

# OIE Reference Laboratory Reports Activities

## *Activities in 2021*

**This report has been submitted : 2022-01-17 18:34:11**

<b>Name of disease (or topic) for which you are a designated OIE Reference Laboratory:</b>	Foot and mouth disease
<b>Address of laboratory:</b>	Ash Road, Pirbright Woking, Surrey, GU24 0NF UNITED KINGDOM
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<b>E-mail address:</b>	donald.king@pirbright.ac.uk
<b>Website:</b>	www.wrlfmd.org and <a href="https://www.pirbright.ac.uk">https://www.pirbright.ac.uk</a>
<b>Name (including Title) of Head of Laboratory (Responsible Official):</b>	Dr Bryan Charleston
<b>Name (including Title and Position) of OIE Reference Expert:</b>	Dr Donald King, Head of Vesicular Disease Reference Laboratories
<b>Which of the following defines your laboratory? Check all that apply:</b>	Research Academic

**ToR 1: To use, promote and disseminate diagnostic methods validated according to OIE Standards**

1. Did your laboratory perform diagnostic tests for the specified disease/topic for purposes such as disease diagnosis, screening of animals for export, surveillance, etc.? (Not for quality control, proficiency testing or staff training)

Yes

Diagnostic Test	Indicated in OIE Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
Vaccine Matching	Yes	0	39
Virus Neutralisation Test	Yes	0	2459
ELISA - Structural protein Antibody	Yes	0	831
ELISA - Non-structural protein Antibody	Yes	0	258
Direct diagnostic tests			
Virus Isolation	Yes	11	589
Antigen ELISA	Yes	0	294
real time RT-PCR	Yes	22	1178
VP1 region sequencing	Yes	0	293
Phylogenetic Analyses (sequences recieved from other laboratories)	Yes	0	168

**ToR 2: To develop reference material in accordance with OIE requirements, and implement and promote the application of OIE 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 disease.**

2. Did your laboratory produce or supply imported standard reference reagents officially recognised by the OIE?

Yes

NOTE: Currently, there are 22 laboratories that produce Standard Reference Reagents officially recognised by the OIE for 19

diseases/pathogens. Please click the following link to the list of OIE-approved International Standard Sera: <http://www.oie.int/en/our-scientific-expertise/veterinary-products/reference-reagents/>. If the reagent is not listed on this page, it is NOT considered OIE-approved. The next two questions allow you to indicate non-OIE-approved diagnostic reagents.

OIE-approved SRR producing laboratory – Select your lab from list:

Disease	Test	Available from
Foot and mouth disease	Enzyme-linked immunosorbent assay (antigen and antibody detection); Virus neutralisation	Dr Donald King Institute for Animal Health, Pirbright Laboratory, Ash Road, Pirbright, Woking, Surrey GU24 0NF, United Kingdom Tel: (44-1483) 23.24.41 Fax: (44-1483) 23.24.48 donald.king@pirbright.ac.uk

Type of reagent available	Related diagnostic test	Produced/ Supply imported	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	Name of recipient OIE Member Countries
Reagents	ELISA serology tests	Produced	<input type="radio"/> <10mL <input checked="" type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	<input type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input checked="" type="radio"/> >500mL	BOTSWANA CHINESE TAIPEI FRANCE IRAQ ITALY KOREA (REP. OF) POLAND ROMANIA THE NETHERLANDS UNITED STATES OF AMERICA VIETNAM

3. Did your laboratory supply standard reference reagents (non OIE-approved) and/or other diagnostic reagents to OIE Member Countries?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient OIE Member Countries	Region of recipients
Virus Isolates	FMD virus detection tests	Produced	111.60 ml	174.6 ml	9	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to OIE Member Countries?

No

***ToR 3: To develop, standardise and validate, according to OIE Standards, new procedures for diagnosis and control of the designated pathogens or diseases***

6. Did your laboratory develop new diagnostic methods validated according to OIE Standards for the designated pathogen or disease?

No

7. Did your laboratory develop new vaccines according to OIE Standards for the designated pathogen or disease?

No

***ToR 4: To provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on disease control measures to OIE Member Countries***

8. Did your laboratory carry out diagnostic testing for other OIE Member Countries?

Yes

Name of OIE Member Country seeking assistance	Date (month)	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
BAHRAIN	March	0	40
CAMBODIA	January	0	9
CONGO (DEM. REP. OF THE)	September	0	95
IRAN	August	0	50
ISRAEL	March	0	6
KENYA	August	0	20
LAOS	January	0	5
MONGOLIA	September	0	16
NEPAL	November	0	70
NIGERIA	February, March, December	0	124
THAILAND	January	0	16
UGANDA	January, November	0	25
VIETNAM	June	0	16
ZAMBIA	July	0	97

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

Yes

Name of the OIE Member Country receiving a technical consultancy	Purpose	How the advice was provided
NEPAL	FMD vaccine selection advice	via email
IRAN	Diagnostic test advice	via email
JORDAN	Sequence analyses	via email
KOREA (REP. OF)	Molecular epidemiology	via email and Zoom calls
GEORGIA	FMD vaccine selection advice	via email

**ToR 5: To carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations**

10. Did your laboratory participate in international scientific studies in collaboration with OIE Member Countries other than the own?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	OIE Member Countries involved other than your country
OIE Twinning Project	3 years	Vaccine QA/QC for Africa	AU-PANVAC	ETHIOPIA
Calibration of VNT methods	1 year	To compare VNT methods used in different laboratories	Sciensano (Belgium), Lelystad (Netherlands), IZSLER (Italy)	BELGIUM ITALY THE NETHERLANDS
Development of FMD ELISA and LFD tests	on-going	On-going new ELISA tests for FMD diagnosis	IZSLER (Italy)	ITALY
Improved tools for the surveillance and diagnosis of FMD	5 years	Understanding the epidemiology of FMD in endemic settings	SUA (Tanzania) and TVLA (Tanzania)	TANZANIA
Serological assays for FMD	on-going	Post-vaccination testing and surveillance	KSRVI (Kazakhstan)	KAZAKHSTAN
-	-	-	-	AFGHANISTAN
-	-	-	-	AFGHANISTAN

**ToR 6: To collect, process, analyse, publish and disseminate epizootiological data relevant to the designated pathogens or diseases**

11. Did your Laboratory collect epizootiological data relevant to international disease control?

Yes

If the answer is yes, please provide details of the data collected:
Sampling dates, location and species

12. Did your laboratory disseminate epizootiological data that had been processed and analysed?

Yes

If the answer is yes, please provide details of the data collected:

Epidemiological data included in diagnostic report returned to sender and country's OIE representative.

**13. What method of dissemination of information is most often used by your laboratory?  
(Indicate in the appropriate box the number by category)**

a) Articles published in peer-reviewed journals: 20

1. Banda, F., Y. Sinkala, L. Mataa, P. Lebea, T. Sikombe, H.L. Kangwa, E.M. Fana, M. Mokopasetso, J. Wadsworth, N.J. Knowles, D.P. King, and M.L.Y. Quan (2021). Characterization of foot-and-mouth disease viruses in Zambia-implications for the epidemiology of the disease in southern Africa. *Viruses-Basel*, 13(11): 14. DOI: 10.3390/v13112195.
2. Biswal, J.K., A. Di Nardo, G. Taylor, D.J. Paton, and S. Parida (2021). Development and validation of a mucosal antibody (IgA) test to identify persistent infection with Foot-and-mouth disease virus. *Viruses-Basel*, 13(5): 17. DOI: 10.3390/v13050814.
3. Brown, E., G. Freimanis, A.E. Shaw, D.L. Horton, S. Gubbins, and D. King (2021). Characterising Foot-and-mouth disease virus in clinical samples using nanopore sequencing. *Frontiers in Veterinary Science*, 8: 10. DOI: 10.3389/fvets.2021.656256.
4. Brown, E., N. Nelson, S. Gubbins, and C. Colenutt (2021). Environmental and air sampling are efficient methods for the detection and quantification of Foot-and-Mouth Disease virus. *Journal of Virological Methods*, 287: 8. DOI: 10.1016/j.jviromet.2020.113988.
5. Buckle, K., R. Bueno, A. McFadden, M. van Andel, R. Spence, C. Hamill, W. Roe, E. Vallee, F. Castillo-Alcala, R. Abila, B. Verin, B. Purevsuren, A. Sutar, H.H. Win, M. Thiha, K.O. Lwin, S. Khounsy, S. Phonthasy, V. Souriya, C. Keokhamphet, J. Arzt, A. Ludi, and V. Mioulet (2021). Detection of Foot-and-mouth disease virus in the absence of clinical disease in cattle and buffalo in South East Asia. *Frontiers in Veterinary Science*, 8: 7. DOI: 10.3389/fvets.2021.691308.
6. Colenutt, C., E. Brown, D.J. Paton, M. Mahapatra, S. Parida, N. Nelson, J. Maud, P. Motta, K. Sumption, B. Adhikari, S.C. Kafle, M. Upadhyaya, S.K. Pandey, and S. Gubbins (2021). Environmental sampling for the detection of Foot-and-mouth disease virus and Peste des petits ruminants virus in a live goat market, Nepal. *Transboundary and Emerging Diseases*: 6. DOI: 10.1111/tbed.14257.
7. Compston, P., G. Limon, A. Sangula, J. Onono, D.P. King, and B. Hasler (2021). Understanding what shapes disease control: An historical analysis of foot-and-mouth disease in Kenya. *Preventive Veterinary Medicine*, 190: 14. DOI: 10.1016/j.prevetmed.2021.105315.
8. Di Nardo, A., L. Ferretti, J. Wadsworth, V. Mioulet, B. Gelman, S. Karniely, A. Scherbakov, G. Ziay, F. Ozyoruk, U. Parlak, P. Tuncer-Goktuna, R. Hassanzadeh, M. Khalaj, S.M. Dastoor, D. Abdollahi, E.U.H. Khan, M. Afzal, M. Hussain, N.J. Knowles, and D.P. King (2021). Evolutionary and ecological drivers shape the emergence and extinction of Foot-and-mouth disease virus lineages. *Molecular Biology and Evolution*, 38(10): 4346-4361. DOI: 10.1093/molbev/msab172.
9. Gray, A.R., B.A. Wood, E. Henry, D.P. King, and V. Mioulet (2021). Elimination of non-cytopathic Bovine viral diarrhoea virus from the LFBK- $\alpha$ V $\beta$ 6 cell line. *Frontiers in Veterinary Science*, 8: 5. DOI: 10.3389/fvets.2021.715120.
10. Jackson, B., Y. Harvey, E. Perez-Martin, G. Wilsden, N. Juleff, B. Charleston, and J. Seago (2021). The selection of naturally stable candidate Foot-and-mouth disease virus vaccine strains for East Africa. *Vaccine*, 39(35): 5015-5024. DOI: 10.1016/j.vaccine.2021.07.001.
11. Jamal, S.M., S. Khan, N.J. Knowles, J. Wadsworth, H.M. Hicks, V. Mioulet, A. Bin-Tarif, A.B. Ludi, S.A.A. Shah, M. Abubakar, S. Manzoor, M. Afzal, M. Eschbaumer, D.P. King, and G.J. Belsham (2021). Foot-and-mouth disease viruses of the O/ME-SA/Ind-2001e sublineage in Pakistan. *Transboundary and Emerging Diseases*: 10. DOI: 10.1111/tbed.14134.
12. Ludi, A.B., V. Mioulet, L.B. Kassimi, D.J. Lefebvre, K. De Clercq, E. Chitsungo, N. Nwankpa, W. Vosloo, D.J. Paton, and D.P. King (2021). Selection and use of reference panels: a case study highlighting current gaps in the materials available for foot-and-mouth disease. *Revue Scientifique Et Technique-Office International Des Epizooties*, 40(1): 239-251. DOI: 10.20506/rst.40.1.3221.
13. Mitoma, S., B.V. Carr, Y. Harvey, K. Moffat, S. Sekiguchi, B. Charleston, J. Norimine, and J. Seago (2021). The detection of long-lasting memory foot-and-mouth disease (FMD) virus serotype O-specific CD4(+) T cells from FMD-vaccinated cattle by bovine major histocompatibility complex class II tetramer. *Immunology*, 164(2): 13. DOI: 10.1111/imm.13367.
14. Nielsen, S.S., J. Alvarez, D.J. Bicout, P. Calistri, E. Canali, J.A. Drewe, B. Garin-Bastuji, J.L.G. Rojas, C.G. Schmidt, M. Herskin, V. Michel, M.A.M. Chueca, B. Padalino, P. Pasquali, L.H. Sihvonen, H. Spooler, K. Stahl, A. Velarde, A. Viltrop, C. Winckler, K. De Clercq, S. Gubbins, E. Klement, J.A. Stegeman, S.E. Antoniou, I. Aznar, A.

- Broglia, A. Papanikolaou, Y. Van der Stede, G. Zancanaro, H.C. Roberts, and E.P.A.H.W. AH (2021). Scientific Opinion on the assessment of the control measures for category A diseases of Animal Health Law: Foot-and-Mouth Disease. *EFSA Journal*, 19(6): 85. DOI: 10.2903/j.efsa.2021.6632.
15. Paton, D.J., A. Di Nardo, N.J. Knowles, J. Wadsworth, E.M. Pituco, O. Cosivi, A.M. Rivera, L.B. Kassimi, E. Brocchi, K. de Clercq, C. Carrillo, F.F. Maree, R.K. Singh, W. Vosloo, M.K. Park, K.J. Sumption, A.B. Ludi, and D.P. King (2021). The history of Foot-and-mouth disease virus serotype C: the first known extinct serotype? *Virus Evolution*, 7(1): 12. DOI: 10.1093/ve/veab009.
16. Swanson, J., R. Fragkoudis, P.C. Hawes, J. Newman, A. Burman, A. Panjwani, N.J. Stonehouse, and T.J. Tuthill (2021). Generation of antibodies against Foot-and-mouth-disease virus capsid protein VP4 using hepatitis B core VLPs as a scaffold. *Life-Basel*, 11(4): 11. DOI: 10.3390/life11040338.
17. Tewari, A., H. Ambrose, K. Parekh, T. Inoue, J. Guitian, A. Di Nardo, D.J. Paton, and S. Parida (2021). Development and validation of confirmatory Foot-and-mouth disease virus antibody ELISAs to identify infected animals in vaccinated populations. *Viruses-Basel*, 13(5): 19. DOI: 10.3390/v13050914.
18. Upadhyaya, S., M. Mahapatra, V. Mioulet, and S. Parida (2021). Molecular basis of antigenic drift in serotype O foot-and-mouth disease viruses (2013-2018) from Southeast Asia. *Viruses-Basel*, 13(9): 13. DOI: 10.3390/v13091886.
19. Waters, R.A., J. Wadsworth, V. Mioulet, A.E. Shaw, N.J. Knowles, D. Abdollahi, R. Hassanzadeh, K. Sumption, and D.P. King (2021). Foot-and-mouth disease virus infection in the domestic dog (*Canis lupus familiaris*), Iran. *BMC Veterinary Research*, 17(1): 5. DOI: 10.1186/s12917-021-02769-1.
20. Zhang, Z.D., R. Waters, and Y.M. Li (2021). Pathogenesis of non-epithelial foot-and-mouth disease in neonatal animals. *Veterinary Microbiology*, 254: 6. DOI: 10.1016/j.vetmic.2020.108961.

b) International conferences: 9

1. Invited speaker: Regional FMD risks for Southeast Asia. 6th Boehringer Ingelheim Scientific Symposium on FMD: Focus on Thailand, October 2021.
2. Invited speaker: Foot-and-mouth disease. Emerging Animal Infectious Disease Conference, Co-hosted by Penn State's College of Agricultural Sciences, the Pennsylvania Department of Agriculture and Penn State's Center for Security Research and Education, Boalsburg, PA, USA, November 2021.
3. Invited speaker: Global and regional risks of foot-and-mouth disease. One Health Global Experts Symposium, FAO and Nanjing Agricultural University, China, December 2021.

Meeting abstracts:

4. Shaw A., Burman A., Asfor A., Ludi A., Brocchi E., Grazioli S. and King D. P. Exploring foot-and-mouth disease virus antibody interactions using biolayer interferometry. Microbiology Society Annual Conference, April 2021.
5. Edwards N., Mioulet V., Reboud J., Waters R., Seago J., King D. P. and Shaw A. E. Towards the development of a hand-held RT-LAMP point-of-need assay for the detection of foot-and-mouth disease virus. Scientific meeting of the Global Foot-and-mouth Disease Research Alliance, November 2021.
6. Dykes L., Tulloch F., Simmonds P., Luke G., Ribeca P., Knowles N. J., King D. P., Tuthill T., Jackson T. and Ryan M. Mutagenesis mapping of RNA structures within the FMDV genome reveals functional elements localized in the polymerase (3Dpol)-encoding region. Scientific meeting of the Global Foot-and-mouth Disease Research Alliance, November 2021.
7. Metwally S., Weber-Vintzel L., King D. P., McLaws M., Arshed M. and Sumption K. Towards the secured elimination of foot-and-mouth disease serotype C. Scientific meeting of the Global Foot-and-mouth Disease Research Alliance, November 2021.
8. Knowles N. J., Di Nardi A., Kerley H., Hicks M. and King D. P. A new expert-curated foot-and-mouth disease virus nucleotide sequence database. Scientific meeting of the Global Foot-and-mouth Disease Research Alliance, November 2021.
9. Shaw A. E., Burman A., Asfor A., Ludi A., Brocchi E., Grazioli S. and King D. P. Exploring foot-and-mouth disease virus antibody interactions using bio-layer interferometry. Scientific meeting of the Global Foot-and-mouth Disease Research Alliance, November 2021.

c) National conferences: 0

None

d) Other:

(Provide website address or link to appropriate information) 3

Website: [www.wrlfmd.org](http://www.wrlfmd.org)

Website: [www.foot-and-mouth.org/](http://www.foot-and-mouth.org/)

twitter account: <https://twitter.com/WRLFMD>



**ToR 7: To provide scientific and technical training for personnel from OIE Member Countries****To recommend the prescribed and alternative tests or vaccines as OIE Standards**

14. Did your laboratory provide scientific and technical training to laboratory personnel from other OIE Member Countries?

Yes

- a) Technical visits: 0
- b) Seminars: 0
- c) Hands-on training courses: 0
- d) Internships (>1 month): 1

Type of technical training provided (a, b, c or d)	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
d	Egypt	1

**ToR 8: To maintain a system of quality assurance, biosafety and biosecurity relevant for the pathogen and the disease concerned**

15. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO/IEC 17025:2017	Pirbright UKAS testing Schedule 2021.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Identification of Foot-and-Mouth Disease Virus (FMDV) and related vesicular viruses	United Kingdom Accreditation Service
Detection of Antibodies to structural and non-structural proteins of Foot-and- Mouth Disease (FMDV)	United Kingdom Accreditation Service
Detection of antibodies to Vesicular and related viruses	United Kingdom Accreditation Service
Detection of antibodies to Structural proteins of Foot-and- Mouth Disease (FMDV)	United Kingdom Accreditation Service
Detection of antibodies to Non-structural protein of Foot and Mouth Disease Virus (FMDV)	United Kingdom Accreditation Service
Detection and identification of Foot-and-Mouth Disease Virus (FMDV) & Swine Vesicular Disease Virus (SVDV)	United Kingdom Accreditation Service
Efficacy Testing against Swine Vesicular Disease Virus, Foot-and-Mouth Disease Virus	United Kingdom Accreditation Service

17. Does your laboratory maintain a “biorisk management system” for the pathogen and the disease concerned?

Yes

(See *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, Chapter 1.1.4*)

### **ToR 9: To organise and participate in scientific meetings on behalf of the OIE**

18. Did your laboratory organise scientific meetings on behalf of the OIE?

Yes

National/ International	Title of event	Co-organiser	Date (mm/yy)	Location	No. Participants
International	16th Annual Meeting of the OIE/FAO FMD Reference Laboratory Network	-	11/2021	Online	74

19. Did your laboratory participate in scientific meetings on behalf of the OIE?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
OIE Scientific Committee for Animal Diseases (SCAD)	02/21	virtual	speaker	Review of FMD Global situation and OIE/FAO FMD Reference Laboratory Network
SEACFMD (Joint LabNet and EpiNet meeting)	02/21	virtual	speaker	
SEACFMD (National Coordinators meeting)	07/21	virtual	speaker	Regional FMD risks
West EurAsia FMD Roadmap meeting	08/21	virtual	speaker	Regional FMD risks and FMD vaccines
West Africa FMD Roadmap meeting	11/21	virtual	speaker	Regional FMD risks and FMD vaccines
Middle east FMD Roadmap meeting	12/21	virtual	speaker	Regional FMD risks and FMD vaccines

***ToR 10: To 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***

20. Did your laboratory exchange information with other OIE Reference Laboratories designated for the same pathogen or disease?

Yes

21. Was your laboratory involved in maintaining a network with OIE Reference Laboratories designated for the same pathogen or disease by organising or participating in proficiency tests?

Yes

Purpose of the proficiency tests: <sup>1</sup>	Role of your Reference Laboratory (organiser/participant)	No. participants	Participating OIE Ref. Labs/ organising OIE Ref. Lab.
Panel 1 - Virology (Outbreak scenarios)	Organiser	12	Argentina, Belgium, Botswana, Brazil, China, France, Italy, Russia, South Africa, South Korea, Thailand, UK
Panel 2 - Serology	Organiser	12	Argentina, Belgium, Botswana, Brazil, China, France, Italy, Russia, South Africa, South Korea, Thailand, UK
Virology Panel	Participant	EU and other states	ANSES (France)
Serology Panel	Participant	EU and other states	ANSES (France)
One-step real-time RT-PCR (pan-serotype)	Participant	EU and other states	ANSES (France)

<sup>1</sup> validation of a diagnostic protocol: specify the test; quality control of vaccines: specify the vaccine type, etc.

22. Did your laboratory collaborate with other OIE Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

Yes

Title of the project or contract	Scope	Name(s) of relevant OIE Reference Laboratories
Development of FMD ELISA tests	Apply new technologies for FMD serology and antigen detection	IZSLER (Italy)
Post-vaccination serology	Harmonization and calibration of VNT methods	ANSES (France), Sciensano (Belgium) and IZSLER(Italy)

***ToR 11: To organise inter-laboratory proficiency testing with laboratories other than OIE Reference Laboratories for the same pathogens and diseases to ensure equivalence of results***

23. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than OIE Reference Laboratories for the same disease?

Yes

Note: See Interlaboratory test comparisons in: Laboratory Proficiency Testing at:

<http://www.oie.int/en/our-scientific-expertise/reference-laboratories/proficiency-testing> see point 1.3

Purpose for inter-laboratory test comparisons <sup>1</sup>	No. participating laboratories	Region(s) of participating OIE Member Countries
Panel 1 - Virology (Outbreak scenarios)	32	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East
Panel 2 - Serology	38	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" type="checkbox"/> Middle East

### **ToR 12: To place expert consultants at the disposal of the OIE**

24. Did your laboratory place expert consultants at the disposal of the OIE?

Yes

Kind of consultancy	Location	Subject (facultative)
Technical review	via email	Review of OIE Technical Disease card on FMD
Technical review	via email	Review of OIE Manual (FMD Chapter)
Technical review	via email	Advice regarding text harmonization to OIE Manual and OIE Code (FMD Chapters)
Committee	via Zoom	Contribution to OIE/FAO committee/taskforce on serotype C
Chair of OIE Ad-Hoc Group on FMD	various meetings	[1] virtual meeting with an OIE Member country to provide feedback on their application for an OIE endorsed FMD control programme [2] Participated in a series of online meetings and discussions to review a potential lack of compliance by an OIE Member Country with the FMD Code [3] Virtual meeting of the FMD Ad Hoc Group over six days to review applications to OIE by countries seeking OIE endorsement of their control programmes and OIE recognition of their FMD-free status

25. Additional comments regarding your report: