

Research collaboration towards improved animal and human health

Report of a workshop between the International Livestock Research Institute
and partners from Germany

27 February–1 March 2018



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Cover photo: Officials from the Federal Research Institute for Animal Health, the Federal Institute for Risk Assessment and the Institute of Parasitology and Tropical Veterinary Medicine of Freie Universität Berlin visited the International Livestock Research Institute, Nairobi, 27 February–1 March 2018 (photo credit: ILRI/Wilson Maina).

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Abbreviations and acronyms

BecA	Biosciences eastern and Central Africa
BfR	Bundesinstitut für Risikobewertung (Federal Institute for Risk Assessment)
BMZ	German Federal Ministry for Economic Cooperation and Development
CBPP	contagious bovine pleuropneumonia
CIM	Centre for International Migration and Development
CTL	cytotoxic T-lymphocyte
EVAg	European Virus Archive goes Global
FLI	Friedrich-Loeffler-Institut (Federal Research Institute for Animal Health)
FUB	Freie Universität Berlin
ILCA	International Livestock Centre for Africa
ILRAD	International Laboratory for Research on Animal Diseases
ILRI	International Livestock Research Institute

Summary

Collaboration between the International Livestock Research Institute (ILRI) and partners from Germany dates back to the early days of ILRI's predecessors, the International Laboratory for Research on Animal Diseases and the International Livestock Centre for Africa. Since the 1980s, this joint research has focused on the control of trypanosomiasis in livestock (including camels) across the vast 'tsetse belt' of Africa and on increasing animal productivity through breeding and improved nutrition.

From 27 February to 1 March 2018, the ILRI Nairobi campus hosted a workshop with 35 participants, including 10 visiting scientists from three leading German institutions: Freie Universität Berlin, the Federal Institute for Risk Assessment and the Friedrich-Loeffler-Institut (Federal Research Institute for Animal Health). The workshop was supported by the CGIAR Research Program on Agriculture for Nutrition and Health.

The aim of the workshop was to strengthen collaborative research on animal and human health between ILRI and German research institutions. The workshop involved a combination of plenary discussions and break-out sessions in technical working groups to allow in-depth discussion of specific subject areas. The thematic working groups were on: (1) institutional collaborative agreements, (2) ticks and tickborne diseases, (3) foodborne and neglected tropical parasitic zoonoses, (4) antimicrobial resistance, (5) African swine fever and (5) *Mycoplasma*.

By the end of the workshop, all working groups had delivered at least one concept note for joint research and joint resource mobilization for the research.

Background of the meeting

Collaboration between the International Livestock Research Institute (ILRI) and partners from Germany dates back to the early days of ILRI's predecessors, the International Laboratory for Research on Animal Diseases (ILRAD) and the International Livestock Centre for Africa (ILCA). Since the 1980s, this joint research has focused on the control of trypanosomiasis in livestock (including camels) across the vast 'tsetse belt' of Africa and on increasing animal productivity through breeding and improved nutrition.

In 1994, when ILRAD and ILCA merged to form ILRI, the chair of ILCA's Board of Trustees, Dieter Bommer (from Germany), noted that partnerships would "be even more crucial to the success of ILRI than they were to ILCA, given the new institutes' expanded mandate". Dieter Bommer, Kurt-J. Peters (former ILCA deputy director general for research, later with Humboldt University of Berlin) and Carlos Seré (former ILRI deputy general and alumnus of University of Hohenheim) are just a few names illustrating the long-standing relationship between ILRI and Germany. Currently, ILRI staff include eight German nationals, three integrated experts from the Centre for International Migration and Development (CIM) and 22 African students funded by the German Academic Exchange Service.

Bilateral funding for research has been mainly obtained from the German Federal Ministry for Economic Cooperation and Development (BMZ) and through the German Corporation for International Cooperation GmbH. Between 2010 and 2017, 10 research projects totalling €8,443,421 for small and large research grants were successfully completed. Between 2013 and 2018, four research projects totalling €2,226,000 have been granted and are being implemented. ILRI research partners in Germany include the Federal Institute for Risk Assessment (Bundesinstitut für Risikobewertung [BfR]), the Federal Research Institute for Animal Health (Friedrich-Loeffler-Institut [FLI]), Freie Universität Berlin (FUB), the German Institute for Tropical Agriculture, Karlsruhe Institute of Technology, Kassel University, Landeslabor Berlin–Brandenburg, University of Hohenheim, University of Veterinary Medicine Hanover and Vétérinaires sans Frontières Germany.

Germany entered the global health debate later than other G7 countries; its expertise in global health is still limited and must be strengthened to effectively build partnerships and alliances across sectors and to integrate global health consistently in its foreign policy strategy¹. Germany used its presidency of the G7 and G20 to put global health policy centre-stage and to anchor the topics of antimicrobial resistance and health crisis management as a separate health track on the international agenda and adopted an ambitious Declaration on Global Health at the G20 Health Ministers' Meeting in Berlin². In January 2018, the agriculture ministers of 69 nations gathered in Berlin during the Global Forum for Food and Agriculture³ to discuss how to shape the future of global livestock production, with special reference to the United Nations Sustainable Development Goal 2 to "end hunger, achieve food security and improved nutrition and promote sustainable agriculture".

The published communiqué⁴ explicitly states the aim to safeguard the supply of and access to sufficient, safe, nutritious and affordable food from livestock production for the growing world population and to meet the economic, environmental and social challenges the livestock sector faces. Approaches include, but are not limited to, expansion of research and creation and transfer of knowledge to develop traditional and alternative sources of protein to feed people and animals sustainably and safely, thereby improving access to protein of high nutritional value. Moreover, the communiqué explicitly invited the Food and Agriculture Organization of the United Nations, the World Organisation for Animal Health and ILRI to collaboratively promote international consultation on sustainable, responsible and efficient livestock production systems and to develop good practices, based on integrated assessments, intergovernmental processes and multi-stakeholder consultations.

¹ Kickbusch, I. et al. 2017. Germany's expanding role in global health. *The Lancet* 390(10097): 898–912. [https://doi.org/10.1016/S0140-6736\(17\)31460-5](https://doi.org/10.1016/S0140-6736(17)31460-5)

² Gröhe, H. 2017. Together today for a healthy tomorrow—Germany's role in global health. *The Lancet* 390(10097): 831–832. [https://doi.org/10.1016/S0140-6736\(17\)31617-3](https://doi.org/10.1016/S0140-6736(17)31617-3)

³ Global Forum for Food and Agriculture expert panel on sustainable solutions for the livestock sector. The time is ripe! Details at <http://www.gffa-berlin.de/en/fachpodium-6-2018/> and <https://news.ilri.org/2018/03/05/bmzs-stefan-schmitz-on-sustainable-solutions-for-the-livestock-sector/>

⁴ www.gffa-berlin.de/wp-content/uploads/2018/01/GFFA_2018_Kommunique_EN.pdf

This ILRI–Germany workshop was a first step towards delivering on these commitments. The idea for the workshop was born in 2017 during meetings involving ILRI’s director general, Jimmy Smith, and ILRI’s assistant director general – biosciences, Dieter Schillinger, and several German partner institutions⁵. Several overlapping research interests were identified and the will for collaboration expressed repeatedly.

This first partnership workshop builds on already established research collaborations in ILRI’s Animal and Human Health program under the biosciences directorate. This includes 10 years of research on *Mycoplasma* infection in livestock and risk-based approaches to improved food safety in informal markets in sub-Saharan Africa⁶, the latter resulting in a joint declaration of intent on cooperation signed in November 2016 to strengthen future research on food safety in low-income countries. Other occasional joint activities include project-based collaborative research on specific diseases such as African swine fever and East Coast fever and emerging infectious diseases such as Ebola with impacts on livelihoods and public health in low-income countries.

⁵ http://www.bfr.bund.de/en/press_information/2017/18/german_federal_institute_for_risk_assessment_bfr_expands_cooperation_with_africa-200777.html

⁶ ILRI/BMZ Safe Food, Fair Food project, 2008–16: <https://safefoodfairfood.ilri.org>

Objectives and structure of the workshop

The aim of the workshop was to strengthen collaborative research between ILRI and research partners from Germany towards improved animal and human health. The workshop offered a rare opportunity for face-to-face interaction of scientists and time to work on research concept notes, including resource mobilization, so that ideas materialize into collaborative projects.

Participants from all institutions worked in six small parallel thematic groups to:

- discuss the scope of their activities and research interests (i.e. through technical presentations and laboratory visits);
- identify funding possibilities (i.e. bring calls or identify potential calls during the meetings);
- develop joint concept notes; and
- agree on a way forward (action points and timelines).

Five technical working groups were set up:

- Ticks and tick-borne diseases, especially *Theileria parva*
- Foodborne and neglected tropical parasitic zoonoses
- Antimicrobial resistance
- African swine fever
- *Mycoplasma*

An additional working group on institutional collaborative arrangements convened one afternoon with senior representatives from each institution. Table 1 summarises the composition of the working groups.

Table 1: Thematic working groups of collaboration interests: ILRI, BfR, FLI and FUB

Collaboration interest	ILRI	FUB	BfR	FLI	Working group
Institutional collaborative arrangements, i.e. visiting scientists, transfer of materials (e.g. field isolates), student projects and co-supervision, laboratory trainings	Jimmy Smith Dieter Schillinger Vish Nene Delia Grace Randolph Wellington Ekaya Stella Kiwango Boleslaw Stawicki Tom Randolph Helen Altshul Ephy Khaemba	Peter-Henning Clausen	Nicole Gollnick Karin Schlesier	Thomas Mettenleiter	1
Ticks and tick-borne diseases, especially <i>T. parva</i> , including molecular diagnostics (improved reverse line blot), vaccinology, artificial tick-feeding, anti-tick vaccines	Vish Nene Nicholas Svitek Naftaly Githaka Samuel Oyola	Ard Nijhof Isaiah Obara	n/a	Cornelia Silaghi	2
Foodborne and neglected tropical parasitic zoonoses (soil-transmitted helminths, trypanosomiasis, <i>T. solium</i>)	Annie Cook Fred Unger Kristina Roesel	Peter-Henning Clausen	Anne Mayer-Scholl Karin Schlesier	n/a	3
Antimicrobial resistance: data generation, modelling, One Health	Eric Fèvre (27 February) Bernard Bett Johanna Lindahl (Isaac Omwenga) (Martin Wainaina)		Bernd-Alois Tenhagen Nicole Gollnick Christine Mueller-Graf (Webex)	n/a	4
African swine fever	Lucilla Steinaa Edward Okoth Michel Dione Anna Lacasta	n/a	n/a	Thomas Mettenleiter (Sandra Blome occasionally via WebEx)	5
<i>Mycoplasma</i> (including contagious bovine pleuropneumonia and contagious caprine pleuropneumonia)	Elise Schieck Anne Liljander	n/a	n/a	Robert Kammerer	6

Agenda

The workshop started on Tuesday 27 February 2018 with a panel session including the formal opening of the meeting and introduction of the partner institutions. The detailed workshop agenda is provided in Annex 1 and the list of participants in Annex 2.

ILRI's director general Jimmy Smith opened the meeting and gave a [presentation](#) on why livestock research matters and recent and current research with German partners.

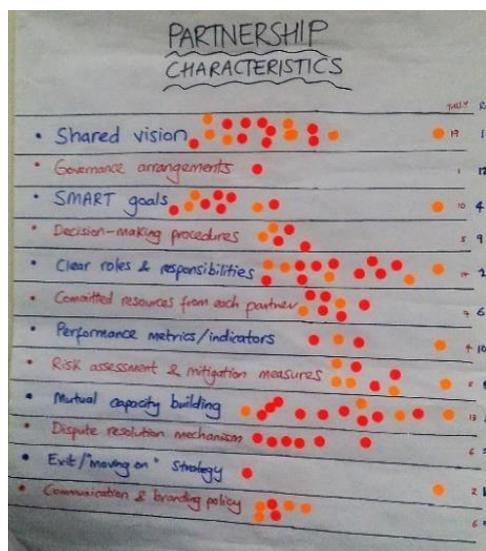
The presentation by Peter-Henning Clausen from the Institute of Parasitology and Tropical Veterinary Medicine, FUB introduced the veterinary department and activities relevant to research on tropical veterinary medicine and veterinary public health.

The [presentation](#) by Nicole Gollnick from BfR introduced the institute, its origins, mode of operation and major research activities for consumer protection.

The [presentation](#) by FLI president Thomas Mettenleiter introduced the institute and its history and gave an overview of its research portfolio which includes animal health, zoonoses, animal welfare, animal nutrition and the preservation and use of farm animal genetic resources.

Helen Altshul, performance and partnerships manager, CGIAR Research Program on Livestock, gave a [presentation](#) on ILRI's partnership strategy then invited the workshop participants to indicate which eight of the 12 listed characteristics of effective partnerships they considered to be most important when developing new collaborations.

The ranking of the characteristics most important to the participants is indicated below:



1. Shared vision
 2. Clear roles and responsibilities
 3. Mutual capacity building
 4. SMART [specific, measurable, achievable, relevant, time-bound] goals
 5. Risk assessment and mitigation measures
 6. Committed resources from each partner
 7. Dispute resolution mechanisms AND Communication and branding policy
-
9. Decision-making procedures
 10. Performance metrics/indicators
 11. Exit/'moving on' strategy
 12. Governance arrangements

In a partnership review exercise, groups are usually asked to focus on the top eight ranked characteristics. For this workshop, in the group discussions, it was suggested that the thematic working groups consider the characteristics numbered 1–4 and the institutional collaborative arrangements group consider those numbered 5–7.

Boleslaw Stawicki, head of ILRI's Business Development Unit, introduced the ILRI business development strategy and how to consider the business case while developing joint research ideas during the writeshop (Annex 3).

Following the opening session, the thematic working groups broke out into different rooms for in-depth presentations on their institutions' activities on the thematic area. Over the following two days, the working groups prioritized ideas for collaborative research and developed concept notes. The program also included tours to ILRI's laboratory facilities, Mazingira Centre for Environmental Research and Kapiti ranch. On Thursday 1 March 2018, the institutional representatives met to discuss how to formalize and implement future joint activities. During the final session of the workshop, all participants came together again in a panel where each working group briefly presented the ideas they had developed and the action points that would follow the meeting.

Outputs of the working groups (joint big ideas)

It was emphasized that the meeting and excellent networking opportunity in Nairobi was an important milestone for future collaboration between ILRI and its partner institutions in Germany. It was highlighted that the writeshop format was ideal for working intensively in small groups to produce, within a short time, advanced concept notes for joint projects. Below are the specific points discussed by the working groups.

Working group 1: Institutional collaborative agreements

Capacity building

Short-term training

- FLI has a working group for international health. FLI experts provide training and capacity building around the world.
- The BfR Academy organizes a two-week BfR summer academy on risk assessment and risk communication. Every year, about 40 international scientists come together in Berlin. For partner institutions, the BfR International Affairs Team also organizes customized workshops and summer schools abroad.

Laboratory training

- At ILRI: Use of the Biosciences eastern and central Africa (BecA)-ILRI Hub facilities is possible for collaborative research projects (subject to availability and secure funding).
- At FLI: FLI is a partner in *European Virus Archive goes Global* (EVAg) and *VetBioNet*, European Union-funded programs that allow access to high biosafety level experimental animal research facilities (also at FLI). FLI will try (so far in vain, unfortunately) to connect ILRI with EVAg.
- At BfR: The Werner Baltes Fellowship is a guest scientist program which enables 10 international scientists to spend three months at BfR in Berlin to receive hands-on training. Topics addressed could easily be aligned to collaborative projects between BfR and the sending institution.

Joint research and capacity building projects

Wellington Ekaya, ILRI's head of capacity development, mentioned the importance of training and mentoring the next generation of scientists. One example of a joint capacity building project is the current application by ILRI, BfR and the University of Liverpool for the Fleming Fund Fellowship as a consortium to train and mentor research fellows interested in working on antimicrobial resistance. An Expression of Interest was submitted on 26 February 2018. The consortium was then invited to submit a full proposal which was done by 31 March 2018.

Institutional collaboration

Funding opportunities for staff

CIM is the competence centre for worldwide labour mobility in the international cooperation of the German federal government (www.cimonline.de). There are funding opportunities for European experts (integrated experts) or experts from low- and middle-income countries after completing a degree or gaining considerable work experience in Germany (returning experts).

Joint appointments between ILRI and German partner institutions

Joint appointments provide an ideal opportunity for researchers to work in collaborative projects and excellently promote networking between the international partner institutions and their respective networks. ILRI currently has 35 joint appointees, most of whom are from the United Kingdom. Kristina Roesel will start as a joint appointee of ILRI and FUB in June 2018. Joint appointments are always based on individual negotiations between participating institutions.

Thomas Mettenleiter reported that FLI has a graduate student program with the Institute of Animal Health in Pirbright, United Kingdom. At present, two students from each institution are trained for one year in the partner laboratories. This is based on a Memorandum of Understanding; a similar arrangement exists currently for cooperation between ILRI and FLI. Joint appointments with ILRI provide an attractive option for intensifying the cooperation.

Working group 2: Ticks and tick-borne diseases

- ILRI and FUB have long collaborated in this research area. Therefore, future joint research builds on a sound basis and several ideas could be developed.
- Concept 1: Unravelling the vector competence of *R. appendiculatus* and *A. variegatum* for tick-borne diseases
- Concept 2: Next-generation vaccines for *T. annulata* and *T. lestoquardi*
- Concept 3: Comparative genomics for support and improvement of vaccination against theileriosis
- Livelihood outcomes through animal health interventions

Working group 3: Foodborne and neglected tropical parasitic zoonoses

- There has been a lot of research on tropical zoonotic parasites in the past including how to control them; however, the burden of these diseases is still high in low-income countries due to the chronic nature of parasitic diseases as opposed to hit-and-run diseases that potentially also affect high-income countries.
- Concept 1: Scaling of integrated intervention packages to control multiple tropical parasitic diseases in four countries in sub-Saharan Africa and southeast Asia
- Direct human health and nutrition outcomes through animal health interventions

Working group 4: Antimicrobial resistance

- This is a topic of emerging public health relevance with a lot of data gaps including on antimicrobial use in low-income countries. The group focused on identifying major researchable evidence gaps.
- The members of this working group (among others) all contributed to the Fleming Fund grant application submitted on 31 March 2018
- Human health outcomes through animal/human health interventions

Working group 5: African swine fever

- African swine fever is a constant threat to the emerging pig industry in sub-Saharan Africa and, of late, to the large-scale European commercial pig industry.
- Concept 1: Induction of immunity to African swine fever virus using viral vectors
- Concept 2: Immunology, candidate cytotoxic T-lymphocyte (CTL) antigens – CTL immunology
- Concept 3: Antibody immunology to African swine fever – induction of neutralizing antibodies
- Concept 4: Pen-side diagnostic test
- Livelihood outcomes through animal health interventions
- The group also identified activities that will be implemented immediately (regardless of funding) while joint proposals are being developed

Working group 6: *Mycoplasma*

- Building on collaborative research (2010–17) on antigen identification for vaccines and diagnostics
- Concept 1: Contagious caprine pleuropneumonia diagnostics: serological tests based on developed contagious bovine pleuropneumonia (CBPP) enzyme-linked immunosorbent assay
- Concept 2: Identification of biomarker of early stage infection in CBPP – A contribution to establishment of improved CBPP challenge model
- Concept 3: Subunit vaccine – Specific targeting of crucial factors for host-pathogen interactions
- Concept 4: Targeting mucosal immunity
- Long-term strategy: Combine efforts with other European partners to establish/optimize genetic engineering technology for *Mycoplasma mycoides* to study gene function

Way forward

Prior to the workshop, working group members had communicated to some extent and in the case of the thematic area of antimicrobial resistance, ILRI submitted an Expression of Interest to the Fleming Fund on 26 February 2018. During meetings in 2017, BfR's Nicole Gollnick suggested that a joint grant application be submitted to the Fleming Fund. ILRI's assistant director general – biosciences, Dieter Schillinger, then contacted Wellington Ekaya (ILRI's head of capacity development) and involved the Animal and Human Health program leaders. Everyone agreed it was a great idea and although applying as a stand-alone applicant, ILRI would work with partners to implement the Fleming Fund Fellowship. Two key partners are University of Liverpool and BfR. The Expression of Interest was accepted on 2 March 2018 for full proposal development by 30 March 2018. Wellington Ekaya is organizing the timely synthesis of the full proposal.

A working group on mycotoxins was not able to meet during the workshop. However, a concept note on mycotoxin research had been developed in August 2017 led by BfR's Stefan Weigel with input from ILRI's Delia Grace, Johanna Lindahl and Kristina Roesel. The submission to BMZ was put on hold until the new German government is in place.

Workshop organizer Kristina Roesel will follow up with all participants by the end of May 2018 to monitor if any concept notes have been developed or if any facilitation is needed. For further information, please email Kristina at k.roesel@cgiar.org.

Annex 1: Workshop agenda

27 February to 1 March 2018 at ILRI Nairobi campus and Kapiti Ranch, Machakos

Sunday 25 and Monday 26 February 2018

Arrival of German partners at ILRI

Tuesday 27 February 2018

Time	Where	Who	What
9:00	Room 720	All	Opening: Jimmy Smith Brief introduction of German institutes <ul style="list-style-type: none"> • FUB: Peter-Henning Clausen • BfR: Nicole Gollnick • FLI: Thomas Mettenleiter Meeting objectives: Dieter Schillinger ILRI partnership strategy: Helen Altshul ILRI business development strategy: Boleslaw Stawicki
10:30	Courtyard	All	Group photo (Paul Karaimu) Coffee/tea break
11:00	Room 721 Sierra meeting room Room 720 Info Centre Swara meeting room	Working group 2 Working group 3 Working group 4 Working group 5 Working group 6	Break-out session 1 Each working group member presents activities in-depth, referring to the overarching topic of the working group for later brainstorming and prioritizing
12:30	Poolside area	All	Lunch break
13:30	BecA-ILRI Hub	German partners only and Julius Osaso	General laboratory tour http://hub.africabiosciences.org/
14:45	Farm entrance	German partners only and Lutz Merbold	Visit Mazingira Centre for Environmental Research https://mazingira.ilri.org/
15:30	Meeting rooms		Coffee/tea break
16:00	Room 721 Sierra meeting room Room 720 Info Centre Swara meeting room	Working group 2 Working group 3 Working group 4 Working group 5 Working group 6	Break-out session 1 continued Each working group member presents activities in-depth, referring to the overarching topic of the working group for later brainstorming and prioritizing
18:30	Jimmy Smith's residence	All	Reception (Ann Mureithi)

Wednesday 28 February 2018

Time	Where	Who	What
7:00	ILRI hostels	All	Departure to Kapiti by hired bus (packed breakfast will be arranged for those staying at ILRI hostels) https://cgspace.cgiar.org/handle/10568/81323
9:00	Kapiti farm house	All and Ilona Gluecks	Coffee/tea break Introduction to Kapiti ranch and tour of the ranch
12:00	Kapiti farmhouse	All	Light lunch
13:00	Meeting rooms at the farm house	Working group 2 Working group 3 Working group 4 Working group 5 Working group 6	Break-out session 2 Each working group to start developing concept notes and brainstorm on resource mobilization sources
16:00	In front of farm house	All	BBQ
18:00		All	Departure to ILRI hostels by hired bus

Thursday 1 March 2018

Time	Where	Who	What
8:30	Room 721 Sierra meeting room Room 720 Info Centre Mimosa meeting room	Working group 2 Working group 3 Working group 4 Working group 5 Working group 6	Break-out session 2 continued Each working group to start developing concept notes and brainstorm on resource mobilization sources
10:30	Meeting rooms		Coffee/tea break
11:00	Room 721 Sierra meeting room Room 720 Info Centre Mimosa meeting room	Working group 2 Working group 3 Working group 4 Working group 5 Working group 6	Break-out session 3 Workplans, action points, budgets
12:30	Poolside area	All	Lunch break
13:30	Directorate meeting room Room 721 Sierra meeting room Room 720 Info Centre Mimosa meeting room	Working group 1 Working group 2 Working group 3 Working group 4 Working group 5 Working group 6	Meeting on institutional collaborative agreements (vising scientists, material transfer agreements, intellectual property, co-supervision of students etc.) Break-out session 3 continued Workplans, action points, budgets
15:30	Room 720	All	Coffee/tea break
16:00	Room 720	All	Wrap-up session in plenary Report back by each group (10 min) and feedback from audience (5–10 min)
18:00	Room 720	All	Closing of meeting Airport transfers/dinner arrangements

Annex 2: List of participants

No	Title	Last name	First name	Institution	Department	Working group	Email	Bio
1	Ms	Altshul	Helen	ILRI	CGIAR Research Program on Livestock	1	H.Altshul@cgiar.org	https://www.ilri.org/users/haltshul
2	Dr	Bett	Bernard	ILRI	Animal and Human Health program	4	b.bett@cgiar.org	https://www.ilri.org/users/bbett
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4	Prof. Dr	Clausen	Peter-Henning	FUB	Institute for Parasitology and Tropical Veterinary Medicine	1+3	Peter-Henning.Clausen@fu-berlin.de	http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we13/staff/clausen_peter-henning/index.html
5	Dr	Cook	Annie	ILRI	Animal and Human Health program	3	e.cook@cgiar.org	https://www.ilri.org/users/ecook
6	Dr	Dione	Michel	ILRI	Animal and Human Health program	5	m.dione@cgiar.org	https://www.ilri.org/users/mdione
7	Dr	Ekaya	Wellington	ILRI	Head of Capacity Development	1	w.ekaya@cgiar.org	https://www.ilri.org/users/wekaya
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12	Dr	Grace	Delia	ILRI	Program Leader (Joint), Animal and Human Health program	1	d.grace@cgiar.org	https://www.ilri.org/users/dgrace
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14	Dr	Lacasta	Anna	ILRI	Animal and Human Health program	5	a.lacasta@cgiar.org	https://www.ilri.org/user/1258
15	Dr	Liljander	Anne	ILRI	Animal and Human Health program	6	a.liljander@cgiar.org	https://www.ilri.org/users/aliljander
16	AP Dr	Lindahl	Johanna	ILRI	Animal and Human Health program	4	j.lindahl@cgiar.org	https://www.ilri.org/users/jlindahl
17	Dr	Mayer-Scholl	Anne	BfR	Unit 45: Diagnostics and Pathogen Characterisation	3	Anne.Mayer-Scholl@bfr.bund.de	http://www.bfr.bund.de/en/unit_diagnostics_and_pathogen_characterisation-9902.html
18	Prof. Dr Dr h.c.	Mettenleiter	Thomas	FLI	President and Head of the Institute of Molecular Virology and Cell Biology	1+5	ThomasC.Mettenleiter@fli.de	https://www.fli.de/en/institutes/institute-of-molecular-virology-and-cell-biology-imvz/scientists/prof-dr-dr-hc-t-c-mettenleiter/
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Annex 3: Business case template

Writeshop – business case template

1. How big is the problem that we'll be addressing through research?

- 1.1. Is the proposed research addressing the problem in its entirety or parts of the problem?
(e.g. the vaccine that we are developing on is only targeting one of many strains prevalent in Uganda)
- 1.2. Geography: is the problem of local [], regional [] or global [] relevance?
- 1.3. Livelihoods: is the problem related to farm (or value chain) productivity, e.g. of economic importance [], or related to public health [], or both []?
- 1.4. How many animals are affected:
- 1.5. How many households are affected:
- 1.6. How many people are affected:
- 1.7. Provide some details on type of losses:

	Monetary:	Non-monetary:
Direct:		
Indirect:		

2. Government commitment

- 2.1. Is this problem also seen as such by the government(s) (be it national or local) where we've identified this problem? Yes [] No []
Reference:

- 2.2. Has the government expressed its desire to address this problem (e.g. a national ASF or AMR control strategy)? Yes [] No []
Reference:

3. How will we address this problem?

- 3.1. Think impact pathways. Which partnerships are suitable and feasible to establish in order to ensure that our research truly benefits affected individuals? In other words, how will we ensure that our research is used?

4. Value for money offered by the research initiative

- 4.1. Given the potential monetary benefit achieved (indirectly) by our research initiative, what is the developmental rate of return?

Hypothetical example:

- East coast fever causes monetary losses of USD 300m/ annum.
- ILRI works on the ECF vaccine that has an 80% success rate. Cost of the development of the vaccine is USD 10m.
- Prevalence of ECF, and therefore, cattle mortality is reduced by 80%. i.e. annual monetary loss is reduced by USD 240m.
- Therefore, for each USD invested in ECF vaccine research, the annual return is USD 24.

Annex 4: Media coverage by BfR and ILRI

[BfR press release, 27 February 2018](#)

[ILRI Clippings blog, 1 March 2018](#)

ILRI Flickr (click on the images to enlarge and see the captions)

