

Designing and Evaluating Innovations for Development of Smallholder Female Livestock Cooperatives in Nepal

Agriculture and Livestock Cooperatives in Nepal Preliminary Findings from Semi-structured Interviews

Sudhindra Sharma, Mahesh Raj Maharjan,
Himal Khanal, Rabina Thapa

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Inter Disciplinary Analysts

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List of Abbreviations

BFI	banks and financial institutions
CAHW	Community Animal Health Workers
CAVE	Community Agro-vet Entrepreneurs
GDP	gross domestic product
HIN	Heifer International Nepal
ICT	information and communication technology
IDA	Inter Disciplinary Analysts
INGO	international non-governmental organization
NARC	Nepal Agricultural Research Council
NGO	non-governmental organization
PI	Principal Investigator
PPPP	public-private-producer partnership
RSDC	Rural Self-Reliance Development Center
SHG	self-help group
SLVC	Strengthening Smallholder Enterprises of Livestock Value Chain For Poverty Reduction And Economic Growth in Nepal
SMS	short message service
VAHW	Voluntary Animal Health Worker

Preface

Small agriculture and livestock producers in developing countries often face constraints that limit their ability to sell in formal markets.¹ Limiting factors include poor infrastructure, weak communication channels, and long distances between market actors that lead to high costs of doing business, as well as weak bargaining power and information asymmetries (e.g., lack of knowledge about alternative prices).² Although they are not a solution to every issue that confronts small producers, cooperatives can aggregate production from many small producers, potentially making it easier to access high-value markets (e.g., increasing the ability to sell to large buyers), while increasing bargaining power, boosting access to information, and improving access to finance.³ But rather than eliminating the source of market constraints, the burdens are shifted to the cooperatives themselves. In particular, the effectiveness of cooperatives in raising smallholder market engagement with high-value output markets often depends on how well cooperatives manage the challenge of internally coordinating sales among a large group of individual market actors. Cooperatives frequently fail to overcome this challenge, facing problems such as free-riding and side-selling that damage market performance and weaken participation incentives.

In Nepal, goats are a major livestock commodity, and the potential benefits to producers of marketing through cooperatives may be high. Rising incomes, urbanization, and government policy to restrict imports imply that small producers could benefit from selling into higher-value markets. Cooperatives can facilitate that access by aggregating small numbers of animals across many producers, making transactions more appealing to large buyers. Despite this potential, much of the evidence on benefits from producer cooperatives comes from the African context rather than environments like Nepal, indicating a gap in existing research.

At the same time, the challenges associated with coordinating sales may be especially pronounced in Nepal. Mountainous landscape and poor infrastructure can make it costlier to combine animals from many small producers. Participating in collective commercialization in this context often requires farmers to directly transport their goats to the cooperative's collection center, which may be several miles away and involve significant changes in altitude. In addition, high migration rates among rural men in Nepal suggest that households must either shift away from agriculture and livestock production in the wake of migration or transfer a share of management responsibility to women. Evidence from outside Nepal suggests that among rural households, gender norms can prevent women from substituting their own work for lost male labor in certain activities.⁴ Women may also struggle to access key input and output markets.⁵

Against this backdrop, I collaborated on a research project entitled *Designing and Evaluating Innovations for Development of Smallholder Female Livestock Cooperatives in Nepal* from 2018-2021. The research team included Sarah Janzen from University of Illinois-Urbana Champaign, Nicholas

¹ Barrett (2008).

² Aker (2010); Key, Sadoulet, and de Janvry (2000); Stall, Delgado, and Nicholson (1997).

³ Poole and de Frece (2010); Markelova et al. (2009); Csaki and de Haan (2003); Stall, Delgado, and Nicholson (1997).

⁴ de Brauw, Kramer, and Murphy (2021).

⁵ <https://www.worldbank.org/en/topic/agriculture/brief/women-farmers-getting-to-equal>

Magnan from Colorado State University, Neena Gorkhali from the Nepal Agricultural Research Council in Kathmandu, and Inter Disciplinary Analysts (led by Sudhindra Sharma) in Kathmandu. Our implementing partner was Heifer International Nepal, with leadership by Neena Joshi and Bhola Shrestha. As part of its programming in Nepal, Heifer has helped create over 200 producer cooperatives, and cooperative members are all women. A large portion of cooperatives include goat marketing among their activities. But at the time of the project's initiation, these cooperatives struggled to broadly include members in collective sales. Although officers from 86% of cooperatives included in our study stated that their organizations coordinate goat sales, fewer than 40% of households in a random sample of members reported having received any information about cooperative sales in the 6 months prior to data collection. These cooperatives also appeared to largely communicate in person. Among the households that did receive price and sales information, nearly 75% did so through in-person meetings. We saw great potential to make communication more efficient through the use of information technology, and to streamline the way in which cooperatives collect data on livestock inventory among members.

Our project had three major components: development, implementation, and evaluation of an Android app designed to facilitate improved cooperative goat marketing, development, implementation, and evaluation of a platform designed to enable women to train as Community Animal Health Workers, as well as forage distribution and training in the production of improved forages. This report primarily focuses on the first component of the project and describes what the data we collected uncovered about the challenges faced by cooperatives in promoting collective marketing. The insights gleaned by Inter Disciplinary Analysts should serve as important inputs into any future efforts to improve cooperative marketing in Nepal.

While other project dimensions were quite successful (in particular, using Android tablets to train Community Animal Health Workers), we did not succeed in broadly improving collective goat marketing. But our efforts are not complete. We have incorporated what we learned through our first project with respect to improving collective goat marketing into a new iteration of Android marketing technology and are working closely with cooperatives to incorporate their ideas into the technology as well as its deployment. We plan to continue cooperating with Heifer International Nepal to build credible evidence for tools that can raise the ability of cooperatives to improve welfare among rural households.

Associate Professor Conner Mullally
University of Florida

Acknowledgements

This report is an outcome of the research project *Designing and Evaluating Innovations for Development of Smallholder Female Livestock Cooperatives in Nepal*, of which the Lead Principal Investigator (Lead PI) was Associate Professor Conner Mullally, University of Florida. I am grateful to Associate Professor Mullally for involving IDA as a partner of the University of Florida and Heifer International in this project. I am also grateful to Co-Principal Investigators Associate Professor Sarah Janzen and Associate Professor Nicholas Magnon, with whom I have had the privilege of collaborating in previous projects as well as in this.

This report is based on semi-structured interviews with cooperative chairs or managers and cooperative members of over 83 cooperatives that focused on goat and dairy value chain and have been associated with Heifer International Nepal during the past decade or so. Though IDA had undertaken semi-structured interviews with over 150 cooperatives, this report is based on 83 interviews transcripts that were processed.

In this project as well as in others, IDA has had the privilege of collaborating with Heifer International. I would specially like to mention with Ms. Neena Joshi and Mr. Bhola Shrestha for their insights and feedback.

I am grateful to the chairpersons and managers of the cooperatives as well as the cooperative members who had willingly consented to be interviewed over the phone in May and June 2021.

I would like to thank the research assistants at IDA who had undertaken the phone interviews and had also transcribed the phone interviews into Nepali language—Mr. Buddhi Prasad Gautam, Mr. Chitra Thapa Magar, Mr. Debraj Dhakal, Mr. Dipak Rijal, Ms. Mamta Hamal, Ms. Neeru Sharma, Ms. Lila Devi Mainali, Mr. Sagar Aryal, Ms. Seema Vishwokarma, Ms. Sushila Khadka and Mr. Tikaram Basnet. I would like to thank Mr. Hiranya Baral for recruiting the research assistants.

The trainings for the survey as well as the semi-structured interviews for both the research assistants as well as research associates were provided jointly by Mr. Hiranya Baral, Mr. Pankaj Pokhrel, Mr. Dinesh Dangol, and Mr. Chandra K.C., for which I would like to thank them all.

At IDA, several in-house research associates as well as external translators were involved in translating the Nepali transcripts into the English language. I would specially like to mention Ms. Akriti Rana, Ms. Pragya Pokhrel, Ms. Puspa Poudel, Ms. Jasmine Shakya, Ms. Tejeswee Thapa, Ms. Shweta Acharya, Ms. Moovie Sharma, and Ms. Ridima Tulachan.

Several individuals have been involved in processing the transcripts by entering the transcripts into Excel and then processing these. I would specially like to thank Ms. Rabina Thapa and Mr. Himal Khanal (who are also co-authors of this report), along with Ms. Jasmine Shakya, Ms. Ekta Rawal and Ms. Dilasa Shrestha. Special thanks are due to Pankaj Pokhrel of copy-editing. It is due to the effort of all that the report is where it is at the moment. Finally, thanks are due to Mr. Sandeep Thapa for the design and layout.

Sudhindra Sharma, Ph.D.
Team Leader on behalf of IDA and Executive Director

Foreword

In making any study public, there is much trepidation about how it will be received by the wider research community. It is made worse by the fact that behind the finished and packaged product lie many hours of informal discussions, tidbits, reservations, and even vague insights that end up on the cutting floor, which leaves one always wondering, “If only it had been included...could the future critics possibly be kinder and understanding?” My anxiety, too, comes from that knowledge, but my delight arises from a distant past three decades ago when I was involved with the subject matter of this survey report.

I am writing this foreword a day after a *festschrift* of sorts in Kathmandu for former finance minister and civil society activist Dr. Devendra Raj Pandey, who was the instigator of a grassroots rural development initiative known in Nepali as *swabalamban*, or “self-reliant sustainable development of the poor by the poor”. It was begun in the waning years of the Panchayat system in the mid-1980s as an action research program with some two dozen Dalit bonded laborer families in the settlement of Jhadewa in Palpa District with a remarkably small Swiss help (just US\$ 2000, so far as I remember).

In 1991, after the restoration of multiparty democracy, it got formalized into an NGO—Rural Self-Reliance Development Center (RSDC)—which I had the honor of being the founding chair till 1996. It expanded to fifteen districts of Nepal, working in remote settlements of very marginalized communities, creating “income-generating groups” whose social cohesion was the only capital they could leverage to access micro-credit, which for RSDC was only a means (not the end) toward social and political self-reliance. The emphasis was not on the micro-credit part (indeed the term *laghu-bitta* had hardly even entered the Nepali lexicon those days) but on collective social self-discipline and self-help, eschewing resource-frittering habits such as smoking, drinking, and gambling, as well as converting skills of farming, tool-making, and other handicrafts into larger marketable products.

With multiparty democracy, both NGOs and cooperatives proliferated, and RSDC’s many scattered income-generating groups too began to formalize themselves into various cooperatives. Eventually, by 2013, they had coalesced to set up a “D-category” bank headquartered in Butwal: RSDC Laghu-Bitta Bank. But, as many at the *festschrift* pointed out, this seeming progress came with an unfortunate cost: the primacy of revenue, financing, and interest concerns and the loss of self-empowering *swabalamban*, indeed of genuine development itself. This is even reflected in the current global unease as well with development: Are GDP and other financial growth indicators not hiding growing income disparity, poverty, Ponzi-like financial bubbles, and environmental degradation in the supposedly rich industrialized North, to say nothing of the Global South? What is apt-development versus mal-development?

Today, nearly two decades into a republican New Nepal, these concerns are becoming stark and worrisome. Two scandals related to the subject of this report dominate newspaper headlines currently: first, the wide-scale embezzlement of cooperative funds across Nepal by its managers, leading to a rising distrust among the people in entrusting their savings to cooperatives; and second, what is called *meter-byaji* extortion (meaning exorbitant interest rates to the poor, vulnerable, and gullible that run fast like taxi meters and leave their collateral securities falling to shylock-style village moneylenders). Both of these, of course, are illegal, but rarely are the

perpetrators brought to justice, as they seem to enjoy political protection by powerful parties and leaders.

This study, too, has been conducted against such a background where larger questions of development lurk in the background, and this underlying aspect of the report has been a source of personal joy to me. The collapse of the Panchayat system coincided with the collapse of the Berlin Wall and the Soviet system, leading to a belief that state had no role in development, that it was market alone that would bring in economic well-being, with NGOs doing a few social things that markets were not interested in. What was forgotten was Karl Polanyi's basic political economic question: Should market serve society or should society be subservient to market interests? Who should decide? And how? (Polanyi's view was that it was civic voices that would articulate non-profit values of society such as equity, justice, traditions, etc., to keep markets in check.)

In Nepal's case, whether it is rural infrastructure such as roads or urban vegetable bazaars that saw business interests capturing those lifelines and extracting exorbitant rent from farmers, villagers have been at the exploited end. To push back against it, there have been social and environmental advocates that have championed cooperative ownership, whether in transport or goats and vegetables. Their tasks have not been easy, as this report testifies, at both ends of the spectrum, from skeptical individual households to state structures favoring urban traders and middlemen. Indeed, as was pointed out in the *estschrift*, Nepal today is completely bereft of rural since all official bodies have been "municipalized"! It is hoped that this study will help those championing rural development and rural poverty alleviation as well as those hoping to reverse the disastrous rural outmigration of youth to understand the challenges they face in concrete terms.

Dipak Gyawali
Chair, Inter Disciplinary Analysts (IDA)
& former Founding Chair, Rural Self-Reliance Development Center (RSDC)

Abstract

With increased feminization of agriculture and with efforts by organizations for women's empowerment, women-centric agriculture cooperatives are growing in Nepal. This report summarizes the findings from the qualitative component of an endline study consisting of semi-structured interviews undertaken with 83 women's farming cooperatives spread across 26 districts in Nepal, supported by Heifer International. This report highlights the efforts of women for collective marketing of goats and dairy through their cooperatives, the performance of animal health-related services, and the use and need of informational materials for enhancing producer knowledge. Regarding collective sales, the study found that side-selling—that is, selling to traders at one's doorstep rather than to one's own cooperative—was still prevalent but was decreasing, and cooperatives have implemented various strategies, including monetary incentives, transparent weighing mechanisms, and inculcation of loyalty among members to sell through the cooperatives. Regarding services, the voluntary animal health workers were actively working in their communities, providing veterinary services, facilitating goat insurance, and sharing information related to goat farming. To boost knowledge and skills for livestock production, cooperatives were engaging their producer members in training programs, were encouraging use of informational materials available at the cooperatives, and were promoting the use of mobile phones and online platforms to learn and refresh their knowledge by audio-visual means as well as traditional informational materials such as posters and books. In spite of various constraints, such as traditional individualistic marketing practice, low literacy, low availability and adoption of technology, and the recent Covid-19 pandemic, cooperatives were collectively gearing toward establishment of formal collection centers for livestock and livestock products and toward increasing agricultural productivity—thereby empowering women in agriculture.

1. Background of the Study

According to the Economic Survey 2022/23, 15.1 percent of the population in Nepal live below the poverty line. Most of the poor live in rural areas and are mostly involved in subsistence farming and livestock-related activities. Livestock is vital for rural households since it helps to increase rural income, improve diversity in food consumption, and increase agriculture productivity through manure. Though buffalo is the largest contributor to livestock GDP in rural Nepal, the contribution of goats is increasing.

Rearing of goats is widespread in rural areas. According to Heifer International, 49.8% of households in Nepal keep goats, at an average of 3.3 goats per household⁶.

The major labor force in rural agriculture in general, including in goat production, has been female, both due to traditional gender roles as well as increasing male labor migration. Goat, as a medium-sized livestock, is mostly reared and owned by women and can contribute to narrow the gender gap in ownership of assets. Moreover, women are becoming involved not just in rearing but also in marketing of livestock.

Considering women's crucial role in agricultural production and marketing, many women-centric farming cooperatives have been established throughout Nepal in the rural areas to increase productivity. Apart from that, such farming cooperatives also serve as an institution for empowering women by raising awareness, developing knowledge and skills through various trainings, and building social capital. Various governmental and non-governmental initiatives have provided support in livestock production through such cooperatives, with focus on empowering women.

With rising income and nutritional awareness, the demand for goat meat in urban areas of Nepal is increasing. However, a poorly functioning value chain, limited access to animal feed and other inputs, and limited knowledge and skills for large-scale, efficient, and sustainable goat production have left poor smallholders unable to benefit adequately from the increased demand and rising prices. Specific constraints include lack of year-round access to nutritious feed, scarce extension and veterinary services, and poorly functioning output markets, including weak bargaining power and a lack of communication infrastructure.

⁶ Heifer International Nepal (2012). *A Study on Goat Value Chain in Nepal*. (https://docplayer.net/56918446-A-study-on-goat-value-chain-in-nepal.html#google_vignette)

Heifer International Nepal

The implementation partner of this project was Heifer International Nepal.

Heifer International is a global non-profit working to end hunger and poverty and care for the earth by using sustainable practices and engaging smallholder farmers in agricultural development. Heifer International was founded on the simple belief that ending hunger begins with giving people the means to feed themselves, generate income, and achieve sustainable livelihoods. Since 1944, Heifer International has helped 20.7 million households—more than 105 million people—in over 125 countries, through community-based training, appropriate technologies, and agricultural resources, enabling communities to lift themselves out of poverty and hunger onto a path of self-reliance and economic prosperity.

Heifer International started work formally in Nepal with its first project in 1993. As of December 2022, Heifer International Nepal (HIN) has assisted more than 325,000 families and transformed their livelihoods through a community-led approach with a focus on livestock development programs. HIN aims to bring project participants from a state of poverty and vulnerability to sustainability and resilience through their engagement in competitive, sustainable, and inclusive goat and dairy value chain enterprises in a holistic system approach for bringing economic growth, improved livelihoods, and food and nutrition security. HIN is implementing project activities focusing on goat and dairy value chains in 29 districts of Nepal in collaboration with local and provincial governments, civil society organizations, and private sectors.

While Heifer International implemented the project “Strengthening Smallholder Enterprises of Livestock Value Chain for Poverty Reduction and Economic Growth in Nepal (SLVC I)” between 2012 and 2016, SLVC II was underway between 2018 and 2021. *Designing and Evaluating Innovations for Development of Smallholder Female Livestock Cooperatives in Nepal* worked under the umbrella of SLVC II.

SLVC II sought to focus on meat goat and dairy value chain, connecting smallholder producers to consumers. It aimed to bring goat meat and milk/milk products from farm gate to plate in an efficient manner. This project worked with smallholder farmers’ organizations and value chain actors to improve market systems, primarily in meat goat and dairy value chains along with vegetable and backyard poultry. It intended to scale up enterprises of the participating farmers. It was envisaged that introduction of new technologies, along with increased access to other business development services (finance, market, input supply, technical services, insurance, etc.), would increase productivity, efficiency, and thereby increase farm profitability. The project sought to prototype new technologies and scale as appropriate and facilitate public-private-producer partnership (PPPP).

Other Partners in the Consortium

An important partner in the project was Nepal Agricultural Research Council (NARC). NARC is the Nepal Government mandated agency for undertaking agriculture research in Nepal. Established in 1991 as an autonomous organization under “Nepal Agricultural Research Council Act 1991”, NARC undertakes agricultural research in the country to uplift the economic level of the people. The first objective of this project was to increase feed and forage production through preservation, improved varieties, and access to other forage resources for improved livestock productivity. This effort was spearheaded by NARC and in particular by Dr. Neena Gorkhali, Chief and Senior Scientist, Animal Breeding Division at NARC, who was a Co-Principal Investigator of this project.

The main research partner in this action research was University of Florida, in particular Dr. Conner Mullally. As the Principal Investigator of this action research, Dr. Mullally, who is an Associate Professor in the Food and Resource Economics Department at the University of Florida, was the lead in designing the implementation and evaluation of this project. Dr. Sarah Janzen, Associate Professor of Agricultural and Consumer Economics at the University of Illinois Urbana-Champaign, and Dr. Nicholas Magnon, Associate Professor in the Department of Agriculture and Resource Economics at Colorado State University, were Co-PIs of the project.

Dr. Conner, Dr. Janzen, and Dr. Magnon were responsible for designing the evaluation framework as well as tools such as survey questionnaire for addressing the other two objectives of the project, namely, to increase access to markets of meat goats for smallholders in order to improve household income, nutrition, and food security; and to increase the percentage of female CAHWs for improved livestock productivity and reduction of animal disease. To achieve the second research objective, the project sought to develop and test an SMS platform that would strengthen producer cooperatives. The major intervention designed for the program was a smartphone-based app (e-Khashi Bazaar) to help cooperatives manage goat inventory and organize collective sales. To achieve the third objective, the project developed and piloted a “distance learning” platform that would increase the percentage of female CAHWs by requiring less time away from home relative to the training package typically employed by HIN and endorsed by the GoN.

The final partner in the consortium was Inter Disciplinary Analysts (IDA), a research and consulting organization established in 1996 and based in Kathmandu. IDA was responsible for implementing the research in the field, which among others included translating the tools into Nepali language, designing the software application for conducting the interview through tablets, recruiting and training enumerators and supervisors, coordinating with Heifer International, and conducting the fieldwork by interviewing the cooperative leaders, members, as well as CAHWs. On behalf of IDA, Dr. Sudhindra Sharma, who is the Executive Director of IDA, was also the Co-PI in this research project.

Designing and Evaluating Innovations for Development of Smallholder Female Livestock Cooperatives in Nepal, underway between 2017 and 2021, sought to design, implement, and rigorously evaluate three interventions to improve goat value chain functionality in rural Nepal. These were:

- a) Evaluate several drought-resistant forage varieties, disseminated through CAHWs trained by Heifer International Nepal and promoted within their smallholder cooperatives. The Nepal Agricultural Research Council (NARC) directed this effort, working in four different research locations and collaborating with Heifer International Nepal and producer cooperatives to introduce varieties and the package of services offered to cooperatives, while training members on the use of silage to reduce dry season feed shortage.
- b) Assess distance learning platform that makes it easier for women to become CAHWs. The project developed and piloted this platform, which consisted of
 - (i) a short workshop at a central location for an introduction to and receipt of training materials, including a tablet computer pre-loaded with the government-approved curriculum for training animal health workers and sufficiently ruggedized for the conditions of rural Nepal;
 - (ii) one or more short in-person follow-up training sessions;
 - (iii) apprenticeship and/or mentoring from a previously trained CAHW;
 - (iv) regular tablet-based tests for assessment of learning; and
 - (v) final workshop and graduation ceremony. To strengthen the quality of mentorship, experienced CAHWs were provided mentorship training.
- c) Assess an SMS-based information sharing platform that improves cooperative efficiency and sustainability. Through the SMS platform, cooperative leaders communicate with a single member of each self-help group (SHG)—organized by Heifer International Nepal and consisting of 20–30 women—who provide their cooperatives with regular updates on the goat inventory of their members; this information is used by cooperatives to negotiate with buyers. The SMS platform is also used to communicate information on disease outbreaks, availability of CAHWs, and other services.

This research project sought to strengthen livestock (goat) value chain and increase the proportion of female community animal health workers (CAHWs) through digital, SMS, and online-based innovations/interventions. The two major interventions designed for the program were;

- 1) a smartphone-based app (e-Khashi Bazaar) to help cooperatives manage goat inventory and organize collective sales; and
- 2) a tablet-based training system for CAHWs.

The smartphone-based app (e-Khashi Bazaar), designed to increase the bargaining power of small producers and improve access to services, could not work to the extent it was envisioned. Technical difficulties in initial rollout, failure of cooperatives to arrange incentives to persons who were assigned with coordinating roles in SHGs, inadequate support in the field from implementing partners, inadequate piloting, limitation of technology (SMS has character limit, mobile coverage is unreliable) were the major reasons for the app not performing.

However, assessment of distance learning platform that would make it easier for women to become CAHWs proceeded as per plan.

Baseline and Endline Studies

Baseline and endline studies of this research project were aimed at assessing the current status of Heifer-supported cooperatives related to their management, planning, and goals; the services they provide; the level of transparency they maintain; the equipment and infrastructures they possess; and their intensity of communication with members.

The baseline study (November 2017–May 2018) employed two quantitative surveys—one focused on cooperative leaders and the other on self-help group (SHG) members. The primary objective of the cooperative leaders' survey was to examine the nature and operation of the livestock cooperatives, along with their information management and marketing practices. Similarly, the household survey of the SHG female smallholders covered various aspects such as income, assets, expenditure, health, nutrition, food security, women's empowerment, financial inclusion, aspirations and hope, trust and trustworthiness, and livestock practices. Administered across 24 districts, the survey encompassed 2880 SHG members and 120 cooperatives.

Based on the baseline data, Scott Miller and Dr. Conner Mullally have published an article “Investigating the Inclusive-Performance Tradeoff in Agricultural Cooperatives: Evidence from Nepal”.⁷

The endline survey aimed to evaluate different aspects of cooperative members in relation to their cooperatives:

- (i) services that cooperative members received from their cooperative;
- (ii) marketing strategies adopted by members for selling goat and dairy products and the level of support that members received from the cooperative; and
- (iii) information sharing pathways of the cooperative.

More importantly, the survey also expected to garner information and lessons learned to feed into the designing of the proposed second phase of the research program. The questions were formulated with the aim to capturing these issues.

The endline survey was conducted amid the Covid-19 pandemic. The pandemic posed difficulties in conducting the field work. Concerns about Covid infection, lockdown, and changed routines led to decreased willingness to participate on the part of the respondents. Taking into account these constraints, it was realized that face-to-face interactions were not possible in those circumstances, and IDA proceeded with phone interviews.

While remote surveying offered advantages, it also presented challenges, including connectivity issues and difficulties in obtaining correct phone numbers of the sampled respondents. The IDA team addressed these obstacles strategically. To overcome the challenge of reaching out to the respondents, the IDA field staff employed various methods such as contacting cooperative leaders to get phone numbers of the respondents.

Thus, the interviews during the endline study were conducted remotely via phone.

Inter Disciplinary Analysts (IDA) implemented the endline survey from May 25 to June 18, 2021. Two sets of interviews were undertaken with leaders and members of cooperatives—one was survey interview and the other was semi-structured interview. This report outlines the major findings from the semi-structured interviews.

⁷ Miller, S., & C. Mullally (2022). Investigating the Inclusive-Performance Tradeoff in Agricultural Cooperatives: Evidence from Nepal. *World Development* 159, 106017.

2. Methods Used in the Endline Study

The endline study used quantitative surveys and semi-structured interviews with agricultural cooperatives that were led by and comprised of women members. Some of the cooperatives focused explicitly on milk and dairy products, others focused on goats, while still others were involved in both goats and dairy. The interviews were administered to two sets of individuals in each cooperative: a cooperative leader and a cooperative member.

The endline survey was administered to a leader and an ordinary member of each of the 155 cooperatives spread across 29 districts. A leader could be either the general manager, chairperson, or any other person entitled to a leadership or managerial position in the cooperative. Likewise, an ordinary member could be any general member of the cooperative who had not been in leadership or managerial position at present or in the past.

IDA pre-tested the tools on May 17 and 18, 2021. Based on the feedback from the field team, minor corrections were made and incorporated into the questionnaire. Then an intensive three-day online training for the research assistants and research associates was conducted from May 22 to 24, 2021. The interviews were undertaken from May 25 to June 18, 2021. Due to the Covid-19 risks, the interviews were conducted through phone calls, rather than face to face.

Ten research assistants were assigned for conducting the survey.⁸ Geographical area and knowledge of local languages were taken into account while allocating the cooperatives to research assistants. Thus, for some of the cooperatives in the Tarai where local languages such as Maithili or Awadhi are spoken, research assistants who had good command in those languages were selected. Many of the research assistants had been previously involved in the Designing and Evaluating Innovations baseline survey, while some had even been involved in the Evaluation of the Welfare Impacts of a Livestock Transfer Program in Nepal (BASIS)⁹ surveys. The interviews were conducted, as much as possible, with the leaders/members of the cooperatives who had been “visited” earlier during the respective project baseline survey.

The phone interviews were recorded. The research assistants then listened to the audio and transcribed the interview in the Nepali language. Once the Nepali transcripts were ready, the research assistants sent these through email to the research associates, who then translated these into English.

IDA organized a qualitative data analysis and research writing training for its researchers¹⁰ in August and September 2022 by the qualitative expert. Then the researchers analyzed the data and prepared a draft report, which was finalized by the qualitative expert. This report is based on the processing of 166 transcripts—a leader and a member from each of 83 cooperatives spread across 26 districts¹¹.

⁸ The research assistants were Buddhi Prasad Gautam, Chitra Thapa Magar, Debraj Dhakal, Dipak Risal, Mamta Hamal, Neeru Sharma, Lila Devi Mainali, Sagar Aryal, Seema Vishwokarma, and Sushila Khadka.

⁹ The BASIS project “Evaluation of the Welfare Impacts of a Livestock Transfer Program in Nepal” was implemented from 2014 to 2017 with the support from Heifer International.

¹⁰ The training participants were Mr. Tikaram Basnet, Mr. Himal Khanal, Ms. Jasmine Shakya, Ms. Dilasa Shrestha, Ms. Rabina Thapa, and Ms. Ekta Rawal. The training was facilitated by Dr. Sudhindra Sharma and was provided by the qualitative expert Mr. Mahesh Raj Maharjan. Besides by Rabina Thapa and Himal Khanal, many transcripts were processed by Ekta Rawal and Dilasa Shrestha.

¹¹ The districts were Argakhanchi, Baglung, Banke, Bardia, Chitwan, Dang, Dhading, Dhanusha, Jhapa, Kaski, Lamjung, Mohattari, Morang, Parasi, Nawalpur, Nuwakot, Palpa, Parnat, Pyuthan, Rautahat, Rupandehi, Salyan, Sarlahi, Sindhuli, Siraha, Surkhet, and Tanahun.

3. Findings

3.1 Revenue Boosting and Management Training

In Nepal, cooperatives in rural areas—whether saving and credit cooperatives, consumer cooperatives, or producer cooperatives—are mainly involved in financial activities such as saving and credit. The main source of revenue for cooperatives is the interest on loans, while cooperatives themselves are the major source of acquiring capital for rural women, whether for agricultural production or household needs. Women are involved often in more cooperatives than in one.

However, cooperatives, including farming cooperatives, cannot prosper on subsistence agriculture of their members and limited financial activities. Also, without large capital, producers cannot transition from subsistence to commercial agriculture. Moreover, operating cooperatives is challenging especially for women, who are relatively less educated, have less mobility, and have low (external, outside of family circle) social capital compared to men. So, management and business trainings for women's cooperative leaders are crucial.

Considering this situation, questions about cooperative management were asked to the cooperative leaders. The questions were primarily related to the cooperative's major activities, revenue-boosting suggestions, and information about the importance, need, and benefits of management training.

Major Activities and Revenue Boosting

The study found that all cooperatives were engaged in loan investment as well as saving activities, such as monthly saving, optional saving, child saving, term saving, and joint saving. Cooperative leaders went on to explain that loans were often given for production of goats and vegetables. Majority of the cooperatives were involved in collecting and selling goats and/or milk production. Other major productive activities included vegetable production, poultry farming, and local productions (such as ginger and turmeric by LGS-P Cooperative¹²) as a major activity.

Leaders were further asked to rank—as high, medium, and low—the different economic activities of their cooperatives that generated the most revenue. For nearly all cooperatives, the major income-generating source was interest from loan investments. Milk was the highest revenue-generating source for some cooperatives.

Some productive activities generated the highest revenue for some cooperatives, such as manure (DGK Cooperative, DBT Cooperative, JTI Cooperative); poultry (SFT Cooperative); chemical fertilizers (TVN Cooperative, GKJ Cooperative, DSK Cooperative, SMD Cooperative); banana farming and local chicken production (SDD Cooperative); and sale of vegetables (NMN Cooperative, UTG Cooperative, and UPH-SY Cooperative).

Commission from goat sales was the most frequently mentioned medium revenue-generating source, following the interest from loans. Other sources of medium revenue of some cooperatives were sale of dhaka handicraft, manure, vegetables, fodder and milk, local chicken, or grain/husk. Of note, the majority of leaders, however, did not mention the source of medium revenue.

¹² For the purpose of this report, the names of cooperatives have been shortened.

There were many activities that yielded low revenue for many cooperatives, such as selling of feeds, grains, fertilizers, seeds and saplings, local poultry, vegetables, fodder, as well as membership entry fee, transportation charge, and service charge.

Revenue Boosting—Suggestions for Management

As the major revenue of most cooperatives came from saving and credit activity, there was obviously a need to increase productive and marketing activities. So, leaders were questioned about their suggestions for the management team to increase revenue. The majority of leaders offered concrete suggestions, which included marketing of agricultural products and livestock, effective management practices, market management practices, and improved work ethics and trainings so that the management team could realize their responsibilities and work for the betterment of the cooperatives, which would ultimately help to increase revenue. A frequently suggested revenue-boosting strategy was widening financial activities, either by increasing capital or saving, or by collaborating with banks and financial institutions (BFIs). For example, the leader of ARB Cooperative suggested that working with BFIs would enable farmers to start livestock and agricultural farming as a business by offering larger loans at lower interest rates.

Some cooperatives also emphasized commercial production of goats. For example, the leader of KNC Cooperative said that members should rear goats commercially rather than doing it as a temporary business. While few leaders suggested recruiting more members and monitoring of investment sites (TVN Cooperative, UTG Cooperative), the DGP-M Cooperative leader advised to encourage cooperative members to start their own businesses. Leaders from CNP Cooperative and PPN Cooperative acknowledged that activities of cooperatives ought to be more diverse, i.e., explore more than one economic activity.

Revenue Boosting—Challenges

Cooperative leaders expressed concern about challenges to boost revenue from the above-mentioned suggestions. Financial constraints—lack of funds or capital—appeared to be the most significant challenge for the majority of cooperatives. The leaders acknowledged, on the one hand, that due to lack of funds cooperatives were unable to meet the demand of farmers, and members were unable to increase their savings amount, which had led to a cash shortage (LGS-C Cooperative). Limited capital had made it difficult to develop sound budget plans (APS Cooperative). On the other hand, the Covid-19 pandemic and lockdown had a great impact on the cooperatives. It was challenging for HSL Cooperative to hire new employees, and its income was also low because of lockdown.

Similarly,

“All our work has stopped for now because of lockdown. Many of our cooperative members are daily wage workers.” — Leader of PRB Cooperative

Lack of goat collection center and weighing machines was a major hurdle for GGJ Cooperative. Unlike other cooperatives, side-selling had reduced revenue for ARB Cooperative.

Factors related to the political and economic environment also posed challenges to cooperatives. The DYL-P Cooperative leader noted that the legally limited working area for a cooperative (to just one ward of a municipality) made it difficult to reach out to households beyond that ward. Also, competition between cooperatives was cited as another challenge, such as by the leader of

STC Cooperative: “We had started the process of selling chemical fertilizers, but there is a cooperative bigger than us that provides them at a lesser price, so all the farmers were attracted to that cooperative.”

Another challenge for increasing economic activities was socio-cultural.

“Many of the residents here belong to the Muslim community. Muslim people have very strict gender roles, where women are restricted from leaving the house without permission. So, we haven’t been able to encourage members to start raising goats.” — Leader of DDB Cooperative

The DYL-P Cooperative leader said that their members’ lack of help at home prevented them and the cooperative from engaging in other businesses. Similarly, according to the leader of SNK Cooperative, “Men’s support to women is almost zero. In comparison to males, females of this place are really very backward.”

Management Training

Almost all of the leaders agreed that management training for the management team was crucial. Board members’ lack of expertise or understanding was seen by some leaders as a major obstacle to increase revenue (STG Cooperative, JBR Cooperative, JLM Cooperative). The leader of STC Cooperative highlighted that if the management were to be provided training, it would be easier for them to understand their roles and responsibilities and their attitude toward the cooperative would change. The leader of SNT Cooperative elaborated on its importance in this way: “Cooperative officials in the organization come and go. Because newcomers lack knowledge on the subject, it is necessary to educate or train them so that the cooperative work is not hampered.”

The leader of STR Cooperative, however, was of the opinion that management training was crucial for all employees, not just new ones, because older ones tended to forget, so training at regular intervals was essential. Similarly, management should be trained on a regular basis to help the team learn new ways to do things, according to the leader of MLS Cooperative.

Leaders of various cooperatives said that they had received trainings like accounting training; management training; training on investment, saving and operations; corporate and business training; cornerstone training; and training on male-female-mutual development.

Regarding benefits from trainings, the leader of SKM Cooperative had previously learned data entry and elaborated on the benefits of such training:

“They can work well, such as entering data into computer as the data lasts longer; even if the staff leaves, the data will remain and can be used in the future.” — Leader of SKM Cooperative

Many cooperative leaders said that officers, such as chairperson, secretary, and treasurer, had received management trainings before and they got benefits from the training. However, according to the leader of CTD Cooperative, “Not much training has been provided to the members, and the women of my cooperative are not interested in traveling far for it.”

Many leaders mentioned the benefits in a general, nonspecific way, such as “helped in managing cooperative” (ADS-D Cooperative), “staff knowing their responsibilities well” (STC Cooperative), “made work easier” (KMC Cooperative), “helped to increase production” (SNK Cooperative),

“easier to make decisions in various circumstances” (SKYW-P Cooperative), “realization of own responsibilities and understanding of the ways of growing cooperative” (PPJ Cooperative), “helped members implement their learnings in real life” (PPN Cooperative), “been more conscious and vigilant of actions” (APS Cooperative), “skill enhancement and positive change” (SRK Cooperative), and “can deal with unforeseen circumstances” (PYS Cooperative).

Others were specific in the benefits, such as “able to educate people about the need of commercialization and saving of products sale” (STR Cooperative), “learned to operate a computer to record transaction” (DYL-D Cooperative), “learned various aspects of cooperative, especially bookkeeping, financial transactions” (JLM Cooperative), “been able to speak confidently in front of the masses” (MLS Cooperative), “learned to operate staff and manage cooperative efficiently” (GLD Cooperative), “cooperative runs smoothly even in the absence of manager” (SNP Cooperative), “effective loan recovery and conflict management” (GRM Cooperative), “helped to understand business skills and enhanced knowledge on plans/projects” (GKJ Cooperative), and “helped to increase income source, exchange learning, confidence boost and learn responsibility and compromise for common good” (DYL-D Cooperative).

The leaders provided diverse suggestions to include in management trainings. Again, many leaders gave general, nonspecific topics. Most leaders emphasized accounting and management training, while many placed emphasis on computer/software training. Some emphasized training in agriculture and livestock, followed by training in saving and credit and cornerstone training. Only a couple of cooperatives emphasized refresher training, skill-based training, self-reliance training, milk marketing training, staff management training, leadership training, training in policy and monitoring, training in proposal writing, and business planning training.

3.2 Side-selling and Control Strategy

In rural areas in Nepal, most goats are consumed by the family or the village people collectively. Surplus goats are sold to local traders, known as collectors, mostly individually based on need for cash. Collectors supply goats to nearby weekly local markets, called *haatbazaar*, or far-away markets. This vertical value chain linkage between farmer and collector is characterized by lack of trust, inconsistency in pricing, excessive bargaining, and short-term relations based on instantaneous benefits for both, which obstruct the creation of a smooth-functioning livestock market.

To support establishment of collection centers and to promote collective marketing, Heifer International Nepal transformed self-help groups into multi-purpose cooperatives, which would manage inventory of goats produced by their members and serve as goat collection points for collectors. It was believed that establishment of such centers would promote good marketing practices, benefiting all the stakeholders of goat value chain. In the case of women-centric farming cooperatives, this would contribute to increase in women's bargaining power through collective action and ultimately empower them.

This transition from individual to collective marketing is difficult, and cooperatives face many challenges due to the longstanding selling preference to collectors/traders. This study sought to capture the attitudes, beliefs, preferences, and practices of producers regarding selling to cooperatives compared to selling to traders. Because cooperatives depend on the loyalty of their members for their success, the role of cooperative managers become important in persuading members to sell through the cooperative.

Side-selling—Prevalence

Questions related to side-selling prevalence were asked to cooperative leaders. The leaders acknowledged that most members did side-sell, that is, sold goats on their own to outside traders instead of to/through the cooperatives. It was found that side-selling prevalence was high in most of the cooperatives, and it had become a major concern for them. The leader of DPN Cooperative remarked, "The cooperative as well as producers have experienced losses as a result of this action."

"Despite convincing members, they continue to sell to traders without measuring the quantity of either milk or goats." — Leader of PPJ Cooperative

One of the major problems faced by the cooperatives is the lack of goat collection centers, due to which producers were unable to sell immediately to the cooperatives. The other issue was that members thought that they would get more money if they sold goats haphazardly without weighing, and that if they weighed and then sold it would not be profitable for them. Leaders of KNC Cooperative and UPH-P Cooperative highlighted that some members had difficulty transporting the goats to the cooperatives, so they sold to the traders.

Covid-19 also impacted some of the cooperative's goat production.

"Before Covid, only few were involved in side-selling. But now it has increased because the cooperative couldn't sell the farmers' produce in the market last year due to Covid. And it is the same situation right now too." — Leader of MLS Cooperative

Not all cooperatives had the problem of side-selling. Some leaders (STR Cooperative, KLK Cooperative, LGS-P Cooperative) said that while it had been a major problem in the past, it had now been controlled.

“Most of the members have come to realize that selling goats after weighing is more beneficial to them.” — Leader of SSD Cooperative

Usually, when member sell livestock or livestock produce directly to traders, the cooperative would not benefit. However, there is an interesting practice in some cooperatives where members would pay a certain amount to the cooperative as a commission or a fine when they sold goats to the traders. In the case of APS Cooperative, members were required to pay at least Rs. 5/kg to the cooperative. This suggests that even if side-selling is unavoidable, members wish to be involved in the cooperative.

Side-selling—Reasons for (Not) Side-selling

Most members preferred selling to the cooperative than to traders. The main reasons for selling to the cooperative were: fair price; incentives or additional money; services given by the cooperative; and benefits to the cooperative.

The main reason for members selling to the cooperatives was fair price. Fair price occurred because the goat was accurately weighed and cheating was unlikely to happen. The cooperative determined price only after weighing the goats, and while doing so, producers did not get deceived, got a fair price, and did not suffer losses. For example, the member of STG Cooperative said that the cooperative would weigh goats in front of their eyes and would pay a reasonable price. Also, members believed that cooperatives would not cheat them, unlike traders who would make random guesses and would take goats.

Cooperative members also got incentives and bonuses from governments and the cooperative if more goats were sold through the cooperative. The member of STG Cooperative said that farmers would get incentives from the provincial government, municipality, and the cooperative. Similarly,

“Another good aspect is that the cooperative has made an agreement where the municipality gives us an additional 25 rupees per kilogram of goat when we sell it through the cooperative. For sales of milk, the municipality gives us an additional 10 rupees per liter when we sell through the cooperative.” —
Member of MHS Cooperative

Cooperative members talked about different services provided by the cooperative as a reason for selling to the cooperative. The most important was that cooperatives provided loans at low interest rates at the required time and gave trainings when needed. Non-monetary factors also encouraged members to sell through the cooperative, such as getting seeds, manure, saplings, and goats in grant. Moreover, most of the members mentioned that one of the main reasons to sell through the cooperative was that it was established by themselves, they considered it as their own, and they wanted to see it benefit.

“How can the cooperative earn a profit and progress if we don’t sell to them? We won’t be able to develop the cooperative if we don’t think of it as our own. Therefore, we let the cooperative take Rs. 5/kg of the goats sold by us.” — Member of SLB Cooperative

Although most members said that they preferred selling to the cooperative, some members preferred selling to both cooperatives and traders due to several reasons. Most of the members mentioned that when the cooperative was unable to bring the traders then they would be forced to sell outside.

Some members said they got better price from traders, at their doorstep. A member preferred to sell through the cooperative only if it offered the price that traders would give:

“Traders come to our house itself to buy. Another reason is we don’t get the price that we desire for. We take our goats to the cooperative but they don’t give us good price. They don’t come for collection; we have to take our goats there. When there are more than 4 to 5 goats, then they should come with vehicle for collection, isn’t it?” — Member of ADS-D Cooperative

Likewise, as the price keeps fluctuating, goats are sold to traders if they offer a good price. Farmers feared that they might be losing if sold to the cooperative. However, some members would sell to traders when in difficulty, or in need of quick cash for emergencies, but only after informing the cooperative beforehand.

Side-selling—Consequences

Cooperative members were asked about negative consequences of selling to traders. Most members said that cooperatives felt cheated when selling to the traders, but the cooperative did not take any action and could not prevent them from using any facilities. Some cooperatives, on the other hand, would inquire of its members about the price they received from traders.

Cooperatives had various punitive provisions against members who engaged in side-selling, such as depriving them of loans and stopping access to facilities. For instance, most of the cooperatives might not invest or provide services and loan to those who side-sell (SKY-P Cooperative, PSK Cooperative, MHS Cooperative, SNP Cooperative, APS Cooperative, JLK Cooperative). If PYS Cooperative found out about side-selling, it might deny buying any of the produces. Similarly, SMP Cooperative might not include members in programs and might not distribute seeds or medications that had been donated by other organizations. Some members said that their cooperatives might penalize Rs. 10/kg as a commission (HRP Cooperative, RDT Cooperative, SLB Cooperative). Similarly, side-sellers might need to pay Rs. 50–100 to the cooperative as a commission (PRB Cooperative). DGK Cooperative would charge Rs. 50 per goat as a penalty for side-selling.

Although cooperatives had such provisions to discourage side-selling, they did not seem to have taken such acts strictly. But some cooperatives have indeed penalized members when they found out about side-selling. Cooperatives have excluded members from taking loans, have prohibited them from using facilities, and have made members pay certain fines.

The leader of SDD Cooperative acknowledged that punishing members who were engaged in side-selling was not possible because they had not been able to fulfil their duties and were unable to

collect goats due to lack of a collection center. Similarly, the leader of SNP Cooperative shared that it was their weakness that they could not send persons to collect produce at the time asked by the farmers.

It is obvious that enforcing the threatened sanctions is difficult, and not desirable. However, it seems that threats and imposition of commission or fine had some positive effect. Even if its members did side-sell, the cooperative benefitted from such arrangement, as the cooperative was able to create an inventory of goat sales and also got commission from sales through proper weighing for the benefit of its members.

Side-selling—Control Strategies

Besides punitive measures or threats, cooperatives used a variety of strategies to control side-selling. These included giving incentives, having meetings and discussions to raise awareness, preventing traders from entering villages, and asking for assistance from the ward office or municipality to address this issue.

Almost all cooperatives had used monetary and non-monetary incentives as their prime control strategy to discourage side-selling. In many cooperatives, members who sold goats through the cooperatives were rewarded with Rs. 10/kg (for goats up to 150 kg, in KNC Cooperative), Rs. 20/kg (LGS-P Cooperative), to Rs. 50/kg (for goats up to maximum 100 kg and also a grant of Rs. 25/kg from ward office for GGJ Cooperative), often with financial assistance from the local or provincial government. For example, the leader of DYL-P Cooperative explained that they would provide annual prize money to members who made the highest goat sales through the cooperative, and along with this, the provincial government had announced to give an additional Rs. 25/kg. Cooperatives had provided monetary rewards to the bestselling producers (SNT Cooperative, TVN Cooperative, UPH-P Cooperative) at the annual general assembly to members (UTG Cooperative) and that a certain percentage would be deposited in their account (DGD Cooperative). In the case of GLD Cooperative, they received a grant of Rs. 615,000 for distribution to members, which has attracted everyone to sell through the cooperative and has reduced side-selling.

Side-selling Control Strategy of STD Cooperative:

“The cooperative had set aside some 140,000 rupees for travel allowance from the budget. When the chairperson went to report side-selling to the District Animal Services Office, she herself shared a side-selling control strategy, such that the travel allowance would be distributed to members as a bonus for selling goats through the cooperative itself—and it worked. The farmers got 27 rupees extra per kilogram as an incentive. This incentive made the farmers sell within. This year, again, the Veterinary Hospital and Animal Expert Center, Lamjung, has agreed to give 20 rupees extra as incentive to the farmers if the sale is up to 30 kilograms. And to this, the cooperative will add 5 rupees, and the farmers will receive 25 rupees extra as an incentive. So, now, there is no side-selling.”

Similarly, regarding milk selling, SUT Cooperative would give Rs. 25,000 as an encouragement to the member who met the target of 10,000 liters of milk per year.

Some cooperatives have offered loans at a low interest rate (SNT Cooperative, DGP-M Cooperative, SFT Cooperative, UTG Cooperative, PPJ Cooperative, UPH-P Cooperative), and certain commissions for every sale they make (Sainamaina Municipality). The leader of HSL said

that members involved in milk production could be given loan at 1–2% less interest than others. According to the leader of the PSK Cooperative, they had requested Heifer to launch an incentive program, and they were planning to provide 5- and 10-liter cans as a gift to the members along with some grants. Aside from this, Heifer had provided them with an incentive of Rs. 25,000 to build a goat shed and to invest in vegetable farming.

One strategy of reducing side-selling was described by the member of MNK Cooperative, who says that their cooperative has a weighing machine set up in a nearby place for members who live far away from the cooperative, and a vehicle has been arranged at the weighing place, which also provides a bonus to members who sell through them. A few members also said that their cooperatives had arranged lunch and travel expenses for farmers who came from far away to sell their products (UPH-P Cooperative, SFL Cooperative, UTG Cooperative).

Many cooperatives, on the other hand, held periodic meetings and discussions to discourage members from side-selling and raise awareness among them. For example, at PPJ Cooperative, they have created a network to stop side-selling, where they hold meetings with the network every month, record the number of goats each member has, and tally the data with the remaining ones when they are sold, making it difficult for members to lie. Similarly, PYS Cooperative organizes meetings with animal department of the municipality, traders, farmers, and the chairperson and discuss ways to reduce side-selling.

In GRM Cooperative, both Heifer and the cooperative focus on trainings to members:

“We invite two influential persons from each village and educate them about the effectiveness and importance of selling via cooperative as well as the drawbacks of side-selling. When they return back to their village, they can convince the goat farmers as well.” — Leader of GRM Cooperative

Members of JLD Cooperative and KNC Cooperative shared that their cooperative chairpersons would visit groups to advise members about selling through them, and warn them to be aware of intermediaries (LGS-P Cooperative).

Such side-selling control strategies were reported also by cooperative members along with the leaders.

Because the management cannot effectively control side-selling, many cooperatives have resorted to conducting trainings/discussions and awareness programs on how to get fair price from traders. Members are taught not to sell their goats to traders without weighing, as they can be at loss.

The member of STR Cooperative mentioned that the cooperative would impose a fine of Rs. 20/kg if members sell outside *without* informing them. Similarly, even if members sell to traders, they pay a required amount per kg to the cooperative (GLD Cooperative). Many cooperatives, which even had set up a collection center and weighing machine, would give advice about selling to the traders only after weighing the quantity of the goats at the cooperative (SSD Cooperative, LHR Cooperative, MHN Cooperative, SJT Cooperative, ANJ Cooperative, GSD Cooperative, RDT Cooperative, JLM Cooperative).

Also, cooperatives have been giving advance money to the producers, if necessary (SFT Cooperative, TVN Cooperative, SFL Cooperative, UTG Cooperative).

There was some control in side-selling noted due to such measures. For example, in PJJ Cooperative, only 10% of members were selling their goats to the cooperative earlier, but now it has reached up to 70–80%.

Some of the cooperatives, on the other hand, have taken a stricter measure to control side-selling. According to the leaders of SKYW-P Cooperative and PJJ Cooperative, they were coordinating with Heifer, local government, and police to prevent traders from entering villages.

However, there was some skepticism toward such measures:

“Without self-realization by members, we won’t be able to accomplish anything. Outsider cooperative representative who visits the village for two to four days will not be able to stop it.” — Leader of STG Cooperative

When leaders were asked about the kinds of support from Heifer or other outside groups that could help curb side-selling, the majority of them would welcome the help of Heifer. Most of the leaders expressed hope that Heifer should help them in the construction of collection centers and arrange weighing machines at different places. Some leaders also believed that Heifer should give trainings (ADS-N Cooperative, PYS Cooperative) and counsel members who were not convinced even after cooperative tried to persuade them (SKYW-P Cooperative). Apart from that, few leaders shared that Heifer should provide some sort of reward as an encouragement to farmers so that they could sell more through the cooperatives (LGS-C Cooperative and JBR Cooperative).

Selling through Cooperative—Changes Required

Members were asked about changes required to encourage members to sell through the cooperative. Major suggestions included giving higher prices by providing monetary incentives, providing bigger loans with low interest rates, helping farmers to do better goat farming, and giving necessary trainings.

A more frequent suggestion was providing bigger loans at a low interest rate for goat farming.

“The cooperative should provide concessional loans without collateral, and they have been discussing about increasing the loan limit for agriculture from Rs. 3 to 4 lakhs.” — Member of STG Cooperative

Members also suggested that cooperatives provide more services for goat farming. These included providing high breed goats (ANJ Cooperative, PPJ Cooperative, JBR Cooperative, PYS Cooperative), such as in the form of gift or capital; set up collection center in many places (MLS Cooperative, MHN Cooperative, UPH-P Cooperative, SRK Cooperative); and provide seeds/saplings, manure, fertilizers (PRB Cooperative, PYS Cooperative), grains, husk cutting machines (SHY Cooperative, PYS Cooperative), and quality grass seeds for goats (SMP Cooperative, PPJ Cooperative).

Other than these, members of the ADS-D Cooperative mentioned that if the cooperative asked them for a timely update on the progress of their business and for vaccination, they would have sold through them. And if members had market facilities, then none of the farmers would sell their goats elsewhere. She further added, “Sometimes we have to sell to the traders or to the villagers in case of emergency. Cooperative would come for collection anyhow if the market management was there.”

A few members found the selling services satisfactory. For instance:

“Cooperative has been teaching them to increase their production so they want to give their products to the cooperative... They have also given price as expected.” — Member of UPH-P Cooperative

Similarly, the member of PJJ Cooperative said that cooperative provides loans, and additional 25 rupees per kg for goat as subsidy.

However, other members believed that selling goats haphazardly without measuring would benefit them more and that weighing would result in a loss (PSK Cooperative), while if they received the demanded price without having to give a commission, they would prefer to sell more to the cooperative (SJT Cooperative).

“Cooperative doesn’t do anything. People here are very ignorant; they don’t try to understand. Many of them even ask their shares back. Those who are job holders or work elsewhere keep on asking their shares as they don’t want to be cooperative’s member anymore.” — Member of PRB Cooperative

Side-selling Controlling Measure—Self-help group (SHG) Sales Agent

Cooperative leaders were asked about their views on a plan where the cooperative would provide an incentive in cash (such as a small commission) or in-kind (mobile phone recharge card) to one person per self-help group who would regularly encourage others to sell through the cooperative. Almost all leaders said that it would be feasible.

Although majority of cooperatives believed that it was viable to implement such a method, a few had tried it and failed, concluding that it was ineffective.

“We tried this plan. We gave leaders of the group with an incentive of 100 rupees’ worth of data to use it in a month and asked them not to sell the goats to the middle men. Then the cooperative heard that the leaders were not listening and were selling the goats as they liked.” — Leader of STD Cooperative

On the other hand, some of the leaders claimed that it was not possible (PPN Cooperative), as the cooperative was not much in profit (HRP Cooperative) or it would not be profitable for the cooperative (STC Cooperative).

3.3 Selling Preference

Selling Price of Goat/Dairy

Cooperative members were asked about at what price they would be willing to sell goats or milk. On average, the majority of the members said that they desired to sell goats at Rs. 500–600/kg, and a minority of them at around Rs. 400/kg. A few of them said that price would depend on the weight of goats. For instance, goats that weighed more than 40 kg would be sold at Rs. 500–520/kg (MHN Cooperative), and at Rs. 525/kg they would usually get Rs. 15,000–16,000 (JTI Cooperative). Additionally, a few of the members stated that they wanted to sell their goats for an average price of Rs. 5,000 to 25,000, although they did not specify the weight.

In the case of milk, members of the few cooperatives involved in dairy production were willing to sell milk at an average of Rs. 50–100 per liter. A member of PPJ Cooperative remarked, “Milk generates more profit as we get the money on a regular basis. We need to wait almost a year to sell the goats while we can sell milk every day.”

Selling Preference—For Same Price within Village

Cooperative members were questioned about their selling preference if cooperatives and traders both offered to buy their goats for the same price within the village. All the members said that they preferred to sell through the cooperative because it was established with members’ hard work (NKL Cooperative, SLB Cooperative, DGD Cooperative, SNT Cooperative). For instance, the member of DPN Cooperative remarked: “Cooperative is like a home for us. It is the responsibility of all the members to make it better and move it forward.” Moreover, they said that selling products through cooperatives was beneficial for both the cooperative and the members.

Another reason given by members was that traders would come occasionally and could deceive them, but cooperatives would stay with them. The member of MNK Cooperative remarked, “Traders only provide the price of goats, but the cooperative offers bonus for selling goats through them. We don’t have to worry about being deceived. Traders aren’t there for us for long term but the cooperative is always there for us in need.”

Some members were not willing to sell their goats to traders even if they offered higher rates.

Most cooperative members stated that members received facilities from the cooperative. Such facilities included loans at a low interest rate, rewards, seeds, fertilizers, training, and information regarding goats.

“We will sell to the cooperative because traders are for a short period of time but the cooperative is a long-lasting source of income for us. They help us when we are in need such as now. They are selling our milk even during lockdown. If we couldn’t sell milk during lockdown, the cooperative would compensate us through grants since we have suffered loss. These kinds of things aren’t done by traders.” — Member of ADS-N Cooperative

Members also expressed that they preferred selling to cooperatives because they would get incentives from the local and/or provincial government, as described in the previous section.

Selling Preference—For Same Price but Need to Travel

Cooperative members' selling preference to cooperative was more emphasized when questioning whether they preferred to sell to the cooperative if it gave the same price as traders did but they needed to travel to another village. Most members were willing to travel for selling goat to the cooperative. On average, they were willing to spend Rs. 50–400 and were ready to travel 1–4 hours. They expressed a sense of collective benefit and emotional attachment to the cooperative when they shared that they would sell wherever the cooperative asked them to; were ready to bear the cost; and were willing to travel if it benefitted the cooperative (MNK Cooperative, SSD Cooperative, SLB Cooperative). The member of DBT Cooperative said she would sell it to the cooperative but wished to get some extra cash as she herself had to take the goats and expected the cooperative to give 10–12% extra for it.

However, some of the members stated that they preferred to sell to traders if the cooperative failed to collect goats from their house and if traders offered the same price at their doorsteps. For example:

“It takes us 1-1/2 hours to take goats there. Even if cooperative offers me 800 rupees but I have to take the goats there and there's a trader at my house who's offering me 700 rupees, then I will sell it to the trader.” — Member of ADS-D Cooperative

Similarly, the member of MJK Cooperative said she would sell to the trader if she had to walk that long with goat: “Cooperative should focus on providing benefits and facilities to farmers. It was formed with the purpose of selling our goats. If it can't adhere to this, I will sell my goats to the trader.”

In the case of milk, the member of MLS Cooperative said she would sell it to traders because it was difficult to carry milk and travel to another village. In addition, the member of CKW Cooperative said, “I don't actually sell milk to outsiders. But if someone comes to my home to buy milk at the same price, that would be wonderful.”

Selling Preference—Additional Amount by Cooperative

Members were also asked about their selling preference if the cooperative and traders both offered to buy their goats for the same price, but the cooperative added an additional amount and the members did not need to travel to another village. Most of them mentioned that whether cooperative paid more or less, they preferred to sell it to the cooperative as they would be deprived of subsidy if they sold it to the traders. Members would not just sell to the cooperative for a higher price (UPH-P Cooperative), but members would sell to the cooperative because they felt like it's home for them (SNT Cooperative), without being greedy for money (NKL Cooperative).

Although most of the members were willing to sell their goats or milk through cooperative, a few of them said that they would sell it to those who offered more money and facilities.

3.4 VAHW Services

VAHW refers to Voluntary Animal Health Workers who had been trained by Heifer in the past year to provide the animal health-related services to the cooperative members. One of the project's objectives was to extend the services and to increase the percentage of female VAHWs for improved livestock productivity. This study tried to assess the perception of producers about the performance of VAHWs. For this, leaders and members of cooperatives were asked about whether they had received services from them and how they found their performance.

VAHW—Services

The services that VAHWs facilitated, as mentioned by both the leaders and members, included castrating goats, giving medicine to goats/chicken, timely vaccinations to goats, facilitating insurance of goats, and conducting group meetings to share information related to goat farming.

The majority of leaders and members reported having VAHWs working in their communities, while a small number mentioned having never used any animal health services. Leaders of some cooperatives mentioned that they had received VAHW services from new VAHWs, while others had received services from older VAHWs as the new ones had not come.

However, a few leaders claimed that the VAHWs had provided no services. Among them, some claimed that services were not provided to members as no one from the cooperative went to receive the VAHW training (MJR Cooperative, DGD Cooperative, STD Cooperative), whereas in the case of GKJ Cooperative, "VAHW stopped working because she was not able to work based on only one training; it was difficult for her." Similarly, STR Cooperative's VAHW service was discontinued because "VAHW was not counted in quota." According to SNK Cooperative, "One sister had taken the training, and as soon as she returned from the training, she became pregnant, and after delivery she couldn't give us her time." JLD Cooperative's VAHW services, on the other hand, were halted due to the Covid-19 pandemic.

More cooperative members than leaders reported that they had not received VAHW services.

Notably, the member of STR Cooperative stated that she was unaware of VAHW and had no idea what it was. Additionally, a member of NUD STR said that they were using the services of a private vet, which caused them a lot of difficulties.

VAHW—Performance

Most leaders and members of cooperatives were happy with the services that VAHWs rendered and believed that the VAHWs were doing a good job and their services were useful.

For example,

"They have received training and have a thorough understanding of the subject. Cooperative wouldn't have known anything about animal husbandry if this program hadn't been implemented. Those VAHWs are providing such information to us." — Leader of KNC Cooperative

Similarly, the member of PPJ Cooperative appreciated the work of VAHWs and stated, "They come whenever they are called and treat animals as if they were their own."

Regarding performance, leaders and members found VAHWs' performance satisfactory and services beneficial. The member of SLB Cooperative shared her experience: "VAHWs offer

training and give advice on how to raise goats and how to take care of them. There have been instances when they have made mistakes, but overall, they have performed well.” The leader of PPJ Cooperative claimed that due to the usefulness of the service, members are even motivated to raise more goats.

Meanwhile, a few leaders and members complained that the VAHWs’ services were ineffective because they were unable to deliver services when needed. The leader of GRM Cooperative complained that when farmers called to treat sick goats, the VAHW would ignore the need and would refuse to come, claiming that there was no medicine to treat goats. Similarly, according to the member of MHN Cooperative, “VAHW is not performing well. CAVE¹³ before this one was much better.” The member of SSD Cooperative showed dissatisfaction and said, “We called the VAHW when our goats were sick but they did not come. I don’t know what work they do because they did not come when we called.”

Another complaint about VAHWs was that they lacked training. The leader of GKJ Cooperative stated that there were two VAHWs, one female and one male, where one owned a veterinary and the other provided service from home, but they stopped working due to a lack of training. Similarly, the PSK Cooperative’s leader said that due to lack of necessary training, VAHWs were unable to provide effective service and expressed dissatisfaction with their work, stating, “They find their work difficult because their training was online; it would be better if they were given face-to-face training.”

Similarly,

“I don't think they have been able to provide the service as expected, perhaps because she has to work for free or has to give a lot of time or due to a lack of allowance.” — Member of KLK Cooperative

¹³ Community Agro-Vet Entrepreneurs (CAVE), trained by Heifer International. VAHWs were known as CAVE earlier.

3.5 Technology Use and Its Constraints

Households that lack access to information may be unaware of potential resources and hence are deprived from economic opportunities. In the case of agricultural producers, lack of access to information may deprive them from low-interest loans, higher price markets for their livestock or livestock products, agriculture extension services, and knowledge and skills for efficient production.

Access to information, including technology to acquire such information, may be limited by lack of education, location in remote areas, and gender. Women's access to information may be limited due to their decreased mobility, low education, and low social capital compared to men.

In the livestock sector, besides market information system, knowledge about various aspects of livestock and livestock-related services is important for increasing productivity. Such information may be obtained through traditional means or modern information and communication technology (ICT). Access to information also depends on the availability of materials nearby or at home.

In the case of information related to livestock for cooperative members, Heifer International Nepal has provided traditional learning materials such as posters, pamphlets, brochures, and flipbooks to the cooperatives. Such physical materials can be accessed by members when they visit the cooperative. As mobile phone, including smartphone, as a ICT device is becoming universal also in rural areas, there is an opportunity to more easily and readily share information through smartphones. Moreover, flow of such information needs to be sustained and continuous, as new information emerges and as people tend to forget previous information.

In this context, this study tried to assess the access to and the level of use of information to boost producer knowledge to increase livestock productivity. Additionally, the need and appropriate methods for refresher trainings were also inquired.

Things Producers Like to Learn

Cooperative members and leaders were asked what they would like to know about goat/dairy production and what their major problems were that they would like to get solved.

According to the leaders and members of most cooperatives, they wanted to learn everything they could about goat production, including what type of goat to raise, how to make fodder at home for goats to gain weight, systematic and professional way of raising goats and other cattle, animal diseases, and ways to treat them such as with medicines and vaccines. The second common thing that they would like to learn was to construct improvised sheds to keep goats in a managed way.

A major problem, according to leaders, is a lack of knowledge regarding the best practices of feeding goats. Most of the members came with the issue that despite feeding well their goats were not gaining weight. For example, the CKW Cooperative member was perplexed by the fact that she did not receive a favorable outcome for her efforts and wondered, "Why don't I get a good milk price even when I provide quality feed to the livestock?"

The leaders acknowledged that most members would visit the cooperative to seek assistance with loan-related issues and cures to the illness of goats. The leader of SKYW-P Cooperative said that members would come with a concern related to loan facilities, "How could I get a loan to rear cows and buffaloes and whether or not I would be able to repay the loan." Although many

members did not articulate it clearly, it seemed that cooperatives were not able to provide loans as required by members. For example, the leader of UPH-P Cooperative said that members required higher amounts of loans for farming more goats.

On the one hand, a member of CNP Cooperative remarked that her cooperative lacked skilled VAHWs, so she would like to learn about goat illnesses and medications so that she could treat goats on her own and prevent her goats from dying and her ultimately suffering a loss.

Some leaders claimed that members suffered from untimely goat deaths and illnesses, as well as financial difficulties. For example, a member who recently returned from abroad had been raising goats for a year and had made significant investments in a shed, but he had been experiencing problems with the goats' untimely deaths (STR Cooperative). In such cases, members would like to lean about loan repayment assistance and insurance claims.

“When goats become ill or die, members visit the cooperative in search of financial assistance and even request assistance in setting up grants and insurance coverage for when their goats.” — Leader of LGS-C Cooperative

Some members would like to learn about the cooperative and its functions: the difference between loans issued by cooperative and banks and the difference in the amount of payable interest, the advantages of choosing one versus the other (CKW Cooperative), ways to receive loan when in need (PPJ Cooperative), techniques to get maximum benefits from less investment (SRK Cooperative), benefits of saving at the cooperative (GLD Cooperative), and how cooperatives run, types of savings, information about loans and interest rates (KLK Cooperative).

A few leaders remarked that their members would like to learn about vegetable farming, e.g., “vegetable farming has a lot of potential than being involved in buffaloes and goat rearing” (PJJ Cooperative).

Boost Producer Knowledge—Activities

According to the leaders, cooperatives were engaging in some activities to alter producer management behavior and increase producer knowledge.

These activities primarily included training programs on a variety of issues, such as animal husbandry, grass cultivation, business management, market information, distribution of educational materials, field visits, organization of educational tours, and arrangements for external trainers to deliver specific trainings (KMC Cooperative, TKY Cooperative, SMD Cooperative, DSK Cooperative). Similarly, some cooperative leaders only mentioned that they provided training without specifying the type (STC Cooperative, NMN Cooperative, PRB Cooperative, GGJ and DYL-D Cooperative). Similarly, books, posters, pamphlets, and records on related topics were also mentioned as activities to increase knowledge (DPN Cooperative, ADS-N Cooperative, HPT Cooperative, PSK Cooperative, DYL-P Cooperative). One member (ADS-N Cooperative) stated, “They share their success stories and methods and help each other to increase their production,” while another (HSL) mentioned that their cooperative encouraged interaction through Facebook groups to teach and learn from each other's experiences.

The provision of resources was another activity to increase producers' knowledge—the cooperatives provided resources and support to their members, such as medicines, vaccines, worm medications, minerals, loans, and technicians (SSD Cooperative, SJT Cooperative, DBT

Cooperative, PPJ Cooperative, JLK Cooperative). Some cooperatives practiced providing business knowledge/information while also providing loans to run businesses (SLB Cooperative and SFT Cooperative).

Boost Producer Knowledge—Outsider/Insider Trainers

Different cooperatives had different approaches to training, depending on whether they relied on outside trainers or internal trainers. The majority of cooperatives relied heavily on external trainers. Some cooperatives (NKL Cooperative, SNT Cooperative, STR Cooperative, PJJ Cooperative, DGP-M Cooperative) relied on outside trainers as they believed that external trainers, as experts in their respective fields, could provide the necessary knowledge and skills. These cooperatives acknowledged that new types of work would constantly emerge, making it challenging for them to develop trainers within their own ranks. They also highlighted the need for specialized technical training, which needed outside experts (ADS-D Cooperative, HSL Cooperative).

Some leaders said that they had so far relied on outside trainers, but now they were making efforts to develop their own resource persons (SNT Cooperative, TDB Cooperative, DPN Cooperative, UTG Cooperative). They believed that relying on external trainers would be expensive and that building internal capacity was a more sustainable approach. The leader of STC Cooperative stated that their financial condition was currently weak, but they had plans to develop their own human resources in the future.

Despite depending on outside trainers, these cooperatives received support from various institutions. For example, KLK Cooperative was assisted by Heifer International Nepal, SJT Cooperative received help from the umbrella organization of veterinary district cooperatives, GGJ Cooperative was supported by Nestro organization, and GRS Cooperative received assistance from CAVE. These collaborations with external entities enabled the cooperatives to access necessary training and resources to overcome their challenges.

Informational Materials at Cooperatives

Most of the cooperatives had informational materials available, mainly posters, pamphlets, and brochures—mostly given by Heifer. However, there were no videos or audio-visual materials in most of the cooperatives. Only a few cooperatives (SKY-P Cooperative, SFL Cooperative) had videos that were provided by Heifer International Nepal to boost producers' knowledge. Similarly, cooperatives had received materials also from other institutions.

However, some cooperatives had no such materials (KNC Cooperative, LHR Cooperative, MHN Cooperative, SJT Cooperative, TKY Cooperative), while the leaders of SKY-P Cooperative and CKW Cooperative claimed they did not have materials but had flex photos hung on the walls. The leader of TDB Cooperative mentioned that they had an information board on the cooperative but no other material available. The leader of STC Cooperative mentioned their cooperative had a limited supply of materials due to their poor financial condition.

Informational Materials—Use

The utilization of materials at the cooperative by its members varied among the cooperatives. Most of the leaders claimed that members used such informational materials. Approximately half of the members from HPT Cooperative, BGD Cooperative, and NUD Cooperative used these materials, whereas 500 members from STG Cooperative actively utilized them. Leaders from SNT

Cooperative, STG Cooperative, NMN Cooperative, and PJJ Cooperative stated that members actively used the provided materials, which included pamphlets, books, posters, agricultural diaries, and crop calendars.

However, the rate of usage was influenced by various factors. On the one hand, members from DYLD Cooperative, STC Cooperative, and MLS Cooperative did not use the materials due to lack of interest. On the other hand, members from SRK Cooperative did not use them possibly because they were not involved in animal production or had a general lack of awareness. Some members struggled with technical knowledge or had limited understanding of the content presented in the materials. Additionally, time constraints and other personal commitments contributed to reduced utilization of the materials.

Educated members tended to engage with the materials intermittently, occasionally reviewing the available resources. They might also share their learnings and insights with others in their respective groups during trainings. In contrast, illiterate members relied on their literate family members, particularly their children, to read and interpret the materials on their behalf. Leaders from SNK Cooperative and NMN Cooperative said their members who were interested to use materials either borrowed or the cooperative provided them with the materials to take home and read.

Questions on willingness to use information materials by cooperative members if more materials and facilities were provided were asked to both leaders and members. In terms of technology adoption and utilization of learning materials, majority of the cooperative leaders mentioned that 50–80% of the cooperative members would use the technology if the materials were made available. For example, the leader of SNK Cooperative mentioned that if they were invited to watch videos, they believed that around 60% of the members would attend.

About 80% of the cooperative members would make use of the services if the cooperative keeps newspapers, posters, pamphlets, tabs, recordings, and videos.
— Leader of UTG Cooperative

However, there were also cooperatives where the percentage of members likely to use the service was lower, ranging from 10% to 30%. These cooperatives included ADS-N Cooperative, CTD Cooperative, UPH-S Cooperative, JLD Cooperative, and HSL Cooperative. Moreover, the leader of HRP Cooperative expressed that even when materials were made available by the cooperative, only a minimal number of individuals, specifically 4 to 5 people, would come forward to utilize them.

In line with their leaders, the majority of cooperative members expressed their willingness to utilize the informational materials provided by the cooperative. They responded in somewhat more detail about their willingness. Members from SNT Cooperative, DPN Cooperative, and UPH-S Cooperative showed great interest in accessing the services.

“Yes, we can use the service if we can bring books home to read, and others in the family will also be able to understand due to the knowledge gained from the cooperative.” — Member of UPH-S Cooperative

Similarly, a member from ADS-D Cooperative stated, “It’s not just my family; I believe everyone in the village involved in goat production will take advantage of this service.”

Many members expressed a strong interest in utilizing the service if videos were provided. A member from NUD Cooperative mentioned the flexibility of watching videos on mobile devices at home or during daily activities, such as cutting grass. Additionally, one member from SDD Cooperative proposed the idea of receiving videos at home, allowing them to watch and learn at their own convenience.

Informational Materials—Constraints on Use

While informational materials were present at the cooperatives, there were various factors that could hinder their ability to fully utilize them. These included illiteracy, lack of time, and limited access to the cooperative office. A member from JBR Cooperative expressed that many members were not educated, so it would be beneficial if family members could assist them with downloading and playing recordings and videos. Moreover, leaders from MNK Cooperative, SSD Cooperative, MHN Cooperative, SHY Cooperative highlighted that age was a constraint to using informational materials.

Another main constraint was lack of time. Leaders from many cooperatives highlighted the busy schedule of cooperative members. Related to lack of time were financial constraint and family conditions and obligations.

Many of the farmers are daily wage workers, so if they come to attend the training then their daily earnings can be hampered. — Leader of DYL-D Cooperative

Whenever there is family, there is a constraint. — Leader of JLM Cooperative

Geographical factors making visiting the cooperative difficult was also identified as a significant constraint reported by some leaders, especially for members who lived far away. Moreover, the leader of DYL-D Cooperative mentioned that the ongoing Covid-19 pandemic further compounded the constraints, as it had been restricting members from physically accessing the cooperative's services.

Additionally, lack of interest among certain members in utilizing the cooperative's services was another barrier to adoption. Some members did not want to take materials home from the cooperative due to lack of interest, negative perception, and the belief that reading and using the materials would not be beneficial. This was described by the leader of SSD Cooperative as, "Some may not use this service due to bad perspective towards the cooperative."

Informational Materials—Other Ways to Access for Non-users

According to cooperative leaders and members, a variety of methods can be utilized to effectively reach producers. One such approach, as suggested by many leaders, was to make use of mobile phones, which would serve as the most convenient means of contacting producers who did not currently utilize this service. Additionally, leaders from many cooperatives suggested that videos could be shown to groups, either by gathering them together or by inviting them to the office.

Another method, as suggested by some cooperatives, was to engage with producers through cooperative meetings, training sessions, and field visits to their neighborhoods.

“Cooperatives can provide valuable insights into suitable farming conditions, such as wind, water, and environmental factors. It is also important to have experts present during these visits to provide guidance on appropriate forage for goats and other necessary requirements.” — Leader of STR Cooperative

In situations where producers are unable to attend cooperative activities, alternative strategies can be implemented. One such approach, as suggested by TDB Cooperative, JLM Cooperative, KNC Cooperative, ADS-N Cooperative, and PSK Cooperative, was to make phone calls to producers. This would allow for direct communication and information sharing. Additionally, leaders from ADS-N Cooperative, STC Cooperative, CBJ, and TDB Cooperative proposed the idea of visiting producers' homes. This personal approach will ensure that information is delivered directly to them in their own environment. Another effective method, as recommended by GRM Cooperative and STC Cooperative, is running informational programs on the radio. This enables a wider reach, as producers can access the information from the comfort of their homes or workplaces.

Visiting producers in groups was suggested to be more effective than individual visits, as it fosters better engagement and facilitates knowledge sharing among participants. Leaders from JLD Cooperative, MNK Cooperative, UPH-P Cooperative, NMN Cooperative, DDB Cooperative, KMC Cooperative, and PJJ Cooperative emphasized the benefits of group visits in enhancing the overall learning experience. Furthermore, trained members can play a crucial role in transferring their acquired knowledge to others within their respective groups, as highlighted by SMD Cooperative and DGK Cooperative.

Monthly meetings may serve as valuable platforms for discussions and exchange of information, as highlighted by DYLD Cooperative and LGS-C Cooperative. Establishing learning and reading centers in various locations, as proposed by the leader of SKY-P Cooperative, can provide accessible spaces for producers to acquire knowledge and skills. These diverse approaches may contribute to a comprehensive strategy that will ensure producers receive the necessary support and resources from the cooperative.

Technology Use—Suggestions

Most of the participants (leaders and members) of the cooperatives mentioned that training in their cooperatives using current technology presented certain advantages, such as the ability to utilize videos or online platforms, which provide long-lasting access to information and allow for refreshing knowledge as needed. Most of them preferred mobile phones to share knowledge and receive training.

“This learning would last longer, and we could reuse the resources if we forgot or needed to refresh our knowledge. I think it would be more beneficial rather than in-person training.” — Member from DPN Cooperative

Likewise, communication channels play a crucial role in training delivery. Leaders from TDB Cooperative and CBJ Cooperative mentioned that where mobile phone usage was prevalent among cooperative members, information could be circulated through voice services or mobile messaging apps like Viber or Messenger. This would allow for easy dissemination of training materials and updates.

Similarly, some members believed that training through the Internet and mobile devices could be more effective and would have a longer-lasting impact. They highlighted the benefits of recorded sessions that could be viewed at any time, allowing for easy refreshment of knowledge and ability to teach others. They suggested using a variety of technologies such as phones, recorders, and videos to deliver information. They viewed this approach as more accessible and beneficial compared to in-person training.

It is also crucial to acknowledge that the effectiveness of training through technology may be limited. Over time, people tend to forget the information they have learned, which can have long-term impact of such training efforts. Additionally, accessibility and literacy pose significant challenges. Not all cooperative members have access to mobile phones or the Internet, and many lack necessary technical knowledge, making it difficult to provide training through digital means. Therefore, alternative approaches that focus on in-person training sessions and group discussions may be more feasible and effective, particularly for elderly or less educated members. By utilizing methods such as charts, posters, recordings, and videos, these in-person sessions can be supplemented to enhance understanding and reinforce the information shared.

3.6 Refresher Training

Refreshers—Need

When members were asked about the need of refreshers to review old information and learn new information about goat/dairy at the cooperatives, most of the members of cooperatives stated that relying solely on previous training and learning was insufficient, and periodic refreshers were essential to ensure their knowledge remained up to date. However, the frequency at which members felt the need for refreshers varied. For instance, a member from SKYW-P Cooperative suggested that refreshers should be utilized every two months, while another member from DGK Cooperative mentioned a shorter interval of 2–4 days. Taking notes was considered a valuable strategy for refreshing knowledge, where individuals would jot down important points to refer back to later (members from SHY Cooperative, PJL Cooperative, and PPJ Cooperative).

However, a common approach mentioned by members from SNT Cooperative, SFT Cooperative, APK Cooperative, APS Cooperative, and CNP Cooperative was the use of technology. They proposed utilizing phone messages and recordings as tools to deliver refresher materials. By listening to these recordings, members could easily revisit the information they had previously learned, enabling them to refresh their knowledge effectively. Additionally, some members emphasized the value of watching videos and reading books as effective ways to remember and learn again. However, the importance of physical books cannot be ignored. The member from UPH-P Cooperative expressed concerns about the potential deletion of digital resources and emphasized the importance of using physical books.

Members from various cooperatives, including DGD Cooperative, GLD Cooperative, KLK Cooperative, SFT Cooperative, HPT Cooperative, and GGJ Cooperative, emphasized the significant value of visiting the office as a means to learn and access materials. They strongly believed that being physically present in the office environment would greatly contribute to the learning process. Moreover, they emphasized the importance of having materials readily available for review. According to members, being able to watch and listen to the materials directly at the office would facilitate their ability to refresh their knowledge. These members recognized the office setting as a conducive space for learning and accessing the necessary resources.

Of note, some members expressed uncertainty or provided incomplete answers to specific questions.

Refreshers—Access at Home

Producers who use informational video, audio, or reading service at the cooperative also need to have access to such information at their homes as a refresher. Leaders were asked how such access could be ensured. Most leaders said that members could access refreshers at home via mobile phones, as discussed above.

It is worth noting that not all members had access to mobile phones. In such cases, alternative methods should be considered. One suggestion was to provide producers with pamphlets and books that they could take home and read at their own convenience. This approach was mentioned by STG Cooperative, CNP Cooperative, GRM Cooperative, and JLK Cooperative. Another effective approach, as also described earlier, was to organize group training sessions where representatives visit members' homes and personally deliver the necessary information. This

method was recommended by STG Cooperative, DGK Cooperative, SLB Cooperative, and LGS-P Cooperative.

Refreshers—Best Method of Delivery

The best methods for delivering refreshers to members mainly revolved around the use of mobile phones for watching videos along with reading books, pamphlets, and posters. Members expressed a preference for receiving reminders through mobile phones via messages and SMS.

There was an acknowledgment that mobile phones provided a versatile platform for accessing information. Members can listen to recordings, watch videos, and send and receive SMS through their mobile phones. Members regarded videos as a preferred medium due to their ability to be watched repeatedly, shared, and accessed from the comfort of one's home. They believed that watching videos, along with listening to recordings and reading books, could help remind them of forgotten information. Members from MLS Cooperative and NMN Cooperative emphasized the convenience of mobile phones for watching videos on platforms like YouTube.

Members from TVN Cooperative and TDB Cooperative said the ability to record important content or take various photos was a valuable feature. Additionally, mobile phones were mentioned as a means of contacting knowledgeable individuals through phone calls and for asking questions to learn new information (LGS-C Cooperative, GKJ Cooperative, KKK Cooperative).

4. Conclusions and Recommendations

This section presents the summary and conclusions derived from the above findings and some recommendations based on the various suggestions provided by the cooperative leaders and members on the above issues.

4.1 Conclusions

Revenue boosting: For all cooperatives, interest from loan investments was the source of highest revenue, followed by commission from goat sales or milk sales. Cooperative leaders and members agreed that revenue cannot be boosted further only through savings and loans, so commercial production of goats, dairy, and other local produce is needed, for which cooperatives should collaborate with financial institutions for providing larger amounts of loans at low interest rates.

Management training: Leaders stated that trainings had helped the management in effective management practices and market management strategies. Leaders recognized the need for continuous learning and training to enhance their knowledge and skills in areas such as accounting, computer software, agriculture, livestock, and governance.

Side-selling: Side-selling of goats is still a major issue for almost all cooperatives, causing losses for both producers as well as cooperatives. Although many producers sell to traders as they believe traders give higher rates than cooperatives and come to their doorsteps, producers are increasingly selling to their cooperatives. Now members prefer selling through the cooperative as they get accurate price by weighing goats and thus are not cheated, get incentives from cooperative and governments, and have attachment to the cooperative as their own.

Side-selling control strategies: Cooperatives have implemented various strategies, including monetary incentives, transparent weighing mechanisms, and discussions and awareness programs to encourage members to sell through the cooperative. Although cooperatives have provisions of penalties, they emphasize self-realization among members that the cooperative is their own and they collectively benefit from it. In many cooperatives, members pay a certain amount of commission or fine (e.g., Rs. 5/kg) to the cooperative even if they sell to the traders. Some cooperatives have taken somewhat aggressive measures such as blocking traders from entering the village, and have sought external support, such as collaboration with local bodies and organizations like Heifer International Nepal.

Members desire cooperatives to offer financial incentives, arrange loans with no collateral or low interest rates, assist farmers in raising goats with inputs and trainings, and set up collection in many places. Continued incentives, establishment of goat collection centers with proper weighing facilities, more facilities in goat farming and in other productive activities from the cooperatives, and strong sense of cooperative ownership will gradually reduce side-selling.

Cooperative leaders agreed that it would be feasible to assign one person per self-help group as a sales agent who would regularly encourage others to sell through the cooperative. However, this approach has proven ineffective in some cooperatives.

While side-selling is still prevalent in practice, most cooperative members preferred to sell through the cooperative if both the cooperative and traders offered to buy their goats for the same price within the village, and even if they need to travel 1–4 hours to sell goats. However, some members

preferred traders if the cooperative is unable to collect the goats from their home and if the dealers give the same price on their doorstep.

Though selling through cooperatives is preferred by many, there should be enough collection centers and a sufficient number of goats in the collection center.

VAHW services: VAHWs are working actively in their communities. VAHWs are providing services such as castrating goats, providing vaccines and medicines to goats/chicken, facilitating goat insurance, and conducting group meetings to share information related to goat farming. Cooperative leaders and members agreed that VAHWs' work was satisfactory and that their services were beneficial. The positive feedback from cooperative leaders and members highlights the importance of VAHWs in empowering farmers with valuable knowledge and skills related to animal husbandry. A small share of people think that VAHWs' service is not effective since some VAHWs have discontinued the service in the interim, lack dedication and refuse to come saying they have got no medicines, and lack training.

Informational materials for enhancing producer knowledge: Cooperative members have a strong desire to enhance their knowledge and skills in goat and dairy production. Most members expressed keen interest in learning various aspects of goat husbandry, such as choosing the right breed, proper feeding practices, constructing better designed goat sheds, and gaining knowledge about diseases and their treatments.

Activities undertaken by cooperatives to enhance producer knowledge and management behavior included training programs covering animal husbandry, grass cultivation, business management, market information, and distribution of educational materials. Informational materials in the form of posters, pamphlets, and books are available in most cooperatives, but videos and audio-visual materials are less available. Members expressed a strong willingness to utilize informational materials if made available, and technology is considered an effective means to disseminate and refresh knowledge.

Constraints in use of informational materials: Technology use in cooperatives offers several advantages but also has its constraints. Many cooperative members preferred utilizing mobile phones and online platforms for accessing training materials and knowledge resources. Illiterate members relied on literate family members for assistance. However, limited accessibility, lack of technical knowledge, and illiteracy pose challenges to the effectiveness of technology-based training. Moreover, the long-term impact of training through technology may be hindered by the tendency to forget information over time. Therefore, cooperatives should consider diverse approaches, such as home visits, group discussions, radio programs, and learning centers to ensure effective knowledge transfer and accommodate the diverse needs and constraints of cooperative members. Assistance is required from family members in downloading and playing recordings and videos, especially for those with limited education.

4.2 Recommendations

Revenue boosting and management training: As lack of capital is a major constraint in increasing livestock production and livestock products, cooperatives should collaborate with banks and other financial institutions to provide low-interest loans to their members. Banks already work with cooperatives where the banks provide bulk lending to cooperatives at low interest rates. Once these arrangements are made, it would be possible for cooperative members to get higher amounts of loan at lower interest rates. Also, cooperatives should provide regular trainings for their leaders in cooperative management and in marketing strategies.

Side-selling: Side-selling is still prevalent, so cooperatives should convince their members about the benefits of collecting sales in the long run. While actual use of sanctions seems to be not much effective, the threat of sanctions may discourage side-selling, especially if cooperatives could provide more incentives to their members. Although price advantage for selling through cooperatives is not high, promoting a sense of collective ownership of the cooperatives may reduce side-selling. Moreover, cooperatives should seek help of local governments and other cooperatives to establish viable formal livestock markets at appropriate places by taking into consideration the livestock population.

VAHW services: To enhance livestock productivity, VAHW services should be monitored and VAHWs should be provided with necessary skill enhancement trainings. Cooperatives should ensure that medicines for specific diseases are available.

Information materials for boosting knowledge: Given the strong desire to learn more effective ways of livestock production, cooperatives should acquire traditional educational materials such as posters and flipbooks from Heifer International Nepal and other government and non-government institutions and provide members to home. Moreover, cooperatives should keep an inventory of well-categorized audio and video recordings, along with Internet facilities, so that members can copy/download them in their phones and watch them at home. For refreshers, cooperatives should organize regular refresher training sessions, should encourage members to regularly visit cooperatives for utilizing the various materials, and should send reminders to revisit the materials at their homes.

Adopt other communication outreach strategies: As one way to stop side-selling, Heifer International Nepal had sought to develop, promote, and disseminate the e-Khashi Bazaar app. Though some progress has been made, the intake of the app is low since many of the cooperative members are illiterate and have lower levels of education. Moreover, the ownership of smart phones is less among illiterate or less educated farmers. For this reason, the intake of the app has not progressed to the extent anticipated.

Since it is difficult for illiterate and less educated female farmers to use the app e-Kashi Bazaar, there is a need to develop other ways of getting information about the status of goats and planning for marketing these. One such mechanism would be a toll-free number coordinated by call centers. Farmers can call this toll-free number and get required information or supply information, while the call center can also get the required information, especially related to goat marketing.

Another way to restrict side-selling would be by one person in the self-help group coordinating with members about updating the inventory on goats and providing the information to the cooperative. A person within each self-help group could be provided incentive in cash (such as a

small commission) or in-kind (mobile phone recharge card). This approach has been tried in some cooperatives. It needs to be pursued more aggressively in other cooperatives.

Pro-active engagement with the local government: There is a need for cooperatives to engage more actively with local governments. This could be in setting up goat collection centers with weighing machines in convenient locations within the cooperative jurisdiction area. Since local governments have funds for these purposes, they could help in setting up more collection centers. Moreover, there could be a larger collection center at the municipality level where the goats could be collected from all the collection centers and sent to urban centers like Kathmandu or Pokhara, where better prices could be obtained for the goats. In this way, both the cooperatives as well as the cooperative members would get a higher price for their goats.

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