

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

24 – 27 March 2026, Nairobi, Kenya

Remote veterinary assistance: use of digital tools and case studies, photography and documentation

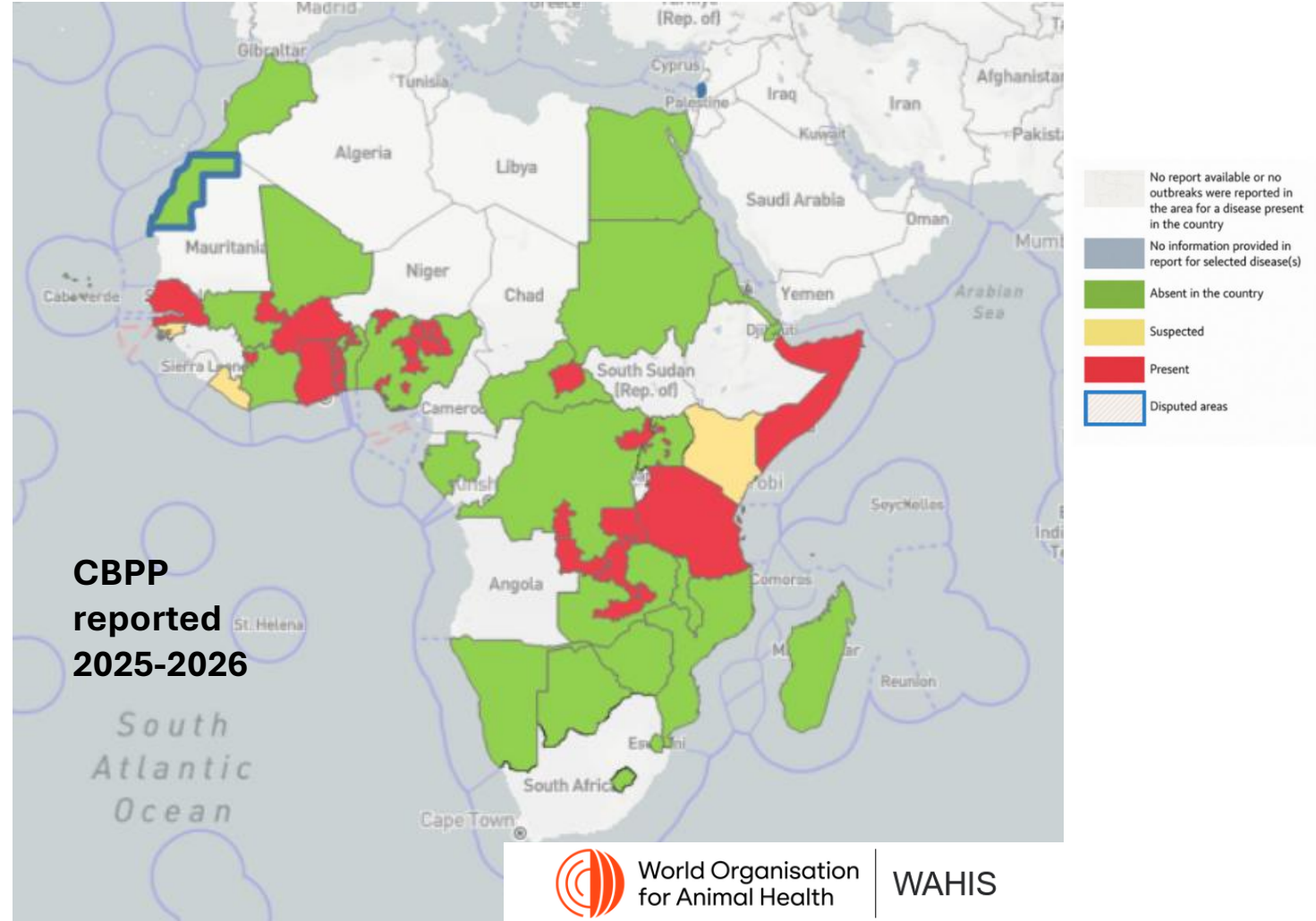
Flavio Sacchini & Massimo Scacchia

The problem: Infection Foci detection

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.





CBPP Infection Foci detection

AU-IBAR emphasises CBPP control
policy concerning active surveillance
and information gathering for the early
detection of CBPP foci of infection





How to identify foci of CBPP infection in some 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?





Events based surveillance of CBPP: Innovative Technologies





Events based surveillance of CBPP: Innovative Technologies

- Event-based surveillance in animal health relies on the rapid capture of signals such as **farmer complaints**, media reports, social media posts, and **informal field observations**, followed by verification, risk assessment, and response.
- Mobile phones, cloud databases, and digital decision-support tools offer opportunities to strengthen EBS through timelier signal detection, automated workflows, and integration with One Health surveillance platforms shared with public health





Events based surveillance of CBPP: Innovative Technologies

“Suspicion of CBPP related to pathological lesions”

- **Abattoir surveillance:** *Post-mortem examination*
- **Field surveillance:** Necropsy and/or slaughtering related to traditional ceremonies





Events based surveillance of CBPP: Innovative Technologies - **Actors**

Identification of infection

foci involving:

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

- **But also trained** traditional leaders, breeders
- local communities and eventually NGOs personnel, under VSs remote support





Events based surveillance of CBPP: Innovative Technologies

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





What are VETERINARY TELEMEDICINE/ REMOTE VETERINARY ASSISTANCE?

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





What are VETERINARY TELEMEDICINE/ REMOTE VETERINARY ASSISTANCE?

VT/RVA services are:

- assimilated to any veterinary diagnostic/therapeutic service.
- complement the veterinary examination to improve its effectiveness, efficiency and appropriateness.





VETERINARY TELEMEDICINE/ REMOTE VETERINARY ASSISTANCE

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

It also serves as a valuable communication tool, facilitating information exchange among veterinarians, technicians, farmers, and local communities.



VETERINARY TELEMEDICINE/ REMOTE VETERINARY ASSISTANCE

VT/RVA is not the future, it is already the present: Every phone call, @mail, WhatsApp, video call and photo transmission is part of VT/RVA.

But **Mobile Apps** allow a field veterinarian, veterinary technician and farmer to share with an expert data and observations of one or more sick animals or pathological lesions found, following *post-mortem* examination.

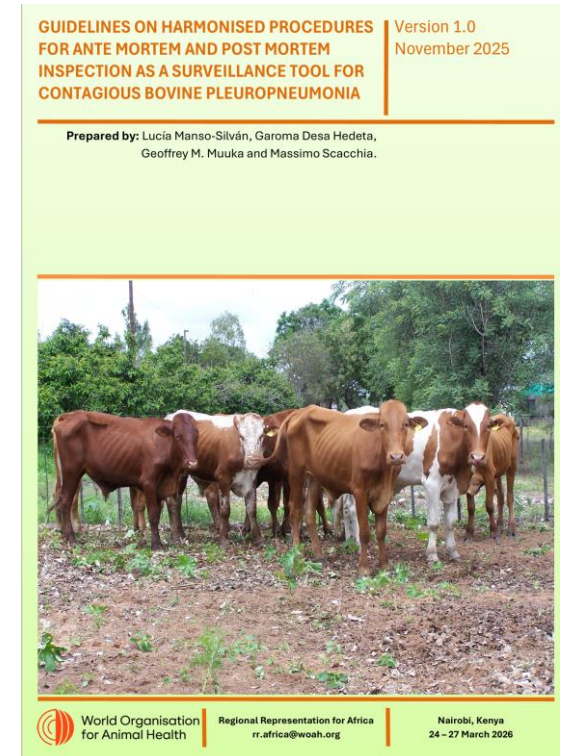
**However, information exchange definitely needs a
standardisation.**

VETERINARY TELEMEDICINE/ REMOTE VETERINARY ASSISTANCE

What data are we talking about?

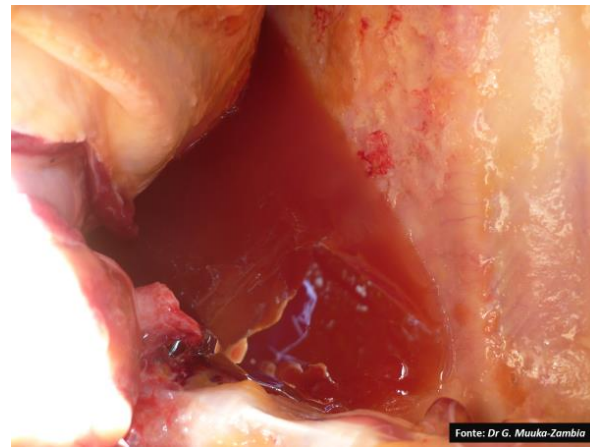
TELEMEDICINE DATA/ REMOTE VETERINARY ASSISTANCE

- Standardised forms concerning:
 - Veterinary visit to the farm;
 - Necropsy examination;
 - Collecting and sending material to the Veterinary Diagnostic Laboratory



TELEMEDICINE DATA/ REMOTE VETERINARY ASSISTANCE

- **Standardised images:** concerning clinical and pathological findings in sick animals, collected by mobile





TELEMEDICINE DATA/ REMOTE VETERINARY ASSISTANCE

- **Audio:** e.g. sounds produced by animals in particular pathological situations
- **Video:** images of clinical symptoms present and describing the herd, grazing and watering areas, video conferencing in consultation with field veterinarian and farmer
- **Georeferencing:** when available





TELEMEDICINE DATA/ REMOTE VETERINARY ASSISTANCE

Standardization of information provided through the system is important to generate **quality data** (numbers) and numbers are important to:

- Ensure the quality of the services provided through VT/RVA
- Identify the problem (what and where)
- Quantify the problem (how many animals are involved)
- Design intervention strategies (eg. CBPP, zoonotic diseases)
- Allocate the necessary financial, human and technical resources (Central Authorities)





TELEMEDICINE DATA/ REMOTE VETERINARY ASSISTANCE

Quality data are also important to **set indicators to monitor:**

- Disease evolution (where the disease is spreading)
- Vaccination efficacy (reduced number of reported cases, complementary to the use of active sero surveillance)

In order to get reliable data it is crucial to establish some rules: standardization of data acquisition (TRAINING, PROCEDURES, FORMS) and data verification (Veterinary supervision). **This will reduce the bias on data collection. (Messy data input.....**





VETERINARY TELEMEDICINE/ REMOTE VETERINARY ASSISTANCE

VT/RVA will be a tool for continuous professional training of veterinarians, health technicians, local communities, traditional leaders and breeders



VETERINARY TELEMEDICINE/ REMOTE VETERINARY ASSISTANCE

Keep in mind that VT/RVA is a practice tool,
not a separate discipline within
the veterinary profession



***VETERINARY
TELEMEDICINE/
REMOTE VETERINARY
ASSISTANCE:
SOME EXAMPLES OF
MOBILE APP***





Veterinary Telemedicine/ Remote Veterinary Assistance: Mobile App

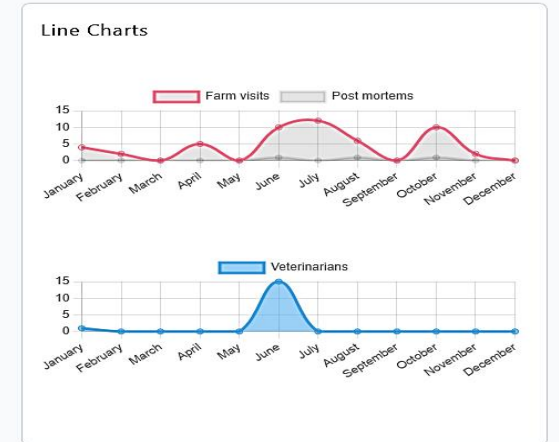
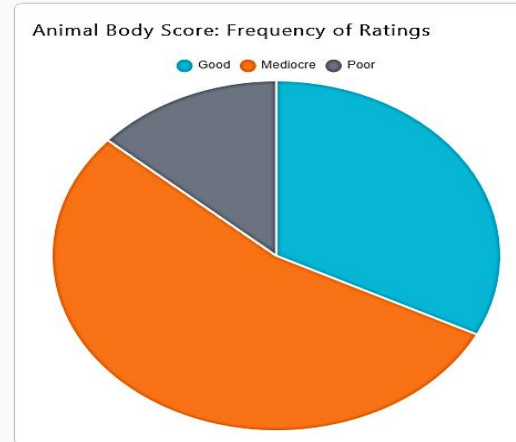
Photos and additional standardised information are sent from the field and abattoirs, by local Veterinarians or Technicians to experts, via a specific Mobile App, for quick feedback



VETSYRIA

- Dashboard
- Cases
- My Cases
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- Pathologies
- Pathology Properties
- Settings
- Language Lines
- Terms and conditions

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- استشارة وتشخيص**
 18/04/2025, 07:36
 🐄 Cattle
 بقره اصيبت بالحمى القلاعية وتم تقديم العلاج وتحسنت ولكن بعد يومين انتكست بشده واستدعاني المرابي فكانت البقره ضعيفه جدا وانتفاخ في الوداجي وذهاب العزم وتم...
- استشارة طبية**
 14/04/2025, 21:00
 🐑 Sheep
 بثور جلدية تشكل طبقة بيضاء سميقة، التشخيص المناسب، والعلاج الأفضل من فضلكم.
- استشارة**
 09/04/2025, 23:57
 🐄 Cattle
 بقره مضى على ولادتها 7 اشهر ولم تدخل بدورة شبق بعد الولادة ابدأ تم فحصها وفحص المبايض فتبين وجود جسم اصفر... اعطيت بروتاغلندين ٤سم فيتامين
- استشارة**
 09/04/2025, 15:08
 🐄 Cattle
 بقره مضى على ولادتها ٢٠ يومشهيه ضعيفه وحراره ٤٠ بول مدمم يشبه القهوة او الشاي العامدم منحل يشبه القهوهتم... تشخيصها على انها بيله هيموغلوبينه ونقص الفوسفورتم
- استشارة**
 08/04/2025, 20:21
 🐄 Cattle
 حراره ٤٠ عرجتسلخات بالفم والاضلافسيلان لعابي

Latest Articles [View all](#)

- (Test Article) Marek's disease**
 11/06/2024, 10:10
 🐔 Chicken 🐔 Marek's disease
 Introduction Marek's disease is a highly contagious viral disease primarily affecting chickens, characterized by the formation of tumors and paralysis. The causative agent, Gallid alphaherpesvirus...
- (Test Article) Foot rot in sheep**
 11/06/2024, 10:10
 🐑 Sheep 🐑 Foot rot
 Introduction Foot rot is a highly contagious bacterial infection affecting the hooves of sheep, leading to lameness, significant discomfort, and economic losses in the sheep...



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Mobile App



VETSYRIA

- Dashboard
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 - Animals
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- Pathologies
 - Pathologies
 - Pathology Properties
- Settings
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 - Terms and conditions

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Cases

[+ New](#)

Object ↑↓	ID ↑↓	Type	Status ↑↓	Visibility ↑↓	Read ↑↓	Translated ↑↓	Latest update ↑↓	Created at ↑↓	
استشارة طبية	00010FV/25	Farm Visit	Pending	Visible	☒	☑	20/04/2025, 16:18	14/04/2025, 21:00	👁️ 🗑️
استشارة	00007FV/25	Farm Visit	Pending	Visible	☒	☑	18/04/2025, 07:41	08/04/2025, 20:21	👁️ 🗑️
استشارته وتشخيص	00011FV/25	Farm Visit	Pending	Visible	☒	☑	18/04/2025, 07:37	18/04/2025, 07:36	👁️ 🗑️
استشارته	00008FV/25	Farm Visit	In progress	Visible	☑	☑	12/04/2025, 09:21	09/04/2025, 15:08	👁️ 🗑️
استشارته	00009FV/25	Farm Visit	In progress	Visible	☑	☑	12/04/2025, 09:18	09/04/2025, 23:57	👁️ 🗑️
استشارة	00004FV/25	Farm Visit	In progress	Visible	☑	☑	05/02/2025, 11:27	31/01/2025, 14:35	👁️ 🗑️
استشارة حالة مرضية	00006FV/25	Farm Visit	In progress	Visible	☑	☑	05/02/2025, 11:25	02/02/2025, 21:36	👁️ 🗑️
استشارة حالة مرضية	00005FV/25	Farm Visit	In progress	Visible	☑	☑	05/02/2025, 11:12	02/02/2025, 21:12	👁️ 🗑️
طلب استشارة	00002FV/25	Farm Visit	In progress	Visible	☑	☑	30/01/2025, 11:52	10/01/2025, 19:29	👁️ 🗑️
مشاركة الحالة مع الاطباء البيطريين	00003FV/25	Farm Visit	In progress	Visible	☑	☑	30/01/2025, 11:50	14/01/2025, 17:50	👁️ 🗑️
Request a consultation from an experienced veterinarian	00001FV/25	Farm Visit	In progress	Visible	☑	☑	17/01/2025, 14:44	09/01/2025, 18:20	👁️ 🗑️
استشارته	00038FV/24	Farm Visit	In progress	Visible	☑	☑	28/11/2024, 11:35	27/11/2024, 12:55	👁️ 🗑️
تشخيص وعلاج	00037FV/24	Farm Visit	In progress	Visible	☑	☑	24/11/2024, 14:38	18/11/2024, 13:31	👁️ 🗑️
استشارته	00034FV/24	Farm Visit	In progress	Visible	☑	☑	28/10/2024, 16:37	15/10/2024, 12:18	👁️ 🗑️
الاستشارة والاستفادة من خبره الدكتور والاح الكبير ماسيمو	00036FV/24	Farm Visit	In progress	Visible	☑	☑	28/10/2024, 16:30	24/10/2024, 16:04	👁️ 🗑️
مشاركة حالة عجول	00031FV/24	Farm Visit	In progress	Visible	☑	☑	28/10/2024, 16:20	09/10/2024, 12:44	👁️ 🗑️
Request for medical consultation from scientific and field experience	00033FV/24	Farm Visit	Closed	Visible	☑	☑	27/10/2024, 07:42	10/10/2024, 08:46	👁️ 🗑️
Request medical advice from those with scientific and field experience	00035FV/24	Farm Visit	In progress	Visible	☑	☑	21/10/2024, 16:00	18/10/2024, 19:32	👁️ 🗑️
استشارة حول علاج التهاب قناة فالوب عند الأبقار	00032FV/24	Farm Visit	In progress	Visible	☑	☑	11/10/2024, 17:10	09/10/2024, 13:30	👁️ 🗑️
Pulmonary fibrosis	00001PM/24	Post Mortem	Pending	Hidden	☑	☑	10/10/2024, 08:34	01/08/2024, 17:14	👁️ 🗑️


« < 1 2 3 > » 20 ▾

Latest Cases

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Request veterinary consultation

19/06/2024, 15:04

 Sheep

.Dear veterinary experts.A herd of sheep numbering 100 heads.The injured 25 heads.Skin symptoms that start small and expand, and the skin becomes hard and thick.I...

The milk curdles

19/06/2024, 12:31

 Goat

Dear Veterinary ExpertsGreetingsI would like to consult you on a medical caseA goat has a normal temperature and appetite, the color of the milk is...

My fellow doctors, male and female veterinarians, I would like to obtain your professional and field expertise in the case of persistent estrus in a...

Seeking advice about a case of an acute diarrhea in a young calf

18/06/2024, 10:46

 Cattle

Dear veterinary experts, I am asking about the possibility of controlling a case of severe diarrhea in a three-month-old calf. The diarrhea is yellow

Request veterinary advice about a complex case

17/06/2024, 17:04

 Sheep

Hello, my fellow doctors, male and female veterinarians. I am asking for your help in a case that affects young sheep between the ages of...

Mobile App

Latest Articles

[View all](#)

Marek's disease

11/06/2024, 10:10

 Chicken  Marek's disease

Introduction Marek's disease is a highly contagious viral disease primarily affecting chickens, characterized by the formation of tumors and paralysis. The causative agent, Gallid alphaherpesvirus...

Foot rot in sheep

11/06/2024, 10:10

 Sheep  Foot rot

Introduction Foot rot is a highly contagious bacterial infection affecting the hooves of sheep, leading to lameness, significant discomfort, and economic losses in the sheep...

Request veterinary consultation

Mobile App



yosef mohamad 19/06/2024, 15:04



Original English Italian Arabic

.Dear veterinary experts
 .A herd of sheep numbering 100 heads
 .The injured 25 heads
 .Skin symptoms that start small and expand, and the skin becomes hard and thick
 .I have injected her several times with ivermectin as well as infusions with external fluids
But it's no use



Type

Farm Visit

Farm Owner

Mostafa Khaleel Al Mostafa

Address

Al Yamama Village

Visit date

2024-06-01

Visit number

1





[Redacted], 15:08



Original English Italian Arabic

Please Help



(1) أفات جلدية
80 KB



(3) أفات جلدية
73 KB

Status

Closed



Mobile App



Scacchia Massimo
m.scacchia@izs.it

+ Comment



Scacchia Massimo [Redacted] 14:18



Original English Italian Arabic

Dear friend, I think it is Dermatophilosis caused by *Dermatophilus congolensis*.

Dermatophilosis is initially characterised by the presence of small corneous swellings on the epidermis, which, with the time, evolve into more or less confluent crusty formations consisting of epithelial cells and exudate that conglutinates the wool. Such crusts, often tenaciously



Mobile App: Training

This approach required online training on the most important diseases in the Region and how to collect standardised information concerning:

- Farm epidemiological data;
- Clinical visit and symptoms;
- Necropsy and Pathological lesions;
- Therapy;
- Organs photos and clinical symptoms videos, using mobile phone.





Mobile App: Training Courses

Training on drafting and sharing standardised forms related to:

- Veterinary visit to the farm;
- Necropsy examination and how to take biological material;
- Biosecurity;
- Sending material to the Veterinary Diagnostic Laboratory.





Mobile App: Training Courses

- **Standardised images**

Drawing up and sharing teaching material related to photo collection on:

- Veterinary visit to farm;
- Clinical examination;
- Necropsy examination;
- Procedure for sampling biological material during necropsy.





Mobile App: Photo collection

In addition, were provided to all the actors involved in this activity, via **Mobile App**:

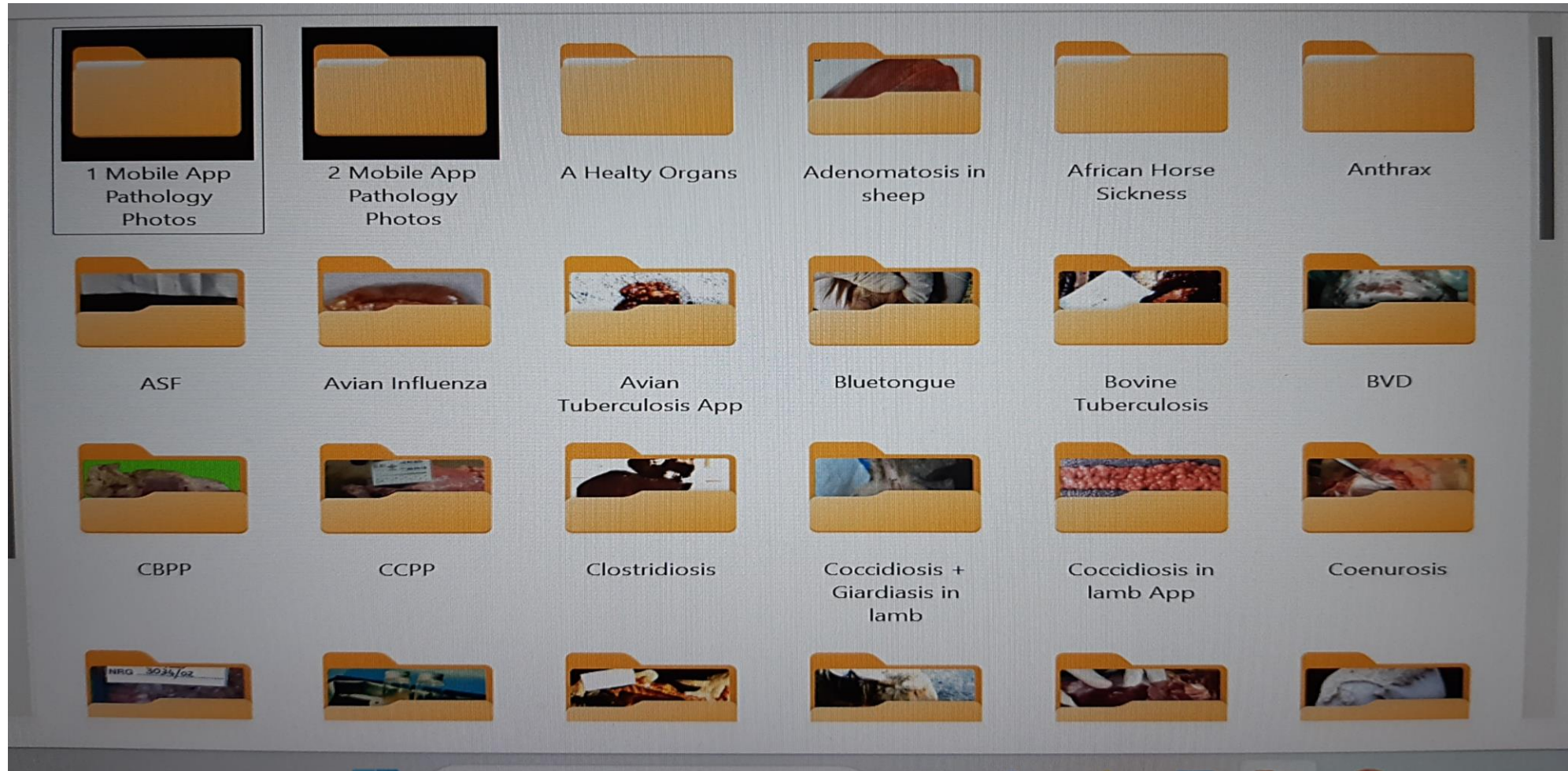
Photo collections

- Characteristic lesions of the most important Pathologies for the Region
- Photos of Differential diagnosis lesions





Mobile App: Photos collection



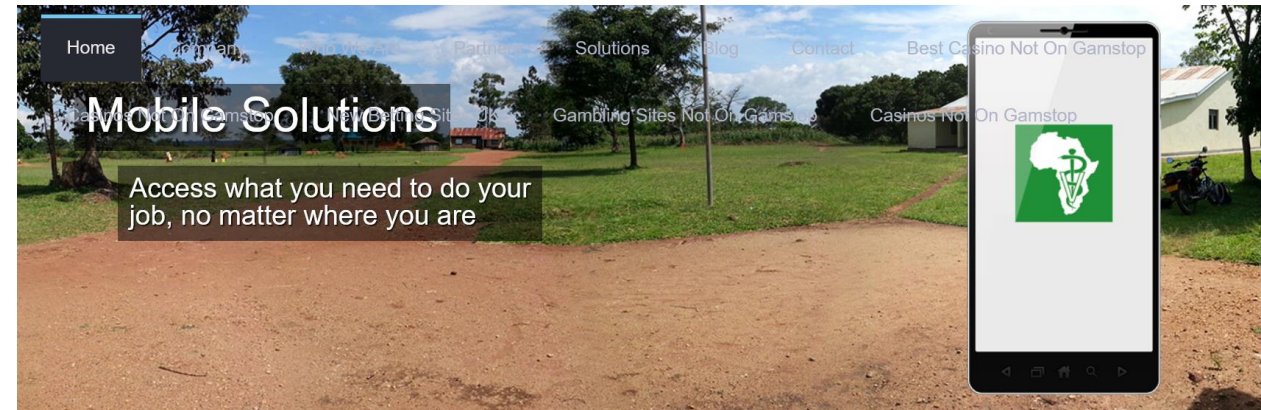
Another example: Vet Africa app

<https://www.cojengo.com/>

Cojengo Ltd (IT professionals company)

VetAfrica is a mobile app developed by Cojengo to help farmers and vets in East Africa (Kenya, Ethiopia) diagnose livestock diseases and manage animal health data efficiently.

It operates off-line, allowing field diagnosis and real-time surveillance of diseases in cattle, significantly improving livestock survival rates



Partners (Africa, Americas, Europe etc.):

- **Technology:** local Microsoft teams in Africa
- **Government:** Local and national government bodies
- **Academic**
- **NGO**
- **Pharmaceuticals:** enabling the pharmaceutical industry access to real time, location specific data about where specific treatments are being used.

TECHNOLOGICAL NEEDS



TECHNOLOGICAL NEEDS

Field Vets and Technicians

- Mobile phones or tablets
- Mobile network coverage
- @mail, if possible
- Offices with electricity and Internet connection

Telemedicine/Tele-assistance Secretariat

- Internet connection (also off-line

functionality)





TECHNOLOGICAL NEEDS

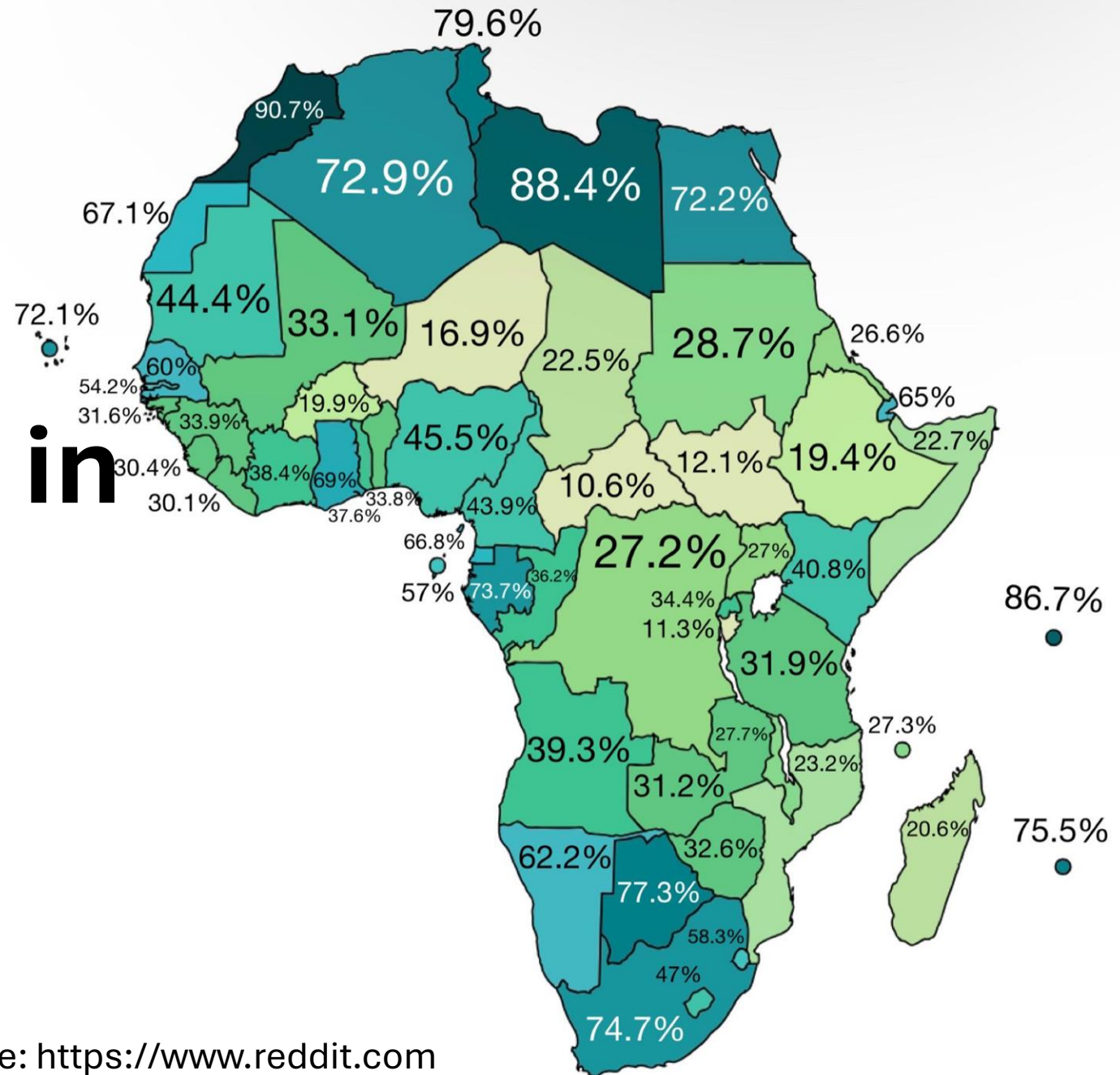
App or plastic-coated:

- Atlas with photos on how to carry out clinical and post-mortem examinations
- Atlas with photos of main pathologies
- Dossier containing the main Project Documents and Forms
- Plastic-coated labels for photos identification





Internet access in Africa March 2024





VETERINARY TELEMEDICINE: CBPP AND ANTIBIOTICS



Regional Training Course
Contagious Bovine Pleu
24 – 27 March 2026, Nairobi, Kenya



ANTIBIOTICS AND CBPP: TANZANIA STUDY



Antibiotics and CBPP: Tanzanian experience

*The results from the **400 interviews** show that **Tylosin** is the most commonly used antibiotic by 286 (84.87%), followed by **Oxytetracycline** 47 (14.39%) and **Enrofloxacin** 3 (0.89%)*

*346 (86.50%) **knows about CBPP**, while 41 (10.25%) **never sought professional advice**, and 347 (86.75%) **used antibiotics to treat CBPP***





Antibiotics and CBPP: Tanzanian experience

122 (34%) of cattle keepers practice self-treatment to cattle, 77(20.98%) do not complete the dosage, and 103 (28.06%) do not follow the withdrawal period

Cattle keepers 261 (65.74%) do not know about AMR



ANTIBIOTICS AND CBPP: KENYA STUDY

Antibiotics used

Farm 1 (Kajiado) _ **PenStrep**, Oxytetracycline (10%, 20%, & 30%), Dexamethasone
_Tylosin administered by the CDVS which stopped the deaths

Farm 2 (Kajiado) _ Betamox, Oxytetracycline 10% and later 30%

Farm 3 (Kajiado) _ PenStrep, Oxytetracycline, **Diaminazene Diaceturate**, Metaphos
(phosphorus and Vit B12 supplement), and Butaphos
_Dewormers

Farm 4 (Marsabit) _ Oxytetracycline 10%, 5%

Farm 5 (Laikipia) _ Oxytetracycline, Butalex, Multivitamin, Dexamethasone

Farm 6 (Isiolo) _ PenStrep, Antihistamine, multivitamin and, Tylosin



- The overall herd **mortality rate** for CBPP was estimated to be **30%**
- CBPP causes high economic losses to farmers through the purchase of drugs and loss of animals
- Self-treatment by farmers is common, at times the vets may inject the first dose and leave drugs with the farmers to continue with subsequent injections
- One ranch in Laikipia sourced Tulathromycin to successfully treat CBPP





***According WOAHA
PVS, use of
antibiotics is
OUT OF VETERINARY
CONTROL
in a large number of
African countries!!!!***





Antimicrobials

Antimicrobial treatments, given the problems related to **residues in meat and milk and AMR**, have to be carried out under the direct control of Veterinarians or Animal Health Technicians or,

using VT/RVA,

under the control of traditional leaders or farmers leaders
properly trained by VSs





VETERINARY TELEMEDICINE/ REMOTE VETERINARY ASSISTANCE

Therapy

The purpose of VT/RVA for a veterinarian is to define the therapy following a suspected diagnosis and assessing the disease course after pharmacological treatment





VETERINARY TELEMEDICINE/ REMOTE VETERINARY ASSISTANCE

Therapy

Through this service the veterinarian has to provide **clear information** to farmers, on the **drug** to be used, the **dosages**, the **duration** of therapy, drug **storage** and above all the **withdrawal times in milk and meat**.





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f.sacchini@izs.it
m.scacchia@izs.it

