

Blog “Sustainable Land Management in Sub-Saharan Africa: Improving livelihoods through local research”



INTRODUCTION



Our blog is intended for project staff as well as interested stakeholders from science, policy and practice, to share experiences and mutually learn. It is an opportunity to showcase the multi-faceted nature in which we improve livelihoods and support sustainable land management through local research.

This current blog from the **InfoRange** team gives insights into their Vet-App, which has been co-designed with local pastoralists and relevant stakeholders. Thanks to the co-design approach a shared understanding was created based on bottlenecks to be overcome as well as being able to adapt and develop an App that takes needs and interests into account from the start.

CO-DESIGNING DIGITAL SOLUTIONS FOR PASTORALISTS

Pastoralism in the drylands of Kenya and Namibia has always been adaptive and innovative. The **InfoRange** Vet-App builds on these strengths and shows that technology does not need to start in a laboratory or at an office desk—it can begin with conversations between pastoralists and animal-health service providers. Through a transdisciplinary, co-design process, pastoralists’ lived experiences and deep knowledge of livestock health are directly integrated into the development of the tool.

What matters is not only improving disease reporting and data collection, but strengthening communication and coordination between herders, veterinary services, and other input providers. This enables faster responses to disease outbreaks, healthier herds, and more resilient pastoral communities. The rangelands already hold the expertise—digital tools like the **InfoRange** Vet-App simply help to unlock, connect, and amplify it.

BRINGING ANIMAL HEALTH INNOVATION TO THE RANGELANDS

Pastoralists manage nearly all of the rangelands in northern Kenya and Namibia— vast ecosystems often misunderstood as unproductive drylands. Yet pastoralism contributes significantly to national economies and rural livelihoods. In Namibia, pastoralists rear around 80% of the cattle herd, and in Kenya livestock contributes almost half of the agricultural GDP. Despite this importance, access to veterinary services remains limited. The privatization of the 1980s did little to improve the situation in remote areas, where high transaction costs and long distances between pastoralists and animal health workers continue to hinder effective delivery of veterinary care.



Picture 1: Herders and the UoN research team during a focus group discussion to elicit experiences and priorities for the design of the veterinary app (photo by Alfred Mainga)

Digital innovations are frequently promoted as solutions to livestock health challenges. However, many apps are designed far from the realities of herders’ lives, and pastoralists are rarely involved early in the design process. The **InfoRange** project

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addresses this gap by adopting a co-design approach that actively involves pastoralists in defining the attributes they want to see in the prototype of a digital solution.

UNCOVERING EXISTING BOTTLENECKS

Before writing a line of code, the team from the Faculty of Veterinary Medicine at the University of Nairobi (UoN) listened closely to the people who live and work in the rangelands. Through twenty focus group discussions and more than thirty interviews, pastoralists, disease reporters, veterinary officers, and community leaders identified the real gaps and barriers they face in reporting diseases and responding to outbreaks. Both herders and animal-health professionals pointed to the same bottlenecks: limited access to veterinary services, slow information flow, and unreliable communication channels for sharing disease information and receiving advice.

This shared understanding led PhD student Derrick Sentamu (UoN) to initiate the co-design of a veterinary app that connects herders with each other and with veterinary services—rather than simply pushing information to them. The app allows communication via voice messages, photos, and text so that herders can promptly report observed clinical syndromes. When livestock keepers share photos of sick animals, these appear on a digital disease map, generating geo-referenced reports that support timely responses and early warnings of new outbreaks. Field research showed clearly that a successful digital tool must work on basic smartphones, function in areas with poor connectivity, and require minimal mobile data. Importantly, the design must reflect communication practices already used by pastoralists, rather than those imagined by software developers in distant cities.

To complement this co-design process, PhD student Rufo Compagnone (DITSL) and colleagues emphasized the importance of digital inclusion as a foundation for participation. Through [InfoRange](#), specially trained [Volunteer Information Facilitators](#) (VIFs) have been working with pastoralist communities in northern Kenya and Namibia to build smartphone literacy. This has enabled herders to document

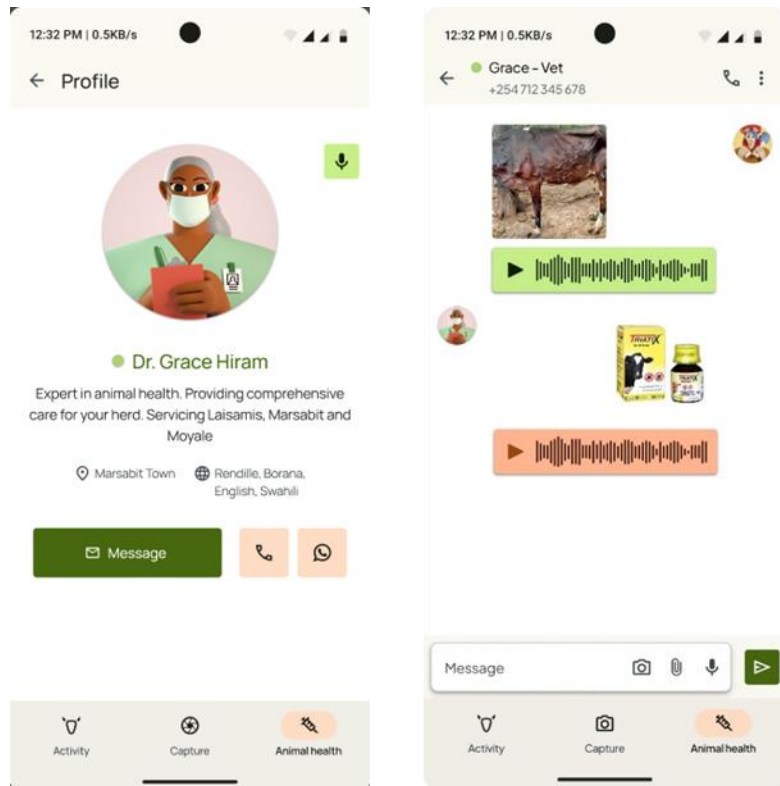
grazing and animal-health conditions through photos and share them within their networks.

HERDERS’ NEEDS AND INTERESTS INTEGRATED

The co-design discussions also revealed strong interest among pastoralists and veterinarians in having a dedicated space within the app to access practical animal-health and rangeland knowledge locally and offline. Such a digital community knowledge centre could host audio, photos, short videos, and practical guidance in local languages. It could become a repository where information on livestock and zoonotic disease management, prevention, treatment, and medicines can be easily accessed—even by users with limited literacy—through images, audio, and local-language content. Additional topics might include poisonous plants, seasonal grazing strategies, and drought preparedness. The interest expressed by communities highlights an exciting direction for future development.

One of the insights from this work is that pastoralists are not digitally inept nor technology-averse. In fact, they are already creative adopters of mobile solutions when these help them navigate uncertainty. They want to participate actively in shaping the solutions that affect their livelihoods. The co-design approach demonstrated how herders can become collaborators rather than merely beneficiaries. They identified what information matters most to them, how it should be shared (publicly or privately), and which functions a digital tool must have to be useful in their everyday lives.

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Pictures 2 and 3: Prototype user interface illustrating functions for identifying veterinary personnel and communicating symptoms via images and voice notes

NEXT STEPS

The next steps for the project include establishing feedback loops with government animal-health authorities, private veterinary workers, and NGOs, as well as preparing for field pilots. The app will continue to evolve based on community input, which is essential for ensuring long-term relevance and sustainability. Rather than developing technology first and expecting people to adapt to it, this process focuses on developing technology with the people who will use it.

PHOTOS

Courtesy of [InfoRange](#)

FOR FURTHER INFORMATION

Funded by the German Federal Ministry of Research, Technology and Space (BMFTR), within the strategy of its platform [Research for Sustainability](#) (Forschung für Nachhaltigkeit, FONa), the **INTERFACES** project works with four regional projects – **COINS**, **DeLaRe**, **InfoRange** and **Minodu** – to strengthen the integration, coherence and reach in the area of sustainable land management.

MEDIA

Follow us for updates on the research programme on our [website](#) and follow us on [LinkedIn](#) and on [D-Groups](#).

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