

GF-TADs

GLOBAL FRAMEWORK FOR THE
PROGRESSIVE CONTROL OF
TRANSBOUNDARY ANIMAL DISEASES

Africa



Food and Agriculture
Organization of the
United Nations



World Organisation
for Animal Health
Founded as OIE

African
Union 



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CBPP WOAHA CBPP TWINING PROJECT with IZS, Teramo Italy and AHI, Sebeta .



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FMD WOAAH twining Project



- ▶ FMD twining program was between IAH, UK (Parent) and AHI, Ethiopia(Candidate lab) started January 2012
- ▶ Objective: Strengthen the capacity of FMD Diagnosis and surveillance in Ethiopia
- ▶ Completed and we applied for WOAAH reference lab





Rabies WOAHA Twinning Project



- ▶ Rabies twinning program was signed between ARC, South Africa (Parent) and AHI, Ethiopia (Candidate lab) on 17 December 2020
- ▶ Objective: Capacity development towards standard rabies diagnosis in Ethiopia
- ▶ On-going project





CBPP WOAAH Twinning Project



- ▶ CBPP twinning project is between IZS, Teramo (Parent) and AHI, Ethiopia (Candidate lab) started on December, 2019
- ▶ **Objectives** : Increasing capacity for CBPP outbreak investigation and laboratory diagnosis
- ▶ On-going project



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Specific Objectives

- **Improve the diagnostic capability of** AHI for CBPP to meet WOAHA standards on bacteriological, serological and molecular test methods and serve also in the region
- Improve the capability to **produce reagents** for serological tests
- Prepare standardized **test methods and working documents** (SOPs) to comply with methods outlined in the WOAHA manual
- Provide sample panels for participation in the international **CBPP proficiency** test scheme (PTS) run by IZSAM for CBPP diagnosis
- Upgrade **CBPP surveillance capacities** through provision of epidemiological training

Main activities of the project

- ▶ Provide training **in laboratory diagnostic** protocols for CBPP by IZSAM Staff.
 1. Isolation and identification by culture and biochemical tests;
 2. Serological tests like CFT, c-ELISA and immunoblotting;
 3. Organization of serological proficiency testing;
 4. Molecular detection of antigen (by PCR, Real time PCR)
 5. Sequencing and phylogenetic analysis
 6. Reagent production for serological tests like CFT and immunoblotting.



Main activities of the project

- ▶ Additional topics covered by the training include:
 1. Overview of good laboratory practices;
 2. Principles of laboratory Bio-risk management system;
 3. Handling and shipment of CBPP suspected biological material to WOAHA Reference Centres;
 4. Review and strengthen epidemiological surveillance on CBPP in Ethiopia
 5. Development and maintenance of a quality management system.



SGE1 Expected outcome of the CBPP

CBPP Twinning project

- Improved technical knowledge and skill of AHI staff on CBPP diagnosis
- Improved capacity on Production of reagents
- Handling and shipping of suspected biological materials
- Strengthened epidemiological surveillance on CBPP
- Enhanced network between AHI and East African countries on CBPP diagnosis and surveillance.



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The goal of the CBPP project

- ▶ Candidate Institute to be in a position to be accredited ISO 17025:2017 for CBPP diagnosis
- ▶ Recognition as an WOAHA Reference Laboratory for CBPP diagnosis for East African countries.



Achievements of the project

1. **Training on CBPP Serological diagnostic Techniques at *Teramo WOAH Laboratory* (February 3-21, 2020) (Teferi Benti Moti)**
 - ▶ Diagnostic method for **CBPP-CFT** test
 - ▶ Serum Banking
 - ▶ How to identify Biological Reagents
 - ▶ Proficiency testing **CFT- CBPP**



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Achievements of the project

2. Training on CBPP CFT and RBPT Antigen production at IZS, Teramo (June 06-24/2022) (*Abdela Bulbula Ogeto*)
 - ▶ CBPP CFT Antigen production
 - ▶ RBPT Antigen production
 - ▶ Serum lyophilisation



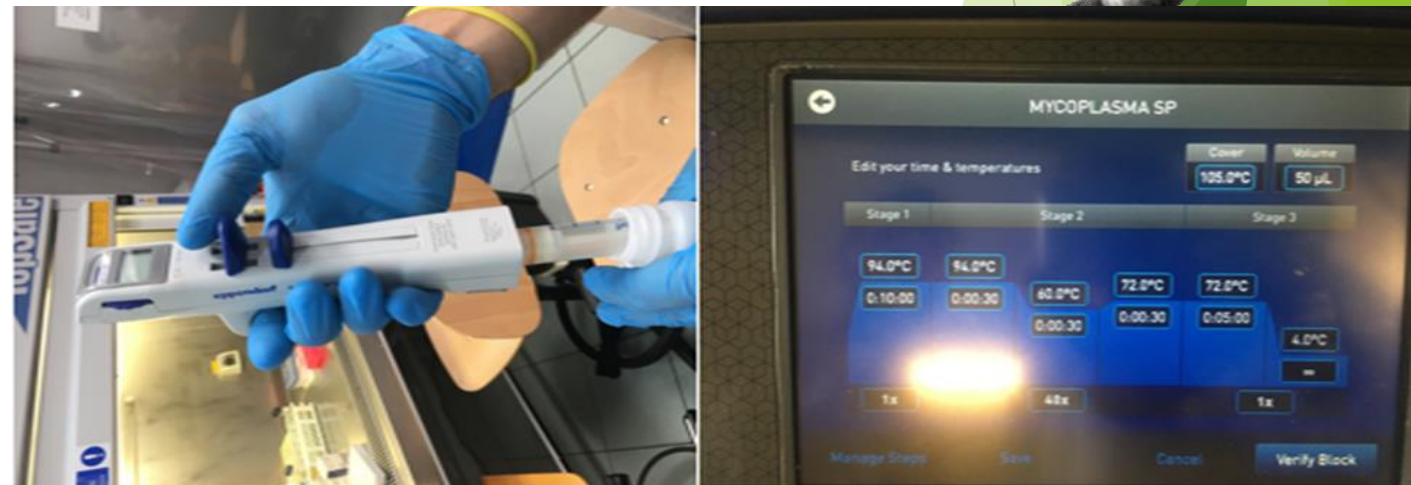
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CBPP

Achievements of the project

3. Training on Molecular diagnosis of CBPP at IZS, Teramo (June 06-24/2022) (Abde Aliy)

- ✓ DNA detection and typing of Mycoplasma by biomolecular methods.
- ✓ Biosafety procedures and laboratory waste management.
- ✓ DNA bank organization,
- ✓ Ring trial organization and management.



4. Training on CBPP outbreak investigation and laboratory diagnosis at IZS, Teramo (June 06-24/2022)

Mekdes Tamiru

- ✓ **Sample collection** at the abattoir and necropsy room for mycoplasma spp. Isolation.
- ✓ **Isolating Mmmsc** and other mycoplasma spp.
- ✓ Biosafety producer for necropsy room and Bio-bubble area.
- ✓ Laboratory **waste management**.



5. Training on Next generation sequencing and Bioinformatics of CBPP at IZS, Teramo (June 06-24/2022)

- ▶ DNA quality check
- ▶ DNA Library preparation for the sequencing and run sequencing.
- ▶ Introduction on Genpat platform for the bioinformatics



6. Preparation of SOP

- ▶ Standard Operating Procedure (SOP) for **Isolation and Identification** of Mycoplasma from animal tissue samples.
- ▶ Standard Operating Procedure (SOP) **Complement Fixation Test** (CFT) for CBPP.
- ▶ Standard Operating Procedure (SOP) for Competitive Enzyme Linked Immuno - Sorbent Assay (**c- ELISA**) test
- ▶ Standard Operating Procedure (SOP) for CBPP Complement Fixation Test (**CFT**) **Antigen production**.
- ▶ Standard Operating Procedure (SOP) for in-house method **of Rose Bengal antigen production**.
- ▶ Preparation of documents (SOP, Test method) for CBPP diagnosis using **Molecular methods**



Interim Audit Comments

BACTERIOLOGY lab

- The Department has a very good organisation and it is very well equipped.
- Quality System and Biosafety procedures are in place.
- It is necessary to increase the number of samples tested for CBPP and *Mmm* strains in the Bio-bank.
- In addition, it is necessary, if possible, to organise PT for *Mmm* isolation at Regional level.
- *Mmm* diagnostic tests must be accredited.



Interim Audit Comments

SEROLOGY lab

- The Area has a very good organisation and it is well equipped.
- Quality System and Biosafety procedures are in place.
- Sera bank is very well organised.
- The area tested a good number of samples.
- The area has good experience on PT organisation and management. The number of laboratories involved have to be increased(PT).
- *Mmm* serological tests must be accredited.



Interim Audit Comments

Molecular Biology lab

- The Department has a very good organisation and it is very well equipped.
- Quality System and Biosafety procedures are in place.
- Good biological bank.
- It is necessary increase the number of samples for CBPP test in the Department.
- In addition, it is necessary organise PT for *Mmm* Traditional or RT PCR at Regional level.
- *Mmm* RT PCR must be accredited.



Interim Audit Comments

Sequencing lab

- The Area has a very good organisation and it is very well equipped.
- Quality System and Biosafety procedures are in place.
- It is necessary increase the number of samples for CBPP test in the Department



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CBPP Bilateral opportunity



- ▶ Supporting technically ERFAN partner at Regional through networking activities
- ▶ Capacity building through training and technology transfer
- ▶ Capacity building through support of collaborative quality research programs



SGE1 Strengthening of the collaboration CBPP with the Italian Institutes.

- ▶ Visit of the Italian Ambassador to AHI
- ▶ the collaboration RESEARCH ACTIVITIES with the Italian Institutes.



SGE1 Collaboration with IZS on International CBPP conferences

- ▶ Training on isolation and detection of *Bacillus anthracis* included spores from soil will take place in Ethiopia, June 2023



SGE1 Major Challenges at AHI and solved CBPP by WOAH Twinning projects

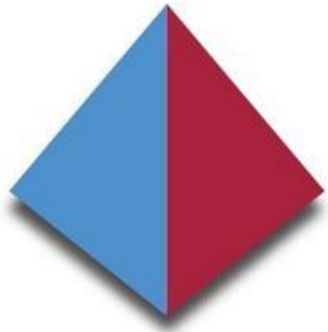
- ▶ **knowledge** and **skill gap** on animal health diagnostic and research
 - ▶ Provision of Continuous up-to-date training to the staff
- ▶ **High cost** and **shortage** in availability of diagnostic kit and reagents
 - ▶ Increase capacity of Production of **reagents** and supply for diagnostic kits and reagents
- ▶ **Insufficient support** for problem solving researches from the government
 - ▶ Strengthening the collaboration with national and international donors



SGE1 CBPP Acknowledgements



Thank you



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