

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 was prepared by Rufo Roba Halakhe, Keerthana Sri Krishnan Sathyabama, Felista Timaado, Halkano G. Bonaya, Mpule Kamwi, Mareike Aufderheide-Voigts, María Restrepo, Janna Pfister and Brigitte Kaufmann from the **InfoRange** project. It takes a closer look at how the **InfoRange** project enhances pastoralists' access to relevant information on the internet in Kenya and Namibia, with the help of so-called Volunteer Information Facilitators.

DIGITAL INCLUSION FOR PASTORALISTS

HOW VOLUNTEER INFORMATION FACILITATORS STRENGTHEN DIGITAL SKILLS AMONG PASTORALISTS IN KENYA AND NAMIBIA

In northern Kenya, herders have started using smartphones to take and share pictures on grazing conditions in pasture areas. They take photographs of vegetation and water sources and share this information within their communities. This enables them to make quicker, better-informed decisions about where to lead their herds next.

This digital innovation has been made possible through smartphone training sessions offered by so-called Volunteer Information Facilitators (VIFs) as part of the **InfoRange** project. The aim of the training is to support interested herders in the Laisamis and Sololo regions (northern Kenya) and in Kavango and Omaheke (northern Namibia) in developing digital skills that allow for enhanced information sharing and thereby supports sustainable grazing and rangeland management decisions.

DIGITAL SUPPORT FOR PASTORALISM

The exchange of real-time information via smartphones on suitable grazing areas, for instance, provides valuable support for scouting activities. Until now, scouting has

been time-consuming: typically, one or two herders are sent out to scout potential grazing areas, walk long distances, assess conditions, and report back to the community before a decision is made.

In northern Kenya and Namibia, where mobile livestock keeping (pastoralism) plays a central role for the livelihood of the majority of the people, herds rely on natural sources of fodder and water. However, these resources are not available in the same locations year-round: rather the pasture area consists of patches with different types of vegetation that provide fodder at different times of the year. This also depends on whether and when it has rained in the respective areas. Therefore, herds must be mobile, and herders take decisions about where best to move with their herds. Timely access to reliable information is thus essential.

LOCAL TRAINERS STRENGTHEN DIGITAL KNOW-HOW

While smartphones become more easily available in the drylands of Northern Kenya and Namibia, pastoralists usually use ordinary mobile phones. One pastoralist explained

"I did not have any interest with smartphones because I had convinced myself that I could not learn how to use it. I did not even want to touch it." – Co-design team member in northern Kenya.

To address the limited digital literacy, **InfoRange** collaborates closely with pastoralist communities in northern Kenya and Namibia. Eight digitally literate young locals were selected jointly by the communities and the researchers to act as Volunteer Information Facilitators (VIFs), delivering training and supporting herders in building digital literacy.

The training sessions started with an introduction to the basic functions of smartphones, which were then compared to the standard mobile phones that herders are familiar with. Building on this foundation, participants learn to use the camera and photo gallery, as well as how to share information via WhatsApp.

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Figure 1: Smartphone learning session in Ngurunit - Keypad training comparing with cellphones (photo by Keerthana Sri)

In addition to training, the VIFs are regularly present on site. Twice a week, they visit markets, water points, and other public gathering places, where they provide mainly illiterate community members with internet access. They help them searching for online information that interests them. Until now, many pastoralist communities in Kenya and Namibia have had limited access to online information—not only due to a lack of devices or digital skills. A key barrier is that most available content is not provided in their local languages.



Figure 2: VIF in Ngurnit assisting herders in searching for information on the symptoms they have observed in their goats (photo by Peter Letipo).



The intended role of the VIFs is to help close the gap and create the prerequisites for one of the **InfoRange** project's core goals: enabling herders to actively contribute to the development of a smartphone app tailored to their needs. This app is not intended to replace their usual practices but to enhance them by improving access to relevant information and facilitating knowledge exchange within communities.

Figure 3: VIF in Sololo, Walda, assisting a herder whose goats were suffering from severe diarrhoea and whose goat kids were dying in large numbers. The goats were suffering from the PPR virus, and the herder wanted to learn more about it (photo by Halkano Galgalo).

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DIGITAL LITERACY AS A FOUNDATION FOR CO-DESIGN OF THE INFORANGE APP

For the app to be developed in collaboration with pastoralists and to reflect their needs and local context, it is vital that they—with the support of the VIFs—gain an understanding of what information is available online, how digital tools can be used, and what challenges or risks may arise. This allows them to give meaningful input when shaping the app’s functionality, ensuring its relevance and practical usefulness.



Figure 4: Prototype presentations in Focus Groups to provoke or initiate the co-design process with herders in northern Kenya (photo by Haron Akala).

The app is expected to provide reliable real-time information in key areas such as grazing monitoring and animal health, as well as access to veterinary services. These features are informed, among other things, by the VIFs’ monthly reports to the research team, which document the queries they receive from community members whereby providing insights into the digital information needs of the communities.

Since the VIFs started their work in Kenya in July 2024, the most frequent requests have been for information on livestock diseases, animal nutrition, marketing, and human health. According to Rufo Halakhe, a PhD student on the **InfoRange** project, such queries do not necessarily indicate a lack of knowledge. Rather, herders actively seek to compare digital content with their own experiences, also using it to assess the potential and reliability of digital tools.

JOINT SELECTION PROCESS ENSURES VIFS MEET PASTORALISTS' NEEDS

To ensure that the VIFs are well-suited to the needs of the communities, their selection was designed to be participatory from the outset. The **InfoRange** team actively involved representatives of the pastoralist communities in the recruitment process, aiming to ensure both cultural compatibility and technical competence.

In Kenya, for instance, community members suggested placing printed announcements in high-traffic areas such as market centres and the chief’s office to maximise outreach. This approach was successful: 71 people applied, and a shortlist was invited to attend in-person interviews.

Community representatives also played a central role in the selection procedure. They contributed to developing interview questions and were involved in assessing candidates. Interviews evaluated previous experience, language skills, and digital competencies. In a practical test, candidates had to use a laptop and internet access to research online and respond to example queries posed by herders.

Final selection was made jointly based on criteria such as language proficiency (in English and local languages), digital skills, familiarity with local social and cultural contexts, and a commitment to inclusion and gender equity.

VIFS RECEIVE TRAINING TO PREPARE FOR THEIR ROLE

Before they began their work, the VIFs underwent targeted training sessions designed and conducted by members of the **InfoRange** team, such as the MSc student Keerthana Sri, who studied information needs of pastoral women for her thesis. These sessions not only introduced the aims and the participatory approach of the project but also specifically prepared the VIFs for their role as facilitators of digital skills.

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In both project regions—northern Kenya and northern Namibia—the training covered internet search functions, evaluating trustworthy sources, techniques for data documentation, and research methods related to topics such as livestock health. Another major focus was on communication skills, especially for building trust. The VIFs practised real-life scenarios and were encouraged to reflect on what they had learned and adapt it to their local context.

For example, during the training, Mpule Kamwi, a staff member of the Namibia Nature Foundation (NNF), asked the VIFs: *“As a VIF, you have an appointment with farmers in a particular village, but upon arrival, you discover there is a funeral. What steps will you take?”* To address such situations sensitively, Mpule and her colleague Rakel Johannes facilitated role-playing exercises that demonstrated respectful conduct according to Otjiherero traditions, customs, and norms. These exercises gave the VIFs clear guidance on how to respect local standards, which is essential for VIFs to work effectively

An additional course focused on teaching digital skills to adults with limited literacy. This practical training combined technical knowledge with didactic methods thus equipping the VIFs to support individuals with little formal education in using smartphones.

CHALLENGES AND PERSPECTIVES

Many herders involved in the **InfoRange** project have shown great openness to digital technologies and are enthusiastic about the opportunities that smartphones and internet access offer for their daily lives. At the same time, community members have highlighted specific barriers to broader use of digital tools. A key obstacle in both study areas is the cost of mobile data, especially for households with limited financial resources. Access to power is also a challenge in remote areas without an electricity grid connection. Solar chargers could ensure reliable device use, but are still costly.

VIFs in Namibia face additional logistical obstacles. Vast distances between villages and limited public transport make community visits difficult. To overcome this, VIFs have learned to focus their activities around pension payment days at central locations, ensuring maximum participation and outreach.

Working with VIFs has revealed that sustainable digital inclusion occurs when communities take the lead in their learning journey. Peer-to-peer learning creates a natural multiplier effect where confident users spontaneously support beginners, extending impact far beyond formal training. By placing ownership in the hands of communities, the VIF model demonstrates that true digital empowerment is not about bringing technology to communities, but about empowering them to integrate technology on their own terms.

PHOTOS

(c) Courtesy of Keerthana Sri, Peter Letipo, Halkano Galgalo and Haron Akala

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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**, **DeclaRe**, **InfoRange** and **Minodu** – to strengthen the integration, coherence and reach in the area of sustainable land management.

MEDIA

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