World Organisation for Animal Health

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WOAH Collaborative Centre Reports Activities 2024

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CENTRE INFORMATION

***Title of WOAH Collaborating Centre**	Zoonoses in Europe
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***Name of the writer:**	Dr. Jens Schell

TOR 1 AND 2: SERVICES PROVIDED

1. Activities as a centre of research, expertise, standardisation and dissemination of techniques within the remit of the mandate given by WOAH

Category	Title of activity	Scope
		- High pathogenic avian influenza in

Disease control (true)	Scientific support of national and international veterinary services in developing and implementing control measures	Germany and Europe - Technical Support in Eliminating Rabies in Dogs by oral vaccination in Namibia and Turkey (conduction of a large-scale field trial in the Zambesi region; technical assistance with a comparative bait acceptance study in dogs) - Supporting CCHF outbreak response in Namibia - Transmissible spongiforme encephalopathies: Surveillance, Diagnosis and Control
Epidemiology, surveillance, risk assessment, (true)	Serological studies on notifiable zoonotic diseases (viral, bacterial, parasitic)	- West Nile virus: occurrence, distribution, monitoring, and characterization (Early detection and tracking of West Nile virus in Germany by using a functional nationwide wild bird network) - Mycobacterium tuberculosis complex (MTBC): Diagnostic and Surveillance in livestock (ruminants/camelids) and wildlife
Training, capacity building (true)	German Epidemic Preparedness Team (SEEG): working against epidemics-	FLI is together with Charite, BNITM, RKI and GIZ a SEEG member. SEEG supports partner countries to prepare for and respond to disease outbreaks that otherwise may develop into epidemics or even pandemics. In 2024 FLI was involved in several missions in Africa.
		1.) Studies on viral Zoonoses (excerpt) FLI activities covered studies on zoonotic influenza infections in birds and mammals and participated in the search for HPAI in Antarctica (DOI: 10.1038/s41564-024-01868-7). In response to the outbreak of HPAIV H5N1 in diary cows in the US an infection study revealed the H5N1 clade 2.3.4.4b dynamics in experimentally infected calves and cows (DOI: 10.1038/s41586-024-08063-y). Additional studies are ongoing. Highly pathogenic zoonotic viruses of risk group 4 (filoviruses, henipaviruses, arenaviruses and Crimean Congo Hemorrhagic Fever virus): Host-pathogen interactions were studied to develop/improve diagnostic tools, prevention strategies including vaccines/antivirals. A study in swine revealed the complexity of CCHFV-serology. Regarding other zoonotic viruses a study revealed the epidemiology and phylogeography of lethal borna disease virus

Zoonoses (true)	Scientific studies on the diagnosis, characterisation and pathogenesis of zoonotic pathogens (viral, bacterial, parasitic)	1 infections of humans and animals (DOI: 10.1038/s41467-024-52192-x). Studies on Coronaviruses (SARS-CoV-2) regarding the role of animals in SARS-CoV-2 infections and vaccine development are ongoing. In respect to MPox-infections animals models were established and monitoring of local rodents are ongoing. A Hantavirus Disease Cluster Caused by Seoul Virus, Germany was detected in a study suggesting that pet rats, in addition to wild and breeder or feeder rats, should be considered threats for Human Seoul Orthohantavirus infection. Contributing to the “Nigeria Engaging One Health (NEOH) project” including an interdisciplinary field studys on understanding the human-animal interface and spill-over events of zoonotic pathogens The Arthropod vector monitoring and studies of the vector-pathogen interactions were continued. 2.) Bacterial Zoonoses (excerpt) Notifiable bacterial zoonosis are in the focus of our work (e.g. Brucella, Burkholderia, Clostridia, Coxiella, Franciscella, Mycobacteria, etc.) . Genomic analysis of Brucella isolates from animals and humans were continued (DOI: 10.2807/1560-7917.ES.2024.29.38.2400105). A supra-regional laboratory network for highly pathogenic bacterial pathogens between countries in Central Asia is currently established in a multilateral cooperation (2024 - 2026). A Mycobacterium bovis Infection Model in Goats with dose-dependent differences in lesions were established, which may serve for testing vaccines for veterinary or medical use (DOI: 10.3390/ijms25189799). In regard to Q-fever a joint project for an improved molecular surveillance and assessment of host adaptation and virulence of Coxiella burnetii in Europe (Q-Net-Assess) is ongoing. Another study revealed reduced Coxiella burnetii shedding in a dairy goat herd by annual offspring vaccination (DOI: 10.1016/j.vaccine.2024.07.026) 3.) Parasites (excerpt) Studies on Echinococcosis and Toxoplasmosis are ongoing. Understanding the genetic diversity and sequences of E.

		multilocularis plays a crucial role in tracing back epidemiological investigations, enabling researchers to track the spatial and potentially temporal movements of the parasite
Diagnosis, biotechnology and laboratory (true)	Development and Validation of diagnostic test including proficiency testing	By national legislation (Animal Health Act) FLI is designated as national reference laboratory (NRL) for all notifiable animal infectious diseases (viruses, bacteria, parasites and TSEs) and this task is part of our duties. Examples for such activites are - European multi-centre study to establish MIC and zone diameter epidemiological cut-off values for Bacillus anthracis. (DOI: 10.1016/j.cmi.2024.05.019) - Comparison of different diagnostic protocols for the detection of Toxocara spp. in faecal samples of cats and dogs (DOI: 10.1186/s13071-024-06524-x)

TOR 3: HARMONISATION OF STANDARDS

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the main fucus area for which you were designated

Proposal title	Scope/Content	Applicable Area
ECOWAS Regional One Health Coordination Mechanism - Governance Manual	Drafting of a Governance Manual describing the Regional One Health Coordination Mechanism developed for the ECOWAS region. The Manual describes the Regional One Health Coordination Mechanism purpose, including its vision mission and operating principles, the governance model and working procedures.	Health Management
Evidence-informed policy approaches for One Health	Support to WHO in implementing the One Health approach at the global and country levels in several relevant thematic areas. WHO and partner organizations are currently facing the task of finalizing and implementing the global One Health Joint Plan of Action (2022-2026).	Training and Education Health Management
Establishement of a service-based NGS/WGS workflow for notifiable priority livestock pathogens	Harmonisation of in silico analysis of NGS/WGS data for tracing of bacterial strains within the frame of ZODIAC, IAEA	Laboratory Expertise Health Management Animal Production

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3. In exercising your activities, have you identified any regulatory research needs* relevant for WOAH?

No

4. Did your Collaborating Centre maintain a network with other WOAH Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated for the same specialty, to coordinate scientific and technical studies?

Yes

Name of WOAH CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
Multiple cooperations with other WOAH CCs and RLs as well as other organizations	worldwide	África América Asia y el Pacífico Europa Oriente Medio	FLI collaborates with multiple national and international partner within international research networks and research consortia to gain and share information on animal diseases and zoonoses especially in the One Health context. Active participation in worldwide (e.g. BSL4ZNet, International alliance against health risks in wildlife trade) or European (EVD- LabNet, Sharp consortium, VectorNet). FLI is also leading partner in several European research projects like the European Partnership for Animal Health and Welfare (EUP-AH&W) or coordinating Kappa-Flu etc.
ANSES French Agency for Food, Environmental and Occupational Health & Safety	France	Europa	Strategic cooperation on animal diseases and zoonoses in the context of the One Health approach. (MoU) Ongoing research projects on different topics: e.g. EUP-AH&W, SPIDVAC, WiLiMAN-ID, EVA Global; PREPMEDVET, BROILERNET, SPIDVAC, ICRAD-project: PIGIE, ASFVInt, FMDV_PersIstOmics, Q-Net-Assess, TCWDE
			Emerging Diseases:

Institute Pasteur and Institute Pasteur in Guinea	Conakry, Guinea and France	África Europa	Hemorrhagic Fevers (CCHFV, RVFV, Ebola virus, etc.), transboundary diseases. Ongoing research projects on different topics: e.g. EUP-AH&W, VEO; CCHVACIM; DURABLE, TRACE2022
Pirbright Institute	UK	Europa	Strategic cooperation (MoU) on topics of common interest: Transboundary diseases, (re-)emerging animal diseases, vector competence studies, poultry immunology ongoing research projects: e.g; DURABLE, REPRODIVAC, PrV-NiV-Vac, ICRAD-project: ASFVInt
APHA: Animal and Plant Health Agency	UK	Europa	One Health: Animal disease and zoonoses several ongoing research projects; Kappa-Flu;; ENETWILD2, VEO; SPIDVAC, ICRAD-project: PIGIE, FLUSwitch, SciIce
Canadian Food Inspection Agency (CFIA)	Canada	América	Emerging disease: High consequence viruses and TSEs Biosafety Level 4 Zoonotic Laboratory Network (BSL4ZNet) several ongoing research projects: e.g. Kappa-Flu; Delta- Flu; Defend
Centers for Disease Control and Prevention (CDC), Atlanta	USA	América	Emerging and transboundary diseases, WOAH-RABLAB (Joint coordination), Biosafety Level 4 Zoonotic Laboratory Network (BSL4ZNet),
Australian Animal Health Laboratory, CSIRO, Geelong, Australia	Australia	Asia y el Pacífico	Harmonization of diagnostic approaches for zoonotic diseases, participation in ring trials for the detection of henipavirus infections organized by AAHL, Biosafety Level 4 Zoonotic Laboratory

			Network (BSL4ZNet), Foot and Mouth Disease (FMD-Ready Project)
Zanzibar Livestock Research Institute ZALIRI in Unguja, Zanzibar	Zanzibar	África	New cooperation agreement (Long-term Partnership) : Establishment of a One Health-Field Presence for collaborative basic and applied research studies and capacity building

TOR 4 AND 5: NETWORKING AND COLLABORATION

5. Did your Collaborating Centre maintain a network with other WOAH Collaborating Centres, Reference laboratories, or organisations in other disciplines, to coordinate scientific and technical studies?

Yes

Name of WOAH CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
Multiple cooperations with other WOAH CCs and RLs as well as other organizations	worldwide	Africa Americas Asia and Pacific Europe Middle East	As Federal Research Institute for Animal Health in Germany the expertise of the FLI covers in addition to animal diseases and zoonoses the areas of animal welfare, animal nutrition and farm animal genetics. FLI contributes to the transition of animal production and collaborations with national and international partners to gain and share information are ongoing. The FLI together with Universities of Wageningen and Aarhus is appointed as European Reference Centre for Animal Welfare of Pigs

TOR 6: EXPERT CONSULTANTS

6. Did your Collaborating Centre place expert consultants at the disposal of WOAH?

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Yes

Name of expert	Kind of consultancy	Subject
All scientists of the Friedrich-Loeffler-Institut (FLI)	FLI experts are are available on request by the WOAH for consultation and comment regularly to draft chapters of the WOAH Terrestrial Manual and Terrestrial Code	Zoonoses and animal diseases, including aquatic diseases. Furthermore, FLI can provide consultancy in the areas of animal welfare, animal feeding and farm animal genetics.
Prof. T. Mettenleiter	One Health High Level Expert Panel (OHHLEP) - Chair 1st Term; Member 2nd Term	Four partite Initiative of FAO, WOAH, UNEP and WHO
Prof. S. Knauf	WOAH Collaborating Centre Network for Wildlife Health	Member of the Core Leadership Team
Prof. M. Beer	WHO Coronavirus Network (CoViNet) (FLI participates as 1 of 2 WOAH Collaborating Centres)	The WHO Coronavirus Network (CoViNet) aims to bring together surveillance programs and reference laboratories to support enhanced epidemiological monitoring and laboratory (phenotypic and genotypic) assessment of SARS-CoV-2, MERS-CoV and novel coronaviruses of public health importance.
Prof. S. Knauf	WHO Skin NTD Working Group "One Health"NETWORK ON ANIMAL INFLUENZA	Strengthening WHO's NTD control programmes through an integrated One Health approach
Prof. T. Harder	JOINT WOAH-FAO SCIENTIFIC NETWORK ON ANIMAL INFLUENZA	OFFLU Executive Committee OFFLU Technical Groups: - Wildlife Group - Applied Epidemiology Working Group
Dr. T. Müller	WOAH AD HOC GROUP on dog-mediated rabies	Assessment of country applications for endorsement of dog rabies control program
Dr. T. Müller; Dr. C. Freuling	RABLAB Scientific Opinion on request by WOAH	Rabies point-of-care tests (lateral flow devices)
Dr. T. Müller; Dr. C. Freuling; Dr. A. Fahrion; Dr. F. Busch	United Against Rabies Forum (UARF) - Contributions in defined working groups	Rabies control: Working together to end human deaths from dog-mediated rabies

TOR 7: SCIENTIFIC AND TECHNICAL TRAINING

7. Did your Collaborating Centre provide advice/services to requests from Members in your main focus area?

Yes

Requests from several European member states for advice on diagnositic protocols and reference materials. Currently FLI provides diagnostic services (molecular and sserological methods) for Rift Valley Fever and Henipavirus infections in animals (Denmark) and for histological BSE confirmation and for the proteinbiochemical discrimination of BSE forms (C, L, H type)

8. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by WOAH, to personnel from WOAH Members?

Yes

a) Technical visit : 64

b) Seminars : 93

c) Hands-on training courses: 23

d) Internships (>1 month) : 7

Type of technical training provided (a, b, c or d)	Content	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
A	German Epidemic Preparedness Team (SEEG) -Deployment on Rabies control (12.03-15.03.2024)	Uganda	15
A	Workshop to identify Mycobacterium tuberculosis complex on species level by PCR, Laboratório Nacional de Referência para Tuberculose, São Tomé (12.-19.03.2024)	São Tomé and Príncipe	11
A	Training workshop on MinION sequencing, Mauretania (13.-26.04.2024)	Mauritania	10
A	Mobile Laboratory Training in Cooperation with RKI (14.-24.04.2024)	Tunisia	12
A	Technical training for brucellosis detection (16.04.-18.04.2024)	Marocco, Algeria, Tunisia, Egypt	5
A	German Epidemic Preparedness Team (SEEG) -Deployment on HPAI control	Ghana	5

	and diagnostics (14.7.-20.7.2024)		
A	Technical visit for capacity building brucellosis (27.10.-1.11.2024)	Kyrgystan	6
B	Regional workshop to strengthen preparedness and response capacities to Highly Pathogenic Avian Influenza through the One Health approach in the ECOWAS region (8.7.-12.7.2024)	ECOWAS member states	56
B	Seminar for brucellosis diagnosis (29.07.-30.07.2024)	Turkey	20
B	Zanzibar Field School – "Healthy Livestock – Health People", Pemba, Zanzibar (27.11—01.12.2024)	Tanzania	24
B	Wildlife diseases seminar	Nigeria	3
C	Hands-on-training of using PPE / PAPR / biosecurity in the field (02.2024)	Nigeria	4
C	Surveillance and epidemiology of rabies studies (01.-31.05.2024)	Nigeria	1
C	Global Health Protection Programm: AMR and zoonoses, insights into FLI research (09.04.-20.04.2024)	Nigeria	1
C	Wildlife diseases and Project monitoring and evaluation (Aug/Sep 2024)	Nigeria	3
C	Training Course on Molecular Diagnostics o f Rabies(7.10.-13.10.2024)	Namibia	2

C	Hands-on training at FLI on brucellosis and glanders diagnosis (04.11-08.11.2024)	Ukraine	3
C	Serology of CCHFV and related orthonairoviruses; PCR-based detection of orthonairoviruses; introduction to different sequencing approaches (25.-29.11.2024)	Ukraine	3
C	Hands-on training at FLI on brucellosis diagnosis (02.12.-06.12.2024)	Kyrgystan	4
C	Hands-on training at FLI on glanders diagnosis (12.02.-23.02.2024)	Algeria	1
C	Hands-on training at FLI on Tularemia cultivation, serology and PCR assays (01.11. – 14.11.2024)	Algeria	1
D	Internships of Nigerian Scientist to increase their skills on animal disease diagnostics including AMR and Bioinformatics)	Nigeria	4
D	Internship of a Master student on AMR (July/Sep 2024)	Kenya	1
D	Internship of a Tunisian Scientist on diagnostic methods for viruses	Tunisia	1
D	Master thesis (IDOH Master) “Detection of orthonairovirus antibodies in ruminants using novel antigen candidates”	Ethiopia	1

TOR 8: SCIENTIFIC MEETINGS

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9. Did your Collaborating Centre organise or participate in the organisation of scientific meetings related to your main focus area on behalf of WOAH?

Yes

National/International	Title of event	Co-organiser	Date	Location	No. Participants
Internationally	Rabies Sub-Regional workshop: "Dog mediated rabies control and elimination, and improvement of dog population management"	WOAH / United against Rabies (UAR)	2024-04-22	Qatar	120
Internationally	European Wildlife Disease Surveillance Network Meeting "How do we translate wildlife health surveillance into conservation action?"	European Wildlife Disease Association (EWDA), Friedrich-Loeffler-Institut (FLI), Deutsches Meeresmuseum	2024-09-09	Stralsund, Germany	78
Internationally	15th European Wildlife Disease Conference: One Health – Challenges and Opportunities for the Surveillance and Management of Wildlife.	European Wildlife Disease Association (EWDA), Friedrich-Loeffler-Institut (FLI), Deutsches Meeresmuseum	2024-09-09	Stralsund, Germany	360
Internationally	IABS/WOAH HPAI Conference: Vaccination and Surveillance for High Pathogenicity Avian Influenza in poultry: Current Situation and Perspectives	IABS/WOAH (T. Harder, FLI; Scientific Committee)	2024-10-22	Paris, France	80
Internationally	WOAH in-country Foresight (Futures) section event, Wildlife Disease Association Meeting	Wildlife Disease Assoziation (WDA) /WOAH (S. Knauf, FLI faciliator)	2024-12-02	Canberra, ACT, Australia	50

TOR 9: DATA AND INFORMATION DISSEMINATION

10. Publication and dissemination of any information within the remit of the mandate given by WOAH that may be useful to Members of WOAH

a) Articles published in peer-reviewed journals:

300

As Germanys Federal Research Institute for Animal Health the work of the FLI focusses on farm animal health and welfare and on the protection of humans from zoonoses. The FLI has published about 309 peer-reviewed articles in 2024. Selected publications are listed here:

100 years - Scientific & Technical Review Special Edition (Editor: Prof. T. Mettenleiter, FLI)
S. D.T. Williams, T.C. Mettenleiter & S. Blome African swine fever: advances and challenges
R.M. Wallace & T. Müller Challenges and opportunities for the next miles in global rabies control
D.E. Swayne, L.D. Sims, I. Brown, T. Harder, A. Stegeman, C. Abolnik, M. Delgado, L. Awada, G. Pavade & G. Torres Strategic challenges in the global control of high pathogenicity avian influenza

Highly Pathogenic Avian Influenza A
N. J. Halwe et al., H5N1 clade 2.3.4.4b dynamics in experimentally infected calves and cows. Nature 637, 903-912 (2025).
L. Hohensee et al., The role of PB1-F2 in adaptation of high pathogenicity avian influenza virus H7N7 in chickens. Veterinary Research 55, 5 (2024).
A. Graaf-Rau et al., Reassortment incompetent live attenuated and replicon influenza vaccines provide improved protection against influenza in piglets. npj Vaccines 9, 127 (2024).
M. Kuryshko et al., In turkeys, unlike chickens, the non-structural NS1 protein does not play a significant role in the replication and tissue tropism of the H7N1 avian influenza virus. Virulence 15, 2379371 (2024).
N. J. Halwe et al., Bat-borne H9N2 influenza virus evades MxA restriction and exhibits efficient replication and transmission in ferrets. Nature Communications 15, 3450 (2024).
B. Aguado et al., Searching for high pathogenicity avian influenza virus in Antarctica. Nature Microbiology 9, 3081–3083 (2024).
ENTWILD consortium, F. Occhibove et al., The role of mammals in Avian Influenza: a review. EFSA Supporting Publications 21, 8692E (2024).

SARS-CoV2
J. Schön et al., A safe, effective and adaptable live-attenuated SARS-CoV-2 vaccine to reduce disease and transmission using one-to-stop genome modifications. Nature Microbiology 9, 2099-2112 (2024).
E. R. Agusi et al., SARS-CoV and SARS-CoV -2 cross-reactive antibodies in domestic animals and wildlife in Nigeria suggest circulation of sarbecoviruses. One Health 18, 100709 (2024).
C. Fricke et al., mRNA vaccine-induced IgG mediates nasal SARS-CoV-2 clearance in mice. Molecular Therapy - Nucleic Acids 35, 102360 (2024).
O. Bagato et al., Spatiotemporal analysis of SARS-CoV-2 infection reveals an expansive wave of monocyte-derived macrophages associated with vascular damage and virus clearance in hamster lungs. Microbiology Spectrum 12, e0246923 (2024).
B.-P. Mohl et al., Increased Susceptibility of Rousettus aegyptiacus Bats to Respiratory SARS-CoV-2 Challenge Despite Its Distinct Tropism for Gut Epithelia in Bats. Viruses 16, 1717 (2024).

Bacterial Zoonoses:
K. Akar et al., Genomic analysis of Brucella isolates from animals and humans, Türkiye, 2010 to 2020. EuroSurveillance 29, 2400105 (2024).
F. Dematheis et al., European multi-centre study to establish MIC and zone diameter epidemiological cut-off values for Bacillus anthracis. Clinical Microbiology and Infection 30, 1170-1175 (2024).
A. Felsl et al., Hierarchic regulation of a metabolic pathway: H-NS, CRP, and SsrB control myo-inositol utilization by Salmonella enterica. Microbiology Spectrum 12, e0272423 (2024).

E. Liebler-Tenorio et al., Challenge dose-titration in a Mycobacterium bovis infection model in goats. International Journal of Molecular Sciences 25, 9799 (2024).
K. Mertens-Scholz et al., Ultraviolet C inactivation of Coxiella burnetii for production of a structurally preserved whole cell vaccine antigen. BMC Microbiology 24, 118 (2024).
B. U. Bauer et al., Control of Coxiella burnetii shedding in a dairy goat herd by annual offspring vaccination. Vaccine 4, 126125 (2024).
S. Barth et al., In Vitro Antibacterial Activity of Microbial Natural Products against Bacterial Pathogens of Veterinary and Zoonotic Relevance. Antibiotics 13, 135 (2024).

Parasites:
M. Joeres et al., Genotyping of European Toxoplasma gondii strains by a new high-resolution next-generation sequencing-based method. European Journal of Clinical Microbiology & Infectious Diseases 43, 355-371 (2024).
D.T. Winterfeld et al., Comparison of different diagnostic protocols for the detection of Toxocara spp. in faecal samples of cats and dogs. Parasites & Vectors 17, 436 (2024).
S. R. Wijburg et al., Drivers of infection with Toxoplasma gondii genotype type II in Eurasian red squirrels (Sciurus vulgaris). Parasites & Vectors 17, 30 (2024).

Prions:
S. Ernst et al., Characterisation of European Field Goat Prion Isolates in Ovine PrP Overexpressing Transgenic Mice (Tgshp IX) Reveals Distinct Prion Strains. Pathogens 13, 629 (2024).

b) International conferences:
100
Each year, FLI researchers present at numerous (>100) international conferences.

c) National conferences:
100
Each year, FLI researchers present at numerous (>100) national conferences

d) Other (Provide website address or link to appropriate information):
4
Website of the Friedrich-Loeffler-Institut, including general information and actual information on animal diseases (https://www.fli.de/en/startpage/)

Radar Bulletin Germany – it compiles and evaluates information on the global situation and on the spread of the most important animal diseases which are relevant for Germany and Switzerland. (https://www.fli.de/en/publications/radar-bulletin-germany/)

Rabies - Bulletin – Europe: Rabies Information System of the WHO (https://www.who-rabies-bulletin.org/)

The German One Health Plattform (OHP) started in Dec. 2023 expanding the work of the The German Research Platform for Zoonoses. Both information and service network are mainly funded by the Federal Ministry of Education and Research (BMBF). https://onehealthplatform.net/ (https://zoonosen.net/en/node/600)

11. What have you done in the past year to advance your area of focus, e.g. updated technology?
In addition to the existing high containment research facility including (BSL2 to BSL4) including large animal BSL4 room at Greifswald – Insel Riems, FLI is currently expanding its research facilities at our locations in Jena and in Lower Saxony (Lifestock research – Animal

Welfare).
At FLI-Jena a new research complex (BSL-2/-3) dedicated to our bacteriological research is currently under construction.
At FLI-Mecklenhorst a new research complex dedicated to lifestock research is also currently under construction. It will focus on animal husbandry and welfare, animal nutrition and farm animal genetics.
Commissioning for both is foreseen in 2026.

12. Additional comments regarding your report: