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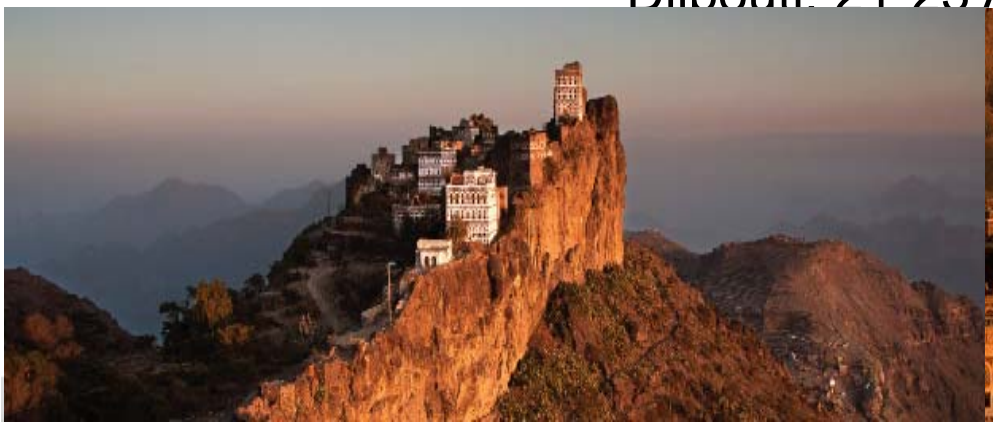
OIE Twinning

RIFT VALLEY FEVER: South Africa & Yemen

Dr. B.A Lubisi
ARC-Onderstepoort Veterinary Institute
Djibouti, 21-23 April 2015



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INTRODUCTION

According to the OIE:

1. Detection, diagnosis and control of animal and zoonotic diseases is to ensure good veterinary governance in Member Countries.
2. Good governance is the ability and capacity of all Member Countries to comply with the guidelines, recommendations and international standards of the OIE that are mandated by the World Trade Organisation (WTO).
3. A system was developed (PVS) to assess and evaluate countries to assist them to identify weaknesses in their systems, based on their performance and vision
4. Integral to the assessment process is the identification of the need to establish scientific and technological expertise within countries for self sufficiency in the early detection and diagnosis of diseases
5. To realise this goal, the concept of twinning between Reference Laboratories or Collaborating Centres and laboratories in developing/in-transit countries was born (2002)

Aim

“The main objective of twinning is to assist laboratories in developing or in-transition countries to build their capacity and scientific expertise with the eventual aim that some of them could become OIE Reference Laboratories in their own right” - OIE.

ROLE OF AN OIE REFERENCE LABORATORY

Terms of Reference
(OIE Reference Laboratories)

1. Use, promote and disseminate diagnostic methods validated according to OIE Standards

2. Recommend the prescribed and alternative tests or vaccines as OIE Standards

3. Develop reference material in accordance with OIE requirements, and implement and promote the application of OIE Standards

4. 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;

5. Develop, standardise and validate according to OIE Standards new procedures for diagnosis and control of the designated pathogens or diseases;

6. Provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on disease control measures to OIE Member Countries;

7. Carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations

Terms of Reference
(OIE Reference Laboratories)

8. Collect, process, analyse, publish and disseminate epizootiological data relevant to the designated pathogens or diseases

9. Provide scientific and technical training for personnel from OIE Member Countries

10. Maintain a system of quality assurance, biosafety and biosecurity relevant for the pathogen and the disease concerned

11. Organise and participate in scientific meetings on behalf of the OIE

12. Establish and maintain a network with other OIE Reference Laboratories designated for the same pathogen or disease and organise regular inter-laboratory proficiency testing to ensure comparability of results

13. Organise inter-laboratory proficiency testing with laboratories other than OIE Reference Laboratories for the same pathogens and diseases to ensure equivalence of results;

14. Place expert consultants at the disposal of the OIE.

MINIMUM REQUIREMENTS FOR AN OIE REFERENCE LABORATORY

1. The institution's ability, capacity and readiness to provide those services described under the Terms of Reference for OIE Reference (*e.g* **ability to receive biological samples from other OIE Member Countries**).

2. The **scientific and technical standing** of the institution concerned at the national and international levels; **presence of veterinary experts within scientific teams** and, for Reference Laboratories, **conformity** with OIE and other international standards for **laboratory quality assurance, biosafety and biosecurity measures.**

3. The **place the institution occupies in the Member's animal health**, scientific or educational structures.

4. The **quality of its scientific and technical leadership** including internationally recognised expertise in the field of its competence, and, for Collaborating Centres, the number and qualifications of its staff.

5. The institution's prospective **stability in terms of personnel, activity and funding**.

6. The **working relationship which the institution has developed with other institutions** in the territory of the Member, as well as at the regional and global levels;

7. The **technical and geographical relevance of the institution** and its activities to OIE's programme priorities.

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Facilities


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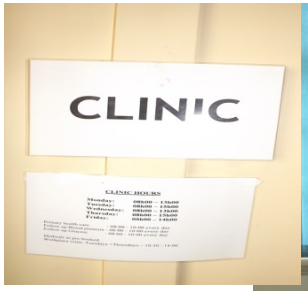
BIOHAZARD
WARNING!
NO UNAUTHORIZED ENTRY
Please keep the door closed
Please keep the door closed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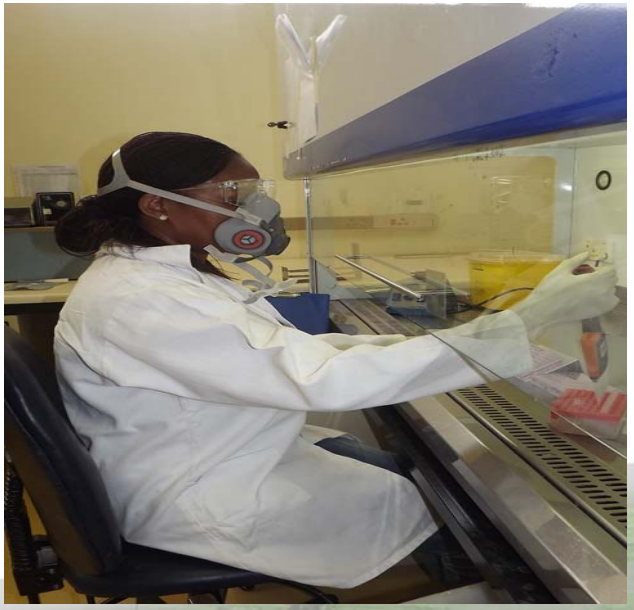


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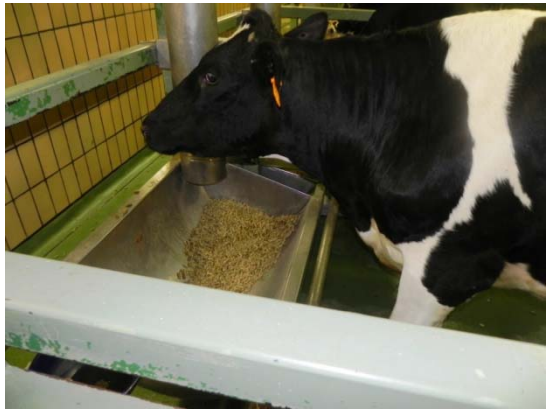
Facilities

Facilities



Facilities

Safety Training

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Diagnostic Methods

- Serology
  - ELISA- IgG
  - ELISA – IgM
  - ELISA – combined IgM and IgG
  - SNT
- Molecular Based

Real time RT-PCR

- Virus Isolation & Neutralisation

ToR:
1; 2; 6 & 8

Quality Assurance

Inter-laboratory test comparisons/proficiency tests

	Serology-ELISA	PCR	VNT/SNT
Frequency	1 X Annually	1 X Annually	Several times
Participants	3 X African Laboratories	2 X African Laboratories	2 X African Laboratories
Accreditation status	SANAS Accredited & DAFF Approved	DAFF Approved	In-progress
Inter-continental endeavours			
Participants	1 X African & 6 X European Laboratories (South Africa, France, UK, Netherlands, Germany and Spain)		
Purpose	ELISA comparison: BDSL-C; IDVET-C; OVI-IgG; BDSL-IgM & OVI IgM		
Participants	Various (Including South Africa and UK)		
Purpose	PCR comparison		

ToR: 10; 12; & 13

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Research

Title of Research	Aim/Purpose	Partners
1. Development of a LSD-RVF-PPR vaccine construct.	Development of a recombinant vaccine that will protect susceptible ruminants against LSD, Rift valley fever and peste des petits ruminant. The vaccine will also protect against sheeppox and goatpox	Canada
2. Socio-economic impact of Lumpy skin disease and Rift valley fever on South African livestock economy.	Determination of the economic impact of LSD and RVF in South Africa	Canada
3. Diagnostic test development, evaluation and validation.	Development of a multiplex fluorescent microsphere immunoassay (FMIA), or Luminex assay, for the analysis of RVFV infection, vaccination, and immunological protection from disease.	United States of America (USA)
4. Diagnostic test development, evaluation and validation.	Validation of a new strip/rapid test for RVF using positive and negative polyclonal RVFV antibody sheep sera	United Kingdom (UK)
5. Evidence of RVF infection in epidemiologically atypical mammalian hosts	Investigating inter-epidemic mammalian hosts of RVFV	South Africa
6. Mammalian host receptors for RVFV	Determination of mammalian host receptors which enable successful infection by RVFV.	SA

ToR:
3; 5; 7;
& 8

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Training

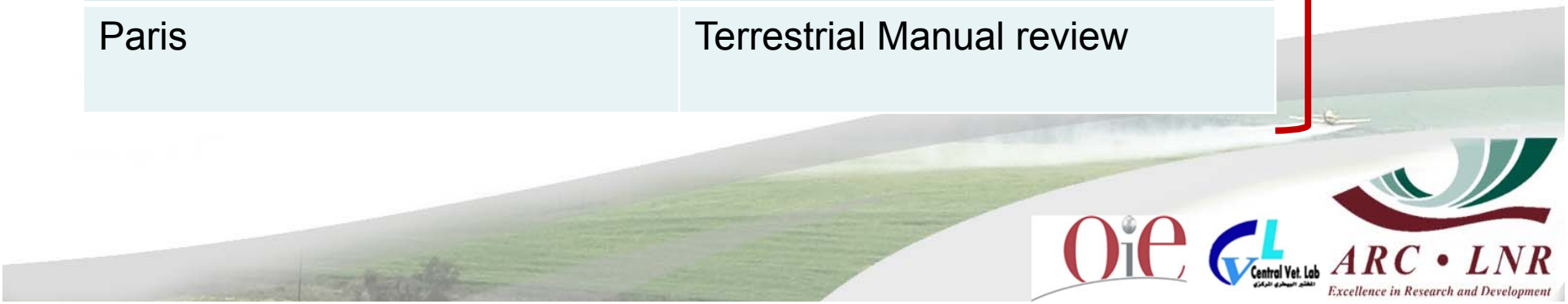
Course	Frequency	Funding
Infectious Diseases including RVF	2-3 X per year	ARC and external
RVF Diagnostic tests	1X (In Tanzania for SADC)	OIE
Twinning	3 year contract signed (commencement pending)	OIE

ToR: 9

Expert Consultations

Country	Purpose
Paris	Terrestrial Manual review

ToR: 14



Organisation of meetings

ToR: 9

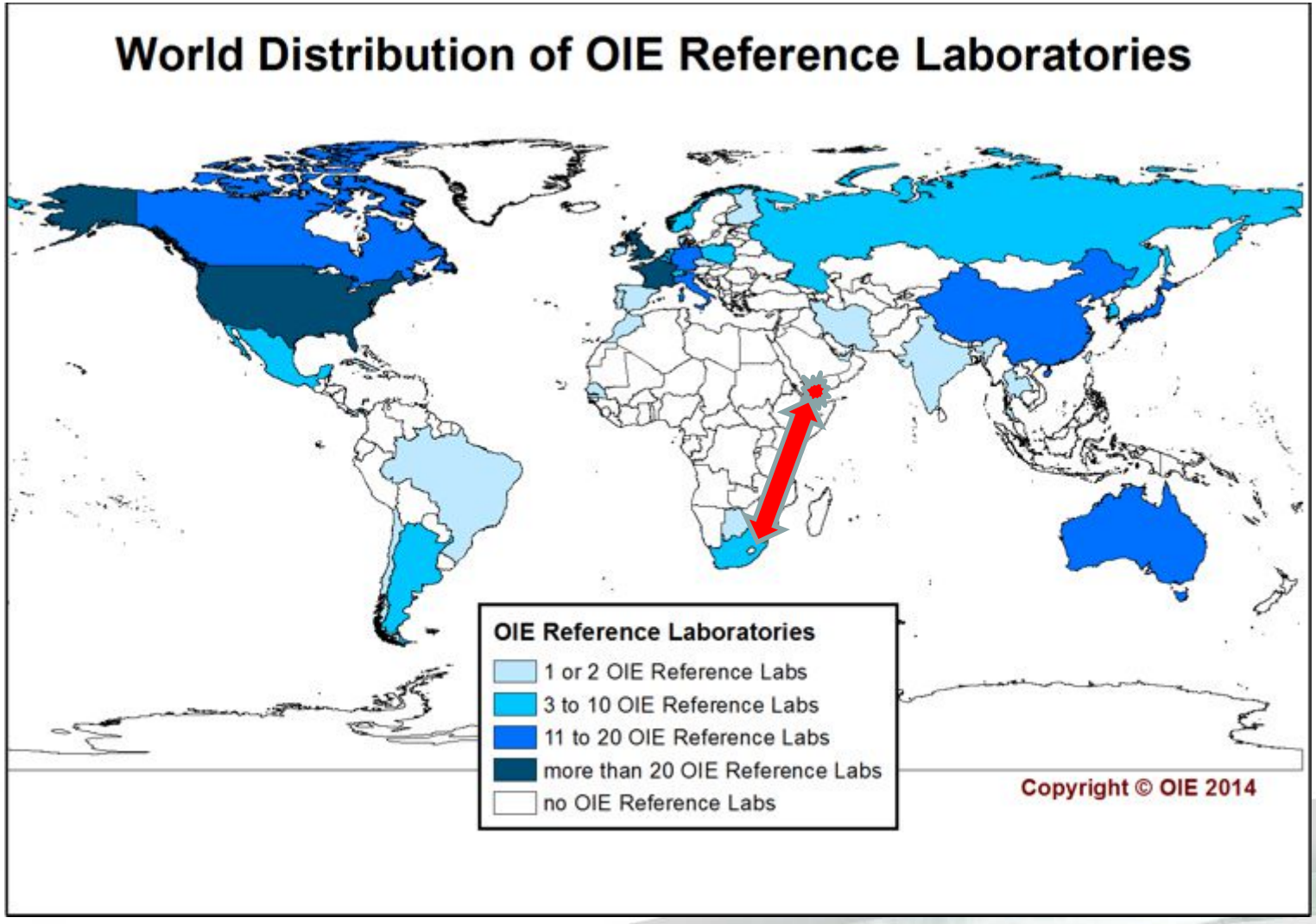
Meetings		
No requests		

Provision of Diagnostic reagents

ToR: 14

Country	Purpose
MTAs signed; shipment pending	Research

TWINNING ON RVF:
SA & YEMEN



OiE

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Aim

The project aims to:

1. Provide a platform for parent and candidate laboratories to exchange samples for interlaboratory testing necessary for maintaining or obtaining accreditation.
2. Provide a platform for the parent and candidate laboratories to continuously validate in-house and commercial kits using samples from different geographical regions.
3. Assist the parent laboratory to strengthen its quality system and increase its accreditation scope, and the candidate laboratory to establish such a system and obtain accreditation status.

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Aim (cont..)

The project aims to:

4. Provide training on laboratory diagnostic techniques to include at least 2 serological and 2 agent identification methods.
5. Harness a long term and mutually benefitting relationship that will include joint research projects in the future

WORK PLAN


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Phase I: 4 Months

Visit to Yemen

- Inspection and evaluation of the laboratories and equipment
- Work flow plan and MoU draft between ARC –OVI and CVL

Visit to SA

- Inspection and evaluation of the laboratories and equipment in the parent laboratory

Gap Analysis

- To procure all personnel, equipment, consumables and reagents needed for the project

Report 1 To OIE

- Write a progress report to the OIE at the end of the 4th month.

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Phase II: 10 Months

ELISA
- Training at ANSES
- Training at ARC-OVI

Testing
- Performance of RVF IgG and IgM ELISA tests at CVL

ILTC
- Inter-laboratory test comparison
- All three laboratories

Reporting
- 2nd OIE Report

RCA
- Root Cause Analysis if required

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Phase III: 1 Year 7 Months

TC	• Training on cell culturing
QA	• Training on quality assurance (ISO17025)
Establishment	• Establishment and maintenance of TC
Establishment	• Establishment and maintenance of ISO17025
Reporting	• 3rd Report to the OIE

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Phase IV: 1 Year 7 Months (cont..)

VI	• Training on virus isolation in tissue culture and mice
VNT	• Training on virus/serum neutralisation
Test	• Establishment of tests and testing at CVL
ILTC	• Inter-laboratory test comparison: VI & VNT
RCA	• Root Cause Analysis if required

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Phase V: 5 Months

PCR	• Training on RT-PCR
PCR	• Training on qRT-PCR
Test	• Establishment of tests and testing at CVL
ILTC	• Inter-laboratory test comparison: RT-PCR and qRT-PCR
Audit RCA	• Root Cause Analysis if required and CVL audit
Report	• 4th Report to the OIE • Project closure

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TRAINING METHODS
&
TOOLS

1. Communication by e-mail and telephone.

2. Formal and informal discussions prior to and during training sessions.

3. Use of standard operating procedures (SOPs) from the parent laboratory.

4. Live demonstrations.

5. Hands – on performance of the tests.

6. Handing out of relevant reading materials

7. Organisation of inter-laboratory test exercises

DISCUSSION


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1. The scope of the twinning includes at least one method in all RVF diagnostic categories. *i.e* Serology; Viral antigen detection; Virus isolation; and Viral genome fragment demonstration.

2. Quality assurance was included since it is integral to diagnostics

3. A third laboratory, ANSES in Lyon, France, was included as a partner for the serological part of the training.
This will give the trainees an experience of working in two RVF laboratories situated in different continents and countries.

4. The parent laboratory will increase the number of laboratories participating in its annual inter-laboratory test comparison.

5. Access to samples from different parts of the world can afford the parent laboratory an opportunity for further test validation.

6. Opportunities for joint research projects will be created by the twinning.

7. The Twinning project on RVF between South Africa and Yemen is viewed as an mutually benefitting journey for both the ARC-OVI and CVL.

Acknowledgements

1. Office International des Epizooties (OIE).

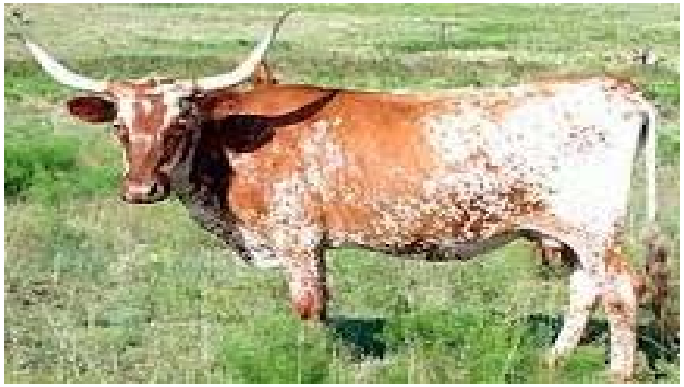
2. Agricultural Research Council (ARC).

3. ARC-Onderstepoort Veterinary Institute (OVI) personnel and programmes at which the RVF reference work is conducted:

i. MEDP
ii. PVVD
iii. TADP

4. ARC-OVI collaborators and RVF related project Funders.

5. Department of Agriculture Forestry and Fisheries (DAFF).



KEEP
CALM
AND
YES
WE CAN

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anses
alimentation, environnement, travail

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