, used at the CVL and in Italy.





Namibia and IZS A&M co-operation

- Within the Namibia and IZS A&M co-operation, in December IZS A&M will provide a **Laboratory Information Management System** for the CVL.



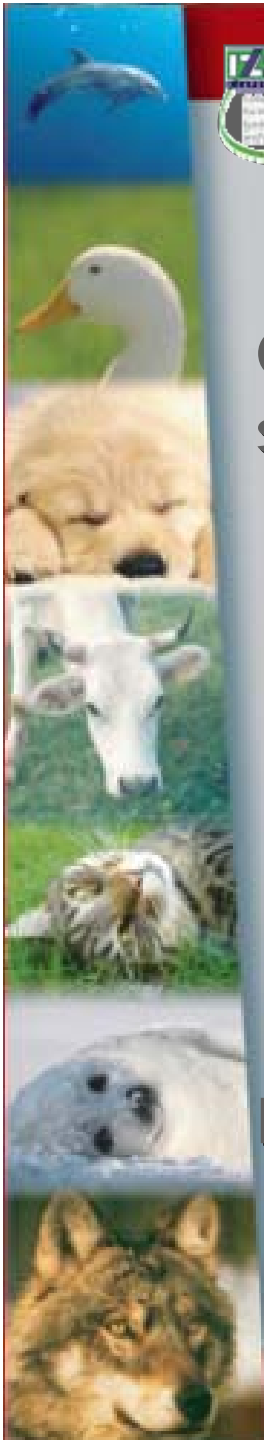


Namibia and IZSA&M co-operation

CVL and IZS A&M are currently carrying out six research projects on:

- African Horse Sickness
- Heartwater
- Dourine
- Ticks monitoring and TBD
- FMD in Buffaloes
- CBPP

Funded by the Italian Ministry of Health



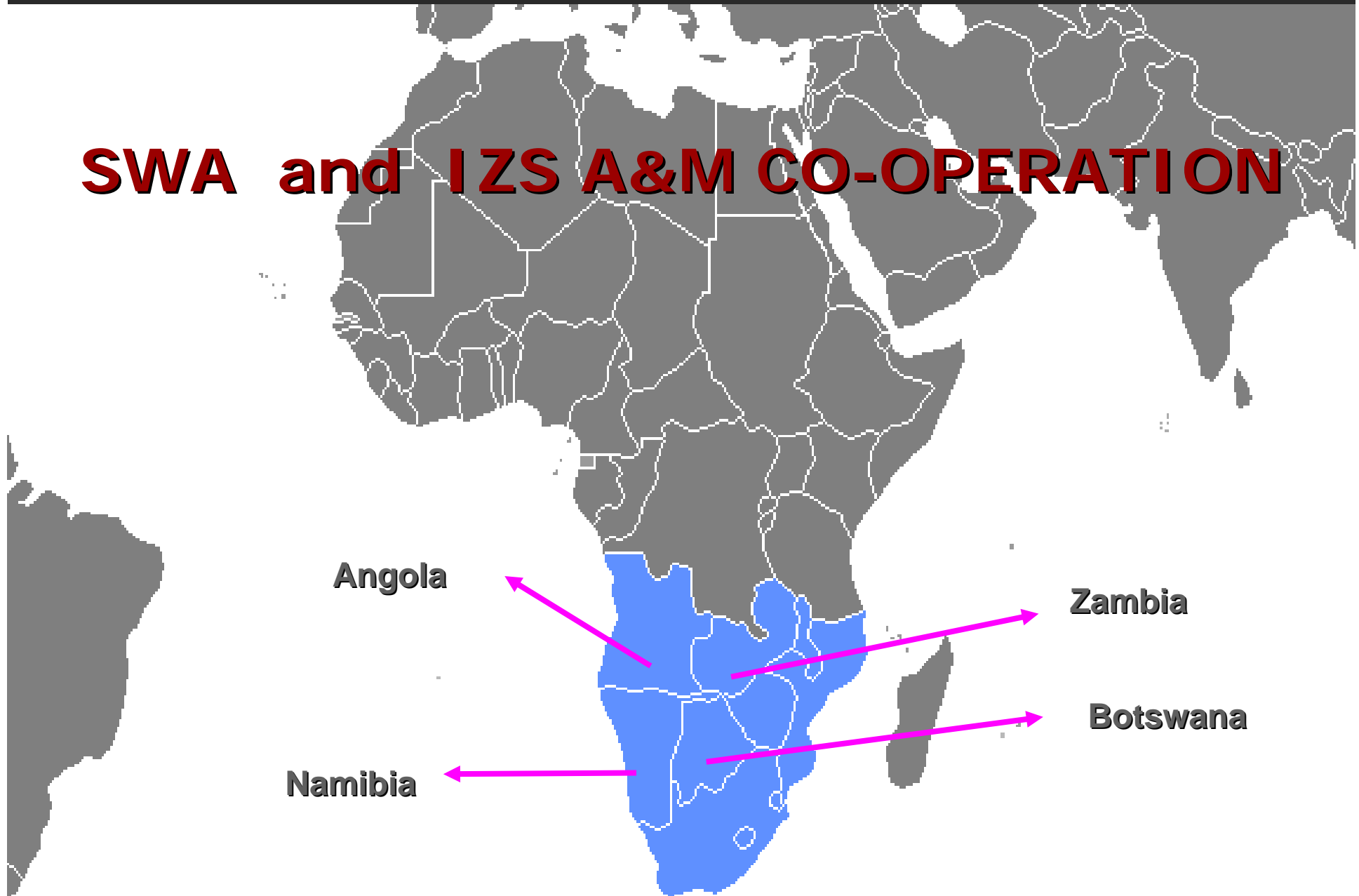


Different approaches of scientific cooperation

Scientific collaboration



SWA and IZS A&M CO-OPERATION



Angola

Zambia

Botswana

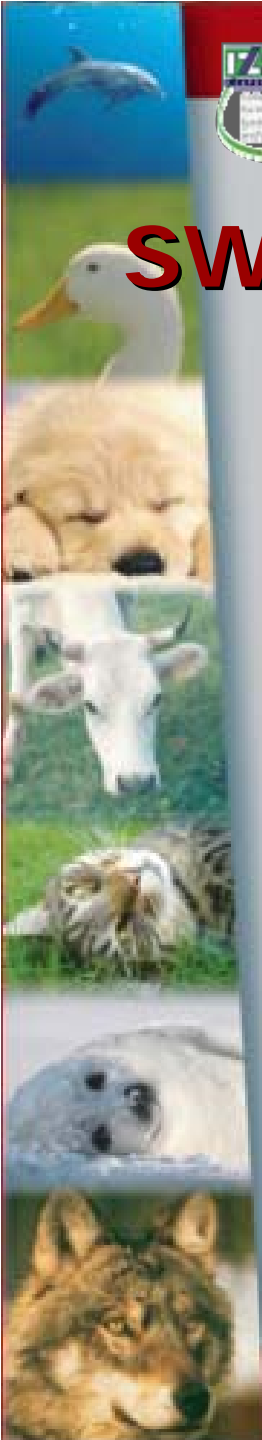
Namibia



SWA and IZS A&M CO-OPERATION

Why?

- Same tribes
- Different animal health status but not controllable transboundary animal movements
- Laboratories with different diagnostic performances



**Not controllable transboundary
animal movements**





SWA and IZS A&M CO-OPERATION

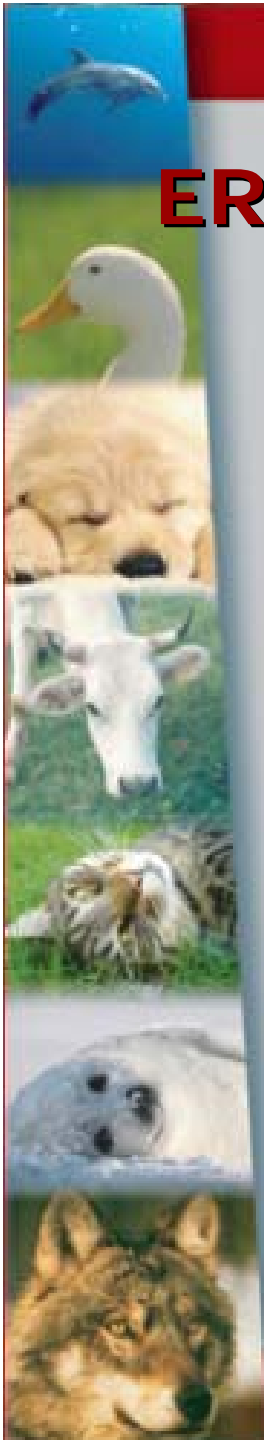
SWA laboratories and IZS A&M are currently carrying out three research projects

1. **Dourine** with **Botswana** and **Namibia**
2. **CBPP** with **Zambia** and **Namibia**
3. **Ticks monitoring and TBD** with **Botswana, Zambia, Angola** and **Namibia**

funded by the Italian Ministry of Health



ERITREA and IZS A&M CO-OPERATION

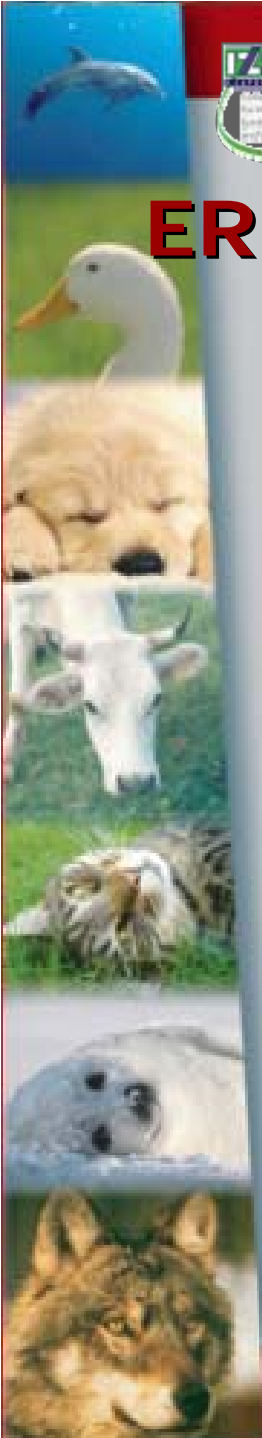




ERITREA and IZS A&M CO-OPERATION

Eritrean Veterinary Service and IZS A&M are currently carrying out two research projects

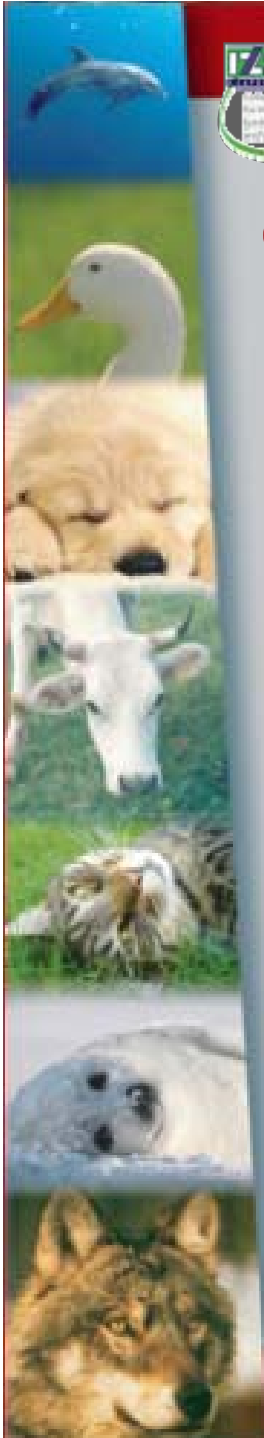
1. **TB** and **Brucellosis** in dairy cattle
2. Study of **PPR** and **Pox virus** in small ruminants





CO-OPERATION with RESEARCH INSTITUTES

A Partnership between **International Livestock Research Institute**, Nairobi, Kenya (ILRI) and IZS A&M, has been established aims to investigate deeply the immune-pathogenetic mechanisms in order to develop efficacious diagnostic tools and vaccines for disease control.





CO-OPERATION with RESEARCH INSTITUTES

The ILRI of Nairobi **represent an excellence centre** for high-quality science and capacity-building in Africa to bear on poverty reduction and sustainable livestock development.

The collaboration will focus on:

- ❖ CBPP
- ❖ RVF
- ❖ Tick Borne Diseases



SADC AND IZS A&M CO-OPERATION





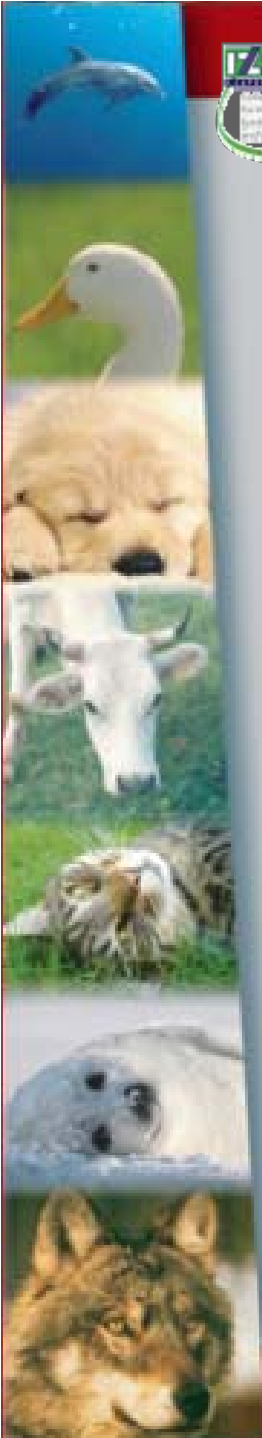
SADC and IZSA&M CO-OPERATION

IZS A&M supported by FAO within a specific project, should provide the **LIMS prototype** developed for Namibia, to all the laboratories (RSA excluded) in SADC region.



Different approaches of scientific cooperation

□ OIE twinning





OIE Twinning project

□ CBPP

Between the National Veterinary Laboratory in Gaborone, Botswana and the CBPP OIE Reference Laboratory at IZS A&M





OIE Twinning project

□ Brucellosis

Between the Veterinary Central Laboratory in Asmara, Eritrea and the Brucellosis OIE Reference Laboratory at IZSA&M.



Iyaloo!

