



RESEARCH REVIEW 2020

Highlights from Brooke's
Global Research Programme

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WELCOME TO BROOKE'S 2020 RESEARCH REVIEW

During what has been by any definition a strange year, the portfolio of research facilitated by Brooke has continued to provide the essential evidence that underpins our work and that of the wider sector. With this in mind, I am particularly proud to welcome you to the second Brooke Research Review.

2020 brought with it a global pandemic that has impacted us all. Like everyone else, Brooke was significantly affected by the lockdown both in the UK and globally, implemented to combat the spread of Covid-19, and we know we will continue to see its effects for months, if not years to come.

But throughout it all, we continued to engage in research, whether we were at home, in our offices or in the field. It is said that necessity is the mother of invention. I am sure that in future editions of this Review, we will be talking about the new ideas formulated and worked on from kitchen tables and almost-empty offices, discussed and polished online. Evidence, both to underpin our current work and critically inform our 'direction of travel', is a pillar of our global approach of which Brooke is justifiably proud. The research we undertake and support demonstrates various methodologies to recognise the differing and sometimes unique contexts we work across.

All of our research is applied, and during this challenging year, our research programme has continued to progress. Brooke's researchers continued to finish and disseminate existing planned research to target stakeholders such as that focused on Pakistan's coal mines and the socioeconomic contribution of donkeys in Burkina Faso, both of which feature in this Review.

Last year, we highlighted the amazing research partnerships we have, ranging from academic partners to other international organisations and wider research institutions. This is no less this year, even with the pandemic pressures. These partnerships continue to flourish, delivering high-quality peer-reviewed results. In this Review, our partner, the University of Liverpool, writes specifically on conducting research in the pandemic.

Our research over the last year establishes some more longitudinal work, developing our thinking around the strengthening of Animal Health Systems, and we are particularly proud to fund and co-supervise a PhD studentship as part of this work. It remains for me to thank each and every one of our research team and external partners for the invaluable contribution they have made to this year's research. Brooke will always underpin its work with evidence, and our research is central to this.

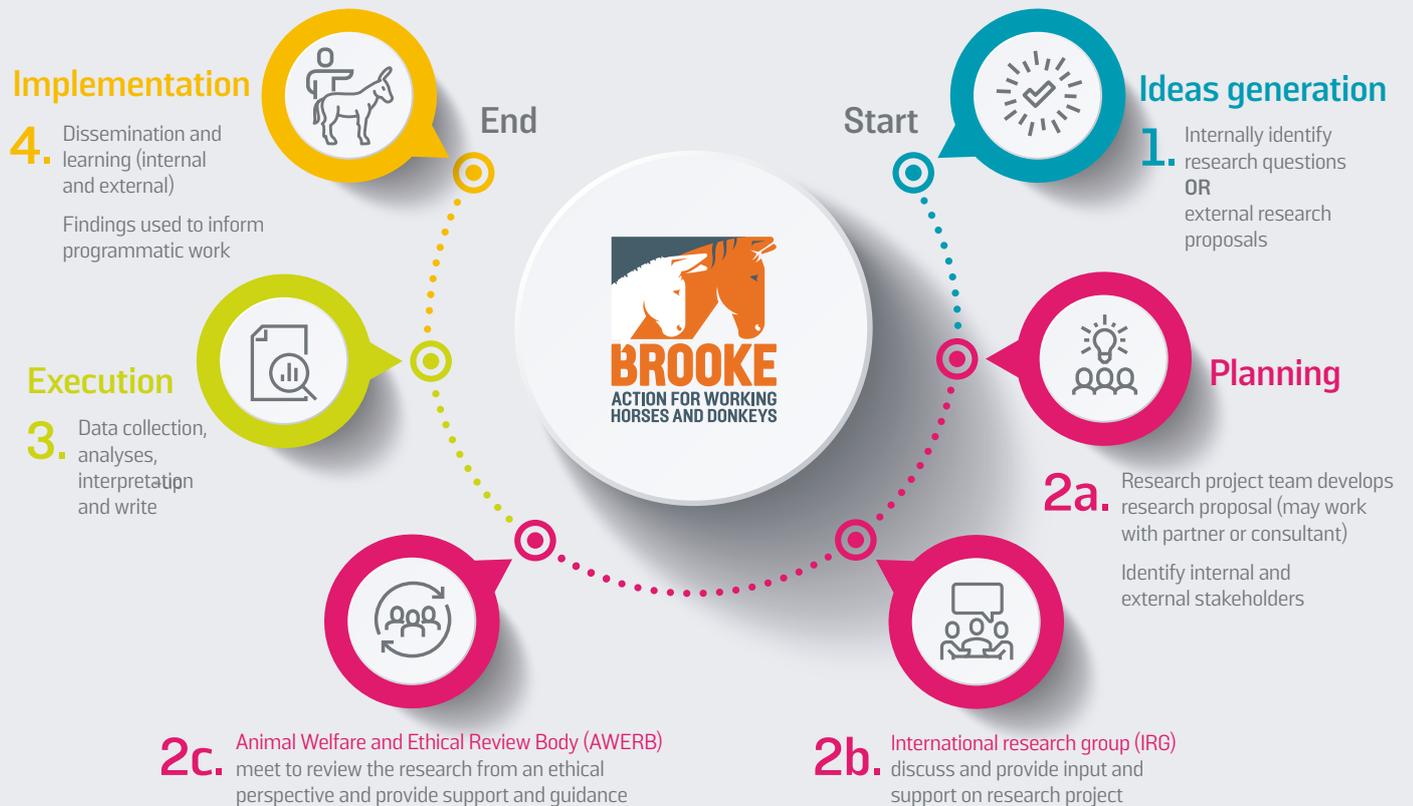
Nigel Wilson
Director of Programmes
Brooke, UK

HOW AND WHY WE CONDUCT RESEARCH

At Brooke, we believe research evidence should inform our work, both to make evidence-based programmatic decisions and conduct advocacy that is impactful and well-informed. Our global team of in-house researchers are based across Africa, Asia, Central America, and the UK. They ensure that our research is contextually relevant, methodologically rigorous and focused on finding solutions that support our work.

We partner with other organisations, such as academic institutes, other INGOs, and external consultants, to gain new perspectives and increase our capacity. We ensure that all research we undertake is ethical, aligned with our strategy and can be applied to transform the lives of vulnerable working equids. Throughout this Review, we highlight work that is guided by these principles.

BROOKE'S RESEARCH PROCESS



COLLABORATIVE RESEARCH



PHD FUNDING ON THE GLOBAL BURDEN OF ANIMAL DISEASES PROGRAMME

The Global Burden of Animal Diseases (GBADs) programme is a multi-partner initiative jointly led by the University of Liverpool (UoL) and the World Organisation for Animal Health (OIE). The programme aims to 'measure to improve' animal health at a local, national, and global level. Brooke, in collaboration with UoL, is proud to now be funding and co-supervising a PhD that will enable research on working equids to be integrated into the programme.

Where livestock experience disease, poor nutrition, and injury, there is a detrimental impact on their welfare and their ability to contribute to supporting livelihoods, food security and water access. The GBADs programme will determine how animal disease affects the health and wellbeing of people. It will produce accessible information to compare the burden of animal health issues within and between farming systems, species, regions, countries and even socioeconomic status and gender. The programme aims to address a number of the Sustainable Development Goals and bring together researchers, funders, and collaborators worldwide.

Brooke's contribution to the GBADs programme will help raise the profile of working equids as an integral part of the livestock sector and have them recognised in programmes and policy that improve their welfare. The PhD, titled 'The Burden of Animal Disease in Working Equids – Ethiopia', will enable GBADs and Brooke to better understand working equid populations, how they contribute to livestock systems and communities, and diseases that affect them and the impact of those diseases on society.

Ultimately, the GBADs programme will contribute to an evidence base for decision making and investment in global animal, human and environmental health.

We know first-hand the expanded expertise that collaborations bring. The outputs of a previous Brooke-funded PhD, in partnership with the University of Bristol, formed the basis of our Standardised Equine Based Welfare Assessment Tool, which has been instrumental in helping us measure equid welfare and how our work improves it. With that in mind, we are particularly excited to work with the GBADs team of global experts in animal health economics, epidemiology, sustainable food systems, infectious disease, and informatics.

The PhD, due to start in 2021, will be co-supervised by:

Dr Klara Saville

Head of Global Animal Health, Welfare, Community Development and Research, Brooke UK

Prof Jonathan Ruston

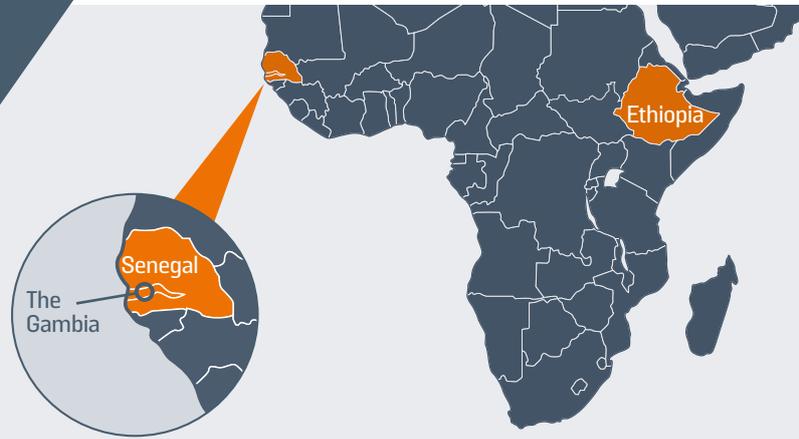
Professor of Animal Health and Food Systems Economics and N8 Chair, University of Liverpool

Dr Gina Pinchbeck,

Reader in Veterinary Epidemiology, University of Liverpool

Find out more about the Global Burden of Animal Diseases programme at their website: animalhealthmetrics.org

PROGRESS UPDATE



TACKLING EPIZOOTIC LYMPHANGITIS

RESEARCH DURING COVID-19

Epizootic lymphangitis (EZL) is a highly contagious fungal infection and a major cause of disability amongst equids worldwide. The disease causes pain and debilitation to many working equids and has extensive impacts on the potential income earned by the families that own them.

Brooke is part of an international research collaboration working to make in-roads into our understanding of this neglected disease that affects both equine health and human livelihoods. Dedicated research teams in Ethiopia, The Gambia and at the University of Liverpool, representing veterinary, academic and civil society organisations, are working together on projects to record how the disease currently affects equids and their owners, develop an in-depth understanding of how it is maintained and transmitted, and what practical steps can be taken to reduce disease occurrence.

PROGRESS DURING 2020

With the Covid-19 pandemic leaving many field activities on hold, the team adapted their approach to this project to allow some work to continue. Although global travel restrictions and regional lockdowns disrupted access to offices, labs and internet facilities and led to the postponement of some planned face to face consultations and data collection with equine-owning communities, good progress has still been made.

The University of Liverpool continued to develop the tools and diagnostic tests for use on the clinical materials we will be collecting to identify *Histoplasma*, the fungus which causes EZL. Some of these were not previously available for use with equine samples and have had to be specially adapted and validated for use during the research programme. In The Gambia, the team adapted research methods

to continue with data collection despite Covid-19 restrictions, such as conducting interviews over the phone. They will also be reaching out to doctors and pharmacists to understand the issues surrounding access and use across health professions. This work, along with findings from the partner study in Ethiopia, will provide information for policymakers to advocate for the need for these medicines and feed into Brooke's ongoing wider work on access to veterinary medicines across its programmes.

The research teams in The Gambia and Ethiopia have also continued to work on data collected during 2019. Findings from these small studies will support the work of larger community studies planned for 2021.

ENGAGEMENT FOR RESEARCH IMPACT

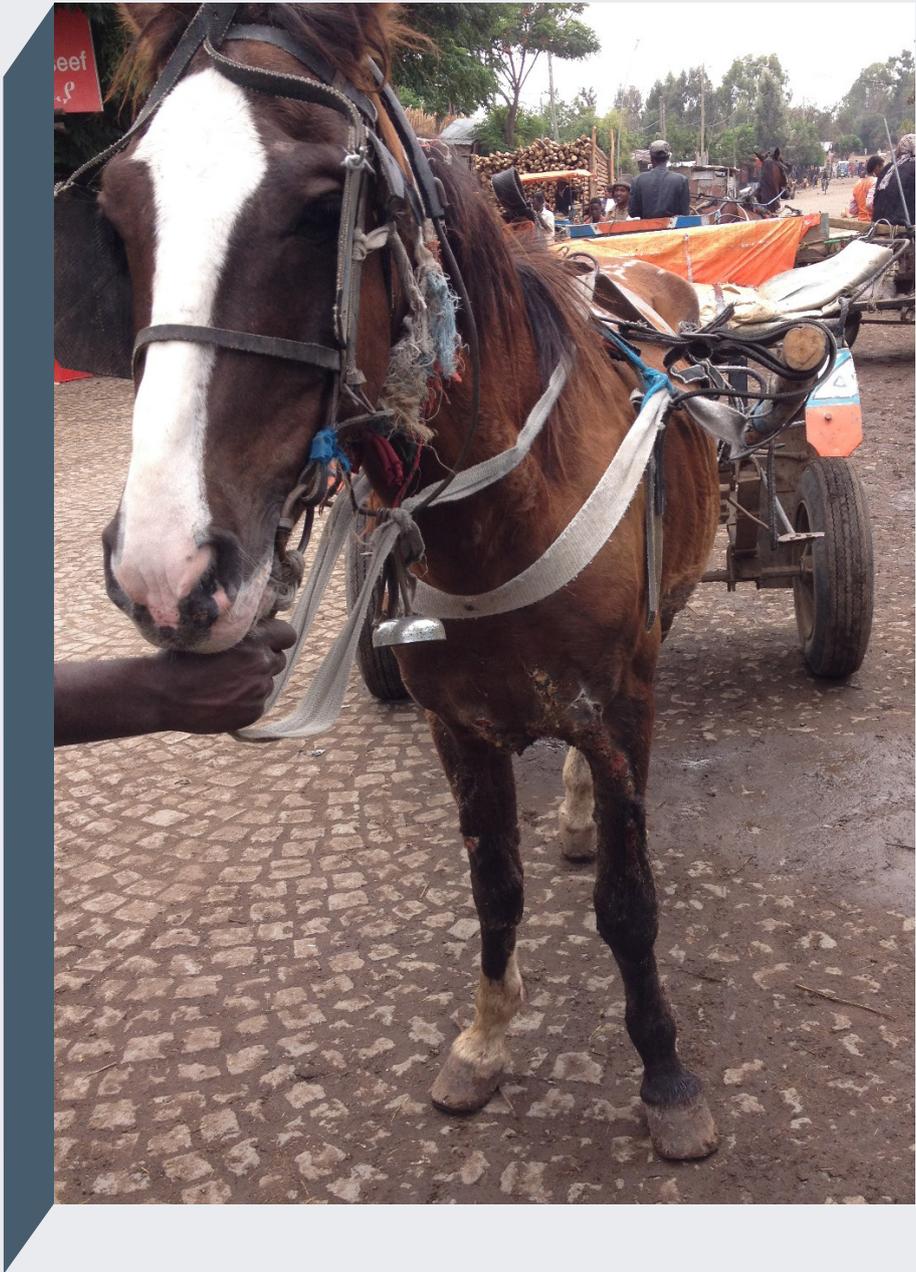
Findings from two studies on EZL were presented at the virtual World One Health Conference 2020, an important step in sharing this research with global stakeholders.

The project team presented key findings from an 'access to antifungals study' carried out in Ethiopia across both the health and veterinary sectors. Carried out in consultation with medical doctors, veterinarians, pharmacists and horse-owners, the study found challenges in reporting need for antifungal medications and issues around decision making and prescribing. Procurement issues were also found to severely impact antifungal availability, with the sustainability of supply routes affected by access to the international market and red-tape around importing medicines and materials.

The project team also presented findings from a cross-sectional study in Kenya investigating histoplasmosis. This study reported an association between the presence of *Histoplasma* antibodies in people and the presence of some wildlife species where they live.



NC STATE Veterinary Medicine



Although not directly linked to horses, the research team is working to understand how this disease functions across wildlife species (such as rats, birds and bats) that transmit the disease and which may be present where horses are housed. This environmental exposure will be followed up in large community studies planned for 2021 in Ethiopia and The Gambia by sampling the earth, dung and stabling environment where horses are kept.

FURTHER RESEARCH

The team is hopeful that the community studies in Ethiopia and The Gambia will take place in 2021, despite the second wave of the pandemic in full force worldwide. Whilst we plan to safely enable extensive data collection to thoroughly investigate this fungal disease, our work is continuing to analyse existing data and report on findings.

CASE STUDY 1

RESEARCH INTO PRACTICE

COAL MINE WORKERS AND THEIR DONKEYS IN PAKISTAN

Due to an increased reliance on coal for power production in Pakistan, coal mining has risen dramatically over the last decade. Coal mining directly supports the livelihoods of those who own and work in the coal mines and industries such as brick kilns. Working donkeys are the main contributor to extracting coal in many mines.

Previous work conducted by Brooke's team in Pakistan identified a number of health and welfare issues for both coal mine workers and their equids, including gastrointestinal tract and respiratory problems, eye problems, work-related injuries, poor body condition, malnutrition, substandard living conditions, and poor sanitation. There is currently no data available that describes the contribution that coal mine workers make to the local economy. As a consequence, there is a lack of appropriate services available to ensure the welfare needs of coal mine workers and their equids.

Our researchers set out to quantify the role that coal mine workers and their donkeys play within the coal mines of Choa Saidan Shah in Chakwal District of Pakistan to engage appropriate stakeholders who can maintain their health and welfare.

The team collected data through face-to-face questionnaires and key informant interviews with coal mine donkey owners, coal mine owners and managers and service providing stakeholders, including local government departments and workers associations. In total, we surveyed 164 coal mine donkey owners, 21 coal mine owners or managers and four service providing stakeholders.

KEY FINDINGS

Results from our research showed that:

- A donkey typically carried a median weight of one tonne of coal to the mine's surface in a single working day and brought a mean gross income of Rs. 9140 (~£45) to a coal mine daily.
- 80% of the coal mine donkey owners reported that their accommodation was made from poor quality materials, and as a result, donkey owners were exposed to adverse conditions.
- 98% referred to the water they consumed as unsafe.
- Almost half (48%) of the workers had witnessed a serious incident in the mines, and 18% had experienced the collapse of a mine within the last year.
- 93% of coal mine workers reported that they were not provided with personal protective equipment.
- Coal mine workers frequently responded that they needed proper living space and better wages, as well as social security for later in life, such as through an Employees' Old-Age Benefits Institution card. They also reported a lack of health facilities for themselves and their donkeys.

Photo: © Freya Dowson / Brooke



RESEARCH IMPACT

The Pakistan team used the findings to develop a policy brief for stakeholders, and we've since seen decision-makers take steps to improve working conditions for humans and animals. The Coal Mine Association will now provide compensation in case of an animal's injury or death inside the coal mine, and the Mine Labour Welfare Department has agreed to provide better human services, including clean drinking water. We also hope for further impact, as the National Commission for Human Rights Committee on Mines has agreed to visit some coal mines to witness workers and animals' situation for themselves.

CASE STUDY 2

RESEARCH IN CONTEXT

DONKEYS' CONTRIBUTION TO COMMUNITIES IN BURKINA FASO

In many countries, donkeys' importance to the poorest populations' livelihoods has not been extensively documented through research. This lack of documentation on the role that equids play often obstructs their consideration in public policies and legislation, which focus primarily on production animals.

Our work in West Africa includes a project in Burkina Faso, where a large proportion of the population depends on agriculture for its livelihood and heavily rely on working equids. In light of the lack of research, we aimed to investigate the economic contribution that donkeys make to communities living and working in urban and rural areas. Our team in West Africa hired an independent consultant with an understanding of the context and communities involved to conduct this mixed-method research.

The consultant carried out qualitative research in five regions to build a broad picture of the role equids play in these communities' lives. The study participants included cart drivers who use donkeys for commercial activities, farmers who use donkeys for agriculture, and pastoralists. Overall, the team selected 210 cart drivers, 235 farmers, and 387 pastoralists to take part. Questionnaires were designed for urban (cart drivers) and rural settings (farmers). Focus group discussions took place with participants in pastoral areas.

These partners all bring different expertise, experience and value to the programme. It is anticipated that by working together as part of a strategic research partnership, the programme will have the capacity to gain a much better understanding of the disease.

KEY FINDINGS

In urban areas, our research showed that:

- Donkeys were used to transport various types of food, including cereal, and materials such as water, bricks and manure.
- Across all regions, the income generated by donkeys accounted for an average of over 85% of the drivers' total income, with values ranging from 77% in the Centre-Nord to up to 93% in the Centre.

In rural areas, on average, 25% of participants owned donkeys (although this number varied between regions).

- The most common use of working donkeys was the transportation of harvest and crop residues and ploughing.
- Households estimated that yield for their most cultivated products would reduce by over 50% without their donkeys, except for rice, where the reduction would be approximately 19%.
- In the absence of donkeys, each household would require over 290,000 XOF (~£395) annually to pay for services such as transportation of goods to markets and cultivation.

In pastoralist areas, donkeys were reported to play a diverse role, ranging from cultural activities to bridal presents and water management.

- Trips to some water sources can be as long as 5km, and the water collected supplies the entire household.
- Donkeys are extremely important to women in these areas. They carry products to markets, gather wood and water and provide financial independence.

RESEARCH IMPACT

The study demonstrated the crucial role of donkeys to the local economy and household livelihoods, maintenance of tradition, and resilience across different communities in Burkina Faso. Thanks to the evidence generated, the team can advocate for authorities to pay more significant consideration to donkeys in public development policies and raise public awareness of donkeys' welfare. This includes advocacy for bans on the trade of donkey skins and products, a pressing problem across many African countries, which must be a priority to preserve these animals and their contribution to poorer populations' livelihoods.

Similarly, the West Africa team will use the study's findings to engage with the Burkina Faso Ministry of Livestock to have donkeys included in disease prevention plans to fight recurrent equine disease outbreaks. The findings also provide an evidence base that will be used to engage with West Africa regional bodies, such as the West African Economic & Monetary Union, on donkeys' protection to inform region-wide advocacy, policy, and programming.



I've been working at the Ministry of Livestock for 18 years. But it is only by working in the surveys for this study that I realised the importance of donkeys in the livelihoods of populations. I have to confess that donkeys have never been a priority. I do hope that this study will contribute to a better consideration for these animals.



Ministry of Livestock official

Photo: © Justice Nnyigide / Brooke



CASE STUDY 3

PRELIMINARY RESEARCH

PERCEPTIONS OF MULE CASTRATIONS IN INDIA

The castration of mule foals has been a common practice in North India for many decades. Typically taking place when a foal is between five and seven months old, the procedure is often performed by local practitioners without pain relief or medication. The crude and often inhumane process, during which the animal is forced to the ground and tied up, generates great fear and stress in the foal. Anecdotal evidence and conversations with equine owning communities and traders suggest that they believe castrating a mule foal may reduce aggressive behaviour and make them easier to handle. However, precise reasons and the community's perception and beliefs around castration are still unclear.

Brooke conducted a preliminary study to understand mule owners and traders' beliefs and motivations in Muzaffarnagar, Uttar Pradesh, for having their mules castrated. We held focus group discussions with both groups, including 71 mule owners and 13 mule traders.

Both groups expressed similar, related opinions around why they castrate their animals. This suggests there may be general patterns and beliefs guiding the prevalence of this behaviour in the region.

FURTHER RESEARCH

This was a preliminary study, and we believe that further research is needed to inform impactful intervention approaches. For example, research exploring the effect of alternative equine management techniques, such as compassionate handling, is needed to understand and evidence the impact of this practice on animal behaviour and management. Such alternative practices could reduce the need for castration and increase animal wellbeing.

In the meantime, we believe that immediate improvements in medical care during and after castration should be made to reduce the suffering that mules experience and to reduce post-castration complications.

KEY FINDINGS

- The main motivation for both owners and traders to castrate their animals is to make them easier to manage. Common practice and tradition perpetuate this perception.
- Participants felt that relying on local practitioners may be the only and/or most convenient way to have their animals castrated.
- Mule owners indicated they could be open to adopting more welfare-friendly methods of castration if they were aware of qualified veterinarians who offered the service.

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NEW AND ONGOING RESEARCH

FINDINGS WILL BE RELEASED LATER THIS YEAR



ETHICAL MAPPING FOR RESEARCH ON WORKING EQUIDS ACROSS AFRICA, ASIA, AND LATIN AMERICA

Brooke is committed to fair, equitable and ethical research. Our research ethics are largely informed by standards developed in the global north (for example the World Medical Association ethical principles for research), but research conducted overseas is subject to different legislation and sometimes complicated by different socioeconomic and cultural norms.

To explore this issue and further our commitment to global ethical research, Brooke teamed up with Julia Lee, a BVetMed student, at the Royal Veterinary College in London for a self-reflective study. Supervised by Dr Madeleine Campbell, senior lecturer in Human, Animal Interactions and Ethics, a European Diplomate in Animal Welfare Science, Ethics and Law and a member of the RVC's Animal Welfare Science and Ethics research centre, Julia investigated the perspectives of local researchers and their understanding of community perceptions of research on working equids.

This study's findings will enable Brooke to better understand the current standards around ethical research in each of the countries we work in and how well our own expectations for ethical research are compatible with those contexts. The next steps for this study will be incorporating some of the findings into our research practices.



Working with Brooke has been an extremely insightful and rewarding experience as we bridged the perception for research ethics between AWERB in the UK and local researchers in various countries Brooke work in. I was amazed by Brooke's impactful research and supportive network, and I would like to sincerely thank Ruth (research coordinator), AWERB, and all the participants for your time, encouragements, and guidance.



*Julia Hui Pin Lee
Royal Veterinary College Student*



WHIPPING DONKEYS IN KENYA: AN ANALYSIS USING THE SCIENCE OF HUMAN BEHAVIOUR CHANGE

A common method to motivate working equids is the use of an aid such as a whip or stick. It is a traditional practice seen in many countries, including Kenya, where the use of a whip or a stick can compromise the physical and mental welfare of the animals subjected to this treatment.

Brooke commissioned Human Behaviour Change for Animals (HBCA) to conduct research into whipping behaviour in Kenya on our behalf. HBCA and Brooke both recognise the need to understand human behaviour to provide solutions to improve animal welfare. The research trialled a human behaviour change approach to examining whipping behaviour, an issue where traditional strategies have proven unsuccessful in eliciting change. The research is a significant step in our journey to understanding how we can apply human behaviour change science within our approaches to working with communities.

The project also compliments our work where we are looking at the root causes of handling challenges through the [Compassionate Handling Global project](#).



BROOKE'S NEW RESOURCES



ANIMAL WELFARE INDICATORS Repository

NEW BROOKE ANIMAL WELFARE INDICATORS REPOSITORY

Since introducing our first Working Equine Welfare Assessment protocol in 2003 (jointly developed with the University of Bristol), we have continued to gain experience and refine how we assess animal welfare in the field and are committed to sharing this learning.

Animal welfare indicators are scientific measurements of aspects that contribute to an animal's overall welfare state. The materials on the site currently focus on animal-based indicators – those which are measured or observed directly from the animal, such as body lesions or eye condition. These indicators provide the most reliable reflection of the animal's actual welfare state and so have been widely used at Brooke. While our indicators have been developed for use with working equids, we believe there is scope to adapt them to other species and contexts.

This new online resource makes our collection of welfare indicators available around the world at no cost. It can be used by animal welfare professionals, researchers, academics, students, advocates, and animal health workers globally.

By sharing our resources, we hope that they can be used more widely to measure and improve equine welfare worldwide and aid the development of future welfare assessment tools.

You can browse the site and sign up to access our indicators at:

www.animalwelfareindicators.thebrooke.org





AWERB

Brooke's Animal Welfare and Ethical Review Body



Brooke aims to be evidence-based in our programmatic work and the creation of these guidelines is a positive step towards achieving that aim by proactively engaging researchers in the ethical review process. We hope that this will encourage collaboration with Brooke and with AWERB from an early stage and inspire greater consideration of the ways in which both humans and animals can be safeguarded.



*Kate Fletcher
Animal Welfare and Ethical Review Body Chair
and Senior Global Animal Welfare Manager*

NEW ETHICAL GUIDELINES FOR RESEARCHERS

At Brooke, our research supports our commitment to improving animal welfare. Importantly, this commitment also guides how we recruit and treat research participants. Pursuing this goal means we must consider all parties – participants and researchers – during study and method design to ensure their protection before, during and after data collection.

To further our commitment, we published a new resource for researchers in 2020: The Animal Welfare and Ethical Review Body Guidelines for Researchers. These guidelines advise on ethical considerations and risk mitigation, such as compassionate handling of equines during and before sampling, informed consent and the protection of vulnerable subjects. The new guidelines support Brooke staff, consultants, and partners to carry out ethical research, enabling maximisation of learning and data usage while promoting a culture of respect and duty of care.

The consideration of ethics and balancing up potential harm versus benefit to both animals and humans is crucial to the organisational culture we promote at Brooke. We abide by the highest level of protection for all participants wherever we work, ever mindful of the different social, behavioural and cultural contexts of our countries of operation. In keeping with our commitment to share knowledge and increase access to information that can improve animals' lives, these guidelines can be downloaded from our website by anyone who needs them.

You can find the guidelines at:

www.thebrooke.org/news/brooke-launches-new-ethical-guidelines-researchers

ENGAGEMENT WITH THE RESEARCH COMMUNITY

- The Covid-19 pandemic impacted our engagement with international conferences in 2020, but we were still able to share our work and engage with stakeholders at conferences held virtually throughout the year.
- At the World One Health Congress in late 2020, we presented our work on using a one health approach to creating lasting change in brick kilns in South Asia. We also shared our Agrovet monitoring framework for improving performance and strengthening frontline animal health.
- We led a workshop on 'animal welfare for agriculture, nutrition and health research' at the Agriculture, Nutrition and Health (ANH) Academy conference in partnership with the International Livestock Research Institute, Chatham House, the University of Melbourne, the Australian National University and KENDAT.
- At the 24th International Society for Anthrozoology conference, we gave a presentation on identifying learning needs for working equine harness improvement.
- Colleagues in our Kenya office attended the 4th Africa Animal Welfare Conference in September – the first-ever virtual animal welfare conference in Africa.
- We became an NGO member of the London International Development Centre (LIDC), a consortium of seven leading London universities with a network of over 5,300 members. Last year we presented on how animal welfare fits into international development to about 200 LIDC members.
- Over the year, we also continued to engage with our external partners, including the University of Liverpool, the Royal Veterinary College, the University of Strathclyde, Hartpury University in the UK and Kalro in Kenya.
- We look forward to continuing our engagement with the research community throughout 2021, both virtually and in-person, when possible.

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COLLABORATE WITH US

Brooke is proud to collaborate with academic and research institutions, other INGOs, and external consultants. We welcome the opportunity to gain new perspectives and find new pathways to produce high-quality evidence that is of use both within and beyond Brooke.

The key principles that inform Brooke's engagement with potential partners, and underpin partnership decisions at every level of activity, are:

- complementary purpose and added value
- mutual respect and commitment
- clarity about roles, responsibilities and decision-making
- transparency and accountability
- adaptability and flexibility

We particularly welcome research partners who:

- have complementary technical and/or geographical expertise to our own
- use innovative research methods and are open to new ways of working
- share Brooke's vision to conduct research that has a practical application

We can offer:

- technical expertise on equine welfare and working animals
- access to a broad network within the international development and animal health and welfare sectors
- experience of conducting research with a clear end use in mind
- a thorough and well-respected Animal Welfare Ethical Review Board
- openness to collaboration and an appetite to learn and share
- co-funding

For more information on our research work or to discuss a potential research partnership with us, please contact the UK Research Coordinators Gemma Carder or Ruth Jobling via research@thebrooke.org

Reference:

Carder G., Jobling R., Randau M., Scantlebury C., Seck M., Zhair S., Wilson. N., Fletcher K., Brown A., Research Review 2020 (2021), Brooke, UK



BROOKE'S RESEARCH TEAM

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Syed Zahir Ali Shah Research Coordinator

SENEGAL

Mactar Seck Programme Manager

UNITED KINGDOM

Klara Saville Head of Global Animal Health, Welfare, Community Engagement and Research

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