

# RESEARCH REVIEW 2021

Highlights from Brooke's global research





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# WELCOME TO BROOKE'S 2021 RESEARCH REVIEW

As Brooke launches a new Global Strategy, evidence gathering and dissemination continue to be key to our approach.

Research at Brooke is ethical. We focus on animal and human welfare, both as an outcome and during the research study process. A research partnership with the Royal Veterinary College, on page 5, investigated the ethical considerations of Brooke researchers in their work. Brooke's Animal Welfare and Ethical Review Board and International Research Group, hold our researchers to account and provide expert guidance, while implementing findings from the study so that Brooke can ensure research ethics that observe local perceptions.

Impactful and well-informed advocacy builds on Brooke's research to change policy that transforms the lives of animals and their owners. 'Working equids: why data matters for policy', on page 7, shows that, despite the need for data to make informed choices, accurate population data are lacking for many countries, and census data for other livestock species often excludes working equids.

Brooke engages in projects that respond to local needs and big picture projects applicable across countries and continents. We are delighted to be working in partnership with the Global Burden of Animal Diseases project and are proud to introduce Dr Girma Birhan Asteraye as the Brooke PhD candidate leading the working equid elements of this work. Find out more on page 12.

We continue to conduct applied research to inform action. We identify the need for research, take what we have learned, and apply the findings directly to have a greater impact on animals and people. An exciting project led by Brooke West Africa on page 13 explores links between compassion and attitudes towards animals, the socio-economic status of horse owners, and the welfare of their horses.

We have been busy sharing Brooke research at international conferences; see page 14. By presenting and publishing our research and influencing others, we can share our learnings with other researchers, international non-governmental organisations (INGOs) and policymakers, informing future research and advocacy initiatives. We partner with other organisations, such as academic institutes, other INGOs, and external experts to gain new perspectives and increase our capacity. This review demonstrates Brooke's significant convening power to bring stakeholders together to build the evidence base for working equid welfare and we want to thank all of those we have worked with throughout 2021.

Our fantastic International Research Team (listed on page 15) is the driving force behind all our research. They ensure that research is relevant to the context, rigorous, and focused on finding solutions to the problems that have the most significant impact on animals. I want to extend my congratulations to the International Research Team on the Research Review 2021.

**We look forward to taking Brooke's research forward into the next Global Strategy.**

**Dr Klara Saville**

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





Photo: © Brooke

## THE DONKEY SKIN TRADE: CHALLENGES AND OPPORTUNITIES FOR POLICY CHANGE

The use of animal derivatives in Traditional Chinese Medicine (TCM) dates back thousands of years. One such derivative, donkey skin produces ejiao, a gelatin used in cosmetics and TCM. The increasing demand for ejiao puts the global donkey population (at a grave risk). Hundreds of thousands of donkeys are inhumane exported and slaughtered annually (primarily from Africa) to meet this demand.

A published report explores the donkey skin trade's detrimental impact on the communities that use donkeys for traction and transportation of goods and people, and on the animal's health and welfare. Donkeys are being slaughtered using inhumane and often illegal methods by untrained staff, causing them huge amounts of pain, fear, and distress.

### Recommendations:

- 1 Reduce demand for ejiao.** We need to raise awareness about the impact of the donkey skin trade on communities and donkeys to reduce demand through public campaigns and education initiatives.
- 2 Lobby for policy change.** We need to see changes to legislation to curb the donkey skin trade. Policy change needs to be bottom-up with local bans in countries where the trade is most damaging. Legislation also needs to be enforced, including tackling illegal cross-border trade.
- 3 Conduct more research.** For instance, further assessments of the impact of the trade on people's livelihoods would further support policy asks to governments. Research using the One Welfare approach would highlight the complex interconnections between animal welfare, human wellbeing, and the environment. We also need further research on consumer and practitioner views on alternatives to ejiao in the context of consumers' attitudes to other TCM products made from animal derivatives.

Goodrum, F., Theuri, S., Mutua, E. & Carder, G. (2022) The Donkey Skin Trade: Challenges and Opportunities for Policy Change. Global Policy, 00, 1–6. Available from: <https://doi.org/10.1111/1758-5899.13072>

# ETHICAL RESEARCH: CONSIDERATIONS ACROSS AFRICA, ASIA, AND CENTRAL AMERICA

Research ethics vary between countries. While international standards such as the World Medical Association's ethical principles for research inform practices worldwide, countries have their own legislation and socio-economic and cultural norms that impact how research is conducted. As an organisation that conducts research worldwide, we wanted to understand what researchers think are the most important ethical considerations for research in their countries.

Brooke teamed up with the Royal Veterinary College (RVC) in London to find out. The project was undertaken by Julia Lee, a recent BVetMed graduate supervised by Dr Madeleine Campbell, senior lecturer in Human, Animal Interactions and Ethics and a member of the RVC's Animal Welfare Science and Ethics research centre.

Julia interviewed Brooke researchers in Ethiopia, India, Kenya, Nicaragua, Pakistan, and Senegal. Data were analysed per country using thematic analysis with an inductive and semantic approach. Julia found that the researchers had similar perceptions and priorities.

## The most important considerations for ethical research we identified

**1**

### THE ROLE OF RESEARCH IN IMPROVING THE WELFARE OF WORKING EQUIDS

For example, considering the relationship between the animal and the owners when designing research and maintaining good animal welfare throughout research activities.

**2**

### RESEARCH STRATEGIES AND ACTIVITIES

For example, engaging the community and building trust, ensuring informed consent is appropriate to local customs and considering the role of gender within the research and the community.

**3**

### LOCAL CONTEXT AND LOCAL PRIORITIES

For example, acknowledging issues that communities may prioritise above working equid welfare, as well as the research literacy of the community and its impact on conveying the purpose of research.

**4**

### THE RELATIONSHIP BETWEEN BROOKE'S RESEARCH PROCESS AND ITS ANIMAL WELFARE AND ETHICAL REVIEW BODY (AWERB)

For example, AWERB's role as a strong voice for ethical research and ensuring standards, but also a need for local perceptions to be well represented in ethical review.



## Research into use

Following the research, Brooke's International Research Group and AWERB committed to reflecting on how we design and conduct research:

- 1) How do we engage communities before, during and after research projects?
- 2) How do we ensure we gain informed consent appropriately for the specific community?
- 3) How do we include the perspectives of local actors in the ethical review process?
- 4) Are our research priorities compatible with communities' priorities?

The collaboration between Brooke and the RVC enabled the research to be enriched. The outcome will allow Brooke to conduct ethical research appropriate to the specific environment more confidently.

For Julia, the research highlighted the importance of incorporating the voices and concerns of local stakeholders into research ethics. It sparked an interest in understanding the experiences of people in direct contact with animals, which will inform her thesis for her MSc in Animal Welfare.



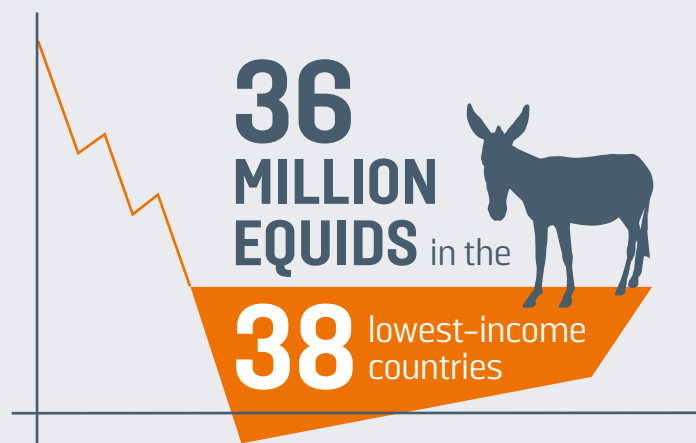
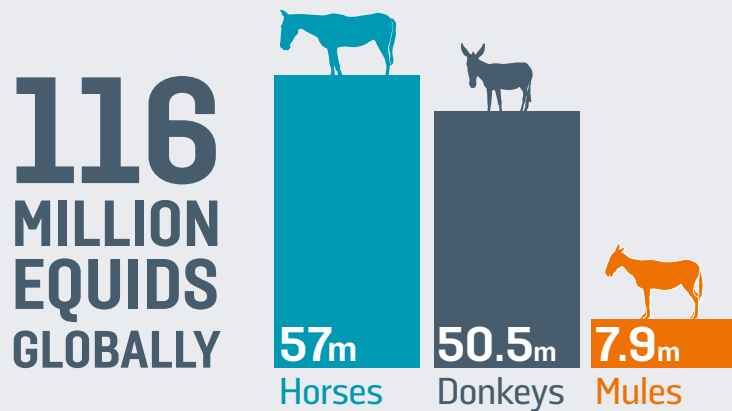
Photo: © Brooke

# WORKING EQUIDS IN NUMBERS: WHY DATA MATTERS FOR POLICY

Despite working equids' vital role in many household livelihoods, accurate population data are lacking for many countries. Census data for livestock species often excludes working equids.

This data gap means governments and organisations cannot identify worrying trends and threats to equine populations, such as illegal trades and diseases. Policymakers need reliable data to make informed decisions to better support animal welfare and communities' livelihoods and inform health surveillance to help reduce the spread of diseases.

A recent partnership between Brooke and the Royal (Dick) School of Veterinary Studies at the University of Edinburgh examined 36 countries to determine how recently governments carried out a livestock or agricultural census. The research identified the challenges to accurate and regular data gathering that many governments face. Case studies highlighted how individual countries collect livestock data, identifying problems and best practices.



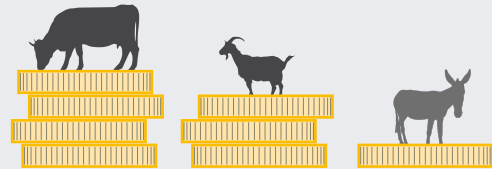


## KEY FINDINGS

- **Different actors collect incomparable data:** the private sector, universities, non-governmental organisations and government agencies collect data using different approaches. These different data sets cannot always be compared or considered sufficient to supply relevant insights on equid population numbers and the status of working animals in any given country.



- **Low socio-economic status of equids:** there is a lack of evidence on equids' economic impact compared to other livestock, such as cows, sheep, and goats. Equids are commonly regarded as less valuable and often excluded from government initiatives and policies.



- **Issues with scope, quality, and logistics:** governments in low- and middle-income countries face challenges to regular data collection, including lack of resources, poor infrastructure, social and political instability, and, at times, conflicts.



- **Not enough data reporting:** the United Nations Food and Agriculture Organisation (FAO) coordinates with governmental statistical agencies to obtain a global overview of the world livestock population. The FAO recommends that countries conduct agricultural censuses every ten years. When there is no regular collection of livestock data or the country does not report back, FAO cannot provide an accurate overview of equid populations.



## RECOMMENDATIONS

Governments need to address data problems to enhance the status of working equid data and farming in policies and programmes by:

- classifying working equids as livestock
- linking equids with the Sustainable Development Goals (SDGs) to demonstrate their intersectional impact (SDG 1, 2, 5, 6 & 13)
- reporting regularly to FAO to fulfil their obligation to report national data. Censuses should also disaggregate equid and other working livestock data by default
- promoting Livestock Identification and Traceability Systems to ensure transparency in trade, food safety, prevention of zoonotic diseases and monitoring of movement in the donkey skin trade
- improving collaboration by all actors across sectors involved in data collection

Brooke plans to use these findings to inform its advocacy strategy, nationally and internationally, to push for improved animal welfare through the One Welfare approach. The full report can be found [here](#).



# DIGITAL INNOVATION: IMPROVING LIVESTOCK HEALTH AND WELFARE IN ETHIOPIA

In partnership with:



Livestock plays an important socio-economic role for rural communities globally, helping to reduce poverty, improve resilience and combat food insecurity. Despite this, animal diseases and limited access to health services mean that almost 20% of livestock are lost to disease in low-income settings.

In Ethiopia, livestock contributes to the livelihoods of around two-thirds of families, but access to veterinary professionals is limited. However, increased mobile phone usage and signal coverage present opportunities for livestock health and welfare advice to be delivered via mobile health applications (apps).

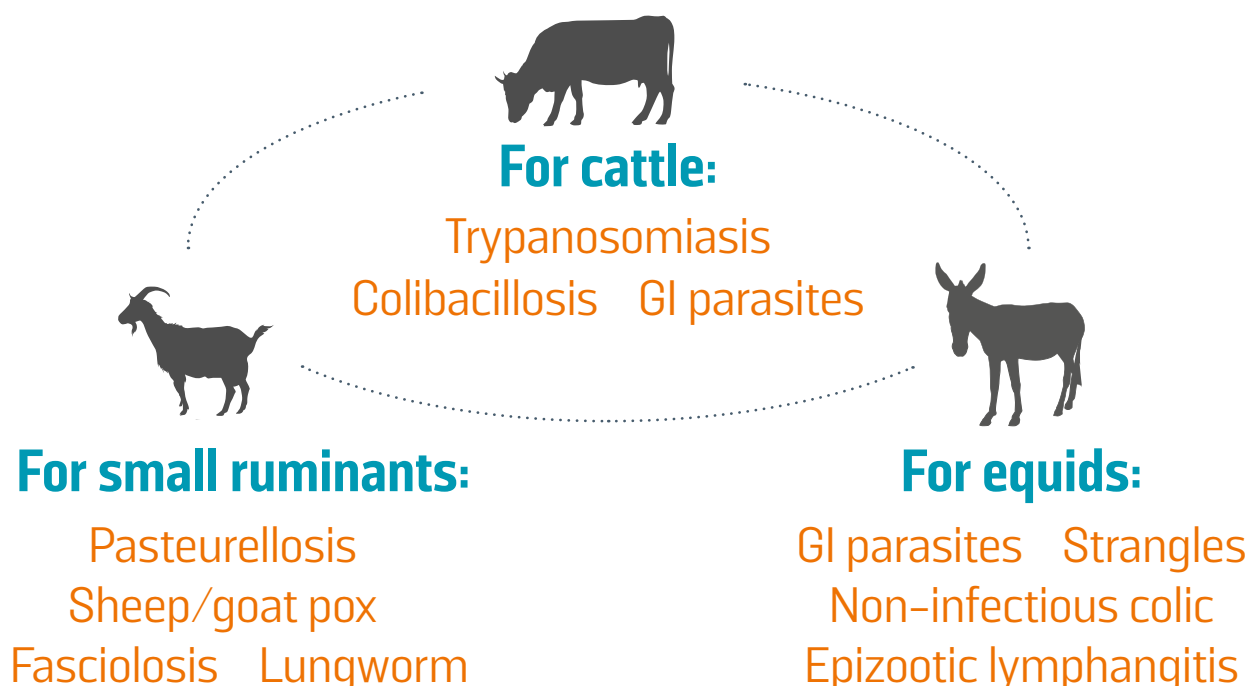
A recent project used a framework for cattle disease and extended it to cover conditions affecting small ruminants (sheep and goats), camels, and equids. Previous studies have demonstrated geographical disease variations, as well as how symptoms present and are described. The project aimed to design an app to overcome these challenges, support differential diagnosis across 50 diseases and improve surveillance in rural settings.

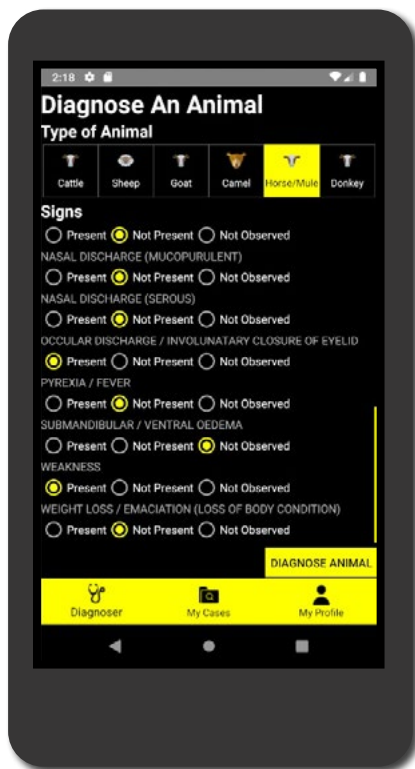
Workshops were held with Ethiopian veterinary professionals to explore each of the major species to be included in the app.

The project was led by scientists from Addis Ababa University, with operational support from Brooke coordinators who supported local animal health professionals to access the app and provide guidance on its use. Technical support on the app's development and use (such as machine learning algorithms for diagnosis) was provided by the University of Strathclyde in the UK.

Between 2018 and 2020, using the app, data was collected from just under 6,000 animals. Whilst the project found frequently occurring diseases within each species, just under 20% of cases were categorised as 'other'. The team, therefore, developed an algorithm to cover 16 to 20 common diseases, including an 'other' category.

**Any future version of the diagnostic app could be extended to include some of the other relatively frequently occurring diseases.**





*Screenshot from app*

## Usability of the app

Animal health professionals generally need access to lab facilities and analysis to confirm a diagnosis. In settings where lab access is limited by geography and cost, the app supports a diagnosis by offering animal health professionals the top three most likely diseases against which they can compare their original findings.

There was an almost perfect match for some diseases between the vet's diagnosis and the app's suggestions, for example, in 17 out of 17 cases of anthrax in horses or donkeys. In contrast, there were diseases on which major disagreement appeared, such as in 30% of epizootic lymphangitis cases in horses. In only a limited number of cases did the app indicate total disagreement with the original diagnosis; varying by species, from 9% in sheep up to 17% in goats.

These results point to the need to update the diagnostic algorithm continually. In 2022, Brooke will continue to work with partners to finalise the app and assess its usability.



*Photo: © Freya Dowson / Brooke*



## ONGOING RESEARCH PROJECTS

A number of Brooke projects were identified or continued in progress in 2021, with completion and dissemination to take place in 2022 and 2023.



# PROJECT UPDATES

## THE BURDEN OF ANIMAL DISEASE IN WORKING EQUIDS – ETHIOPIA

There is very little robust data on how disease, injury, and nutritional deficiencies inhibit working equid's contribution to income generation and their ability to provide access to food and water. This lack of data means equids' contribution to society goes unrecognised, hindering programmatic and advocacy work to improve their welfare. Brooke is funding a PhD at the University of Liverpool to address this issue within the [Global Burden of Animal Diseases](#) programme (GBADs).

The PhD attracted a large number of applicants, many of which were outstanding. We are proud to announce that Dr Girma Birhan Asteraye was successfully recruited into the PhD studentship. Girma is a vet with an MSc in Veterinary Pathology. Before starting the PhD, he worked as a lecturer at the University of Gondar, College of Veterinary Medicine and Animal Sciences, Ethiopia. Aside from teaching, Girma also handled clinical cases and undertook community service work and research.

Girma has witnessed first-hand the potentially devastating effect disease, injury, and poor nutrition has on working equids and the socio-economic standing of their owners. His professional interest in working equids started during a clinical internship conducted with the Donkey Sanctuary Ethiopia. Girma is keen to develop expertise in animal health economics and animal welfare and learn from the diverse teams at GBADS, the International Livestock Research Institute, and Brooke. Ultimately, he aspires to help solve societal problems that come from working equid disease and poor welfare, and improve the understanding of working equids' role so that they are given due consideration by decision-makers who may be able to improve their welfare.

Girma and the supervisory team, Professor Jonathan Rushton, Dr Gina Pinchbeck, Theo Knight-Jones, and Dr Klara Saville, are currently reviewing the geographical distribution, population dynamics and estimation of biomass and stock economic value of working equids in Ethiopia.

### The PhD will go onto:

- improve working equid population estimates
- develop a way to classify working equids into different livestock systems
- estimate the economic savings if working equids were in perfect health

In partnership with:

# GBADs



UNIVERSITY OF  
LIVERPOOL



*My lifelong ambition is to become a recognised expert in the field of animal health economics and animal welfare in general, and I would hope and expect to be able to play a significant role in the development of the equine studies as a whole in Ethiopia where there is few such expertise at present. The long-term benefit to the welfare of the working equid in Ethiopia and other similar developing countries would, I hope, be tangible.*



Dr Girma Birhan Asteraye



# COMPASSION, SOCIO-ECONOMIC STATUS, AND HORSE WELFARE: WHAT ARE THE LINKS?

*In partnership with:*



Poverty in low- and middle-income countries is considered a significant cause of poor welfare in horses. Indeed, the lack of financial means to pay for health and farrier (horseshoer) services seem crippling. However, assuming a horse's welfare is directly linked to their owner's socio-economic status is too simplistic. Parameters such as the compassion and attitudes of the owner towards their animal could affect this cause-and-effect link.

In collaboration with the University of Portsmouth, Brooke is in the early stages of an exciting new research project exploring links between the socio-economic status of horse owners, their compassion and attitudes towards their horses, and the welfare of those horses.

It is anticipated that the findings will inform Brooke's programmatic work, focusing on Brooke West Africa. It will also be used to raise awareness on this issue with external stakeholders, including researchers, donors and other INGOs.

## Tool development and data-collection training

In 2021, the research team worked to design and adapt specific tools for the study. A compassion assessment was adapted from the Sussex Oxford Compassion Scale, based on the Scale's five domains. A socio-economic status tool was developed, integrating references from international development organisations and some dimensions of the United Nation's Poverty index.

Brooke staff underwent training to administer the questionnaires on animal welfare and compassion. Partner organisations are collecting data on socio-economic status, given that it is very confidential and best collected by people the owners trust. These enumerators have also undergone additional training, although they are experienced in this type of data collection.

## Next steps

Data is being collected in Senegal at two locations, Thies and Mekhe. To date, pilot data has been collected to validate the tools. The remaining data will be collected in early 2022 and analysed by researchers at the University of Portsmouth. The findings from the study will be published later in the year.

## EXTERNAL ENGAGEMENT: SHARING BROOKE'S LEARNING

During 2021, Brooke staff attended a number of virtual academic events where we presented our work, built capacity and networked.



### One Welfare Conference

Delegates who attended the virtual One Welfare World Conference shared the latest research on interconnections between animal welfare, human wellbeing, and the environment. Brooke co-sponsored the event, and colleagues from Pakistan, the UK, Kenya, and Nicaragua presented on significant issues relating to working equids. They raised concerns around the damaging donkey skin trade and how International Coalition for Working Equids (ICWE) partnership efforts are raising the standards for working equids in policy. One of our presentations won an award for innovatively bringing to life the challenges for equids and people in coal mines across Pakistan.

### University of Roehampton, London lecture

Colleagues from our offices in Senegal, Kenya, and Ethiopia delivered an inspiring online lecture to undergraduate students at the University of Roehampton. The lecture covered the welfare issues that working equids face in Africa, opportunities and challenges for change and issues related to the trade in donkey skin for use in traditional medicine.



### 8th International Conference on the Assessment of Animal Welfare at the Farm and Group level (WAFL)

Brooke has been continually gaining experience and refining methods for assessing equine welfare. The Brooke Animal Welfare Indicators Repository was launched in 2021 to share our learning on equine welfare assessment. The Repository makes welfare indicators openly accessible online and, when presented, was well-received by conference delegates.



### British Veterinary Association Congress

Brooke delivered a presentation on 'the role of vets in pandemics' alongside the UK Chief Veterinary Officer. The presentation discussed the crucial role that vets play in global health security and preventing future pandemics.





Photo: © Brooke

## BROOKE'S INTERNATIONAL RESEARCH TEAM

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**Ariel Morales** Research & Communications Officer

### PAKISTAN

**Syed Zahir Ali Shah** Research Coordinator

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### UNITED KINGDOM

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

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