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GIZ ReNOKA

Developing a sustainable behaviour change communication strategy

within the Integrated Catchment Management

Lesotho

European Union

german cooperation
DEUTSCHE ZUSAMMENARBEIT

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Busara

Introduction

Project Overview

Natural resources within Lesotho's catchment areas are depleting fast. Some regions have already faced exhaustion due to poor management and unsustainable usage of resources. There is a pressing need for an integrated catchment system because water, land, and other natural resources function together to sustain human life. The objective of Busara's work under ReNOKA, to support ICM, was to develop, implement, and evaluate a suitable behaviour change and advocacy strategy. In other words, our aim was to explore where and how behavioural sciences could be applied, and which insights and methods from the behavioural sciences could enhance ICM-related activities to protect land and water resources in catchment areas of Lesotho. This report summarises our findings.

Our approach involved five progressive phases, starting with **1) Review and Define,** followed by **2) Diagnose and Measure,** then **3) Design and Iterate,** next **4) Test,** and finally **5) Share and Extend.**

In this guide, we further pinpoint key behavioural science concepts that have been validated through the fieldwork. Based on our findings, we offer recommendations for how future interventions can leverage promising behavioural science concepts.

1

Review and Define

To start with, we conducted a preliminary audit of existing program materials. We then conducted a review of the literature on ICM and natural resource conservation in Lesotho and similar contexts. We concurrently conducted qualitative interviews with key informants including representatives from the ICU, subcatchment officials, partner NGOs, and others.

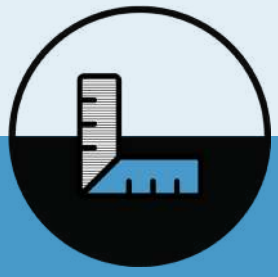
This allowed us to identify key problem areas with the potential for the application of behavioural science.

2

Diagnose and Measure

To validate our findings, as well as fill knowledge gaps from Phase 1, we conducted in-depth interviews with representatives from line ministries at the district level and focus group discussions with community members across the six catchment areas. To synthesise our findings, we generated a behavioural model to illustrate emerging patterns of bottlenecks to change, which we then validated during workshops with stakeholders.

Using this process, we narrowed our focus to five key problems of interest, namely 1) improving cooperation as it relates to sustainable rangeland management practices, 2) reducing vandalism of water infrastructure, 3) increasing adoption of sustainable herding practices, 4) increasing adoption of sustainable agriculture practices, and 5) using visual cues to stop antisocial behaviours.



This allowed us to identify structural and behavioural obstacles hindering the adoption of sustainable practices.

3

Design and Iterate

After finalising our key problem statements, we conducted co-design workshops with community members in catchments and a validation workshop with ReNOKA stakeholders. These sessions were aimed to catch any gaps in our understanding and validate our problem statements, as well as generate novel ideas to solve identified problems. Based on the feedback we received, we narrowed down to four main problems (1 through 4).

We user tested these prototypes with community members across catchment areas as well as with relevant target groups (i.e. farmers for problem area 3). To assess the practicality and likely impact of 13 prototypes, we utilised quantitative surveys and qualitative focus group discussions. On the basis of our findings, we grouped problems 1 and 2 into one focus area, because the behavioural mechanisms underpinning the problems were found to be comparable.

This approach enabled us to pinpoint key concepts to target and develop a total of thirteen different prototypes across the four problem statements.

4

Test

Following this, we created three intervention packages, each built around the most relevant mechanisms for behaviour change. The most promising prototypes were incorporated in these strategies while the least promising ones were discarded. The first package was an intervention targeting vandalism and community cooperation, drawing on cultural folklore to create feelings of social connectedness within and between villages. The second targeted herding practices and aimed to promote togetherness between herders and the community, by providing a voice for herders and a platform for mutual discussion. The third intervention targeted agricultural practices, with the goal of making sustainable agriculture more accessible and the benefits more tangible through demonstrative training programs.

We conducted field experiments to test these three interventions, which are elaborated upon in this guide.

This allowed us to identify key problem areas with the potential for the application of behavioural science.

5

Share and Extend

Finally, after collating the key findings across studies, we identified key recommendations for how future interventions in these topic areas can utilise behavioural science concepts. We held a dissemination workshop with key stakeholders in order to validate and refine these recommendations. We also developed a toolkit on applying behavioural science to guide readers through our approach to behaviour change interventions.

This allows us to ensure that future programs or interventions can build upon our existing work and use behavioural science methods to achieve desirable outcomes within ICM-related activities.

1

Co-operation and Vandalism

The first study that we conducted focused on improving two key outcomes: vandalism and poor cooperation. From our previous diagnostic and design phases, we found that there is a weak sense of cooperation and cohesion around conservation behaviour, within and between communities.

2

Herding Practices

The second study that we conducted focused on improving poor herding practices. From our previous diagnostic and design phases, we found that in many parts of Lesotho, poor herding practices are an ongoing problem, an issue that can be attributed to a misperception that approved grazing zones do not have enough grass and herders' lack of trust towards information they receive about approved grazing zones.

3

Agricultural Practices

The third study that we conducted focused on improving the uptake of sustainable agricultural practices. From our previous diagnostic and design phases, we found that in many parts of Lesotho, the persistent challenge of low adoption of sustainable farming practices (such as the use of organic manure and building farm terraces) can be attributed to perceptions around hassle factors of using sustainable practices, limited awareness and understanding of the benefits of these practices, and low self-efficacy to successfully implement these practices.

1 Co-operation and Vandalism

Study 1 Cooperation and Vandalism

Summary and Findings

What was the issue?

The first study that we conducted focused on improving two key outcomes: vandalism and poor cooperation. From our previous diagnostic and design phases, we found that there is a weak sense of cooperation and cohesion around conservation behaviour, within and between communities. The lack of cooperation and cohesion was due to community members not seeing the benefits of collaborating and working together, particularly when it came to managing shared natural resources. We identified two critical issues stemming from this lack of cohesion. First, **poor land management practices were made worse by weak cooperation within communities.** Therefore, it was important to understand how to improve and facilitate cooperation for communities to lead action, such as the removal of invasive species. Second, **antisocial acts towards infrastructure such as vandalism and theft of taps and machinery, in neighbouring communities, were routine.** It was therefore necessary to simultaneously understand how to prevent these acts of vandalism.

How did we address the issue?

In order to address these issues, we created an intervention with multiple components (e.g. posters, discussion prompts, audio, etc) that was informed by quantitative and qualitative insights from the previous prototyping phase. Drawing from these insights, we focused on three main behavioural science concepts that we believed had the potential to help people cooperate with others:

Behavioural Concepts

1. **Experiencing a strong sense of commonality with one's community, and feeling close and connected to others in neighbouring communities,**
2. **Embracing the responsibility to protect natural resources as a goal and feeling a sense of ownership of these resources, and**
3. **Expecting fellow community members to take actions to conserve shared land.**

Hypothesis

From the qualitative insights, we focused on what was received positively by the community members and altered our approach accordingly. Our main hypothesis for this study was that if we leveraged the above mentioned concepts from behavioural science, individuals would have stronger preferences for participating in community-led initiatives and weaker intentions to damage community-wide resources.

Intervention Details

The intervention was tested through an experiment with two groups: a treatment group of 20 villages receiving the intervention and a control group of 20 villages that did not. Using the experimental method allowed us to assess the impact of our intervention on attitudes and behaviours. The intervention, which lasted on average two hours, took the form of a community event with multiple activities such as storytelling and group discussions. The first part of the intervention was an audio narration of an adapted Basotho folklore tale that focused on feelings of closeness to others and commonality amongst the communities. The goal was to cultivate greater cohesion within and between communities. This was followed by interactive activities, including a skit, group games, and a pledge that focused on achieving group cohesion and encouraging collective participation.

What were our findings?

We did not find a difference between treatment and control villages when it came to participants' intentions to participate in community initiatives or to discourage vandalistic acts towards the resources in neighbouring communities. In fact, **over 95% of community members from both the treatment and control villages said they wanted to volunteer in community activities such as removing invasive species.** However, in both groups, **most people did not actually join in the follow-up activity to remove invasive species** that was held a week later. The follow-up activity was a community event in which rangeland officers guided attendees through removal of invasive species in the community, and was open to all community members. This event was held approximately a week or so (varied within a range of 6–8 days) after the endline survey.

The lack of action, despite expressed interest to volunteer, suggests a gap between what individuals said they wanted to do and what they actually did, a phenomenon known as cognitive dissonance. We found this inaction irrespective of treatment. Cognitive dissonance is a psychological term to describe the discomfort that can arise when an individuals' actions conflict with their beliefs. To explore this further, we conducted qualitative interviews with participants who did and did not participate in the follow-up activity in order to understand why they did or did not attend. We found that **respondents are typically used to and therefore expect a cash incentive to engage in follow-up activities.** The absence of such incentives may have impacted motivation to participate. Additionally, for those that did not participate, we found that the scheduled time of the activity conflicted with other priorities. However, our field team reports that several participants that did attend the follow-up activity set weekly or biweekly dates to continue invasive species removal events as a community in the future.

The intervention did have an effect on willingness to support neighbouring communities. When given a task that, upon completion, offered stickers to raise awareness about invasive species removal, individuals from treatment villages were more inclined to perform the task again if it meant helping adjacent villages. Initially, we asked participants to complete the task and receive stickers for themselves. Following that, we asked if they were willing to repeat the task to provide stickers to neighbouring villages, thereby spreading awareness to those communities as well. This outcome suggests **the intervention had an impact on participants' readiness to contribute towards the well-being of the land in neighbouring regions.** While we did not see an impact of the intervention on feelings of closeness with neighbouring communities (suggesting that this effect on willingness is unconnected to feelings of closeness), perhaps this result is due to the messaging around the benefits of cooperation in the folklore tale.

The intervention had an impact on participants' readiness to contribute towards the well-being of the land in neighbouring regions

Study 1 Cooperation and Vandalism

Recommendations

1 Leverage a sense of commonality

Strengthening feelings of closeness and connectedness to others appears to be important in improving cooperation and reducing vandalism. Although our study did not boost feelings of commonality, we found that those who have stronger senses of commonality and feelings of closeness and connectedness with others in their village were more likely to state their intention to volunteer for cooperative tasks. Similarly, those who have stronger senses of commonality and feelings of closeness and connectedness with other villages in the region were more likely to discourage acts of vandalism. In order to strengthen senses of commonality and feelings of closeness and connectedness, particularly between communities, we recommend interventions that focus on fostering 'contact' between groups. The contact hypothesis suggests that increasing positive interactions, or 'contact,' between different groups can help strengthen bonds and build trust among them (Allport, 1954). In order to do this in a meaningful way, Allport's contact theory recommends that groups need to have equal group status within any given intervention, common goals, intergroup cooperation, and authority support.

To improve cohesion in the context of improving cooperation for sustainable behaviours, we recommend holding cross-community events that can take the form of joint goal-setting and conservation efforts (e.g. removing invasive species on land that is shared by multiple villages) and knowledge sharing (e.g. meetings to discuss common invasive species in the area and the proper methods of disposal).

These events will meet conditions for equal group status, common goals, and intergroup cooperation. These can be similar in format to Letsema[1] and could even be incorporated into these existing initiatives to increase buy-in. In order to strengthen these events by including the component of authority support, we recommend including catchment managers, agricultural extension workers, and/or ministries of forestry or environment as co-facilitators.

[1] An existing practice in Lesotho in which people from a cluster of villages that share a common development goal come together.

2 Leverage goal commitment and a sense of ownership over resources

Our study was successful at boosting goal commitment, and we found that those who committed to protecting natural resources as a goal and felt a sense of ownership of shared resources were more likely to volunteer for cooperative tasks and discourage acts of vandalism. Some ways to strengthen these behavioural science concepts include holding workshops around goal-setting that focus on the importance of protecting natural resources. These workshops can be led by chiefs and local authorities who are familiar with the community, thus making sure the workshops feel personalised. Capacity building initiatives could prepare chiefs and local authorities to facilitate these and any further initiatives. These workshops could involve helping community members set specific, achievable goals related to conservation, either verbally, in written form, or via signature – this can enhance their commitment to these goals. Furthermore, these goals could be displayed in a shared area to serve as a reminder of their commitment. Ways to increase ownership over shared resources in future interventions could include creating a shared community space (such as a garden) or creating a resource monitoring system that holds individuals accountable to report vandalism. If the majority of the community takes part in creating the shared space, this can also ensure protection of the shared space due to the increased ownership.

3 Tailor interventions by age group

Interestingly, we found that younger respondents were more inclined to prioritise individually discouraging acts of vandalism in their catchment area, compared to older respondents. Our formative insights indicate that younger respondents are usually less interested in conservation behaviours. This discrepancy suggests that younger individuals may be more concerned with social consequences as compared to older individuals. This suggests that it could be beneficial to tailor interventions for different age groups. Given our study result and insights from our formative research, we recommend emphasising the immediate social benefits of conservation and protection of resources (i.e. impact on community dynamics and well-being) for younger individuals, while for older individuals, it might be more effective to highlight the long-term ecological and economic benefits. Meanwhile, literature on improving take-up of pro-environmental behaviours (which can parallel to any future research focusing on sustainable behaviours) suggests that focusing on intergenerational consequences and impact on future generations can be an effective tactic for both younger and older individuals (Sarassin et al., 2022; Timmons et al., 2022; Kramer and Petzoldt, 2023).

4 Implement feedback loops within the community

We found in our previous prototyping phase as well as the latest pilot phase that providing positive feedback about the impact of the community's conservation efforts can go a long way in reinforcing their goal commitment to protecting natural resources and reducing vandalism. Our qualitative findings indicate that the community being taught about the positive impacts of sustainable behaviours is not as effective as demonstrating positive outcomes directly resulting from the community's action. Since this cannot be done at the outset, we recommend a two-step process: the first step can focus around telling a tangible success story, potentially with a visual or physical element that demonstrates positive impact, while the second step (less immediate) can focus on highlighting the community's direct impact. An example of this first step could be to have a visual demonstration test showing nutrients in soil that was cleared from invasive species versus soil that was not. An alternative, or a supplement to the above, could also be to provide negative feedback of the effect of inaction on shared natural resources.

5 Implement creative non-monetary incentive systems

> Non-monetary incentive systems can induce more intrinsic motivations as opposed to extrinsic rewards. These could include forms of recognition or awards for those who frequently participate in cooperative or vandalism prevention activities.

This is a component that we did include in our intervention due to the strong positive reaction we had in the prototyping phase, and we received similar positive feedback regarding the effectiveness of such incentive systems. The existing literature also supports the use of non-monetary recognition or rewards based incentives in improving altruistic behaviours such as cooperation or vandalism prevention (Odhiambo et al., 2023). In scenarios where monetary or other extrinsic/resource-based incentives are necessary, we recommend consistency in the form and amount to ensure smooth implementation for future programs.

6 Establish long-term engagement strategies with communities

This recommendation is primarily based on the qualitative feedback received from communities. Long-term engagement will maintain a sense of commitment to a shared goal of protecting one's resources, and can be achieved even through lower intensity but more targeted events. To expand on this, our intervention was high-intensity in that it was focused on a number of different topics and may have even felt overwhelming for participants. Having shorter engagement periods on a variety of specific topics more frequently can keep community members invested; community members also expressed a desire for frequency in interventions. Depending on resource constraints, we recommend aiming for once a quarter.

What are some unanswered questions to explore in future research?

- What format could a similar intervention aimed at enhancing cohesion take specifically within communities?
- What types of non-financial incentives or motivators can counteract the existing reliance on cash rewards and encourage community members to actively participate in conservation and community initiatives? How do different incentive systems influence continued commitment over time?
- How can we sustain and promote community-led initiatives such as invasive species removal (that doesn't require expert involvement) over the long term?
- With what frequency should interventions occur to achieve maximum engagement with community action while balancing resource constraints?

2 Herding Practices

Study 2 Herding Practices

Summary and Findings

What was the issue?

The second study that we conducted focused on improving poor herding practices. From our previous diagnostic and design phases, we found that in many parts of Lesotho, poor herding practices are an ongoing problem, and this issue can be attributed to several factors. **First, there is a common perception that approved grazing areas do not have enough grass for the animals to feed on.** This is sometimes a misperception based on hearsay and may not be accurate. **Second, herders have low confidence in the information they receive about the correct grazing areas, and they may not fully appreciate the importance of designated grazing zones.** This lack of trust could be due to feelings of discontent about herders' belonging within communities as well as a lack of awareness about available information. Given these obstacles, it was important to understand how to improve herding practices through more than awareness-raising campaigns and ways to foster togetherness amongst herders by providing a voice for their concerns.

How did we address the issue?

In order to address these issues, we created an intervention with multiple components (e.g. posters, discussion prompts, audio, etc) that was informed by quantitative and qualitative insights from the previous prototyping phase. Through these insights, we focused on three main behavioural science concepts that we believed had the potential to help people change how they act:

Behavioural Concepts

1. **Sharing a common goal to protect shared land,**
2. **Associating herders' social identity (one's identity as a herder and as a Basotho community member) to this shared goal,**
3. **Utilising softer empathy methods to improve the sense of the community bond between herders and other community members.**

Hypothesis

From the qualitative insights, we focused on what was received positively by the community members and altered our approach accordingly. Our main hypothesis for this study was that if we leveraged the above mentioned behavioural science concepts, herders would have greater intentions to abide by seasonal grazing zones.

Intervention Details

The intervention was tested through an experiment with two groups: a treatment group of 20 villages receiving the intervention and a control group of 20 villages that did not. Using the experimental method allowed us to assess the impact of our intervention on attitudes and behaviours. The intervention, which lasted on average two hours, took the form of two community events with multiple activities, including empathy training and group discussions prompted by visual materials. The first part of the intervention was a community mobilisation event. This was followed by a rangeland protectors' gathering. The aim of these activities was to improve the bond that community members had with the herders, underscore a shared Basotho social identity and help herders build an understanding of how their actions support better environmental practices, while creating spaces amongst themselves to share experiences, receive affirmation, and offer mutual support.

What were our findings?

We did not find a difference in the reported willingness of participants between treatment and control villages to use allocated grazing zones or to volunteer to spread awareness within their community about seasonal grazing zones. Interestingly, we saw that more participants across the sample stated that they would use the grazing zones as compared to participants that were willing to volunteer to spread awareness about using these zones. This indicates a gap between intentions and action. We were also interested in herders' preference for personal convenience versus their commitment to spreading awareness. In order to understand this, we provided two petitions that herders could choose to sign, one of which was aimed at establishing an organisation that would raise awareness about seasonal grazing zones, while the other was aimed at creating an allocated grazing zone near their village. **Despite no difference in response between the treatment and control groups, over half of the total sample signed the petition to raise awareness about seasonal grazing zones as opposed to creating an allocated zone near their village.**

In an effort to gauge interest and willingness to expend time and effort to learn more, we held a second community event. This event featured rangeland officers who shared information about best practices for herding and taking care of the land, and was open to all community members. This event was held approximately a week or so (varied within a range of 6–8 days) after the endline survey. We found that **across treatment and control groups, herders that were interviewed at the first event largely did not participate in follow-up activities. However, it is important to note that participation across the sample of those present during the intervention period (regardless of whether they were interviewed) was meaningful** – about half of those who were present at the first event participated in the second event.[2]

Of those who participated in the second event, the proportion of attendees was much higher for the control group versus the treatment group, contrary to our expectations that the treatment group would show greater interest. This is a key finding that suggests that there is a willingness to learn more about herding practices and an interest in being involved in such activities. **The control group did not receive any intervention, and therefore this could be why they displayed a higher participation rate (i.e. interest) in the second event, likely seeking to fill their knowledge gap.** In this scenario, those who were in the treatment group and had therefore already received an intervention in the first event may have already felt they learnt a lot of information.

[2] To clarify, we invited all herders to the first event, but only interviewed about 13 herders per village. Similarly, we invited all those present at the first event (regardless of whether they were interviewed) to the second event. The previous sentence discussed the results among participants who were interviewed.

In order to understand what motivates herders to engage with improved herding practices, we conducted qualitative interviews with participants who did and did not participate in the second event. From qualitative interviews, we found that a few participants from the control group for the first event had invited other herders to the second event. These interviews support the idea that the control group showed up in higher proportions for the second event due to interest in receiving an intervention. From other qualitative interviews, we found that those that did participate did so because they believed the message was important and cited their positive experience from the first event. Additionally, our field team reports that **several participants expressed interest in learning more and started making plans to organise and attend herder association meetings in the future.** For those that did not participate, we found that the scheduled time of the second event conflicted with a variety of other priorities, indicating a potential lack of motivation to prioritise learning opportunities about herding practices.

Study 2 Herding Practices

Recommendations

1 Strengthen individuals' understanding of benefits of sustainable practices

Learnings from this study highlighted the importance of explaining benefits of sustainable practices intuitively as opposed to stating benefits. We found a positive relationship between understanding the benefits of rotational grazing and the intention to adhere to seasonal grazing zones. Interestingly, merely having information about grazing zones was not associated with greater intentions to adhere to seasonal grazing zones. This suggests that the gap between knowledge of grazing zones and action to adhere to grazing zones is centred around an understanding of 'why' rather than simply a lack of awareness of the existence of seasonal grazing zones. To bridge this gap in future interventions, it is crucial to strengthen how herders' perceive the benefits of rotational grazing.

Communication materials or workshops should clearly emphasise the ecological, economic, and social benefits of rotational grazing and help herders understand how sustainable grazing practices can positively impact their community, livestock, and their own well-being. These can be conducted with the assistance of rangeland officers and herding associations as these groups are most informed on the specific benefits. The benefits can also be communicated in creative ways that can make them feel more tangible and memorable, such as through song or through coordinating exchange visits between herders from different communities. This can also be supplemented by a discussion of the negative impacts of continuous grazing, to further reinforce the benefits.

2 Emphasize herders' social identity

Although we did not boost social identity in our study, we found that individuals with a stronger social identity, indicating a higher sense of belonging as a herder and to the larger Basotho community, were more likely to express a higher intention to volunteer for spreading awareness about seasonal grazing zones in their community. This suggests that future intervention efforts should prioritise improving or priming one's social identity in order to optimise for behaviour change as it relates to engaging with seasonal grazing zones. Several past intervention efforts in the literature have demonstrated the effectiveness of priming a specific self-identity on uptake of pro-environmental behaviours – which would employ a similar pathway to improving uptake sustainable herding practices (McGuire, 2015; Dedman and Lee, 2023). This might involve developing intervention messaging aimed at improving herders' sense of belonging, as well as a connection to shared identity – in our study, this was done through an empathy training and the repetition of the phrase 'Rangeland Protectors'.

Interventions should seek to instil a sense of pride in this role, which can be done through sharing narratives that highlight the significance of being a herder and the role they play in protecting the community's land. These activities can be enforced through the Lesotho Association of Non-Formal Education (LANFE) and their existing initiatives to increase buy-in. The empathy training initiatives can also be conducted in pitsos as a way to increase buy-in, but also as a way to make herders feel more involved in communities. Other intervention efforts from the literature have primed certain values instead of a whole self-identity to similar results (Bonan et al., 2021). Interventions can prime community members' and herders' values as Basotho citizens and tie them to values of peace and cooperation to further improve empathy and connectedness between the two groups. Findings from a stakeholder validation workshop suggest utilising past stories of cooperation between Basotho people.[3]

> Individuals with a stronger social identity... were more likely to express a higher intention to volunteer for spreading awareness about seasonal grazing zones in their community... future intervention efforts should prioritise improving or priming one's social identity in order to optimise for behaviour change as it relates to engaging with seasonal grazing zones.

[3] Stakeholders specifically suggested the story of King Moshoeshoe I who was welcoming to missionaries even when advisors and others were uncomfortable with their presence.

3 Harness herders' sense of responsibility

We also found that herders who feel a stronger sense of responsibility towards safeguarding the community's land expressed greater intent to spread awareness about seasonal grazing zones. This underscores the potential effectiveness of incorporating behavioural strategies that tap into this sense of responsibility towards one's community, particularly for male herders. This was done in our intervention through uplifting herders and demonstrating how they make a positive difference to the community – the behavioural science concepts of social identity and sense of responsibility can be paired together in order to be more effective in future interventions. Interventions aiming to do this can implement recognition programs that celebrate herders who actively practise and spread awareness around sustainable herding practices. Qualitative insights from our prototyping phase revealed that participants respond favourably to recognition programs, and the literature also notes the effectiveness of these programs as a form of incentive (Odhiambo et al., 2023). This recognition could be through public ceremonies or even certificates from LANFE or the Lesotho Distance Training Centre (LDTC).

> To go one step further, provided resources are available, those who are recognized as champions or rangeland heroes can be provided with animal feed or rangeland seeds as a token both to sustain that individual herder's motivation, but also to motivate other herders.

Additionally, our qualitative feedback from this study suggests that involving herders in decision-making processes related to allocating grazing zones as well as non-herding practices can also empower them and strengthen their commitment to shared resources.

4 Tailor interventions to herder type

Another key insight we gained through observational data was that there are three different types of herders:

A. **Herders herding their own livestock**
B. **Herders herding their family livestock**
C. **Herders employed by a livestock owner**

It is important to recognize the unique characteristics and motivations of each group, and tailor interventions to address the specific needs and circumstances of each type of herder.

Herders herding their own livestock are typically older, more responsible, and adhere to grazing practices because they know that any deviations result in fines that they will have to settle themselves. Interventions targeting these herders should focus on reinforcing their sense of responsibility and accountability, and should highlight the financial consequences of non-compliance.

Herders herding their family livestock are typically younger, are guided by their parents, and their behaviour is guided or based on community principles and norms. In a similar vein, they adhere to the chief's instructions and what the community has agreed upon regarding grazing practices. Interventions targeting these herders should work within existing community-led initiatives and should include all community members, not just herders. These interventions can benefit from leveraging a shared social identity.

Herders employed by a livestock owner are primarily placed in hard-to-reach grazing zones. Because of being physically further removed from communities, they are more prone to engage in antisocial practices such as burning the rangelands or engaging in vandalism. They are less likely to adhere to what the village has agreed upon, since they are primarily focused on retaining their jobs by keeping the livestock well fed. This suggests that livestock owners can play a big role in advocating for adherence to grazing zones. In our intervention, we were able to reach herders and livestock owners who also herd (i.e. all herder types) but we did not survey livestock owners who do not herd. Future interventions should focus on both herders and livestock owners (both those who herd and those who do not). Interventions should aim to encourage livestock owners to advocate for adherence to grazing zones and provide non-monetary incentives for responsible herding practices. Apart from the public recognition incentive mentioned previously, these incentives can also take the form of a physical award that serves as a tangible reminder and aspiration – the literature suggests that physical awards can be a form of social motivation specifically in a conservation context (Schattman et al., 2021). If resource constraints allow, material incentives such as livestock feed, gumboots, or blankets may also improve motivation and may be less intensive than cash as these are longer lasting and may feel more thoughtful or personalised. These incentive forms can be applied across herder types to be more inclusive.

5 Establish long-term engagement strategies with communities

The final recommendation we have based on this study comes from our surprising results around the high participation rates in the follow-up activity from the control villages. There is a clear interest and willingness from the Basotho people to expend time and effort on learning more about sustainable herding practices. Therefore, similar to our recommendation from the first study, it is important to establish long-term engagement strategies. Ongoing platforms can be incorporated in these interventions as well to increase buy-in. For example, Maletsunyane has a weekly herder night school – interventions targeting sustainable herding practices can be delivered through these existing programs.

What are some unanswered questions to explore in future research?

- What types of non-financial incentives are most effective in encouraging sustainable herding practices and how might these differ based on herders' specific motivations (based on their herder type)?
- How do recommendations from fellow herders impact participation decisions, and how can peer networks be further leveraged for positive behaviour change?
- What roles and responsibilities do non-herder community members play in improving herding practice outcomes? What are the long-term implications of improving relationships between herders and other community members?

3 Agricultural Practices

Study 3 Agricultural Practices

Summary and Findings

What was the issue?

The third study that we conducted focused on improving uptake of sustainable agricultural practices. From our previous diagnostic and design phases, we found that in many parts of Lesotho, the persistent challenge of low adoption of sustainable farming practices can be attributed to a variety of factors. **Historically, farmers in the region tended to use chemical fertilisers as it was considered the norm.** They also perceived the shift to organic manure as a heavy time investment and a physical hassle. Further, **we observed that limited awareness and understanding among farmers regarding the benefits of sustainable practices,** such as organic manure usage and field terraces, contributed to the slow uptake. Additionally, **a lack of confidence to successfully implement these practices posed another significant barrier,** often stemming from insufficient training and guidance. Given these barriers, it was important to explore ways to improve farming practices and encourage the adoption of sustainable farming methods.

How did we address the issue?

In order to address these issues, we created an intervention with multiple components (e.g. posters, video, in-person training session etc) that was informed by quantitative and qualitative insights from the previous prototyping phase. Through these insights, we found three main behavioural science concepts that we believed had the potential to help people change how they act:

Behavioural Concepts

1. **Promoting sustainable farming practices as a norm and endorsed by one's peers,**
2. **Focusing on promoting the specific benefits of organic manure and field terraces and effective handling of it,**
3. **Delivering the information from a trusted source (i.e. agricultural extension workers) to attach more credibility to the importance of doing these practices.**

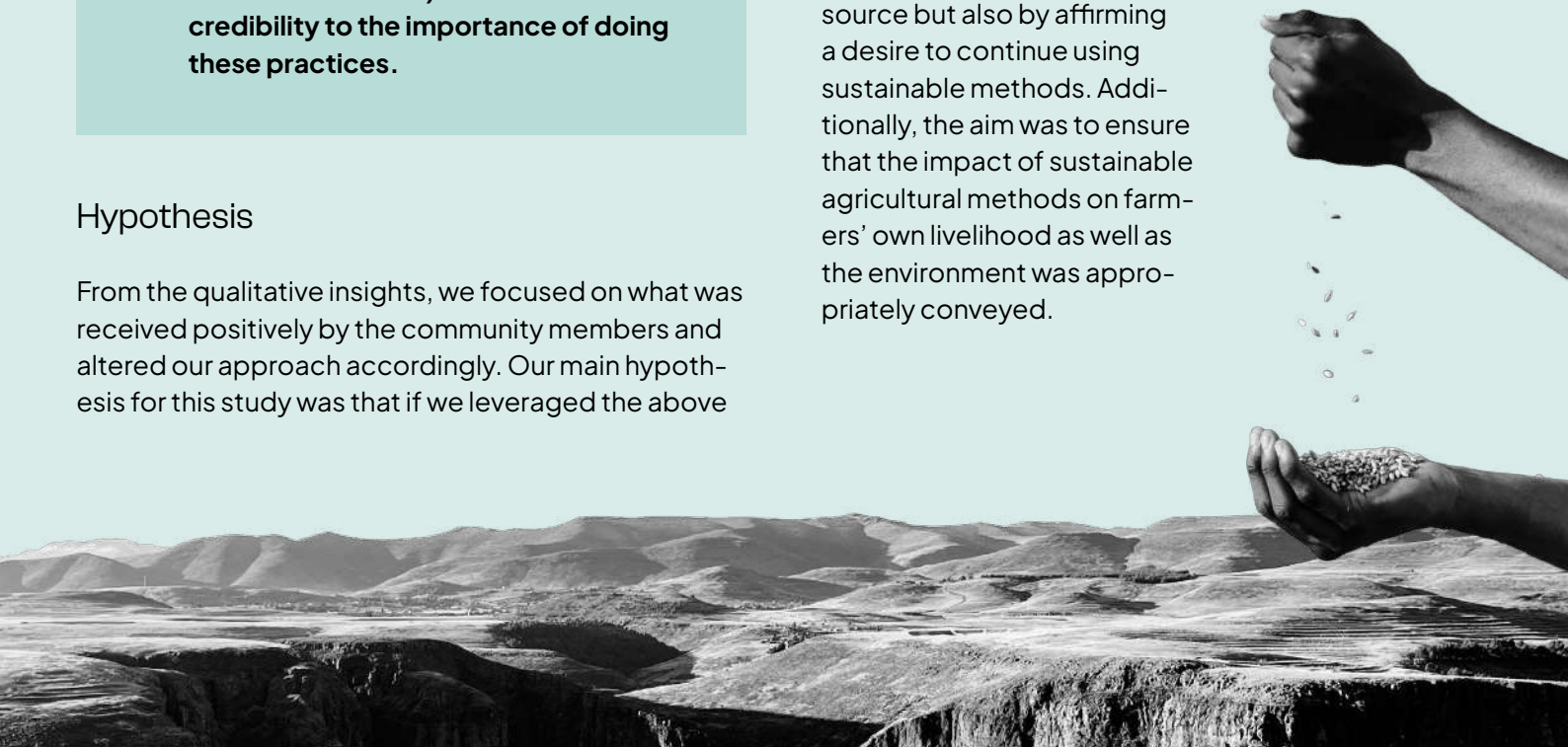
Hypothesis

From the qualitative insights, we focused on what was received positively by the community members and altered our approach accordingly. Our main hypothesis for this study was that if we leveraged the above mentioned behavioural science concepts, farmers would be more likely to shift to using organic manure and maintain field terraces.

Intervention Details

The intervention was tested through an experiment with two groups: a treatment group of 20 villages receiving the intervention and a control group of 20 villages that did not. Using the experimental method allowed us to assess the impact of our intervention on attitudes and behaviours. The intervention, which lasted on average two hours, took the form of a community training session. First, agricultural extension presented information on how to make organic manure, discussing the benefits and the process of making it, as well as going over benefits of field terraces. Then, field officers presented materials (posters, a video, and a brochure) that similarly covered the benefits of these practices. Discussions were conducted with farmers throughout the interventions to go over their experience with these practices, and their intentions to take it up in the future.

The aim of these activities was to create a new norm around sustainable agricultural practices that could be reinforced by receiving the message from a trusted source but also by affirming a desire to continue using sustainable methods. Additionally, the aim was to ensure that the impact of sustainable agricultural methods on farmers' own livelihood as well as the environment was appropriately conveyed.



What were our findings?

We found a suggestive trend that **individuals in the treatment group were more inclined to share their numbers to pre-register for an information session on sustainable farming practices.** From the overall sample including both treatment and control groups, education in particular emerged as a significant factor, with higher levels of education being associated with a greater likelihood of pre-registering interest. This could be because individuals with higher education levels may have perceived the information session as more valuable, thereby recognizing the potential benefits of sustainable farming practices more readily. However, this could also be due to the higher likelihood of phone ownership among educated participants.

The **intervention did not have an effect on participants' willingness to take up sustainable agricultural practices.** In fact, we found that participants in the treatment group had weaker intentions to maintain field terraces as compared to participants in the control group. This could be because the intervention materials to promote field terraces were more limited (a brochure and a video) as compared to the more extensive coverage for organic manure. This difference in exposure might have potentially led to reduced interest or intent in maintaining field terraces. This could also be because maintaining field terraces is perceived as financially costlier, and the information we provided may not have dispelled this notion.

In an effort to understand participants' true preferences (as opposed to asking about their intentions directly), we asked if they were willing to pay a one-time fee to sign up for an information session on converting organic manure to liquid manure and taking better care of field terraces. Once again, we did not find a significant difference between the treatment and control groups. In other words, **both groups were comparable in their willingness to spend money on this particular information session, which we used as a proxy of how much they valued the session. We also did not see a difference between the groups in terms of willingness to volunteer to lead or support an information session on sustainable farming.** It is possible that individuals are generally willing to disseminate information about sustainable farming. However, there may be a gap in their understanding and confidence to disseminate information due to the short-term nature of the session we held. That is, had we held multiple sessions, we might have seen a different result here.

Higher levels of education were associated with a greater likelihood of pre-registering interest

Study 3 Agricultural Practices

Recommendations

Our primary recommendations are around utilising the behavioural science concepts that demonstrated positive results in our studies in future interventions.

1 Leverage social norms

First, we found that social norms can impact participants' preferences to shift to using sustainable agricultural practices. In our study, believing that one's fellow farmers approved of sustainable agricultural practices was associated with having a preference for more sustainable agricultural practices. We also find that social norms play a significant role in influencing participants' willingness to sign up for a sustainable farming program and pre-register for it (by agreeing to share their telephone number). However, social norms did not play a significant role in determining willingness to pay for an information session on sustainable farming practices. This result may indicate that participants could be hesitant to allocate financial resources but remain open to contributing time or effort towards sustainable farming practices. Future interventions should leverage social norms and particularly highlight that other farmers endorse sustainable practices. This could be done via community engagement programs that promote successful stories of farmers who have adopted sustainable agricultural practices. These programs can include workshops, field visits, or community events where farmers can share their positive experiences.

> In addition, setting up peer-to-peer learning groups where farmers can exchange knowledge and experiences could also improve the outcome of interest. This might involve leveraging existing farmer groups or associations to strengthen social connections.

Peer-to-peer learning has been shown to be highly effective specifically in agricultural contexts for teaching new sustainable farming methods (Niu et al., 2022; Alif et al., 2024). In addition, similarly to our study, involving trusted sources such as agricultural extension workers to join or visit with these learning groups could further strengthen the social norm of engaging in sustainable agricultural practices. Capacity building for these extension workers could further improve the quality of these workshops and may also improve trust among the community members.

2 Highlight benefits of sustainable practices

We also found that specifically understanding the personal (e.g. crop yield) and environmental (.g. soil quality) benefits of sustainable agricultural practices (rather than simply understanding how to engage in these practices) can impact farmers' likelihood to shift to using organic manure and discourage fellow farmers from damaging field terraces. Understanding benefits of sustainable farming practices was also associated with higher willingness to sign up for an information program and sharing their phone number to pre-register for the program. To further highlight the personal and environmental benefits, we recommend taking advantage of additional channels of communication, such as local radio, community meetings, and informational pamphlets, to reach a wider audience. In our study we primarily relied upon the latter two, but our intervention was a one-time activity. Social media can also be used as a channel for communication among younger farmers. With knowledge-based interventions, it is important to revisit sites and continue spreading information via a variety of channels. Additionally, we recommend setting up demonstration farms that showcase the positive outcomes of sustainable farming practices. Farmers can visit these farms to witness firsthand the benefits and practical aspects of using organic manure and maintaining field terraces.

Understanding the personal and environmental benefits of sustainable agricultural practices (rather than simply understanding how to engage in these practices) can impact farmers' likelihood to shift to using organic manure and discourage fellow farmers from damaging field terraces.

3 Improve farmers' self-efficacy to engage in sustainable practices

Finally, we also found that farmers' confidence in knowing how to adopt sustainable practices have a large impact on their willingness to shift to using organic manure. This confidence is reflected in their ability to create effective goal-setting for organic fertiliser use, believing in the possibility of their overall success in adopting organic practices, and effectively handling the process of obtaining and using organic fertiliser on their farms by being able to overcome difficulties. However, the positive relationship is more significant in the case of respondents simply stating preferences to adopt the practice as compared to the questions that involved taking concrete actions, such as willingness to pay or providing contact numbers.

These findings suggest that while confidence in one's ability may play a role in shaping stated preferences, its impact on translating intentions into concrete actions may be less straightforward. This could be because individuals may feel confident in expressing their preferences but encounter additional complexities or barriers when it comes to implementing concrete actions, such as indicating a willingness to pay or providing contact numbers. In order to overcome this hurdle, we recommend strengthening the behavioural concept of 'self-efficacy,' which refers to an individual's belief in their ability to accomplish a task and/or achieve a goal (Bandura, 1997). Bandura proposed four sources that could improve individuals' self-efficacy, of which we can address three through intervention: mastery experiences (successful completion of task), vicarious learning (seeing relatable others successfully complete tasks), and verbal persuasion (encouragement and constructive feedback). Guided training sessions that incorporate physical demonstrations, particularly for uptake of organic manure, can be a really useful way of improving confidence through providing a mastery experience. We also recommend mentorship programs that allow farmers to rely on each other for support as well as provide a form of vicarious learning. These could be integrated with existing farmer groups or associations which would tap into an existing trusted network. Both training sessions and mentorship programs can also involve checkpoints of personalised feedback and encouragement in the form of small rewards or recognition.

4 Build trust in government initiatives

Finally, based on our observations, we found that there is limited trust in government bodies that deal with agricultural practices. This suggests a need for interventions addressing trust-building and continuous support. Here, we recommend increasing transparency between government bodies regarding any new initiatives – this could involve increasing interactions between extension workers and community members as well as soliciting feedback from farmers on the effectiveness of the support provided. We also recommend setting measurable goals with community members and regularly communicating any positive outcomes achieved through the adoption of sustainable practices. Demonstrating tangible results can contribute to rebuilding trust over time. Finally, we recommend finding or creating trusted nodes within communities who can act as sources that understand the lives farmers are living and can build the connection between communities and government bodies.

What are some unanswered questions to explore in future research?

- **How do community leaders and influential figures within farming communities contribute to or hinder the adoption of sustainable farming practices through their endorsement or lack thereof?**
- **How can information on sustainable farming practices be effectively tailored to different segments of the farming community, considering demographic differences and levels of experience?**
- **To what extent does an increased environmental awareness influence farmers' preferences for adopting sustainable practices beyond personal/economic benefits?**

Thinking about Monetary Incentives

In the sector of conservation behaviour change, the concept of incentives (monetary and in-kind) can go a long way in achieving behaviour change, but they cannot be used liberally or long-term because this approach is not sustainable and does not guarantee long-term behaviour change. Therefore, we recommend thinking about the necessity of incentives as it pertains to the type of behaviour that one's program wants to change. Through our research, we have identified three main types of behaviours that programs may aim to change:

1. **Behaviours that directly benefit the individual (such as encouraging uptake of organic manure – while this behaviour has benefits for the environment, there are also tangible benefits for the farmer such as increased crop yield and soil longevity).**

2. **Behaviours that indirectly benefit the individual (such as removing invasive species – this is more altruistic; the behaviour has more direct benefits for the community as a whole while the individual may only see some indirect benefits).**

3. **Behaviours that maintain the moral status quo (behaviours such as not vandalising – this doesn't require an active task for the individual, rather they must not engage in the anti-social behaviour).**

The first behaviour type can be taken up without incentives so long as the direct benefits are made clear to the individual. The third behaviour type can be taken up through messaging and ownership of shared resources; past interventions and qualitative insights suggest that financial penalties (negative incentives) are insufficient due to limited enforcement. Of these three types of behaviours, only the second may require monetary (or in-kind) incentives, that too only in the short-term. The second behaviour might require incentives to increase buy-in at the start, but with other mechanisms such as social norms also involved (seeing others doing the altruistic behaviour) these incentives should only be necessary in the short-term.

* Images of 50 and 200 Maloti taken from https://www.foreigncurrencyandcoin.com/product/lesotho-50-maloti/
Image of 20 Maloti taken from https://www.ebay.com/itm/126012587579

Further Testing

We recommend continuing to collect and analyse data on how interventions can change the way communities think and act in order to further refine future endeavours to ensure effectiveness. Testing interventions can be done via conducting an experiment similar to ours, with treatment and control groups, and comparing the data. To assess interventions, a multifaceted approach can be adopted. Firstly, surveys tailored to the specific cultural and linguistic nuances of each community can be distributed, gathering quantitative data on participant attitudes. Complementing this, in-depth qualitative methods such as focus group discussions and semi-structured interviews can provide a nuanced understanding of the community's experiences and feelings towards the interventions as well as an understanding of why an intervention may or may not be working. Finally, observational studies during and after interventions can track behavioural changes, providing tangible evidence of the impact on main problem areas or outcomes of interest; in our studies these were cooperation and vandalism reduction, improved herding practices, and improved agricultural practices. This combined methodology ensures a comprehensive evaluation, blending quantitative and qualitative methods for a holistic understanding of behaviour change.

Conclusion

Understanding human behaviour is key when it comes to tackling conservation issues such as environmental degradation. With a deeper understanding of why people act in certain ways, one can then encourage desired behavioural outcomes. In our project, our main focus was tackling key problem areas with a behaviourally-informed evidence-based approach so as to encourage long-term behaviour change to protect Lesotho's land and water resources. We found that leveraging key behavioural concepts such as social identity or goal commitment is associated with a positive shift in desired behavioural outcomes. Our findings suggest that behavioural approaches are also received positively by the communities of interest, and continuing to integrate behavioural science into ICM initiatives can pave the way for a stronger relationship between communities and their natural environment.

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We are a river

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