

# Beyond the Screen:

## Understanding and Co-Creating App Features with Kenya's Rangeland Pastoralists

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Designing a digital tool together

- By working together, we can make sure that new technology meets your needs.
- In our approach, user is (you are) the focus, more than the tool.

Meaningful user engagement → Relevant tool → Sustainable innovation

- Smartphone trainings to build capacity of the community to be ready to engage in the co-design process
- Similar training will be given to...
- Paper prototypes (last year this was presented to some committees and other leaders to spark conversations on possibility of an application of digital tool)
- Participants were asked to interpret the paper prototypes
- given time to reflect on the potential idea



# Rationale for a Rangeland App

- Pastoralists' grazing management and itineraries depend on **up-to-date information** on rangeland condition
  - They have a **sophisticated information sharing system** e.g., internal 'radio' - travelers, scouts
  - Opportunity to **explore technological** possibilities to **complement** this system
  - Uptake is low due to **low user involvement** in the early design stages
  - As a result, the content is often **irrelevant or misaligned** with user needs
  - **Co-design** integrates user perspectives into the development of digital tools
  - It is conducted with literate or tech-literate populations
- Gaps remain in understanding how to **effectively engage marginalized groups**, such as pastoralists, in co-design processes



# Aim

To explore how progressive participatory design approach supports meaningful engagement in a co-design process

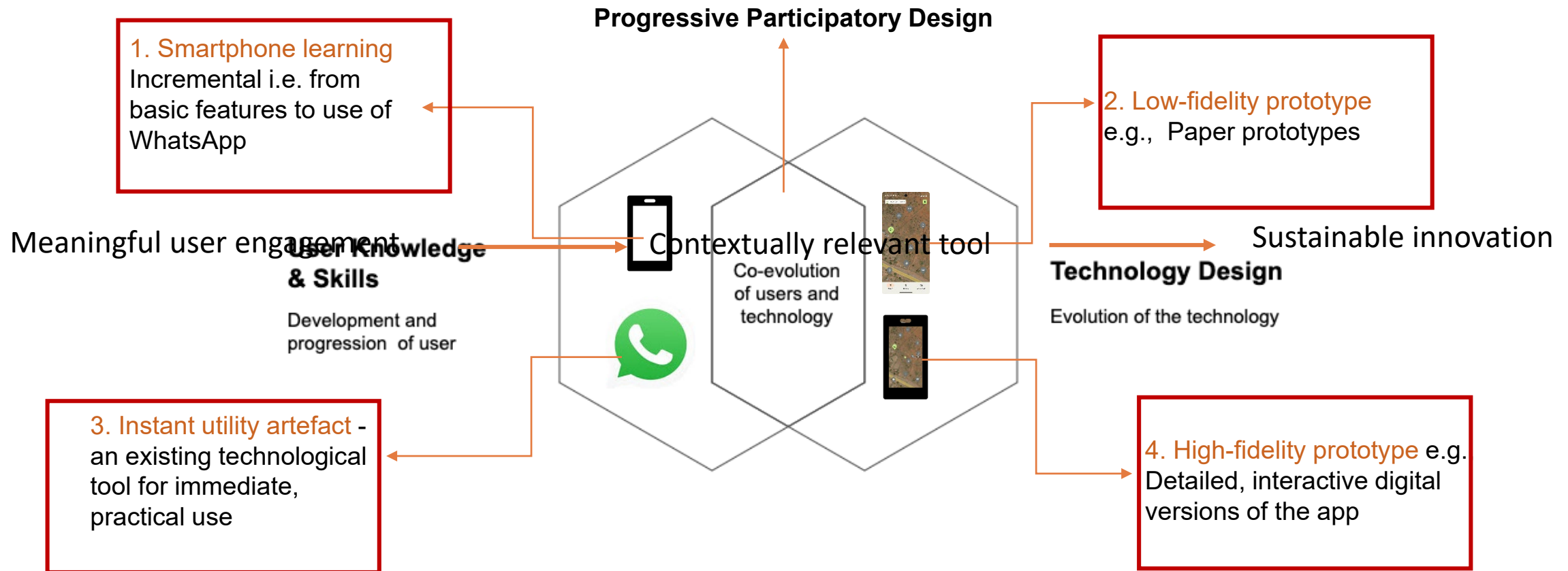


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# Co-design approach

- Co-design enables technical innovations to become more attuned to societal needs and encourages societal actors to share responsibility (von Schomberg, 2013)
- User-centered design: the **user** is the focus, not just the **tool**



# Materials and methods



## 2 Co-design teams

- ⑩ 12 persons in Ngurunit and 8 in Sololo
- 4 Group formation meetings
- *Aburtu finn bori* – scouts for a better future
- *Lchekuti Lolkiliku* – herders of information



## Peer -assisted learning

- Semi-structured interviews
- Most Significant Change stories
- Opinion line



## Co-design workshops

- Video recall
- Opinion line
- Semi – structured interviews
  - Post workshop reflections
- FGDs guided by modified 'crazy 8' approach



## Data Analysis

- Qualitative data
- MAXQDA
- Kirkpatrick evaluation model

# Steps taken to co-design the Rangeland app

## Pre-Design

## Design

## Develop & Implement



Jan-June 2024

March 2024- March 2025

March- April 2025

April- September 2025

### Collective Catalysing

- Concept provocation using paper prototypes
- Brainstorming & conceptualisation
- Information needs

### Training & Support

- Providing smartphone training for interested community members
- Volunteer Information Facilitators - help access information on the internet

### Collective Understanding & Exploring

- Context, boundaries, problem
- Form a Co-design Team
- Collective agreement on goals and aims

### Progressive Participatory Design with Co-design team

- Workshop 1- Reflection on WhatsApp use
- Workshop 2 – Information sharing
- Workshop 3 – Intro of high-fidelity prototype

### Collective Doing & Learning

- Using & experiencing
- Feedback & learning
- Modifying & adapting
- Co-designed product or artefact

Continuous tech development by Compwiz - Constructing, Implementing, Evaluating

# 1. Smartphone learning

- Low prior engagement with technology
  - Volunteer Information Facilitators (peer facilitators) supporting with smartphone training
  - Two co-design teams in Sololo and Ngurunit have been trained
  - Incremental peer-assisted learning with a focus on mastering WhatsApp use
    - Get used to camera, audio-visual messaging functions
    - Participants will serve as peer trainers and first pilot users of the app
- Increase ability to contribute to the process of co-designing a relevant app



Participants in a smartphone learning session in lower Laisamis

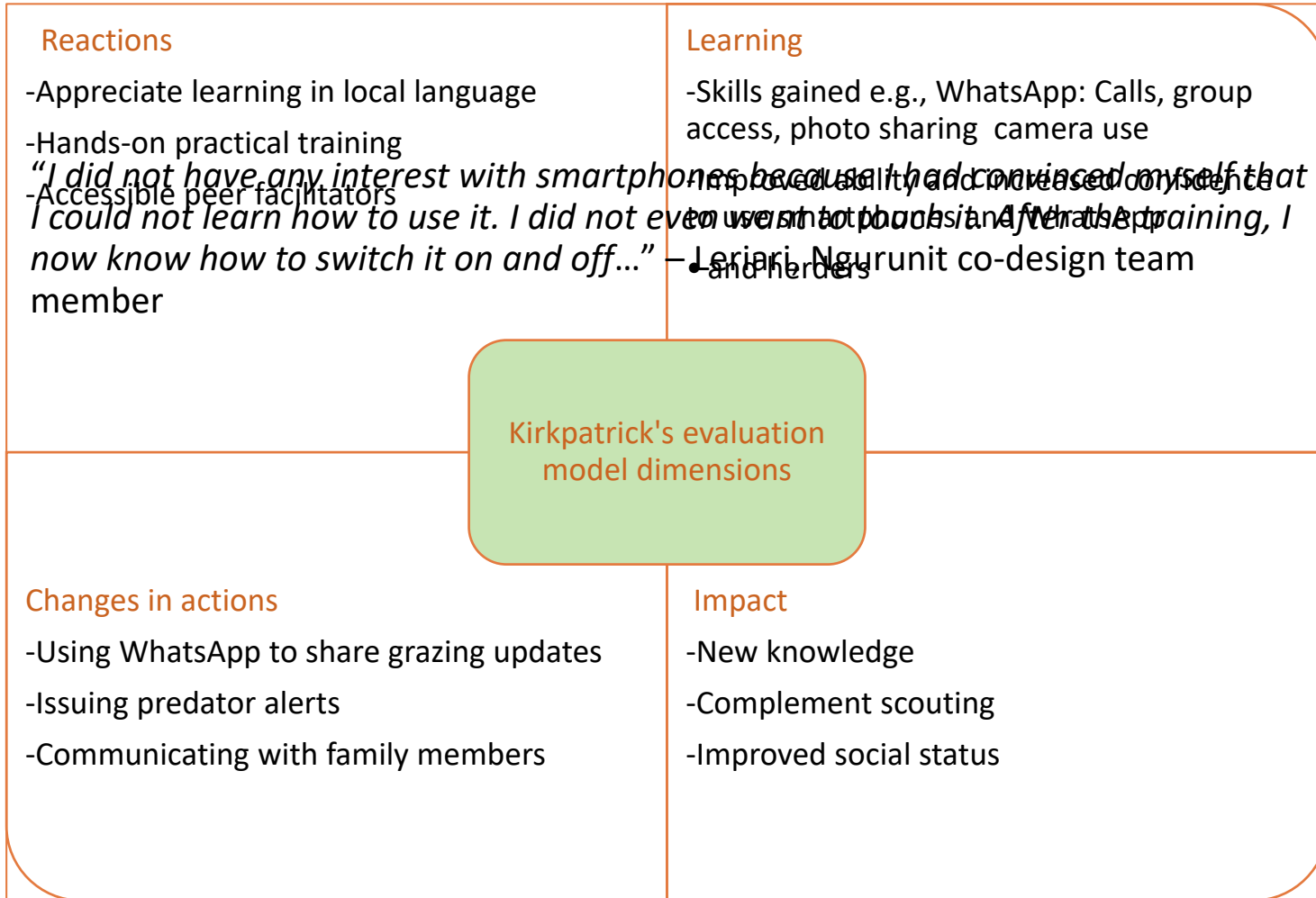
# 1.1 Reflection on smartphone (WhatsApp) learning

## Opinion line



- Opinion line assessed participants' confidence in using WhatsApp.
  - Participants proposed peer support rather than external refresher training.
  - Continued peer support was observed after the training session.
  - This self-organized support shows active engagement and shared responsibility.
- The activity ensured equal footing before beginning co-design.

# 1.2 Results of smartphone learning



Co-design team learning about camera function

Ljalio Lerjari – team member – Lchekuti Lolkiliku

## 2. Low-fidelity prototypes

- Presented as a **potential idea, not a product**
    - Participants were asked to interpret the paper prototypes
    - User-generated information and map layers explained
    - Given time to reflect on the potential **idea**
- Used paper prototypes to spark conversations on possibility of an application



Adjusted icons according to user suggestions

# 3. Instant Utility Artefact

- An existing technological tool appropriated for immediate, practical use (Ramachandran et al., 2007)

WhatsApp = instant utility artefact → App uses similar sharing features

Example 1:

- Trained pastoralists actively using WhatsApp sharing grazing updates, issuing predator alerts, and communicating with family members

Example 2:

- Participants drew on WhatsApp experience to discuss information to share digitally
    - On a small group
    - Large group
    - Private information
  - Sharing preferences were explored using FGD guided by modified “crazy 8” approach
- Decisions were influenced by risk, urgency, and social implications



# 3. Instant Utility Artefact

Type of Information	Shared Widely (Large Group)	Shared Selectively (Small Group/Trusted Members)	Not Shared (Concealed)	Key Variable Influencing Sharing
Pasture Availability	When abundant	When moderately available	When scarce	Resource abundance/scarcity
Water availability	When plentiful	If enough for group only	If only enough for own herd	Quantity; strategic advantage
Market Prices (Livestock)	When favourable	Regular updates among kin/trusted contacts	Rarely concealed	Trust; benefit to kin; fear of manipulation
Rainfall Location/News	If verified	If uncertain or localized	Rarely concealed	Reliability, timeliness, welfare outcomes
Grazing Routes and Locations	When not strategic	If shared use is possible	If high competition or blocked	Overuse risk, secrecy, topography
Settlement Suitability	If the area is not strategic	When involving relatives or alliances	If highly suitable and contested	Size of area; local ties; water/pasture access
Conflict-Prone Areas	If verified and urgent	Selectively with allies	Unverified info	Safety concerns; responsibility; fear of escalation
Predator Presence / Vectors / Insecurity	Almost always	Very rarely	Rarely concealed	Collective risk reduction; herd protection
Rule-breaking (e.g., grazing rules)	Never	Sometimes to avoid penalties	Often concealed	Social norms; fear of sanctions; loyalty to group

## 4. High-fidelity prototypes

- High fidelity prototype introduced as an “empty box”.
  - Live app prototype walkthrough initiated with each participant
  - **First visual assessment:** Focus on images/icons rather than written text
  - Encouraged **peer demonstration** and device sharing to simulate real-world use
  - Identified familiar icons (e.g., stick = herder, syringe = veterinary)
  - Participants **suggested improvements:** similar visuals to WhatsApp, livestock icons, etc
- WhatsApp familiarity helped them recognize functions like audio, photos, and icons



Co-design team first visual assessment of the high-fidelity prototype

# Summary of meaningful engagement

## 1. Reaction

- ⑩ Expressions of enjoyment and willingness to stay longer despite livestock duties
- ⑩ Appreciation for repetition and hands-on activities
- ⑩ Continued attendance

## 2. Learning

- ⑩ Making calls
- ⑩ Send pictures and voice notes

Kirkpatrick's  
evaluation model  
dimensions

## 3. Change in actions

- ⑩ Use of smartphones during daily routines.
- ⑩ Volunteer peer assistance during and post-workshops

## 4. Impact

- ⑩ Use of WhatsApp to share ideas on high-fidelity prototype
- ⑩ Proactively suggesting
  - ⑩ Changes in methods (e.g., preferred pairwise to beehive, preferred FGD to pairwise crazy '5')
  - ⑩ solutions to improve digital literacy PAL



# Conclusions

- Peer-assisted smartphone learning supported the development of practical digital skills, **laying the foundation for meaningful engagement** and feedback in the next stages of the Progressive Participatory Design process
- The integration of a familiar digital tool into the prototype engagement process **lowers technological barriers** and fosters **user confidence**
- Progressive PD ensures that skill-building and technological development advance together, allowing community members to co-create context-appropriate digital tools
- The iterative, inclusive approach fostered shared understanding, tailored information needs, and increased willingness to shape the evolving design

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THANK YOU FOR YOUR ATTENTION!

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