

CBPP TWINNING WITH OBJECTIVE TO ACHIEVING OIE REFERENCE CENTRE STATUS POST TWINNING ACTIVITIES

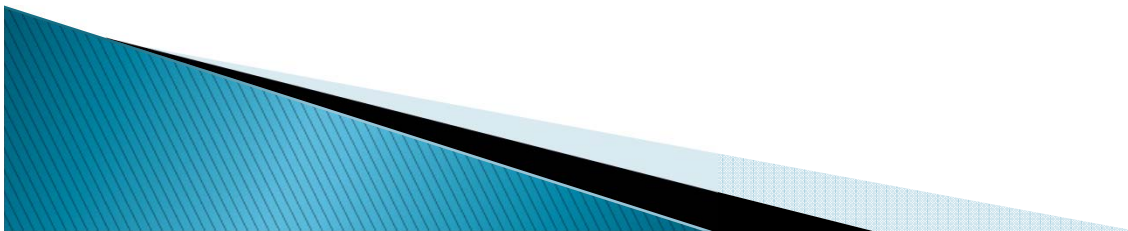
The Airport Grand Hotel and conference centre
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C. MAROBELA-RABOROKGWE



Presentation outline

- ▶ Introduction – why Contagious Bovine Pleuropneumonia?
- ▶ Twinning with IZS
- ▶ Post twinning – sample generation
- ▶ Acquisition of OIE Reference lab Status
- ▶ Conclusion



WHY CONTAGIOUS BOVINE PLEUROPNEUMONIA?



Why CBPP?

- ▶ CBPP is a highly contagious and infectious cattle lung disease, and is one of the most serious transboundary animal diseases in Africa
- ▶ CBPP is caused by a bacterium called *Mycoplasma mycoides* subsp *mycoides* small colony variant



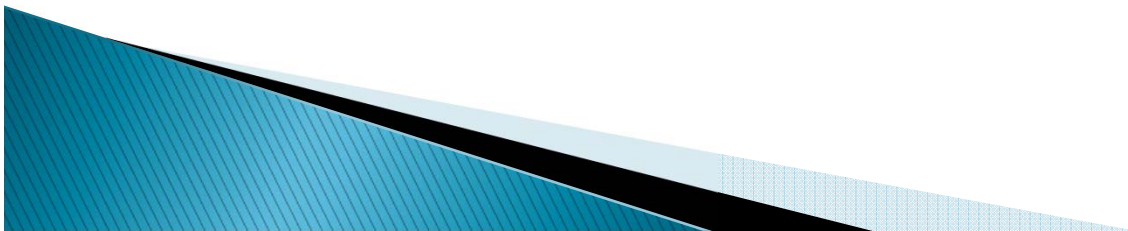
Why CBPP?

- ▶ There was an outbreak of CBPP in Botswana in **1995 after 56 years** freedom from the disease
- ▶ This occurred in the north western part of Botswana called Ngamiland, **spill over from neighbour countries**
- ▶ The outbreak was controlled by stamping out
- ▶ **320 000** cattle were killed
- ▶ Costed government **~USD\$97m**
- ▶ Botswana was declared **CBPP free by OIE in 1998**, and has remained free to date



Why CBPP?

- ▶ CBPP threat to Botswana is real
- ▶ CBPP exists in neighbouring countries:
Namibia, Zambia, Angola



CBPP in the region

- ▶ CBPP regionally occurs in Namibia, Zambia and Angola
- ▶ Botswana, South Africa and Zimbabwe are free



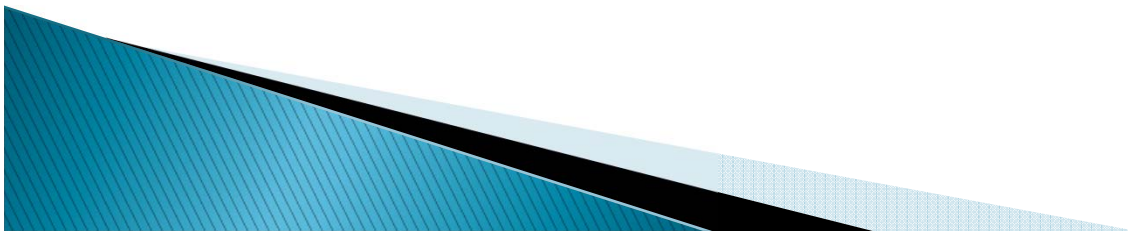
Why CBPP

- ▶ For early detection of CBPP, clinical, abattoir and sero-surveillance are carried out in high risk areas
- ▶ Samples for CBPP are tested at BNVL according to OIE standard
- ▶ BNVL is implementing quality management system according to ISO17025 standard
- ▶ 22 tests are accredited by SANAS





TWINNING WITH IZS



Collaboration with IZS

- ▶ BNVL started collaborating with IZS (ITALY) in 2006, as IZS is an OIE reference lab for CBPP
- ▶ BNVL obtained certified reference serum and antigen for CFT from IZS
- ▶ We also participated in the annual Italian ring trial for CFT from 2007



Twinning with IZS

- ▶ After the introduction of OIE twinning concept in 2006, it was only natural for Botswana to twin with IZS on CBPP
- ▶ It was more like formalising what we were already doing



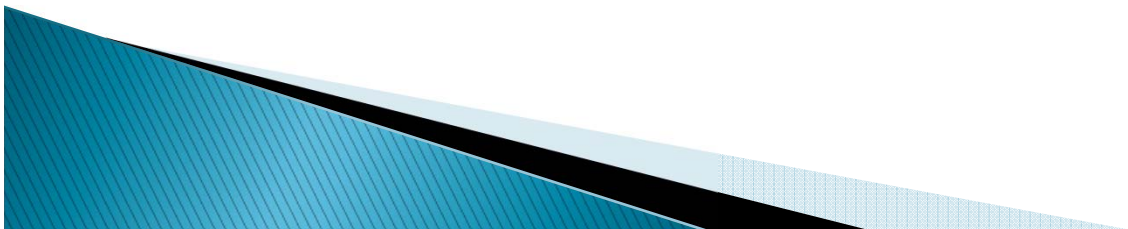
CBPP Twinning

- ▶ Twinning proposal between IZS and BNVL was approved in April 2008
- ▶ The project started in June 2008
- ▶ Ended in August 2010



Objectives of the twinning

- ▶ IZS to assist BNVL acquire capacity to operate according to OIE standards on CBPP
- ▶ To ensure early detection and warning systems for effective CBPP control
- ▶ **Overall aim was for BNVL to acquire status of OIE reference laboratory for CBPP**



Schedule of activities for project implementation

| Activity | Date | Duration | Number of staff involved |
|--|-------------------------|-----------|--------------------------|
| Preparatory meeting at IZS | July 2008 | 2 weeks | 5 |
| Training in serology, bacteriology, PCR, epidemiology at IZS | October – December 2008 | 3 months | 3 |
| Setting up of lab to meet OIE standards at BNVL | January – December 2009 | 12 months | 4 |
| Implementation of corrective action at BNVL | April 2010 | 4 weeks | 4 BNVL, 3 IZS |
| Final meeting (BNVL, IZS, Namibia, Zam, Angola, RSA) | September 2010 | 1 week | 14 |

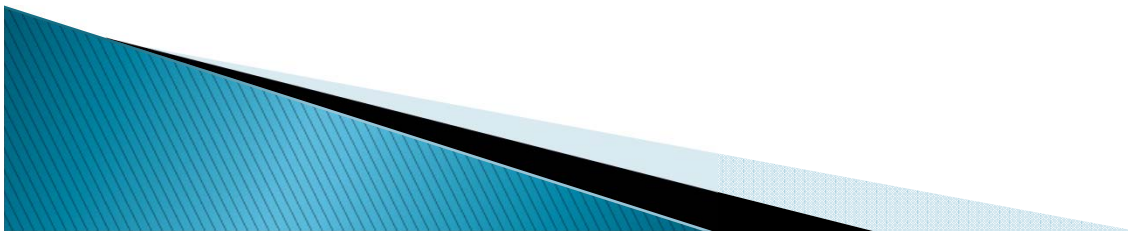


Capabilities acquired from IZS

- ▶ Production of reagents for serological testing; antigen, complement, haemolysin
- ▶ Tests: CFT, cELISA, Immunoblotting, Isolation and identification procedures of the *MmmSC* (PCR)
- ▶ Organisation of ring trial
- ▶ Disease pathology and differential diagnosis
- ▶ Conducting of epidemiological surveillance



POST TWINNING



Post twinning

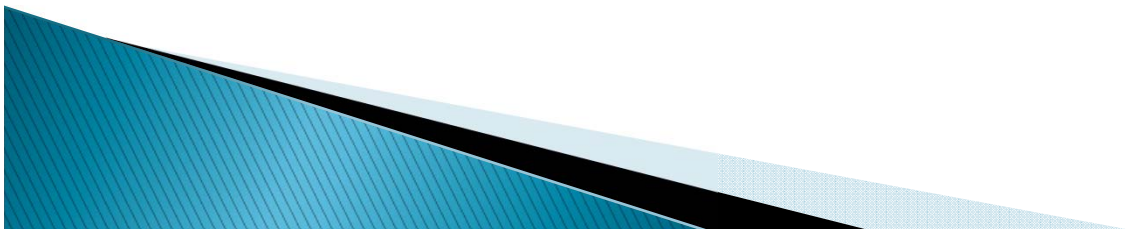
- ▶ Studied the Terms of reference for an OIE reference lab (OIE website)
- ▶ Developed and implemented an action plan to address the OIE requirements – covering 1 year (2011)
- ▶ The CBPP team (Serologist, Bacteriologist, Molecular Biologist, pathologist, Expert) were the project implementers



Reagents production

CBPP CFT Antigen

- ▶ Had to buy a high speed centrifuge for \$50 000.00
- ▶ Has supplied Namibia, Zambia, OVI with antigen



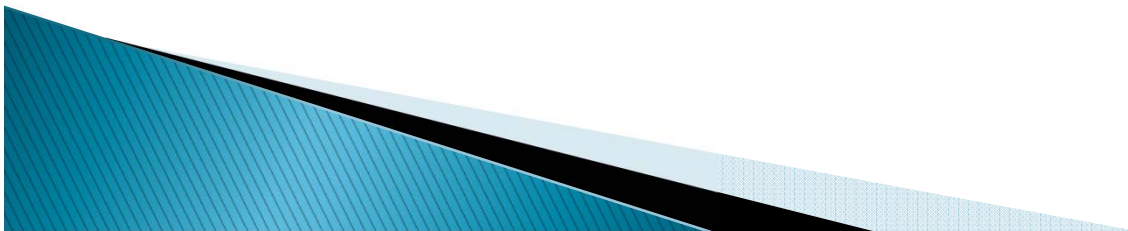
Organisation of ring trials

- ▶ Started in 2007 as interlaboratory comparison with OVI and Namibia
- ▶ Tests involved are CFT and PCR
- ▶ After twinning – done according to OIE guidelines
- ▶ 5 Participating labs: CVL – Namibia, IZS – Italy, CVRI–Zambia, OVI –RSA and BNVL
- ▶ Done annually
- ▶ In 2011 back stopping done for lab with unsatisfactory results



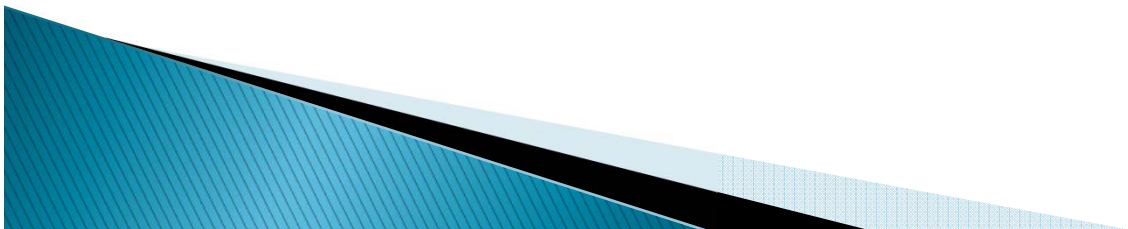
Developing a network and sample generation

- ▶ For BNVL to maintain CBPP diagnostic capabilities, analysts have to carry out testing on a regular basis.
- ▶ **but** as Botswana is free from CBPP, BNVL has a challenge of obtaining samples from CBPP positive animals.



Developing a network and sample generation

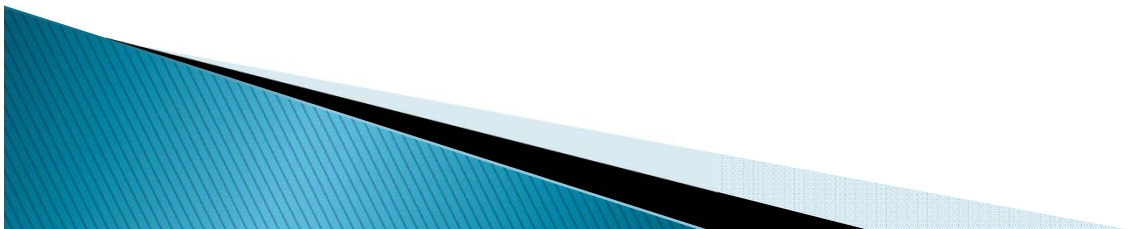
- ▶ The role of BNVL in the region as reference lab was presented at
- ▶ the OIE closing meeting (Namibia, Angola, Zambia, RSA, IZS) that was held in September 2010 at BNVL
- ▶ SADC Head of laboratories meetings which are held twice a year
- ▶ It was resolved at these meetings that countries with positive samples should assist BNVL in order to fulfil its mandate.



Collaboration with Zambia-

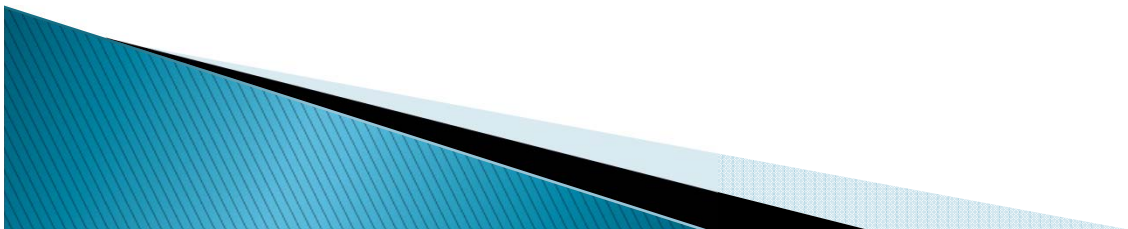
Sample generation

- ▶ Directors of Veterinary Services of Botswana and Zambia were involved
- ▶ **Memorandum of agreement** was signed between Botswana and Zambia in 2011
- ▶ Allows Botswana to obtain samples from CBPP animals in Zambia



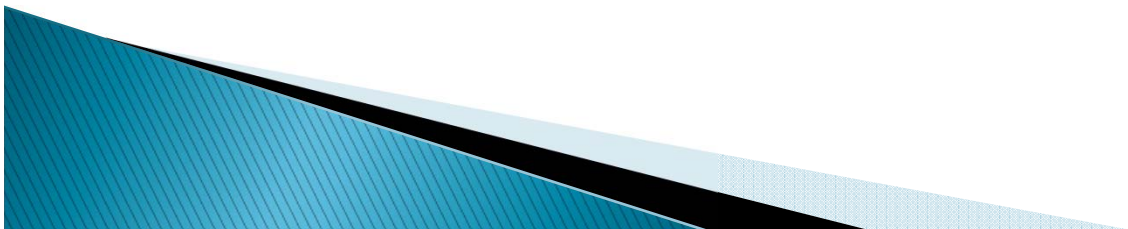
BNVL will be responsible for:

- ▶ Safe and long term storage of CBPP positive materials (bank), which will be used in the future as positive controls and for development of new tests.
- ▶ Such materials will only be used by BNVL for the agreed purpose and not any third party without a written consent of CVRI.
- ▶ Training of personnel in existing and new tests.



BNVL responsibilities contd

- ▶ Production of critical reagents like antigen for CBPP CFT.
- ▶ Provision of certified reference material for CBPP tests.
- ▶ Conducting interlaboratory ring trials on an annual basis for assurance of the quality of test results.



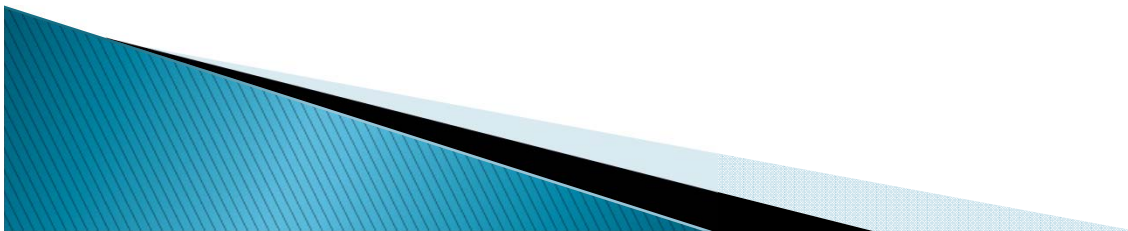
BNVL responsibilities contd

- ▶ Any research that will be conducted using CBPP positive materials from Zambia will be done as a joint venture between the two institutions with both parties participating actively.
- ▶ Publications involving the other party shall be requested for approval and the necessary acknowledgements given as necessary.



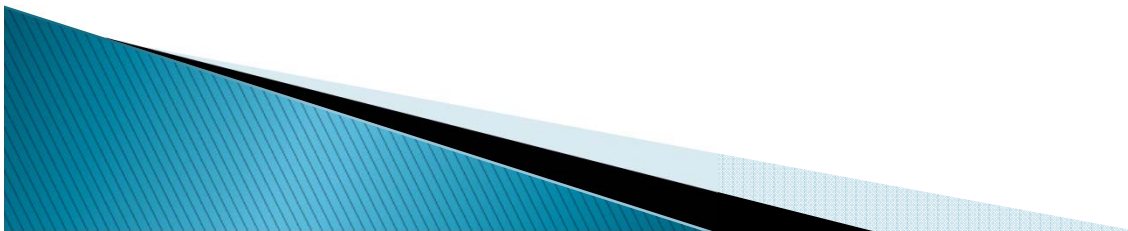
Zambia will be responsible for:

- ▶ Zambia will provide Botswana with CBPP positive samples, either from their bank or Botswana will facilitate the collection of samples by the Zambian personnel which will be later dispatched to BNVL.
- ▶ Samples so collected will remain the property of the Zambian government.



Collaboration with Zambia

- ▶ In September 2011 we visited central lab in Zambia, demonstrated CFT, quality assurance
- ▶ November 2011, participated in a sampling campaign in Monga- Zambia
- ▶ Collected samples for the serum and organ bank



APPLICATION FOR CBPP REFERENCE LAB STATUS

- ▶ Prepared a dossier as guided by OIE (see OIE website)
- ▶ Also looked at criteria used by OIE to approve reference labs (see OIE website)



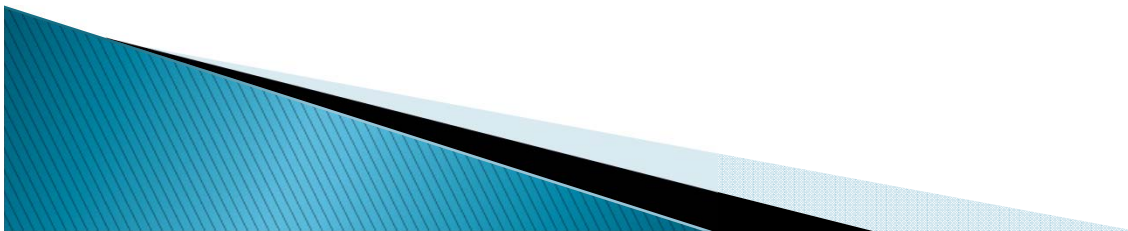
Information needed by OIE

- ▶ Expert – cv
- ▶ Legal and budgetary provisions in place that provide assurance on the sustainability and functioning of the laboratory
- ▶ Financial resources
- ▶ Experience in diagnostic testing for CBPP
- ▶ Additional expertise on the disease
- ▶ Experience in standardisation and validation of tests
- ▶ Reagent production capability



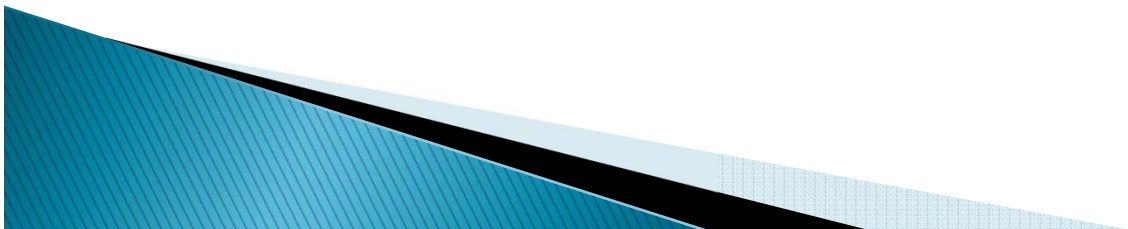
Information needed

- ▶ Capability for international shipment and receipt of samples in accordance with the requirements for postage and packaging of biological materials described in the OIE
- ▶ Current research



Application for reference lab status

- ▶ **December 2011** – Dossier submitted to OIE by Botswana OIE delegate (DVS Director)
- ▶ **February 2012** – Response was received from OIE in that our request to be a reference lab has been accepted
- ▶ **May 2012** – This was endorsed by the General Assembly during the OIE General session, and BNVL designated as an OIE reference lab for CBPP
- ▶ Designated expert: C. Marobela–Raborokgwe





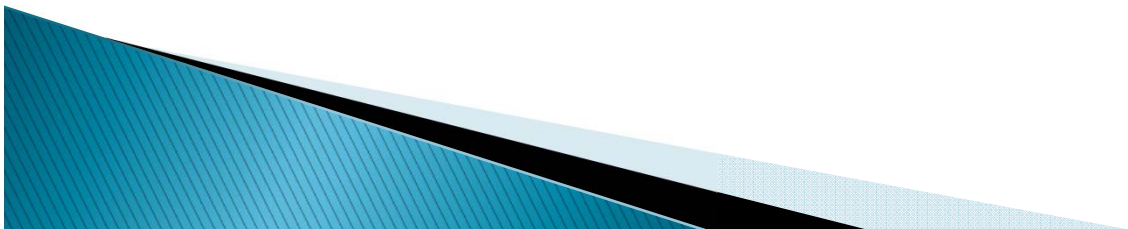
As a reference lab

- ▶ Supplied Zambia with CBPP CFT antigen for 50 000 samples
- ▶ Participated in the review of CBPP chapter in the OIE manual for diagnostic tests



As a reference Lab

- ▶ BNVL tasked with harmonisation of diagnostic tests for CBPP for SADC labs at subcommittee meeting , SOPs have been sent to all SADC labs
- ▶ Presented the role of BNVL at a joint meeting of SADC Diagnostics and Epidemiology subcommittees, held in Johannesburg in June 2012



As a reference lab

- ▶ Organising a ring trial for SADC labs on CBPP CFT and PCR – ongoing
- ▶ Still to seek support for networking with regional labs from donor agencies, will have a meeting with FAO, AU-IBAR, IZS, OIE in November 2012
- ▶ Currently, Government of Botswana is funding all the activities



Conclusion

The road to achieving the OIE ref lab status for CBPP was long and hard

- ▶ but with clear objectives, focus and determination, it was possible for BNVL to realise its dreams
- ▶ **The coaching and mentorship from IZS was tremendous, continuing even after twinning**
- ▶ And as such IZS is helping the region as a whole in controlling CBPP



Acknowledgement

I would like to thank the following:

- ▶ **Botswana Government and IZS** (Professor Carporale, Dr. Pini, Dr Massimo and team) for their support and believe in us
- ▶ **OIE** for the twinning project and for giving us the opportunity to present at this seminar
- ▶ **Everybody** here, for listening

THANK YOU



