World Organisation for Animal Health

Overview of CBPP: epidemiological distribution, socio-economic impacts and eradication strategies

Regional Training Workshop on
WOAH Procedures for Official Status Recognition,
Endorsement of Official Control Programmes and their
Maintenance with regard to
Contagious Bovine Pleuropneumonia (CBPP)

30 March – 1 April 2026, Lusaka, Zambia

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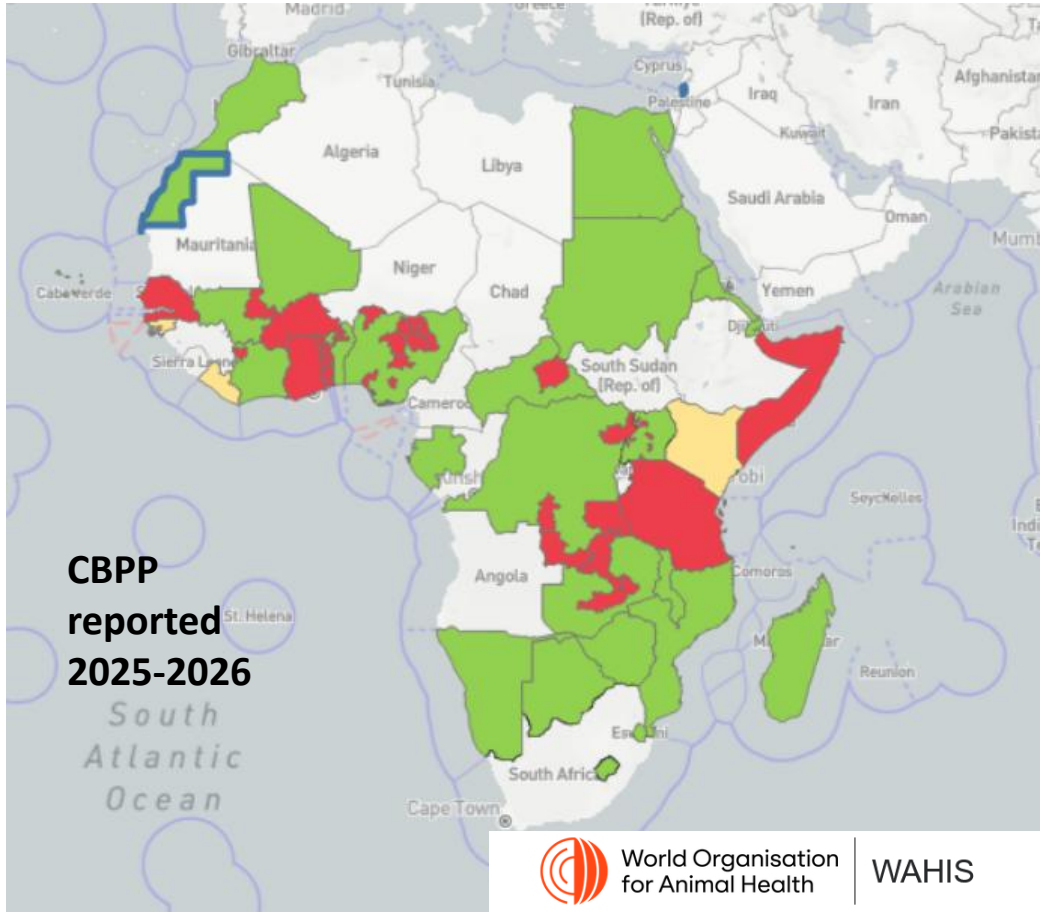
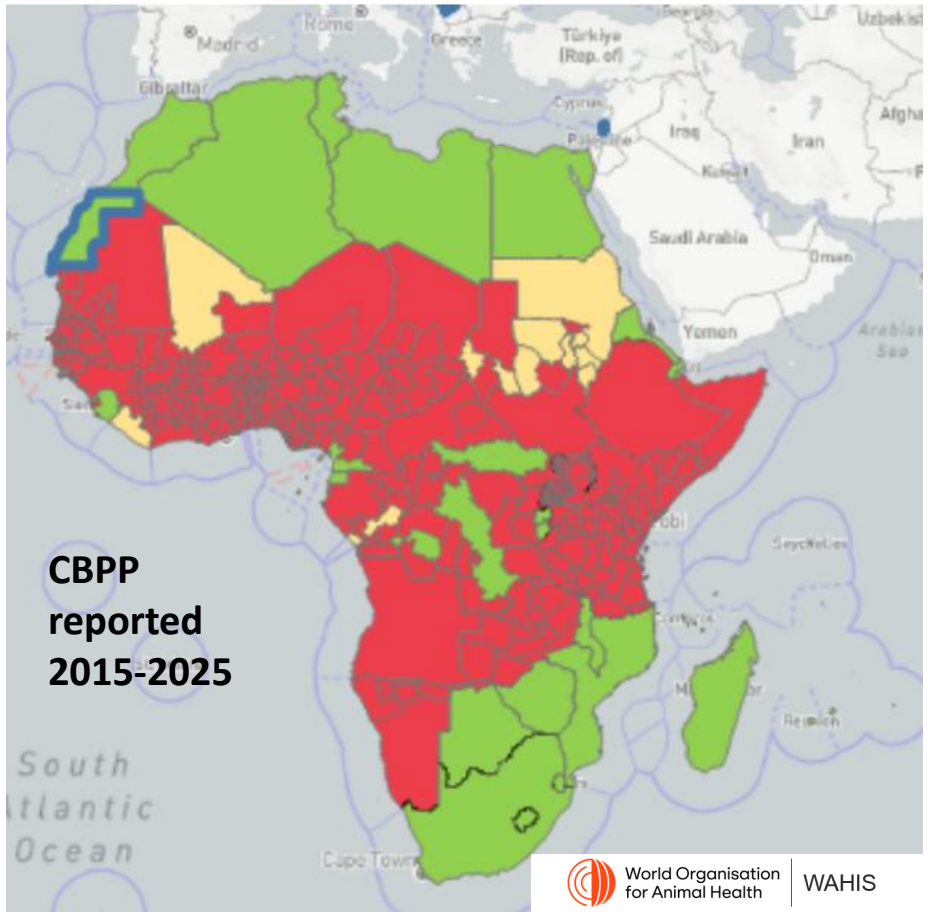
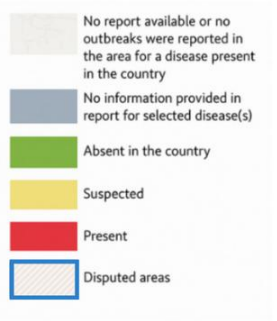
CBPP Epidemiological distribution?







Members/zones CBPP officially free:

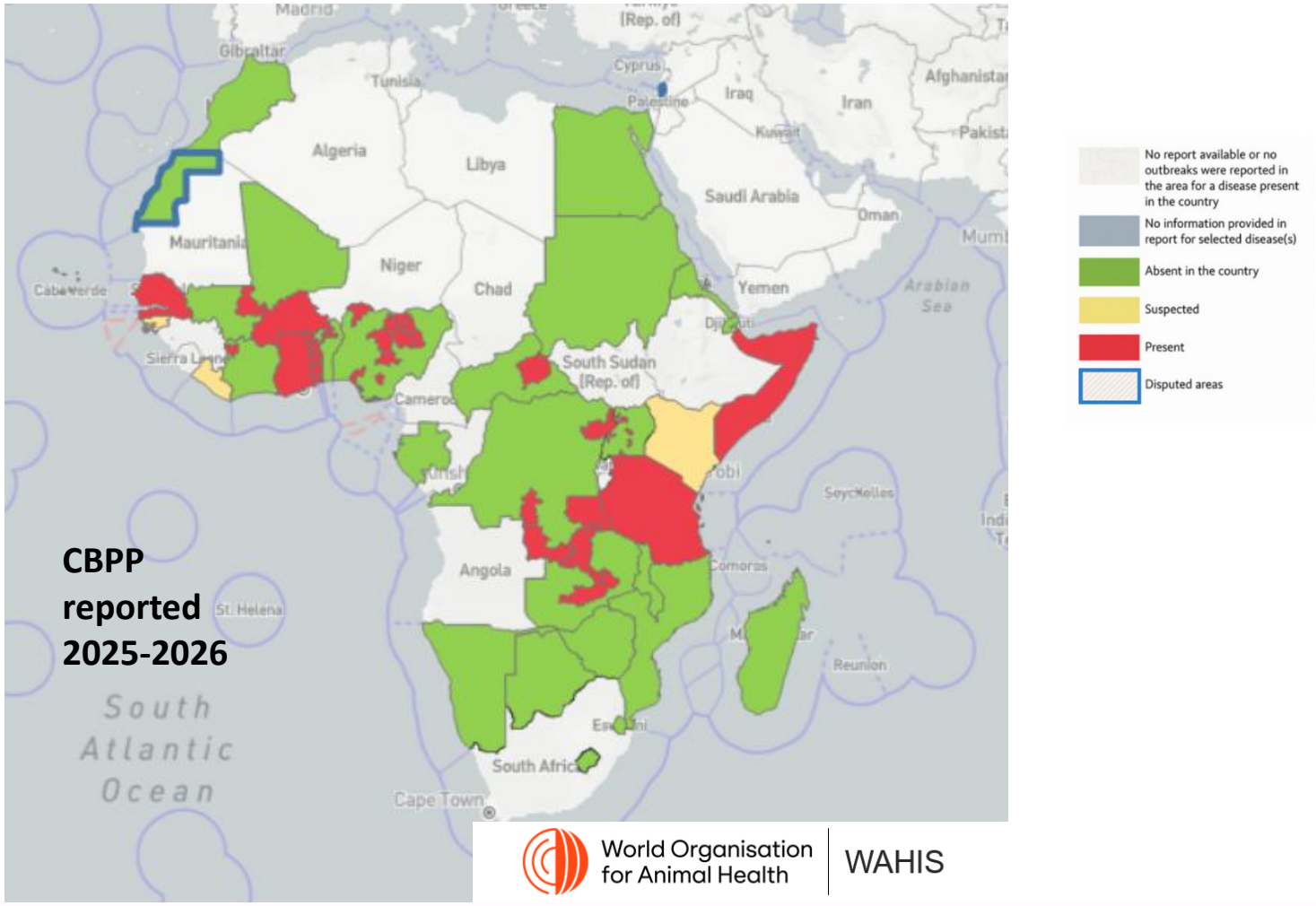
- South Africa
- Botswana
- Eswatini
- Namibia

CBPP Epidemiological distribution?

Traditional indicator-based systems in many African veterinary services suffer from:

- delayed reporting
- under-notification
- poor coverage of remote areas

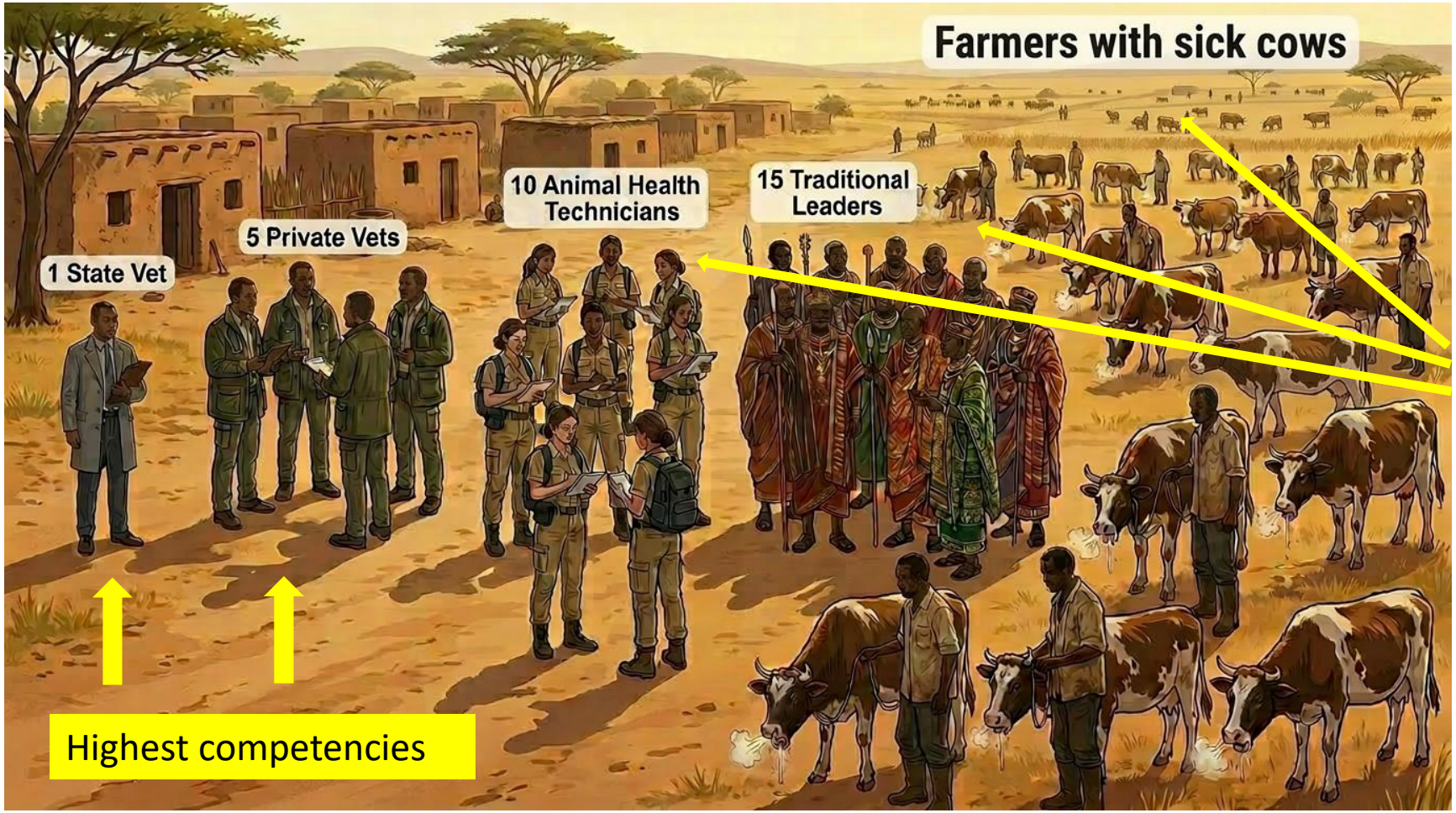
limiting early detection of transboundary and zoonotic diseases.



Need to implement a system for CBPP early detection and reporting in African countries characterised by:

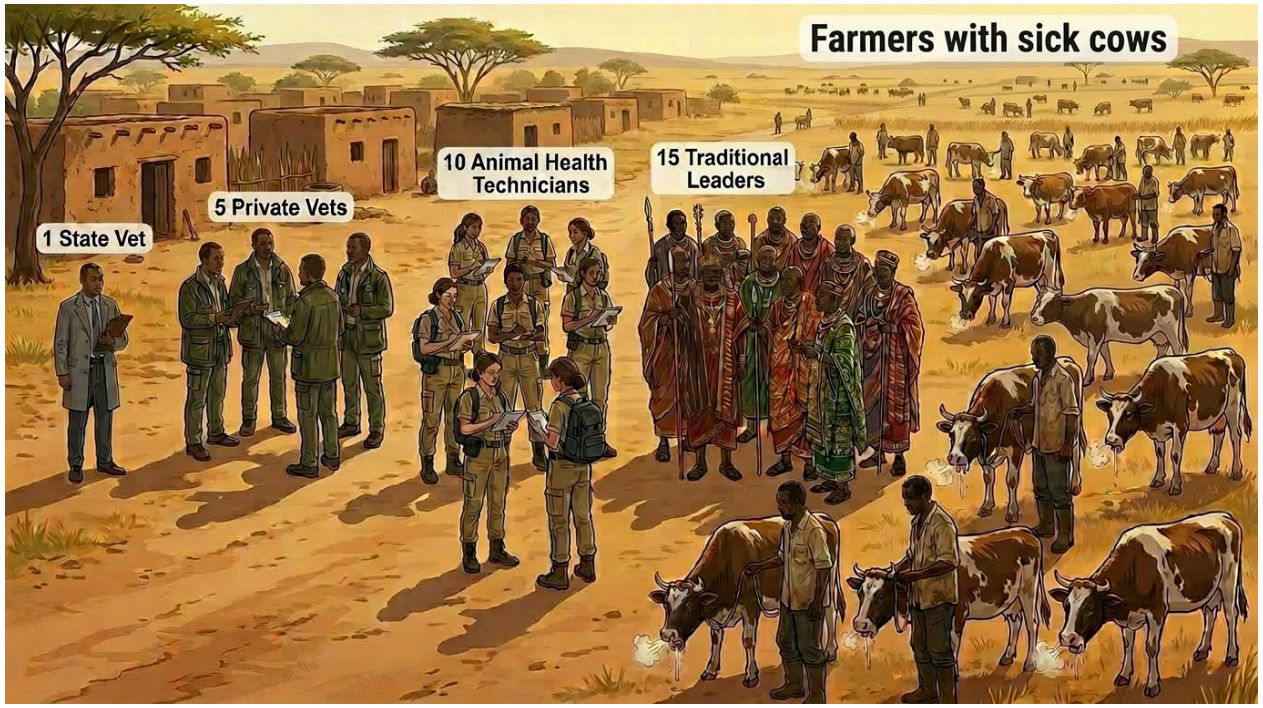
- economic issues
- personnel shortages
- political-military instability
- African pastoral communities living in remote areas difficult to reach and / or at the borders of several nations
- With intense animal movements, related to transhumance and pastoralism

Alternative approaches, new actors and…… innovative technologies



Highest probability of CBPP early detection in the field, especially remote areas

Alternative approaches, new actors and…… innovative technologies



Animal Health system actors

- State and private Veterinarians
- Meat Inspectors
- Animal Health technicians

New informal but trained actors

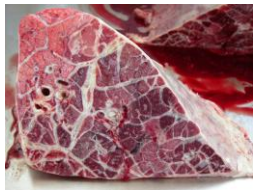
- Traditional leaders
- Breeders
- Local communities
- eventually NGOs personnel

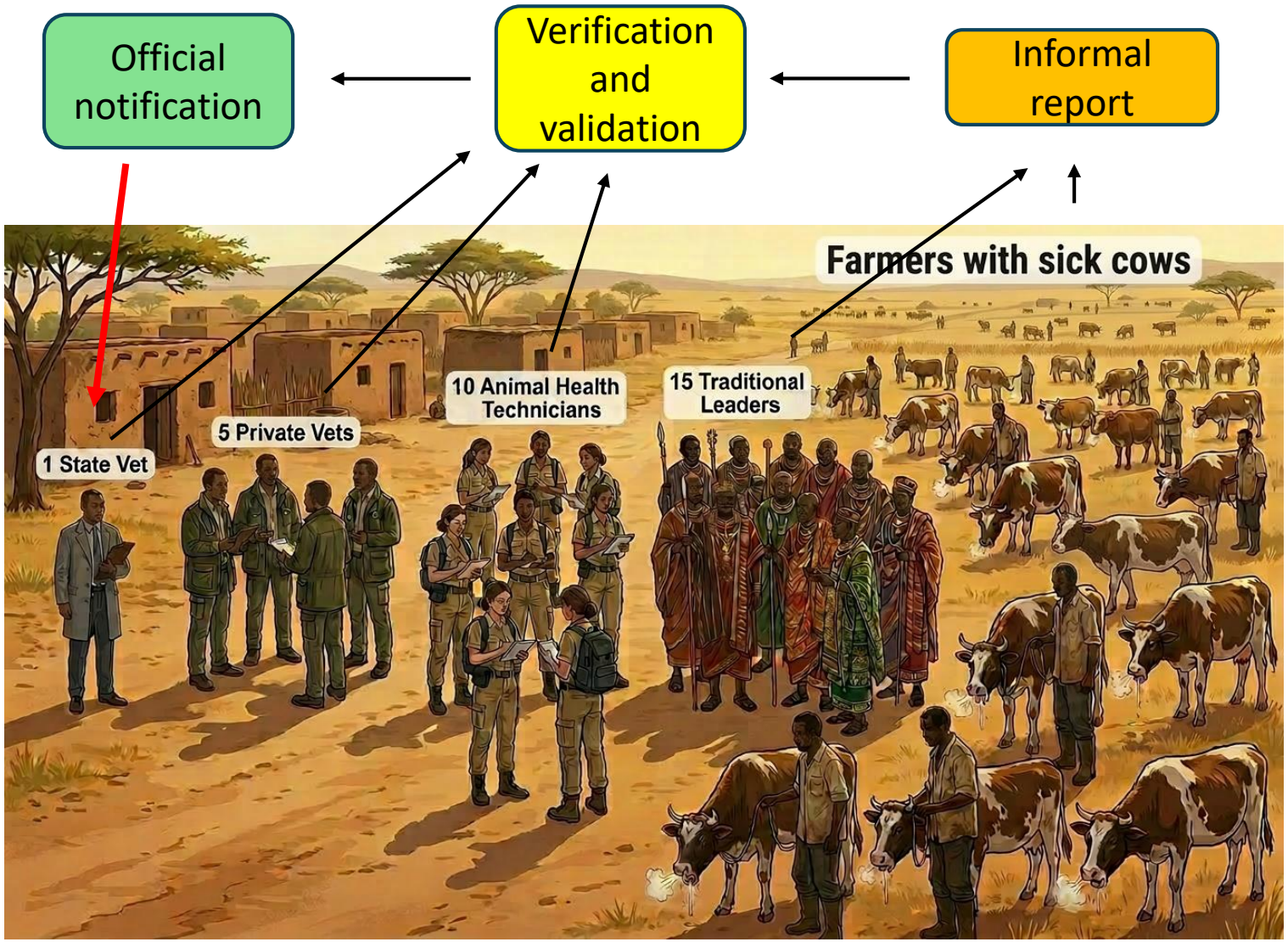
Event-based surveillance approach

Event-based surveillance

Event-based surveillance in animal health relies on the rapid capture of signals such as **farmer complaints** and **informal field observations**, followed by verification, risk assessment, and response.

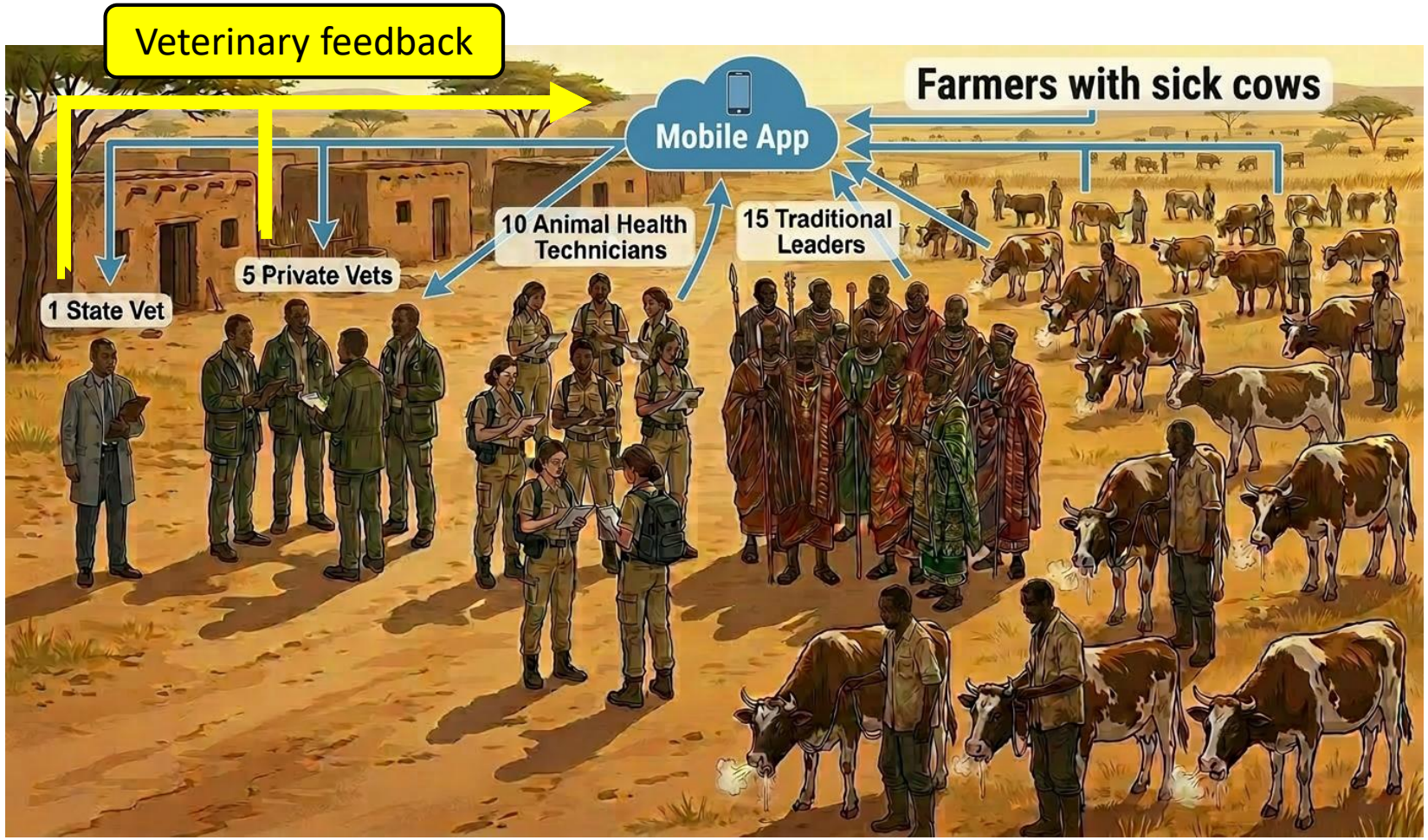
Suspicion of CBPP based on pathological lesions





Event-based surveillance and veterinary support through innovative technologies: Mobile APP

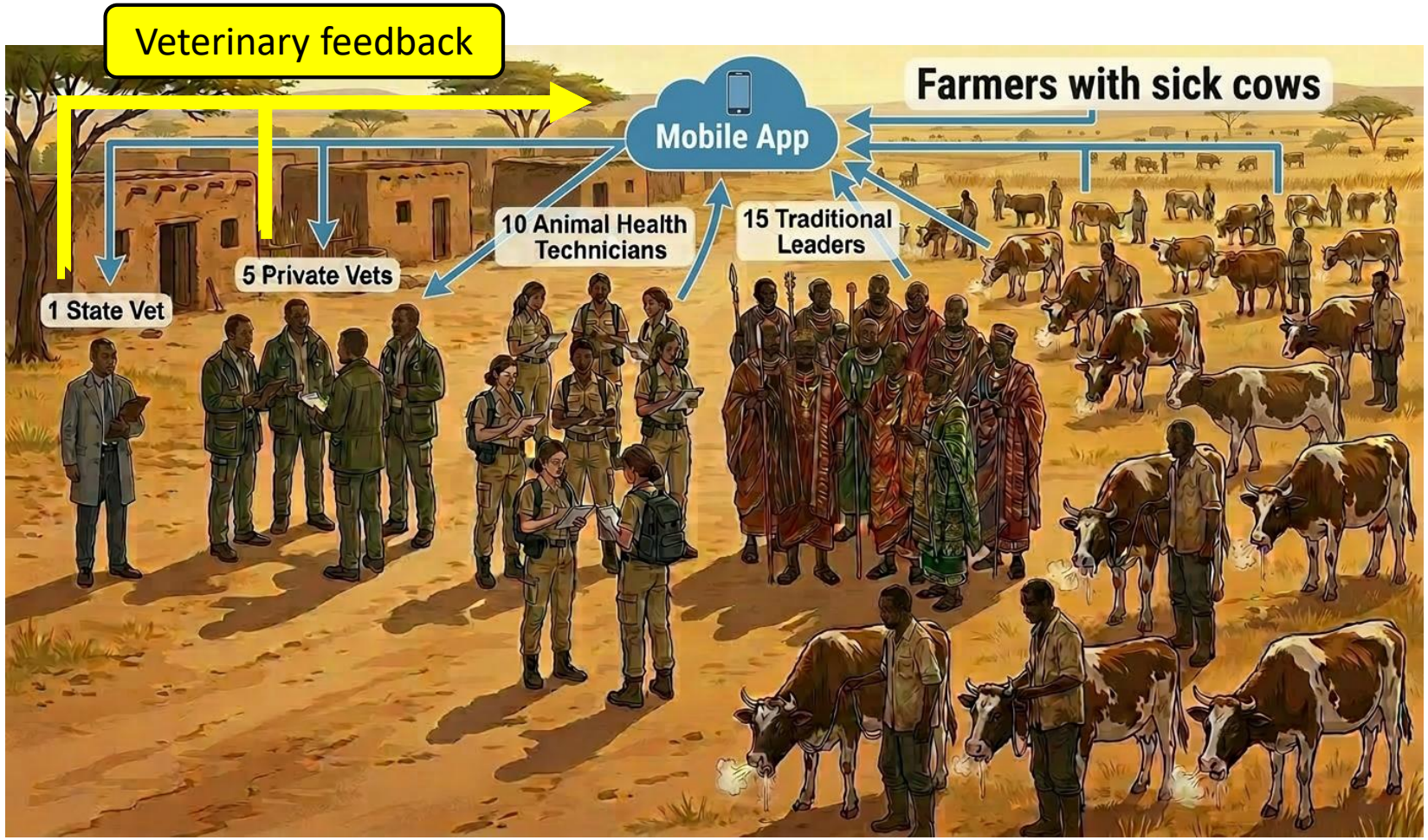
Considering these “new actors”
CBPP abattoir and field surveillance, necessarily need, new approaches such as **Telediagnosis-Remote assistance**
supported by local CBPP Experts or/and WOAH/FAO Experts, and VSs



Event-based surveillance and veterinary support through innovative technologies: Mobile APP

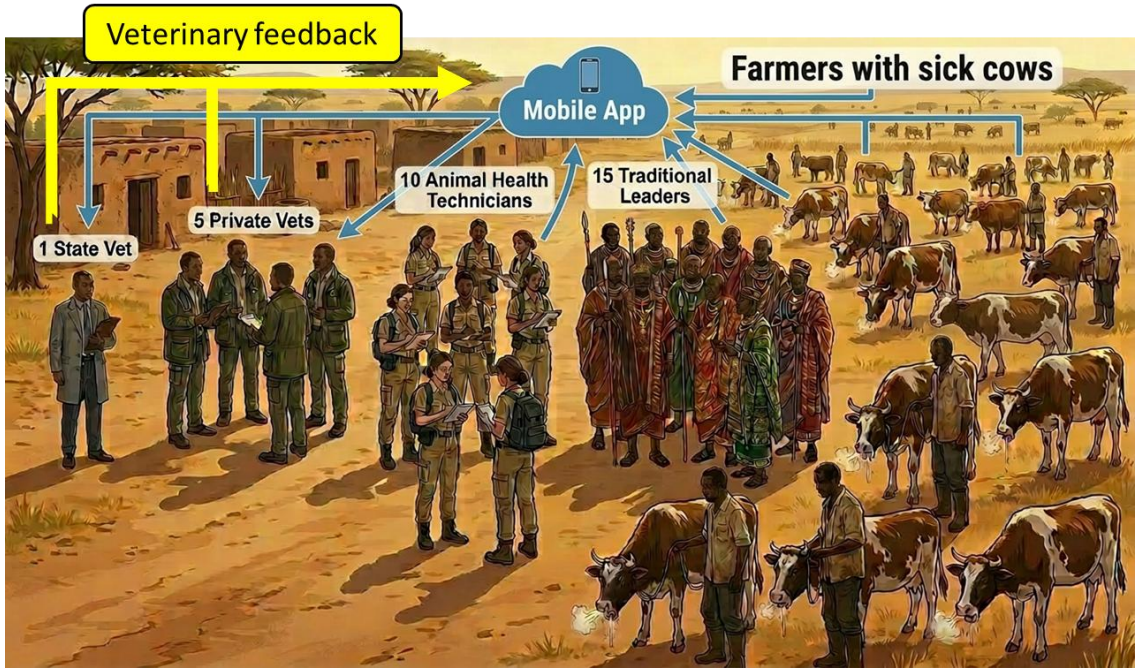
Use **Mobile Apps** allow a field veterinarian, veterinary technician and farmer to share with an expert data and observations

They also allow to record, accumulate and analyse (standardised) data, generating important epidemiological information.



Veterinary Telemedicine and Remote veterinary assistance as flexible tool for multiple purposes

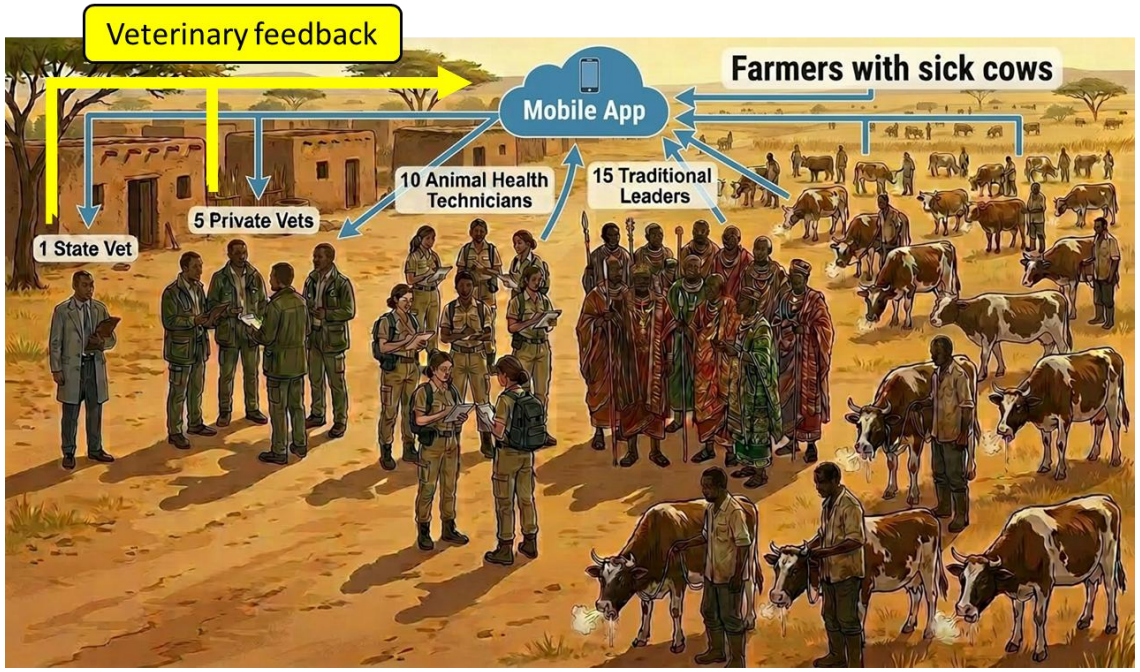
VT/RVA is the use of digital and telecommunication technologies to provide and improve veterinary services in areas where distance, social and political instability and the incidence of disastrous natural events do not allow constant physical contact with Farmers, Veterinarians/Technicians and Experts



VT/RVA serves as a valuable communication tool, facilitating information exchange among veterinarians, technicians, farmers, and local communities.

Veterinary Telemedicine and Remote veterinary assistance as flexible tool for multiple purposes

An innovative and flexible approach that enhances prevention, diagnosis, treatment, and the collection of data related to specific disease outbreaks.



However, information exchange definitely needs standardization and <u>TRAINING</u>

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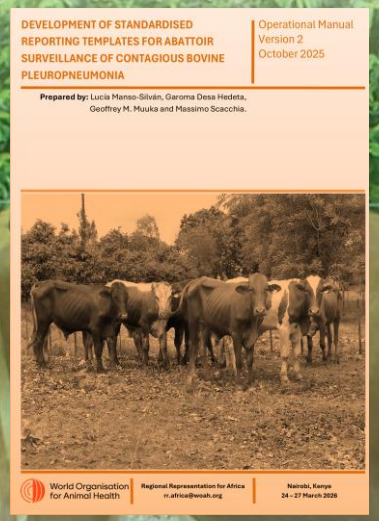
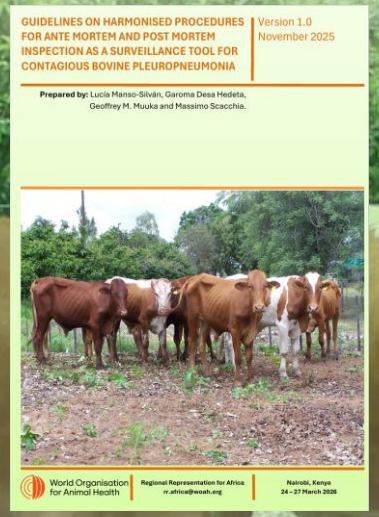
Regional Training Course on Abattoir Surveillance for Contagious Bovine Pleuropneumonia (CBPP)

24 – 27 March 2026, Nairobi, Kenya





The model: From theory to practice considering a Training for trainers approach

Standardization of approaches and procedures

Training to be tailored on different roles and actors

COMESA SPS Project

CBPP socio-economic impacts

- **Direct impact on production**
  - Mortality may be as high as 80%, especially in naive cattle populations that has direct impact on FOOD SECURITY
  - Productivity loss (meat but also milk production)
  - Lost of oxen power in agriculture due to decreased ploughing of farm lands and transport of farm products
  - Use of cattle in social events such as marriages and dowry payment are affected

CBPP socio-economic impacts

- **Direct impact on private and public control measures**
  - Control measures are mostly done as a government good
  - Reporting, testing, movement controls, vaccination, depopulation, compensation, and restocking costs
  - The stamping out method of control leads to loss of valuable genetic resource base (e.g., trypanotolerance in N'Dama cattle of West and Central Africa)
  - **Treatment of sick animals**

CBPP socio-economic impacts

- **Indirect impact**
  - Prohibition of live cattle trade and exportation
  - Price depression of cattle in affected areas
  - Reduced the availability of meat, contributing to local inflation
  - Reduced milk production leading to protein deficiency
  - Movement restriction affect crop production where oxen are used for land preparation and traction of farm produce
  - Impact on the social status (measured by the number of cattle owned by ‘peasant’ cattle farmers)

CBPP socio-economic impacts: prevention is better than cure

CBPP prevention: Vaccination, surveillance in at risk areas, movement control, No antimicrobial treatments

CBPP early detection and intervention: early notification, movement restriction, vaccination, test and slaughter, limited animal losses, possible self-treatments with antimicrobials

No CBPP control: high prevalence, high animal losses test and slaughter not applicable, mass vaccination, <u>massive use of antimicrobials (costs), increased anti microbial reistance (AMR), increase of Public (Human Health) Costs</u>

Animal health issue

AMR

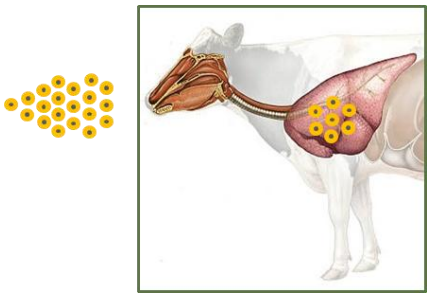
Public health issue

CBPP key facts

- *Mycopalsma mycoides mycoides* has no cell wall and is low resistant in the environment (outside the animals)

- *Mmm* affects lung causing pleuropneumonia

- Disease is transmitted via aerosol and requires close and repeated contact between susceptible and infected animals



- Mmm mainly affects bovine (*Bos taurus*) and zebu (*Bos indicus*) cattle

CBPP walks with animals

Movement control = CBPP control

CBPP key facts

- **Vaccines.** Live attenuated (T1/44, T1SR)
  - Both vaccines confer low efficacy at primo-vaccination (33-67%) and **short-term immunity**, requiring **re-vaccinations every 6 and 12 months** respectively for **T1sr** and **T1/44**
  - Annual revaccination increase vaccine efficacy to >80%
  - T1/44 has residual virulence and **occasional side effects** (Willem's reaction) may occur at first vaccination that may descourage vaccine acceptance by farmers

Vaccination alone is not sufficient to eradicate the disease, especially in areas where uncontrolled movement of cattle takes place.

CBPP key facts

- **Indirect diagnostic tests.** CFT and c-ELISA (international trade) are recommended as screening tests and used in serological surveillance plans for disease eradication
- Suffer of limited Sensitivity (Se 63.8%) when considering individual animals (>30% False negative)
- When interpreted at **herd level** they **can detect 100% of infected herds**
- Can detect nearly **all sick animals with acute lesions**, but a rather smaller proportion of animals in the early stages of the disease or of animals with chronic lesions
- The nature of the pathogenesis of the disease is such that the incubation period, during which antibodies are undetectable, may last for several months

Test & slaughter has to be applied to the entire herd. Only few animals may be detected as positive but the entire herd has to be considered as infected and slaughtered

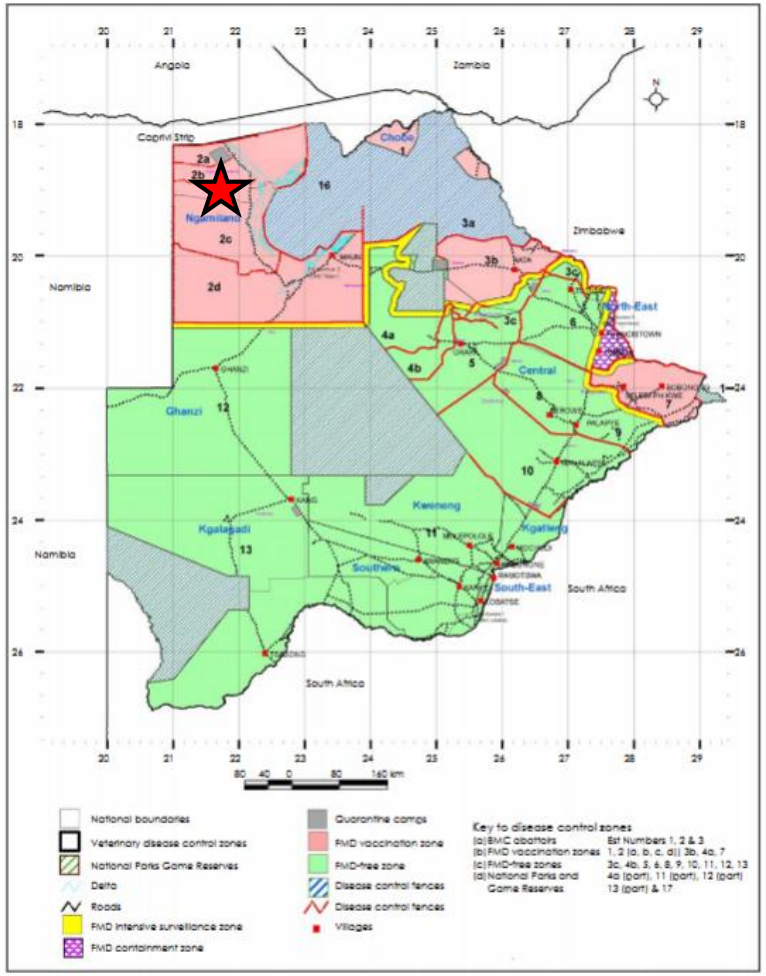
Control / Eradication strategies

- **Movement control** and animal identification. Any system able to guarantee animal traceability, individually or as a group (Es. Branding with District code or ear tagging)
- **Vaccination**
- **Test & Slaughter** (herd)/ **Stamping out** (testing and destruction of all positive herds and in contact herds in the same epidemiological unit)
- **Treatment (no stewardship on antimicrobial use and risk of AMR)**

Combination of more than one strategy is generally required depending on needs of different territories within single Countries and Regions

CBPP Control / Eradication strategies: Botswana

- **Last CBPP outbreak Feb 1995** north-western region (after 56 yrs of freedom)
- Attempt to control the disease in the area failed
- CBPP was eradicated by applying the **stamping-out policy implemented in April 1996** and resulted in the slaughter of **320 000 cattle**. (INVESTIMENT FOR THE FUTURE)
- The Botswana government compensated farmers, offering them different **compensation** options.
- By the end of 1997, the **restocking** exercise introduced 70 000 cattle into Ngamiland.
- Botswana was declared **CBPP-free** by the World Organisation of Animal Health in **1998**.



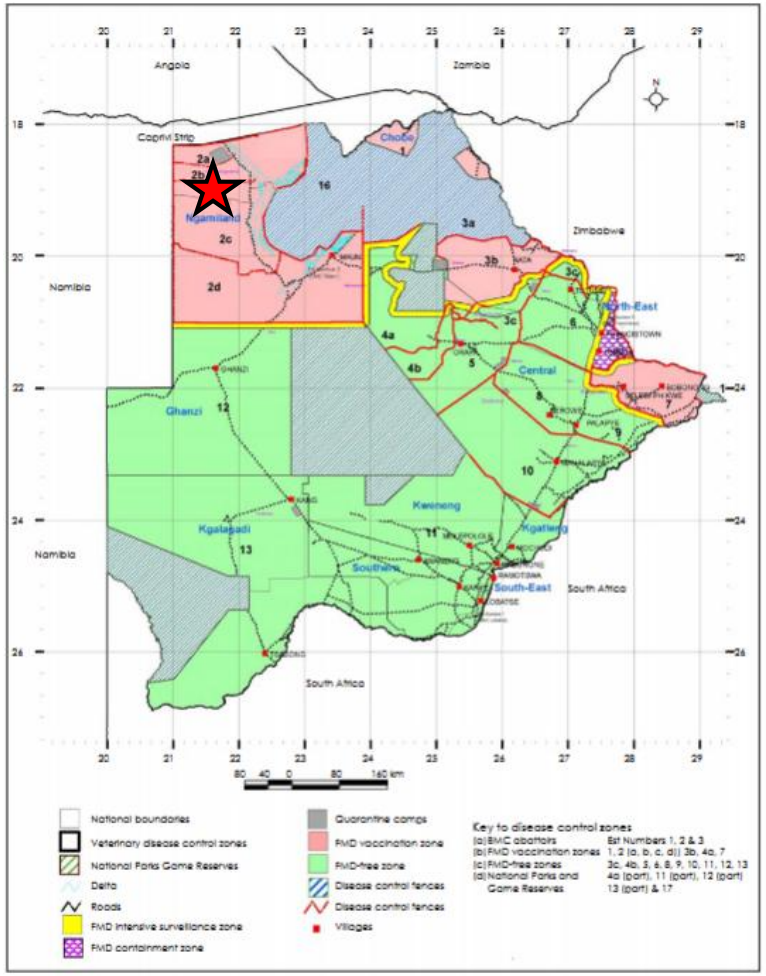
CBPP Control / Eradication strategies: Botswana

- **Costs of eradication** of CBPP in 1995 were estimated at **USD 97.5 million** more than the USD 86 million generated in export revenues in 1998 (Mullins et al. 2000)
- These costs include movement controls, depopulation, compensation, and restocking costs.

BUT CBPP was/is still present in neighboring countries therefore

Prevention strategies required to reduce the risk of reintroduction:

- **Border control**
- Quarantine
- **Animal movement control**
- Serological surveillance and abattoir inspections in high-risk areas.

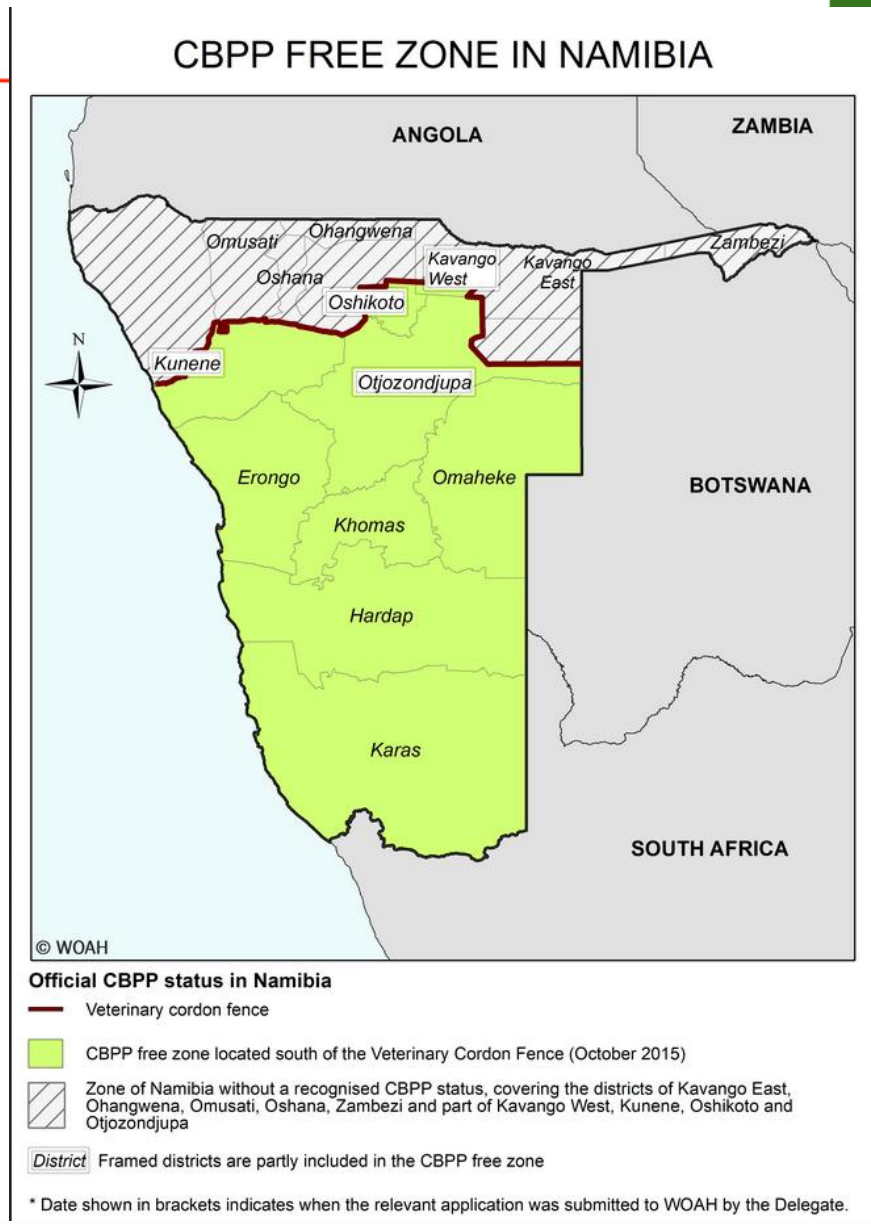


Marobela-Raborokgwe, Chandapiwa. “Contagious bovine pleuropneumonia in Botswana: experience with control, eradication, prevention and surveillance.” Veterinaria italiana vol. 47,4 (2011): 397-405.

CBPP Control / Eradication strategies: Namibia (CBPP free zone)

Namibia's control strategy CBPP focuses on a zonal approach, combining mandatory vaccination with strict movement controls, particularly in the Northern Communal Areas (NCAs)

Namibia is one of the few African countries with a WOAH-endorsed official control programme for CBPP



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CBPP Control / Eradication strategies: Namibia (CBPP free zone)

CBPP Strategy

- **Zonal Management:** The country operates a "two-zone" system based on disease status. The area south of the Veterinary Cordon Fence (VCF) is free from CBPP, while the northern areas (NCAs) are endemic or under surveillance.
- **Mandatory Vaccination:** In the endemic NCAs, free, compulsory annual vaccinations are conducted to maintain high herd immunity.
- **Outbreak Response:** following outbreaks, emergency measures include intensive surveillance, strict livestock movement restrictions, and diagnostic testing
- **Surveillance and Diagnosis:** abattoir surveillance alongside clinical and serological surveys.

CBPP FREE ZONE IN NAMIBIA

Official CBPP status in Namibia

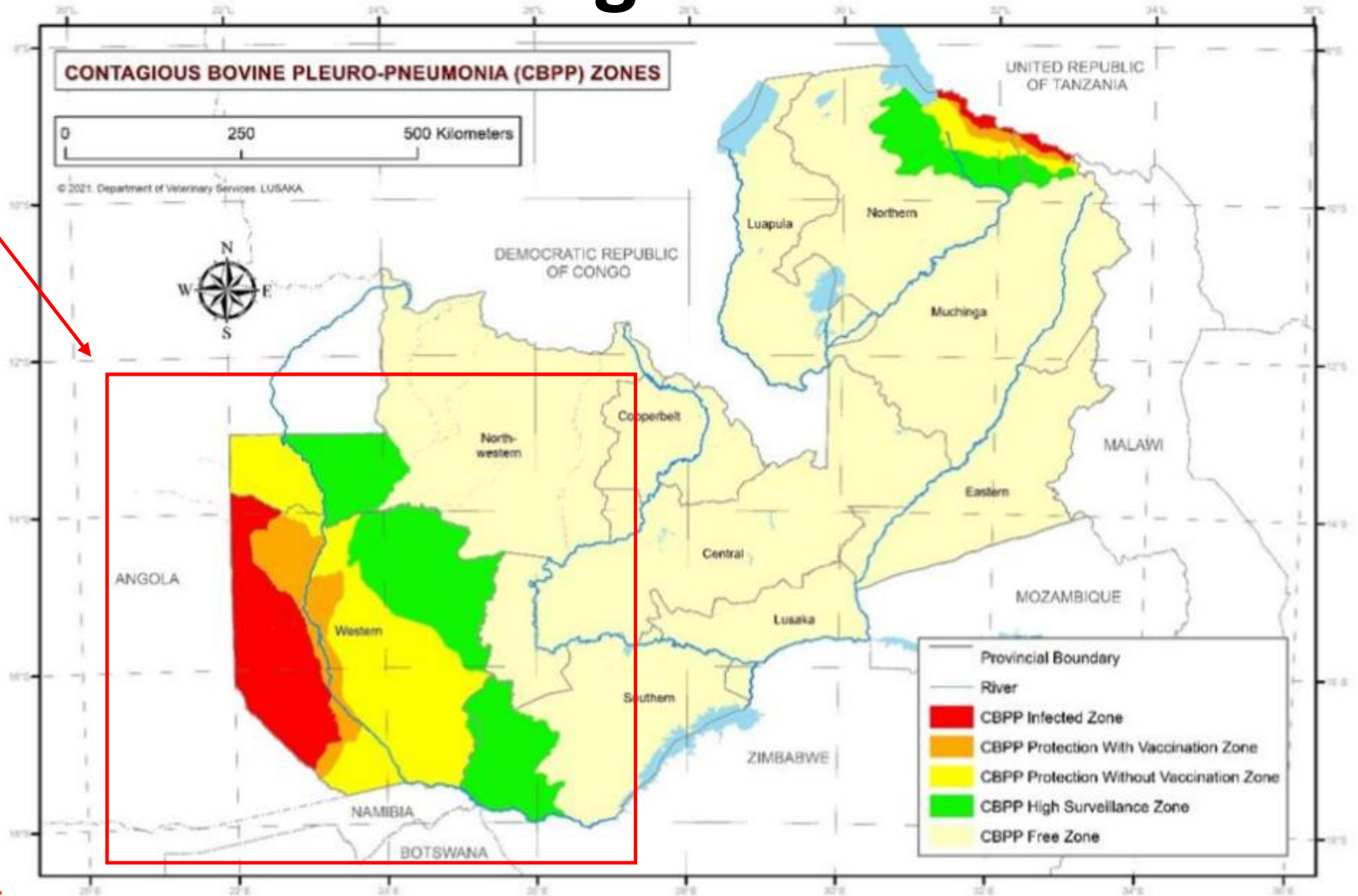
- Veterinary cordon fence
- CBPP free zone located south of the Veterinary Cordon Fence (October 2015)
- Zone of Namibia without a recognised CBPP status, covering the districts of Kavango East, Ohangwena, Omusati, Oshana, Zambezi and part of Kavango West, Kunene, Oshikoto and Otjozondjupa
- *District* Framed districts are partly included in the CBPP free zone

* Date shown in brackets indicates when the relevant application was submitted to WOAH by the Delegate.

CBPP Control / Eradication strategies: Zambia

CBPP Strategy (THE MODEL!)

- Progressive eradication of the disease
- From areas of low prevalence and low risk (the easiest to control)
- To areas of high prevalence and high risk bordering known infected neighboring countries



CBPP Control / Eradication strategies: Zambia

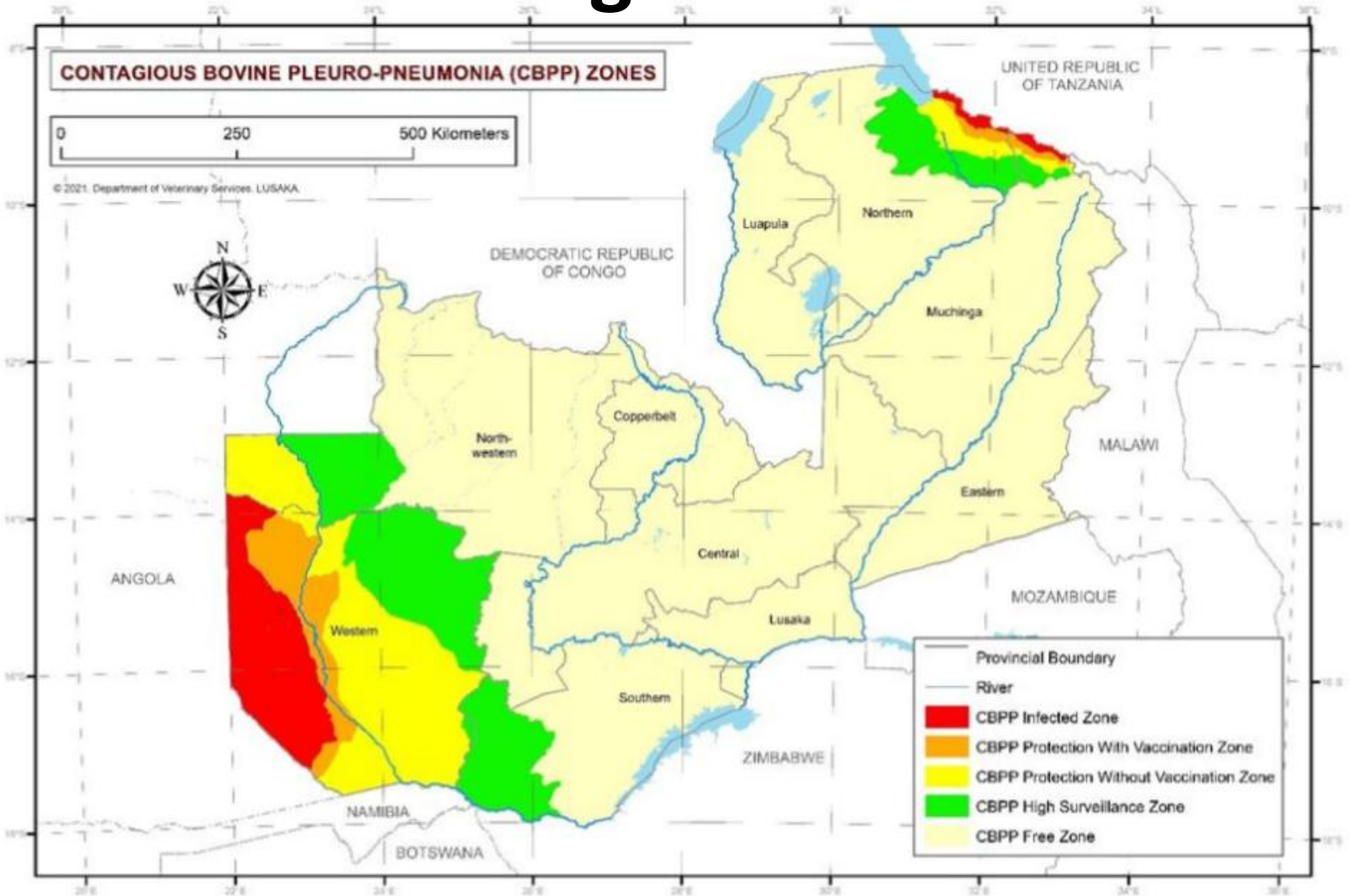
CBPP Strategy

In areas of high prevalence

- Containment of the disease
- then scale up activities to reduction of prevalence
- launch of eradication measures

In low prevalence areas

- Eradication measures applied right from the outset



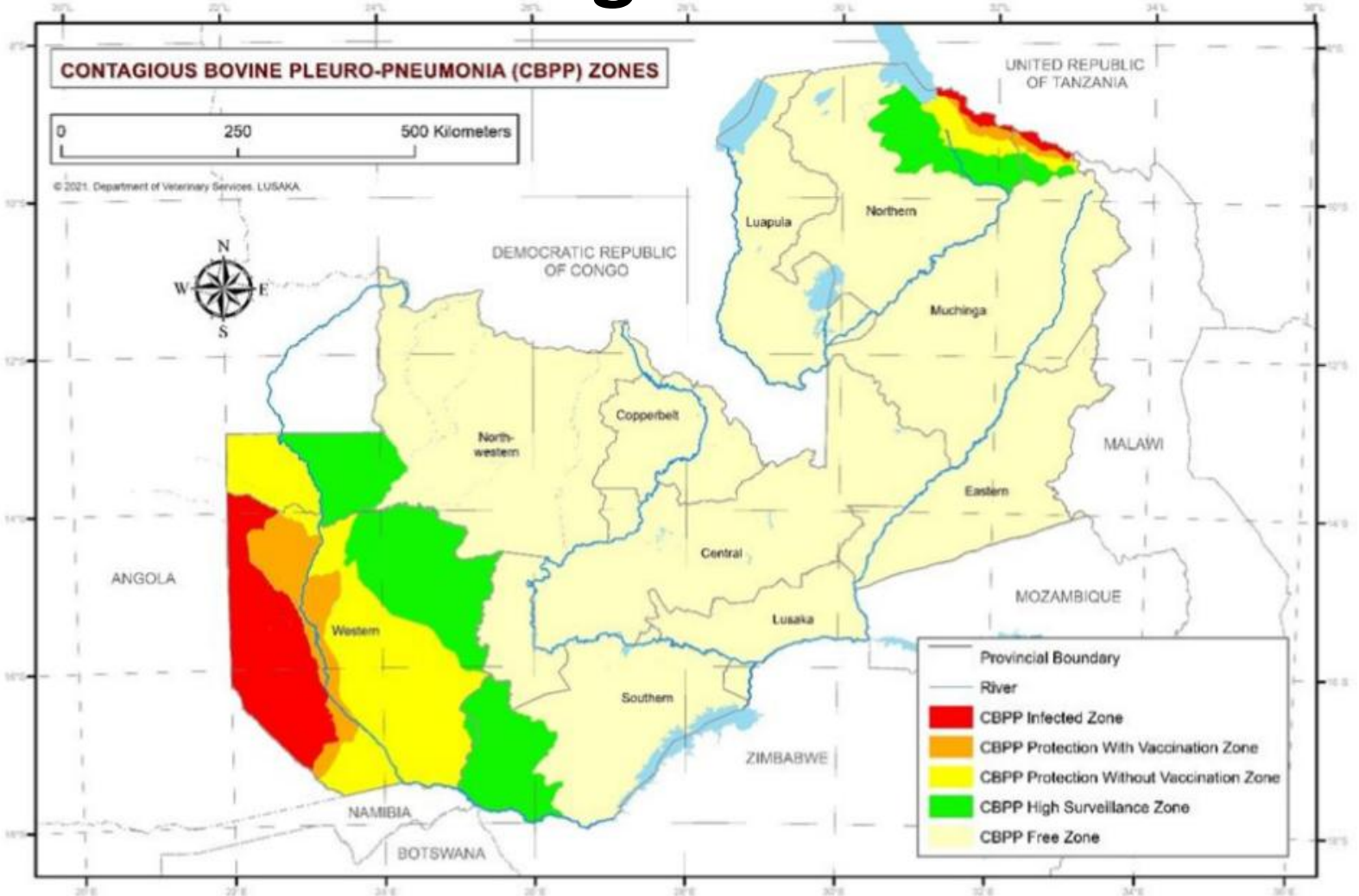
CBPP Control / Eradication strategies: Zambia

CBPP Strategy

Main methods for CBPP control and eradication:

- Mass vaccinations
- Test and slaughter
- Surveillance
- Movement control

The different methods are used in combination or as predomitating, depending on the area



Thank you for your attention!