



Designing and evaluating innovations for development of smallholder female livestock cooperatives in Nepal

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Principal Investigator

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Objectives

- 1) Design, implement, and rigorously evaluate three innovative and potentially transformative interventions to improve goat value chain functionality in rural Nepal.

These include innovations in

- animal feeding,
- strengthening of animal health services through community animal health workers,
- improving the efficiency and sustainability of cooperatives.

Distance learning for community animal health workers

Sarah Janzen,
Nicholas Magnan, Conner Mullally,
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Introduction

- Rural women's entrepreneurship, e.g., providing animal health services, can improve welfare and gender equity.
- Limited mobility may hamper the ability of women to train as community animal health workers (CAHWs) in Nepal.

Methods

- Two-stage randomized trial to assess the effects of increased women's entrepreneurship and the viability of hybrid distance learning for CAHWs.

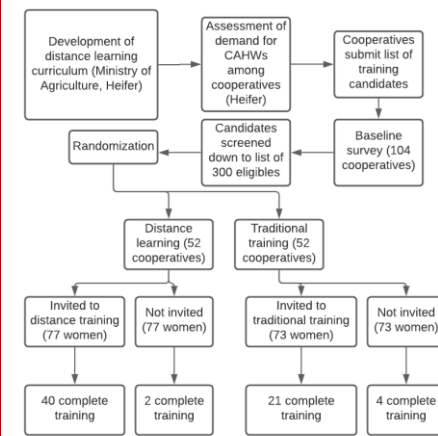
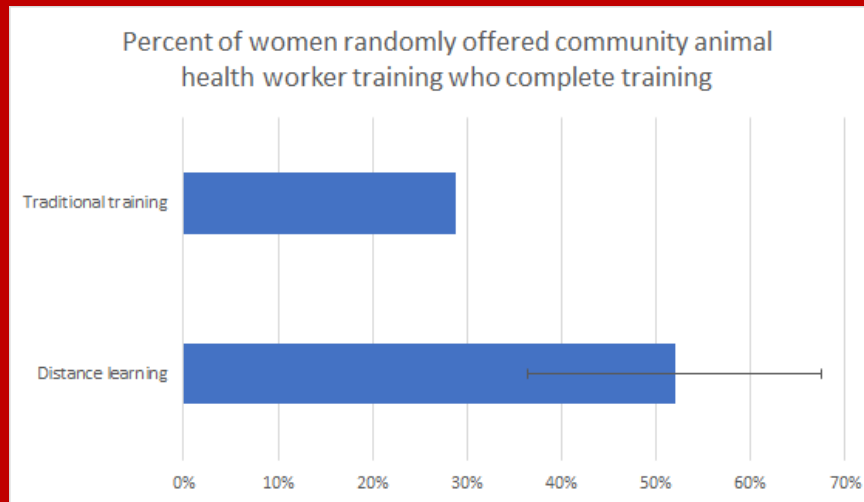
Results

- Being offered hybrid distance learning increases training completion rate from 29% to 52%.
- Other results pending data collections.

Recommendations

- Focus groups suggest hybrid distance learning requires strong hands-on training and monitoring.
- Analyze additional survey data when available and assess scale-up potential.

Distance learning makes rural women's entrepreneurship more attainable and increases availability of animal health services.



Experimental design and training outcomes

Current stage of project

- Follow-up survey by phone to collect data on additional indicators.
- Trial registry with planned indicators available [here](#).

Future opportunities

- Do the effects of hybrid distance learning for animal health workers vary by gender?
- Can hybrid distance learning be used to augment/refresh skill set of existing rural service providers?

Virtual collection center: using an app to improve goat marketing

Sarah Janzen, Nicholas Magnan, Scott Miller, Conner Mullally, Bhola Shrestha

Introduction

- Cooperatives struggle to coordinate bulk sales and manage inventory.
- Simple apps could streamline the inventory and marketing process.

Methods

- Cluster-randomized trial with 92 cooperatives, survey data from 2,800 households and cooperative officers.

Results

- Cooperatives that communicate better with members perform better. This result cannot be explained away by a rich set of farmer and cooperative characteristics (paper [here](#)).
- But the VCC, a tool for better communication, has low depth and breadth of penetration.

Recommendations

- Carefully pilot internet-based system.
- Work closely with cooperatives and tailor tools to their needs.
- Recognize that apps may be effective only in certain regions until network quality improves more broadly.

There is demand for better marketing tools, but challenges remain.

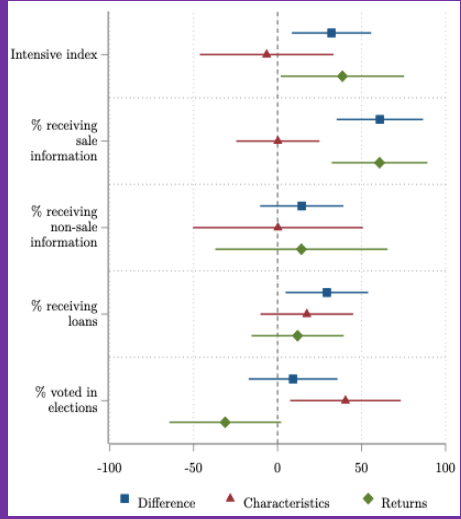
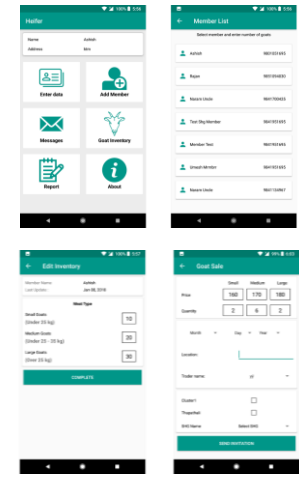


Figure 1: shows the results of a Oaxaca-Blinder decomposition explaining higher cooperative goat revenue per member among cooperatives that are more inclusive (N = 1,384). Inclusiveness is measured using the characteristics on the vertical axis. The results suggest that more-inclusive cooperative do not perform better simply because of their characteristics. For example, more-inclusive cooperatives don't perform better just because they own more goats.



Figure 2: shows goat sales by households whose cooperatives were given the VCC (N = 1,248). The red bars show total sales at baseline and the blue bars show and total sales using the VCC app.



Current stage of project

- Internet-based VCC is under development and will be piloted in late 2020 (lockdown permitting).
- When lockdown is lifted, the team will carefully explore ways to increase app effectiveness.
- Follow-up data collection planned for early 2021 (lockdown permitting).

Future opportunities

- Address reluctance by farmers to share or collect inventory data.
- Can internet-based tools overcome the limitations of SMS without making apps too exclusive?

Feeding management for goats

Neena Amatya Gorkhali, Saroj Sapkota, Birendra Khanal, Jagannath Banjade, Bhoj Raj Pokhrel, Conner Mullally

Introduction

- Specific constraints affecting smallholder goat producers include lack of year-round access to nutritious feed.
- Nutritious feed is scarce during the dry winter and early summer months when communal forests are bare.
- Knowledge of an access to drought-resistant, nutritious forages could improve smallholder goat producer output.

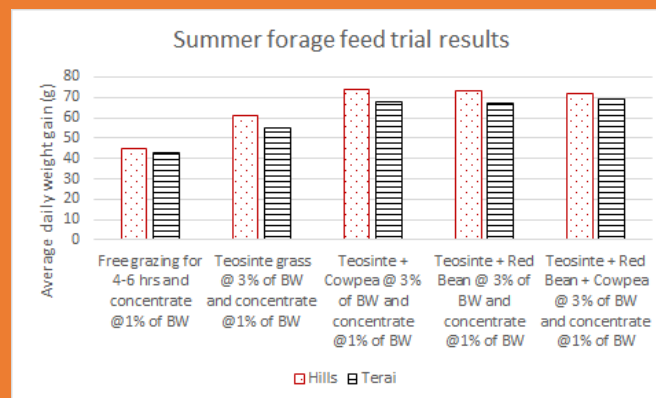
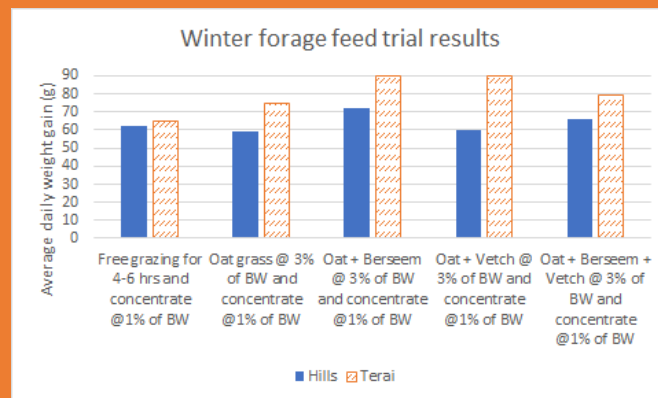
Methods

- Multi-environment trials of annual forages (leguminous and non-leguminous) and varietal trial for drought-tolerant forage varieties at NARC research centers in Terai and one in mid-Hills.
- Feed trials measuring the impact of different feed combinations on animal weight gain.

Results

- Oat and Berseem combination was superior both in Terai and Hills during the winter forage trials.
- Combinations of leguminous and non-leguminous forage was the superior option in Hills and Terai during the summer trials.

Combining leguminous and non-leguminous forages results in superior goat weight-gain performance relative to other annual forage options.



Recommendations

- If annual forage crops are promoted, the focus should be on combining leguminous and non-leguminous forages.

Current stage of project

- Heifer will work on scaling up through farmer training when lockdown lifts.
- We will collect household survey data in early 2021 and ask about use of feed crops included in Heifer training.

Future opportunities

- There is ample room for research on adoption of feed systems and forages: constraints, incentives, and training modalities.
- Future agronomic and feed trials could focus on perennials, which may be more appropriate for smallholders.