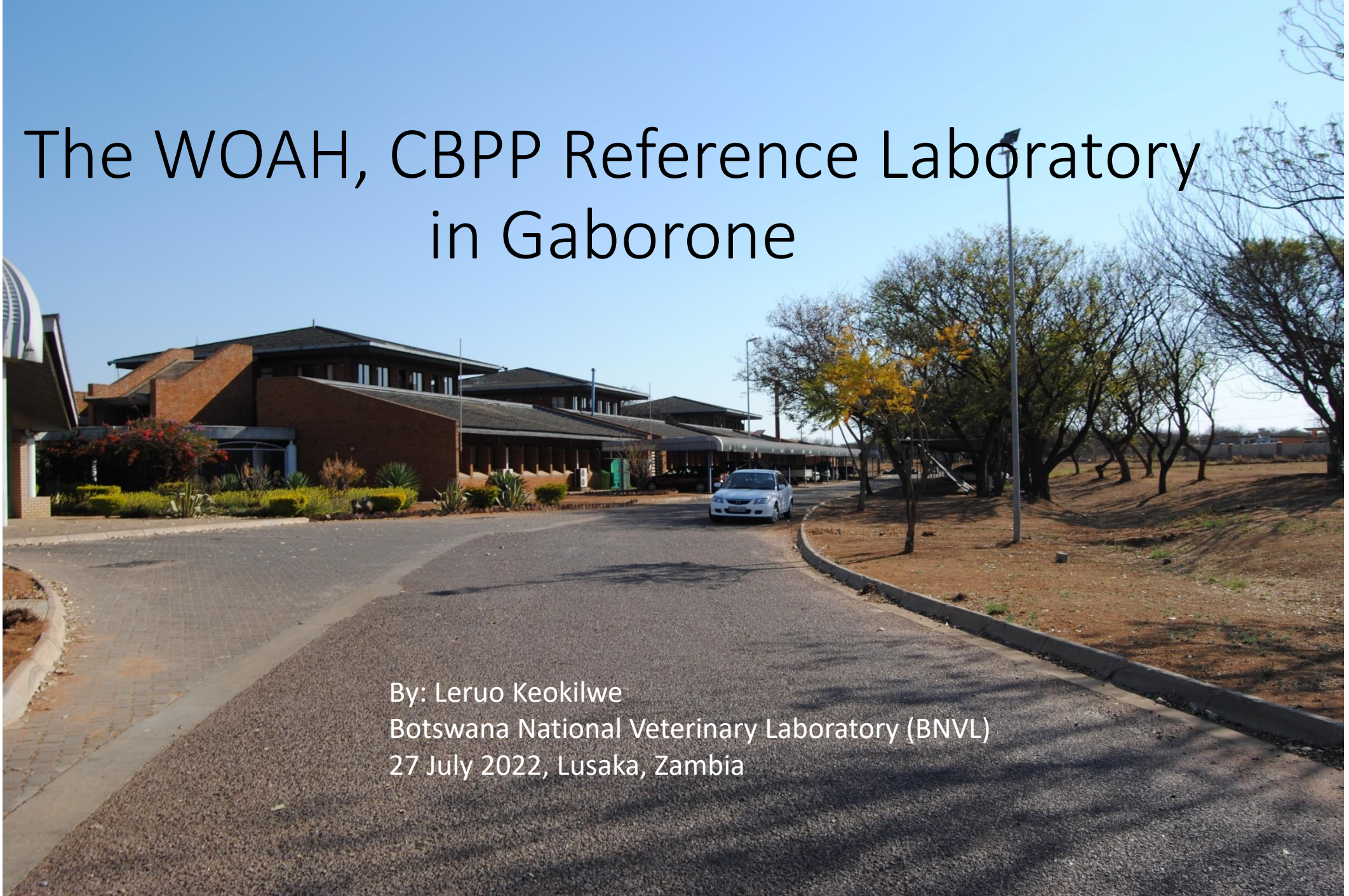


The WOAAH, CBPP Reference Laboratory in Gaborone

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Botswana National Veterinary Laboratory (BNVL)
27 July 2022, Lusaka, Zambia



Role of WOAHA Reference Lab

- To develop reference material in accordance with WOAHA requirements, and implement and promote the application of WOAHA Standards
- To store and distribute to national laboratories biological reference products and any other reagents used in the diagnosis and control of the designated pathogens or diseases
- To provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on disease control measures to WOAHA Member Countries

Role of WOAHA Reference Lab

- To carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations
- To provide scientific and technical training for personnel from WOAHA Member Countries
- To organise and participate in scientific meetings on behalf of the WOAHA
- To organise inter-laboratory proficiency testing with laboratories other than WOAHA Reference Laboratories for the same pathogens and diseases to ensure equivalence of results

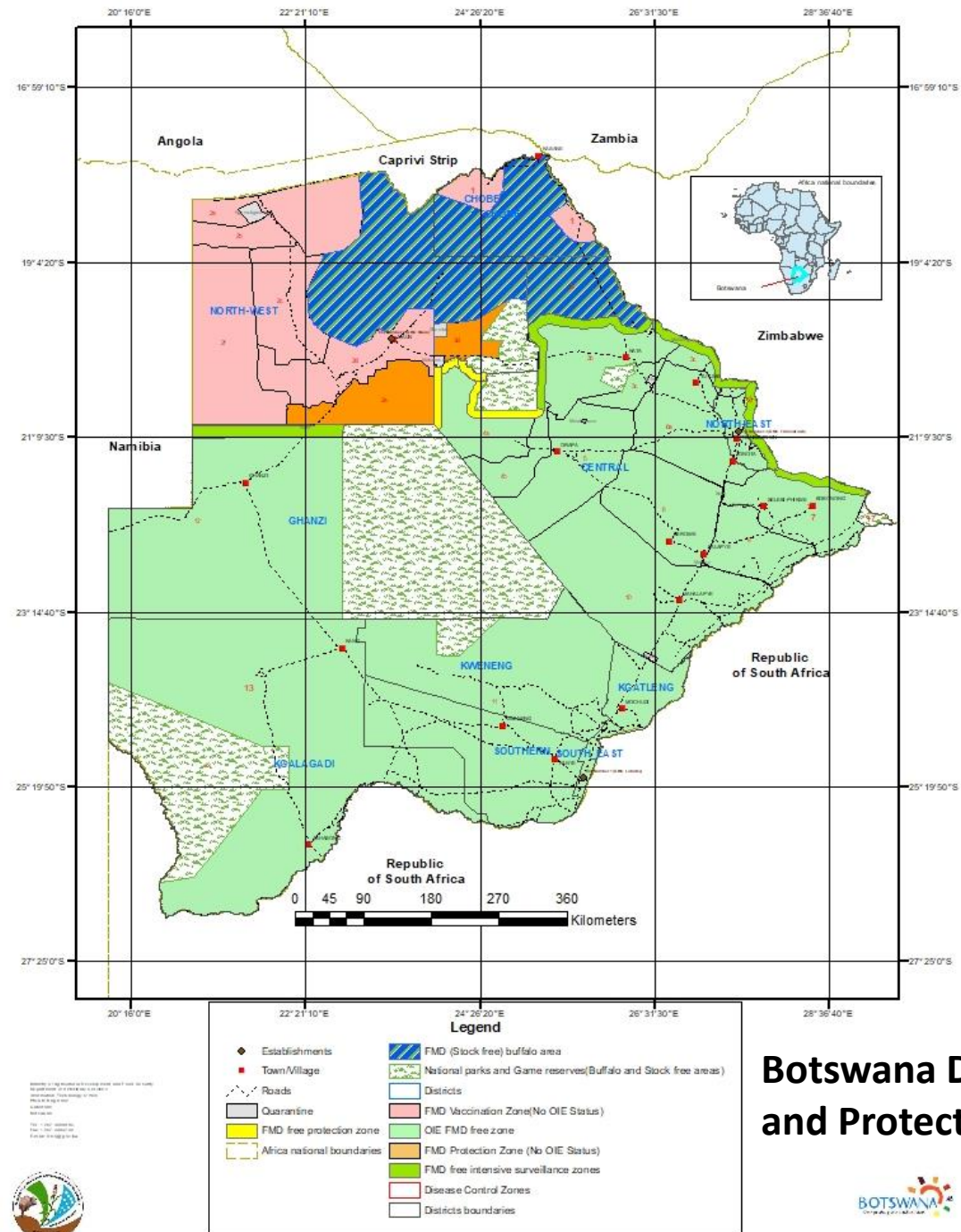
CBPP Testing

- Bacteriology
 - Culture and isolation
- Serology
 - CFT
 - cELISA
 - (Immunoblotting)
- Molecular Biology
 - Conventional PCR
 - Real-time PCR
 - (Sequencing)
- Pathology
 - PM
 - Histology
 - (Immunohistochemistry)

Samples received (Botswana)

Serosurveillance (2021)		
District	No. Samples	Results
Chobe	1810	all Negative
Ngamiland	2000	all Negative

Only 1 lung submitted from Ghanzi district was **Negative**.



Botswana Disease Control and Protection Zones



Samples received (other countries)

- Official controls

2021		
Country	Sample type	No. samples
Eswatini	Sera	200

- Other activities

2021			
Country	Sample type	Reason for Submission	No. samples
Zambia	Pleural fluid/lung	Confirmation, experimentally infected cattle	6
Zambia	Mmm strain	Confirmation, experimentally infected cattle	3
Zambia	sera	ILC	10

Provision of reagents

- CBPP antigen
 - 80ml of CBPP antigen received from IZS A&M in 2021
 - 6 batches CBPP antigen produce at BNVL since 2009
 - The last batch was produced in 2016 (problem of contamination experienced with subsequent batches)

Year	Country	Amount CBPP Ag Provided	Total
2022	South Africa	5ml	15ml
	Namibia	5ml	
	Zambia	5ml	
2021	South Africa	5ml	25ml
	Zambia	20ml	

Provision of reagents

- Positive Reference Sera
 - 5ml provided to South Africa in 2021
 - 1.5 L of positive reference sera received from Zambia in 2021
- Negative Reference Sera
 - 5ml provided to South Africa in 2022
- PCR reagents
 - Primers provided to Tanzania and Nigeria

Ring trials

- Ring trials(Proficiency testing)
 - evaluation of participant performance against pre-established criteria by means of interlaboratory comparisons (ISO IEC 17043)
- Interlaboratory comparison (ILC)
 - organization, performance and evaluation of measurements or tests on the same or similar items by two or more laboratories in accordance with predetermined conditions
- Useful for monitoring the technical expertise of laboratories testing for CBPP and ensuring the quality of test results
 - evaluate performance of analysts
 - Evaluate performance of test

Ring trials – background (CFT)

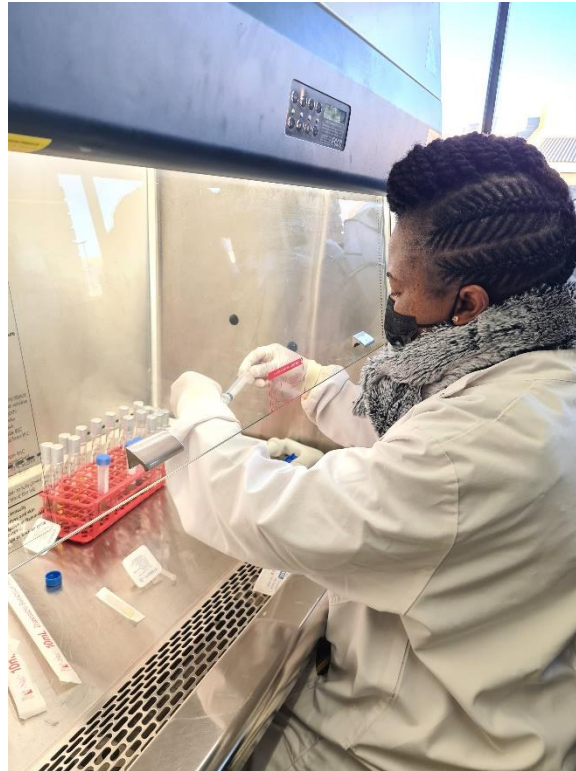
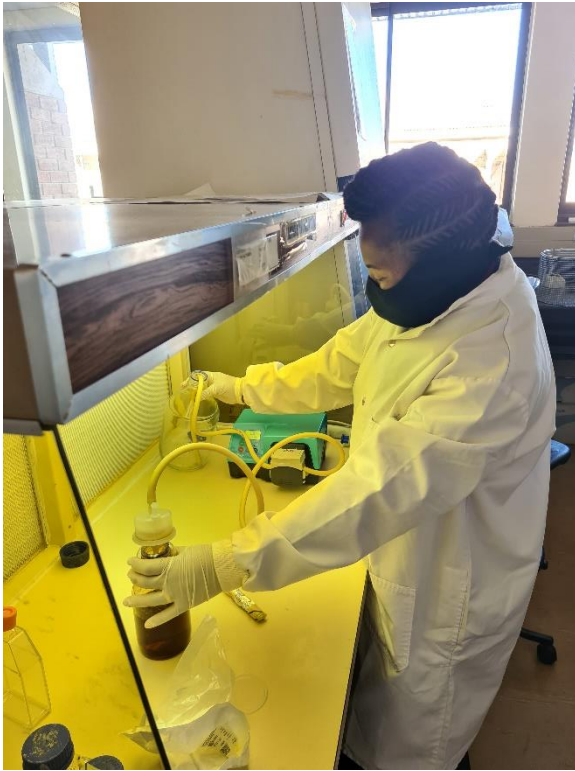
Year	Test	Distribution	Participants	Satisfactory	Unsatisfactory
2010	CFT	1°	Botswana, Italy, Namibia, RSA, Zambia (5)	3	2
2011	CFT	2°	Botswana, Italy, Namibia, RSA, Zambia (5)	3	2
2012	CFT	3°	Botswana, Italy, Namibia, RSA, Zambia (5)	3	2
2013	CFT	4°	Botswana, Italy, France, Namibia, RSA, Zambia (6)	5	0
2014	CFT	5°	Botswana, Italy, Namibia, RSA, Zambia, Kenya (6)	4	1 (1 lab did not return results)
2015	CFT	6°	Botswana, Italy, Namibia, RSA, Zambia, Kenya, Portugal, Zimbabwe (8)	7	0 (1 lab did not return results)

- From 2015 the ring trials were not conducted due to unavailability of CBPP positive reference sera
- CBPP positive reference sera received from Zambia and the ring trials are scheduled to resume in 2022

Ring trials – background (PCR)

Year	Test	Distribution	Participants	Satisfactory	Unsatisfactory
2011	PCR	1°	Botswana, Italy, Namibia	2	1
2013	PCR	2°	Botswana, Italy, France	3	0
2014	PCR	3°	Botswana, Italy, Namibia, Zambia	2	2
2015	PCR	4°	Botswana, Italy, Namibia, Zambia, Kenya, Portugal, Cameroon	7	7

Training



- Media production, culture and isolation, PCR, serology (CFT, cELISA)
- In 2021 training performed virtually
- In 2022 physical training resumed with colleagues from Tanzania and Nigeria



Botswana 2015





Angola 2015





Zambia 2015

In 2015 trainings sponsored by AU-IBAR

Conclusion

- The network is important to share resources and build laboratory capacity
- Research activity has been limited and this is an area for improvement
 - PhD study achieved in collaboration with IZS A&M in 2021 (*Mmm* pathogenesis)
 - MSc study ongoing (antimicrobial resistance of *Mmm*)
- Funding is required to support the activity of the network

Thank you

