

Improving Livelihood through Legumes in Ramechhap



Anisha Joshi
Kamal Devkota

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Published By:

Southasia Institute of Advanced Studies (SIAS)

NK Sigh Marga 306, Minbhawan, Kathmandu

Email: sias-info@sias-southasia.org

www.sias-southasia.org

This Survey Report can be cited as:

Joshi, A., and Devkota, K. (2025). Improving Livelihood through Legumes in Ramechhap: Report. Southasia Institute of Advanced Studies, Kathmandu.

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1 Introduction

Legumes are crop products well-suited to the dry high-hills of Ramechhap district of Nepal. These crops have been recognized as a speciality of the southern facing rain shadow part of the district. Today, as many men leave Ramechhap's villages in search of work in Nepal's bigger cities or abroad, women are undertaking the challenging work of growing and marketing these legumes by themselves. Yet, in the face of financial, technological and gender-based constraints, this has come with significant difficulties that prevent women and smallholder farmers from moving up higher nodes in the value chain. Since 2021, Southasia Institute of Advanced Studies (SIAS) along with ARIA Solutions has been working with legume producing women farmers and the Sagarmatha Livestock and Agricultural Cooperative (SLAC) in Char Gharey, Ramechhap through an action research project called "Co-producing a shock resilient ecosystem for women-led/engaged enterprises" (CREW). CREW aims to facilitate women's economic empowerment through legumes-based enterprise in Ramechhap. This report highlights CREW's interventions surrounding key issues with legume production and marketing in Ramechhap:

- Limited technical knowledge
- Low bargaining power
- Limited mobility and widespread time-poverty
- Limited financial literacy and access to financial services
- Institutional challenges at SLAC

One of CREW's key interventions has been the launch of Char Gharey- a premium brand for legumes produced by smallholder farmers from Rampur, Ramechhap. SLAC directly collects legumes from women and smallholder farmers who wish to sell through the co-operative, at a price they have agreed to. SLAC then store, clean, grade and package the legumes with CREW's support. Other interventions include increasing access to financial knowledge and services, institutional strengthening, and building networks. CREW's interventions have primarily focused on capacity building at the co-operative and the village, so that SLAC can sustain the enterprise beyond the project period.



Image 1: Sagarmatha Livestock and Agricultural Cooperative (SLAC)

This report briefs the situation prior to CREW interventions, highlights the project's key interventions and showcases how they have been innovative and valuable. It further discusses the challenges encountered in the process and presents how they have been overcome while also documenting the experiences and lessons that can inform similar future endeavors in the future.

2 Situation prior to intervention

Baseline surveys and preliminary field interactions conducted in Ramechhap revealed a number of problems impacting SLAC's operations and the farmers' production. Although municipality had occasionally supported this legume-based economy (see Box 1), limited technical knowledge, low bargaining power, time poverty and limited mobility, and a lack of financial knowledge and access to financial services affected

BOX 1: Rampur declared as legume pocket area

Ramechhap municipality declared Rampur area as legumes pocket area and has provided technology support- grading machine, green bags to store seeds. In 2019, municipality provided grading machine, weighting machine, and sealing machine to improve legume processing and packaging. Municipality aimed to promote legume and had allocated 3 Lakhs for legume promotion, but the plan got shelved in lack of application. The municipality allocated 5 Lakhs to support supper green bag for legume seed storage with a provision of 2 supper green bag per household. Although farmers have used green bags, they have not operated grading machine. The coordination among farmers was weak while the cooperative lacked leadership to operate this.

smallholder and women farmers' ability to produce and market their legumes and manage their finances. Technological and labor constraints at SLAC were also preventing the livestock and agriculture co-operative from widening its scope beyond saving and credit and scaling up its operation to singlehandedly take on branding and marketing the legumes.

2.1 Limited technical knowledge

Legume farmers in Ramechhap are already rapidly experiencing climate change impacts, which in turn has steadily decreased their annual legume yields. 66% of the respondents surveyed by CREW in Ramechhap reported that irregular or erratic rainfall and extreme temperature have frequented. Amid prolonged periods of drought and drying of traditional water sources that provided drinking water and rare irrigation services in the area, abandoning of previously irrigated land have spurred. Such harsh climatic conditions along with increasing occurrences of invasive pests have decreased legume production in the district. Although legumes do not generally require much water, extremely low water availability shrink the size of the legumes. Furthermore, storing the legumes for a longer period of time also increases the risk of damage and insect infestation. While the impacts of climate change have been so widespread and deep, Ramechhap's farmers have shared that they have not been able to adapt their traditional farming practices to these new and unfamiliar conditions. Furthermore, without grading and packaging services, they have had to sell high quality legumes for average or even low prices.

2.2 Low bargaining power

In Rampur's rural cash-strapped economy, where farmers are often in need of immediate economic relief, farmers have reported that they often find themselves compelled to sell to the first few middlemen who turn up to the village. The leadership at SLAC also shared that as legumes ripen and are harvested around Dasain or Tihar—Nepal's main festival season—for many farmers, it makes immediate financial sense to sell to these middlemen so that there is cash to manage expenses for the festivities. Another common practice is selling at *Haat-bazaar*—weekly local markets. While selling at the Haat Bazaar, all of the farmers selling at the market have to follow the price set by the legume farmer or vendor who arrived first. If unable to sell before the end of the day, farmers are compelled to sell at whatever price is offered to them. 38%

of surveyed women in Ramechhap shared that they felt they were more active in marketing work for the legumes. A majority of them however have limited access to information about the market, which deter their bargaining power. Although middlemen are common alternative to *Haat-bazaar* for these sales, farmers have also shared that there is little clarity about higher nodes on the value chain, making it difficult for them to demand higher prices.

2.3 Limited mobility and time poverty

The dearth of convenient transportation options and widespread time poverty for women farmers is also a significant challenge for women farmers who wish to sell their legumes. While selling to middlemen who arrive at the village to purchase the legumes eases mobility and time constraints, this option severely limits their ability to set the selling prices. Selling at Haat bazaar confers slightly more freedom in negotiating the prices; but this entails a long and difficult journey with little guarantee that their legumes will be successfully sold by the end of the day. Rampur's settlements are spread out far apart, and the distance to the Haat bazaar is around 16 kilometers. Women often have to crowd the few public vehicles available to travel to the market. Their only other option is often to walk 3 to 4 hours on foot to the bazaar with their heavy loads. This results in a long and difficult journey when women are already overwhelmed by household responsibilities and other agricultural and livestock-related work. The expenses incurred for transportation on the way and back further decreases the profit they turn over at the end of the day.

2.4 Limited access to finance and financial literacy

Relatively low access to financial services, credit, and a lack of financial literacy make it difficult for women to manage expenses and conduct transactions, which in turn affect their ability to manage income earned from legumes. CREW's baseline survey conducted until April 2022 also revealed that many women did not have bank accounts, and in fact thought they did not need it. There are no major banks in close proximity to Rampur, and majority of women also did not trust mobile banking systems. Consequently, local co-operatives are the only viable services for larger financial transactions and budget management. Similarly, obtaining credit to finance their households and farming activities is also difficult for women, as the vast majority do not own property. The survey also revealed that although all of the surveyed

women were farmers, only 16.09% of them owned land. This, along with gender norms where people insist women lack experience in dealing with finances, makes obtaining credit for their farms and household finances a matter of much difficulty. Women's ability to manage finances remains doubted even when they are managing household finances in the absence of husbands who have left for migrant work.

2.5 Institutional challenges

Prior to project interventions, SLAC had been largely inactive for an extended period of time. With only 45 members, the co-operative's operations were also limited and centered around savings and credit. Technological and labor constraints prevented SLAC from scaling up operations, as the co-operative was largely managed singlehandedly by the president. All of the accounting and information management was also done manually. Amid these limitations, taking up and widening its activities in the agriculture (and livestock) development sector, the core objective of its formation, had been impossible.

3 Our Interventions in Ramechhap

CREW has designed the interventions in Ramechhap through a process of co-production since the inception of the project. Co-production entails bringing together "beneficiaries" of the research not just as respondents, but active participants in shaping the trajectory of the research. This has entailed closely working with various stakeholders from different backgrounds such as the women farmers, co-operative leadership, the local government, and the Department of Cottage and Small Industries to build together the knowledge that informs the interventions. Averting top-down approach, ARIA and SIAS facilitated interventions that have been devised in conversation with the cooperative and women farmers, the primary participants of the research. The project has sought to ensure there is meaningful participation of women farmers at executive levels of the SLAC so that they have a voice in the paths taken by the institutional interventions. Furthermore, facilitating in enhancing the capacity of SLAC and women farmers, CREW has also been active in helping SLAC gain exposure and build relationships that the cooperative can draw on for future decision-

making. This has taken the form of exposure visits for SLAC leadership, women farmers and networking with other private-sector actors.

BOX 2: Visit to National Legume Research Center

With CREW's support, SLAC's management and leadership team visited the National Legume Research Center in Nepalgunj. Over the trip, the team was exposed to different methods of cultivating legumes, including the government prescribed cultivation method for legumes to develop a lentil production curriculum. This exposure visit motivated SLAC and involved farmers to experiment with various cultivation methods for legumes to find out what gets the best yields that farmers can adopt to later on. On returning to Ramechhap, the team took the initiative to compare their traditional methods of cultivating legumes with the government-prescribed method, bio-fertilizer, chemical fertilizers, and mulching. The yields for treated and untreated seeds were also tested. Farmers who work with SLAC have worked with the co-operative to farm legumes on the plots. Work on determining the most appropriate cultivation method based on Rampur's local context has been a very collaborative effort that involves input not only from the agricultural and forestry expertise from SIAS, but also the observations and knowledge of SLAC leadership and local farmers.

All the tested treatments showed satisfactory results, but bio-fertilizer treated plots showed the most vigorous growth, followed by the mulched plots and the farmers' control plot.

Another exposure visit was also organized for the SLAC leadership to explore and understand different nodes on the value chain in the legumes market. Similarly, the women champions and the coeprative leadership were taken for an exposure visit and interactions with successful women farmers, market actors, local government promoting the agriculture-based local economy, and well-functioning agricultural cooperatives in Central and Eastern Nepal. This visiprovided them the opportunity to observe, learn, network, and enhance their entrepreneurship skills and enriched their capacity to engage in entrepreneurial activities and encourage and support other women in their communities.

3.1 Branding and marketing of legumes

3.1.1 Establishing SLAC Udgyog and creating Char Gharey Brand

Legumes provide cash earning opportunities for women in Rampur of Ramechhap. The limited pricing until recent past, however, forced them to forgo financial opportunities. Exposure visit led to an awareness that Ramechhap legumes possess comparative advantages compared to similar products from elsewhere and indicated an extensive opportunity to expand the market reach and enhance women's economic empowerment through legume-based agri-enterprises. This propitious opportunity motivated SLAC and the CREW team towards creating a brand for wider marketing legumes of Ramechhap. SLAC and the CREW team agreed to select a traditional Nepali name that the consumers could resonate with authenticity of the product and concurrently represent the sentiments of the producer farmers. Subsequently, Sagarmatha Livestock and Agricultural Cooperative Udhyog and "Char Gharey", a women-engaged brand of legumes from Ramechhap were established. Over the months, the project focused on creating brand awareness through farmers' stories, field footage about the place and the product, and capturing the history of Char Gharey.

Char Gharey's branding places its women producers and Ramechhap identity at the forefront, particularly highlighting the work they have put into producing the legumes. Women producers have appreciated that the current branding highlights their identity and the effort they put into producing the legumes. The brand is currently marketing the legumes under two product lines- an A-grade product that comes in a premium brown paper package with a thank you note, and is exclusively sold by 4 retailers. A B-grade product—legumes of a similar quality but sold in plain plastic packaging—is also being marketed to reach a broader audience. While the branding—particularly for the A-grade product—has entailed significant investment, it is hoped that the intensive effort with the brand story can incur a higher value for the legumes. Consumer feedback on the quality, price, and social responsibility over the next season will help determine the next steps for Char Gharey's branding strategy.



Image 2 : Char Gharey A-Grade Legume Packaging

3.1.2 Marketing and Strengthening the Value chain engagement for Char Gharey

The project played a crucial role in expanding the market reach of “Char Gharey” Rajma, focusing on enhancing its value chain through strategic packaging and marketing initiatives for enabling women secure better rates for their *Rajma* (kidney beans). Employing a tiered packaging strategy and leveraging social media for brand visibility, the project activities aimed to cater to diverse customer bases. The research on packaging provided some lessons; adopting cost-effective packaging, coupled with effective branding and adjusted pricing fosters sustained market demand and competitiveness. The project team addressed technical challenges in Rajma storage by implementing comprehensive methodologies to combat moisture and insect infestation, extending the shelf life and contributing to economic viability.



Image 3 : DiVya Enterprise promoting Char Gharey Legumes in markets

Facilitating the SLAC and the farmers create strong market presence, ARIA co-designed and launched official website with regular updates showcasing the speciality of “Char Gharey” and publicizing it across multiple platforms. This encompassed digital marketing of the brand through mass media and exploring innovative distribution and retail channels for the Char Gharey brand.

Alongside this, the CREW project facilitated SLAC Udgryog in comprehensive market assessment and analysis of price trends for legumes, with a focus on Char Gharey. The initial market visit involved exploring the landscape, understanding consumer preferences, identifying distribution channels, and establishing collaborations. The sales research focused on Rajma, Gahat, Bodi and Masyang through organic stores (MATO, farm shop), online portals (Daraz, Mero Kirana) and supermarkets (Bhat Bhateni, Big Mart). Visits to these major wholesale markets and grocery marketplace locations provided valuable firsthand information. The project also facilitated SLAC's market expansion by fostering the local weekly market called *haat* and connecting them with potential large buyers and wholesalers in Kathmandu, resulting in substantial sales through their marketing partner, DiVYA¹ (see Box 3). Price research

BOX 3: Branding and building connections with DiVYA

As it would have been difficult for SLAC to singlehandedly take on all of the branding and marketing with no prior experience, CREW has linked the co-operative to DiVYA—a social enterprise led mainly by women—as a marketing partner to ease the process of bringing the legumes to Kathmandu. SLAC has worked with DiVYA to determine the best marketing strategies for Char Gharey, from keeping inventory and differentiating the product lines to testing out a digital information management system for Char Gharey. Bigger market players with similar products to Char Gharey's tend to leave less room for newer enterprises. As the partner with greater marketing and branding experience, the contractual agreement between Char Gharey and DiVYA includes checks and balances so that the arrangement can continue to be mutually beneficial. An important check and balance mechanism included in the agreement is that DiVYA transparently shares its marketing and branding experience and input to SLAC so that the SLAC also gains important knowledge about the market downstream, which can help the co-operative become resilient. Similarly, DiVYA ensures that the legumes' women producers are benefiting significantly from the enterprise, and are also participating meaningfully. SLAC will also assess if the branding work undertaken by DiVYA is up to the mark. The partnership has worked well until now. Involving DiVYA in the branding and marketing of the legumes also contributes to a key project objective of including women in higher value chain nodes.

¹ Digital Vision Youth Action, abbreviated as DiVYA is a women-led social enterprise promoting women entrepreneurs in higher value chains. It is the marketing partner for "Char Gharey" Rajma and other legume products.

entailed appraisal of quality and pricing of these products being sold by different brands (BBSM, Gau Besi, Big Choice) through in-store purchase, online portals and farmers' markets, as well as local pricing in the *haat bazaar* of Ramechhap.

3.2 Increased access to finance

Settlements in Rampur are spread far apart, the rural agrarian economy is cash-strapped, and has no banking services nearby. For large transactions and to draw out cash, farmers must make long journeys to banking facilities or local co-operatives. This instigated the idea of organizing the digital financial literacy training thereby making financial transactions more convenient and financial services more accessible to women farmers who are already overwhelmed with household and farm work.



Image 4 : Participants getting Digital Financial Literacy Training

The digital financial literacy training has been provided to the women farmers groups, helping them more efficiently manage finances for their domestic and farming related activities. Majority of the women, however, did not have bank accounts or property to their name. The project pursued collaborations with Prabhu Bank and Khalti (an e-transaction service) (see box 4). Pioneering the use of digital transaction services like Khalti is an essential step in helping women producers conveniently conduct transparent business transactions using time-saving tools. Through this training, women could use mobile technologies for financial record-keeping, mobile banking, use of e-commerce, etc., in managing finances for their homes and farming activities. We noticed an enthusiasm to learn digital technology among the women, particularly

youth, who owned smart mobile phones. Some women expressed contentment for having switched to digital technology to top-up their mobile phones and no longer need to travel for recharge, which was vexing, particularly during the night. Besides contributing to reducing their time poverty, newly acquired skills to apply digital financial services can expand entrepreneurship opportunities for women.

BOX 4: On the 27th and 28th of March 2023, CREW conducted a 2-day digital financing training among women legume producers in collaboration with Prabhu Bank and Khalti. Before the training, only 3 of the 25 participating women had bank accounts and only limited knowledge about what they could use their accounts for. While most of the women knew what digital-transactions are and how they can be time-saving, they used to rely on agents for these transactions who took up commissions for their service.

The program focused on equipping the participants with the knowledge, skills and attitude that can help women budget for their household finances and save for personal aspirations and other financial goals. The intensive training included sessions on developing a positive money mindset, calculating net worth and liabilities, responsible debt management, savings, and long-term wealth management (insurance, savings for old age, and investment). The training session followed an experience-based learning style with games, role-play, reflection, and action plan development. The participants were also trained in budgeting for their needs on Sampatti, a free mobile application developed by ARIA.

At the end of the session, CREW facilitated for the 25 participants to start bank accounts at Prabhu Bank, and the project deposited Rs.50 in all the accounts. Prabhu Bank has also seen an incentive in working with the women, many of whom receive remittance and can now directly receive it in their accounts at Prabhu Bank. SLAC is also positive about the relationship established between the bank and the co-operative, as this relationship can potentially facilitate loans for the co-operative's need for working capital in the future, as the co-operative is now bringing additional business to the bank. The project also covered mobile banking fees and helped the women start Khalti accounts, depositing Rs.150 each in all of their Khalti wallets.

By the end of the session, all of the women were familiar with banking and digital transactions using Khalti, and the project will continue to assess if the women continue to use these services in their daily lives. This intervention has been envisioned as a larger catalyst to initiate a culture of digital transaction tools in the village with SLAC as a key agent in the initiative.

3.3 Institutional Strengthening and innovation

As CREW's work with legumes in Ramechhap has been closely involved with SLAC, a number of the project's interventions have also focused on strengthening of the institution. Project activities involved in-depth consultations sensitizing the SLAC members to ensure gender inclusivity and equity within the co-operative's management. Commemorating the Annual General meeting of cooperative in September 2022, SLAC endorsed a drastic re-composition of its executive committees to include more women members, which has increased from 44% in November 2021, to 78% in October 2022. Regular orientations, coaching and mentoring sessions were conducted for the cooperative committee members and staff. This supported the process of the revision of the by-laws (based on the changes in the new cooperative Act) as well as the revision, development and finalization of six key policies, making it gender sensitive and responsive. The revised policies were related to - administration, savings, loans, share membership, human resource and the group operation guidelines. An orientation session for the newly developed policies has also been held for the co-op's board members.

Strengthening SLAC also involved developing Standard Operating Procedures (SOPs) documents with ARIA'S technical assistance and inputs from the leadership and management teams of SLAC. These SOPs include procedures for preparing procurement plans, field monitoring and reporting, price setting, supplier relationships and contracting, procurement, storage and quality control, marketing, negotiations, and sales. The board members and management team were oriented about the SOPs enabling them to implement the SOPs in the upcoming season. Likewise, SLAC's standard operating procedures in finance and human resources have been completed. A set of Key Performance Indicators has been developed to assess and track SLAC's financial growth and social impact.

Apart from capacitating the SLAC management team, nine women sub-committees involving 135 members have been formed to streamline the cooperative's operations and facilitate gender-inclusive governance and effective decision-making. These sub-committees focus on sectors of education, loan monitoring, internal audit, farming, etc. Women members voted for their representatives and welcomed these changes. In a similar vein, elected women members expressed happiness for being

recognized in the community in new leadership roles of the cooperative. Furthermore, to maintain a gender-responsive approach, quarterly gendered enterprise diagnosis interviews are conducted with cooperative executives and women entrepreneurs.

Along with the cooperative management training for the SLAC leadership, the CREW project intensively trained, mentored and financially supported the cooperative to enroll and mobilize two additional staff members for efficient day-to-day operations. The staff members have been trained with basic computer skills and the new digital accounting software currently in use at SLAC to assist in the cooperative's managerial work.

The institutional interventions facilitated by the CREW have focused on increasing women producers' participation in decision-making roles to best represent their interests and accelerate their economic empowerment. Similarly, strengthening the capacity of the newly elected women executives and fostering the recently introduced inclusive management practices at SLAC will also be vital in improving the cooperative's operations from finances to supply chain management. These institutional interventions focus on capacity building at SLAC so that the legume-based women-engaged enterprise and economic empowerment opportunity will be sustained beyond the project term.

3.4 Technological interventions

A number of key technological interventions have also been made at SLAC as a part of increasing its operational efficiency and capacity, and strengthening it as an institution. A key change has been providing the co-operative CoSys, a core banking software, and training cooperative staff members in using it to digitize SLAC's accounting needs. The software is used to carry out the cooperative's day-to-day transactions and account savings and credit, and has been an important time-saving intervention.

A mobile application has also been given to SLAC that helps estimate yields before the legumes have been harvested. The application's information can be used to examine if there is enough of a market for the potential yield, and to adjust the amount that will be sown accordingly. Work is also ongoing with SLAC and DiVYA to test out digitized information management for Char Gharey, and phone and computer-based

information management has been initiated. This system, named the “Farm-to-Fork” software system has been aligned with the existing SOPs. The field mobilization of the project IT staff has contributed to transferring the knowledge of this new digital system to the cooperative team. Alongside this, the project has also introduced user-friendly state-of-the-art digital technology to support women-engaged enterprises and is studying its uptake by women producers and the impact on their enterprises.

3.5 Gender-friendly interventions

CREW has taken care to ensure the interventions surrounding marketing the legumes have been gender-friendly. Char Gharey’s procurement procedures have been formulated to address the major gender-based barriers that previously created difficulties for women and smallholder farmers to market and sell their legumes. The co-operative currently collects the legumes directly from the women’s homes. This intervention is a conscious response to overcome the time and mobility constraints that women farmers recurrently face as unlike men women in Ramechhap have limited access to two-wheeler vehicles and many women farmers’ husbands are away. The intervention gives women respite from the tiresome and time-consuming task of transporting heavy loads of legumes to the co-operative when they are already overwhelmed by other responsibilities. This is particularly helpful as settlements in Rampur are dispersed and traveling to the cooperative’s office is not convenient for all women. It is also less time and effort-intensive than transporting the legumes to the *haat-bazaar* or searching for other markets, for which the transportation options available for women are severely limited. Additionally, women do not have to bear the cost of transportation themselves. The present arrangement also gives women more control over the prices, as opposed to being compelled to sell at the prices given to them.

The institutional interventions implemented at SLAC are also designed to be gender-friendly. Over the course of the project, an important takeaway has been that if the time and the venue for meetings and cooperative work are not appropriate, women are far less likely to participate meaningfully. This is an important consideration, as the majority of women are only able to engage in cooperative work and meetings after taking care of their household duties, and many must also walk long distances to attend the meetings. Therefore, the project has initiated a “Women’s Day Diary” for the



Image 5 : Participant engaging in "Women's Day Diary" initiative

women in Ramechhap, which details the work women are usually engaged in at different times of the day throughout the year, as well as predominant gender roles in agricultural work. The Standard Operating Procedures for Char Gharey have considered women's daily routines so they are not overburdened by work for the cooperatives, such as setting

meeting times and locations based on women's convenience.

To ensure that these gender-friendly interventions are institutionalized and sustainable beyond the project period, CREW has also initiated women's sub-committees adjacent to the project's work with local women champions. For sub-committee work, women champions establish guidelines for upcoming meetings, encourage meaningful participation with other women involved in the co-operative, and engage in monitoring and evaluation to ensure that the co-operative's work continues being beneficial for the women. Through SIAS's capacity-building training for the women champions, it is hoped that women will continue to take initiative to lead future advocacy needs after the project has run its course.

Membership in the Sagarmatha cooperative has increased by 69%, with 105% increase in the women membership as compared to the start of the project. The cooperative has formed nine groups and commenced mobilizing members through the groups and achieved an increase in the share capital and savings by 88% and 33% respectively. SLAC has also impressively increased the representation of women in the executive committee from 44% during the outset of the project to 78%. Although the women in the executive committee need substantial support to enhance their capacity to understand and undertake their roles, with an increase in women members and key decision-making and managerial positions of the cooperatives held by women, there is space now for women to participate more meaningfully. Enhanced skills strengthened voices, and a fostered supportive environment, improve

their capacity and given them self-confidence to share their views and influence the decisions.

4 Legumes in Ramechhap– Life with Char Gharey

The main legume crops cultivated in Ramechhap district are horse gram, cow pea, kidney bean, rice bean, soybean, and pea. Likewise, the main legume producing areas of the district are: Ramechhap municipality, Manthali municipality, Sunapati rural municipality and Khandadebi rural municipality (Source: Interview, Agri Unit, Ramechhap municipality). The Annual Progress Report of Agriculture Knowledge Centre (AKC, Ramechhap 2021) shows around 1000 ha (997 ha in actual) land is under cultivation of legume crops, total district production is also around 1 Mt/ha (0.976 kg/ha).

In our study area Rampur (Ramechhap Municipality -5) which falls under the arid region of the district, legume is the main crop although other staple food crops such as paddy, maize, millet, wheat and buckwheat, peanut are also cultivated. Main legumes grown in the area are: kidney beans (white, red, yellow, brown, mixed color), rice bean, black bean, cowpea, horse gram, yellow and black pea. In the context that legumes make the major crop and source of income in the area, the CREW project, in consultation with the local communities and cooperatives, selected legume value chain enhancement as means to economically empower women farmers. While CREW's interventions in Ramechhap are ongoing, the presence of the project and Char Gharey have already made a tangible impact on the lives of local women and smallholder farmers. These changes have come in the form of increased bargaining power, time saved, and a sense of empowerment among women now taking on new leadership roles in the public sphere.

Haat Bazaar, the weekly local market, was the major market for the legumes of Ramechhap although they also sold their harvest to the collectors in Rampur and Char Gharey. A major constraint for women marketing their legumes has been low bargaining power due to their limited options. However, since the project was initiated in Ramechhap, ARIA has assessed that the average price offered to women and smallholder farmers for their legumes has increased significantly. Before CREW interventions, a single pathi (approximately 3 kilograms) of legumes produced in

Rampur used to be sold for Rs. 125 on average. Since CREW interventions, a single pathi is now sold at an average of Rs. 150, which marks an increase at least by 25%. There is a major opportunity for these interventions to make a tangible difference, even for women and farmers who are not directly involved with the co-operative. This small nudge of an additional market for the legumes beyond the previous options of the *haat-bazaar* and the middlemen has already created a measurable difference for legumes farmers in Ramechhap.

Char Gharey's net profit for its first season 12.5%, which is highly positive for a new rural enterprise of this scale. While this was with the 3,000 kilograms of legumes collected for that season, it is expected that the profit will also increase if the amount of legumes collected for the next season is increased. Based on an analysis of available options, Char Gharey has a good place in the current market; legumes of a similar quality from another district sold in rough plastic packaging are currently sold at Rs. 370 per kilogram. Char Gharey's A-grade product still turns over a profit when sold at Rs. 350 per kilogram, positively reflecting marketing potential.

Women who have sold their legumes to Char Gharey have also reported that it has been a very positive experience compared to marketing them at the *haat-bazaar* or to middlemen. As the legume producers were still vague about the value chain when selling to middlemen, the transparency in how Char Gharey and SLAC have marketed and sold the beans has been a welcome change for smallholder farmers. Similarly, women shared that it has been a relief not to personally transport heavy loads of kidney beans to the *haat bazaar* or the cooperative, as it saves them much time from their already overwhelming schedules.

The institutional interventions at SLAC have also had an empowering effect on the women who have been involved with the cooperative—financially, as well as by challenging gender norms by facilitating for women to take up roles in the public sphere. Since its revival, SLAC has continually stressed the importance of inculcating a regular saving habit to its members in the monthly meetings it facilitates for its sub-groups. SLAC facilitators aid meaningful participation from the women during these meetings, who are also encouraged to speak about the gender-based constraints they face in their daily lives.

Women who have taken up new leadership roles in the cooperative—whether in the executive committee, or as treasurers and chairs of sub-groups—have also shared with CREW staff that they feel happy about their new positions. As a coordinator for the financial committee for a local SLAC sub-group shared, she enjoys her new role as she can learn new things from this new role she has taken on, and also share what she is learning with other community members. Another female chair of a local sub-group echoed similar sentiments, sharing that she now encourages good farming practices she learns from the CREW team in her community, such as saving seeds and using the right chemicals when there are pests. She also feels happy in her new role as she feels it has earned her respect in her community.



Image 6 : Haat Bazaar where women sell Legume beans along with other local produces

5 Challenges and future considerations

Implementing the interventions and facilitating enterprise development for legumes in Ramechhap has not come without its challenges. As the interventions seek to cover a variety of basis (from the technological to sociocultural), and are carried out in partnership with stakeholders from varied backgrounds, the project has run into many challenges in meeting diverse needs. However, the interdisciplinary nature of the project has also been one of its major strengths, and addressing these challenges have been important learning opportunities that can inform similar endeavors in the future.

5.1 Climate resilience

Working with Char Gharey producing and marketing legumes—an agricultural product in particular—provides opportunities for unique insights into the sustainability of businesses in the face of climate impacts. While legumes are a crop suited to Ramechhap's dry and arid weather, extended periods of drought have proved very challenging for legume farmers. As interlocutors have described, there is no guarantee that their crop yield will be consistent from one year to the next, which directly impacts their livelihood. Farmers have already reported that the extended dry season that started from the autumn of 2022 to the spring of 2023 has boded ill for their crops. they worried that similar issues, if frequented in the upcoming years, will jeopardize their livelihoods. Furthermore, during CREW's baseline survey in Ramechhap, it was found that while most farmers have suffered climate impacts to their agricultural practices, only a worrying low number of farmers have taken on adaptation practices. Only 1% of respondents in Ramechhap reported that they had adopted adaptation practices, and only 2.4% of the respondents reported that they had attended training and awareness programs related to adaptation.

While initially, farmers were reluctant to go beyond the traditional practices of producing and selling legumes, establishing demonstration plots has been an important intervention in addressing this challenge and promoting the commercial production of legumes. Following the soil sampling of the plots, complete block was designed in two randomly selected locations. Preliminary results indicated that the local Rajma (Kidney Beans) variety was more competent as a climbing type than the

PDR 14 variety; the plots also didn't have signs of major disease and pest infestation upon planting over raised beds, with proper spacing and seed treatment.

The demonstration exercise has allowed SLAC and involved farmers to experiment with different cultivation methods to study what practices are best suited to Ramechhap's current climatic conditions. Four major and potential legume crops were sorted as Rajma (Kidney Beans), Gahat (Horse Gram), Mashyang (Rice Beans) and Bodi (Black Eyed Peas) of which Rajma crop was most prioritized at the initial stage of intervention and has been marketed as Char Gharey brand. As this has been a collaborative effort between the cooperative and farmers, it is also a solution the farmers can take ownership of and co-generate economic opportunities.



Image 7 : Demonstration Plots to motivate for commercial Legume production

In such a context, it is important to consider how components of climate resilience can be integrated in a business that is so directly contingent on natural resources and climatic conditions. The policies and projects intending to pave pathway for agricultural enterprise as

a resilient source of livelihood need to assess climate-related shocks that farmers are most prone to. Equally important is to train farmers on adaptive practices and arrange alternative irrigation services that can help farmers adapt to climate vagaries and pursue the steps such as agriculture insurances that can make farmers resilient. Business diversification at the cooperative—moving beyond savings and credit to legumes and food-stuff—has already been a first step towards such resilience.

5.2 Resource constraint

As a project that addresses many bases—from strengthening SLAC to kick starting Char Gharey's branding and marketing—resource constraints have been a persistent challenge over the course of the project, especially during the current national credit crunch. While this has impacted many of the planned interventions, the project has

worked to improvise and adapt plans in the face of budgeting constraints. Initially, a farmer's field school had been planned as an intervention to train farmers in the most successful legume cultivation methods. As the budget was inadequate for the field school, the team opted to demonstration plots to collaboratively learn and achieve a similar impact. The cost of packaging for the legumes for the A-grade line of product has also been significant, as the enterprise could not import the paper-based packaging in bulk from China for this season. While a more expensive but locally-sourced alternative was used for the current season, the cooperative can determine if branding costs need to be reduced and make the necessary adjustments.

Similarly, it has been noted that a lot of manual labor and time is expended to grade, clean and dry the legumes which incurred high production cost. Incentivizing farmers to clean, grade and adopt improved post-harvest practices and investing in a high-quality grading machine can greatly reduce the production cost. Higher operational efficiency has the potential to increase the profit margins for the enterprise, which in turn is vital to ensure its longevity and sustainability and thereby ensuring market access and shared profit for its member farmers. However, lack of working capital has been the major constraint for the cooperative to thrive. To address the challenge, the cooperative and project are searching for funding and subsidies. While SLAC has secured a 50% subsidy from the government to purchase grading machines for legumes, work is undergoing to obtain the remaining 50% of the required funds. Potential avenues include entering sharing agreements with venture capitalists. The project team consulted multiple Class A and Class B banks i.e., Muktinath Bikas Bank, Prabhu Bank and Sana Kisan Sahakari Sanstha for arranging working capital drawing on the subsidized financing provisioned by the Government and Financial Institutions for women entrepreneurs. However, the current credit crunch in Nepal continues to pose a challenge to farmers for loan appraisals. Thus, the team turned its attention to exploration with wholesale microfinance institutions, with suitable products.

5.3 Production costs and Procedural constraints

SLAC was new to processing and marketing legumes and paid a high price while purchasing legumes from farmers. Unfortunately, farmers had not dried the legumes properly, which SLAC overlooked and consequently faced loss due to insect infestation. During grading, the amount of wastage was also high which increased the

cost of production. Related to the issue of navigating working with stakeholders from such vastly different backgrounds, there have been several procedural challenges that the project's team members at SIAS, ARIA and SLAC have had to navigate to get the Char Gharey brand to the market. The most major challenge has been bureaucratic obstructions, which SLAC leadership reflected have been hard for them to work through with Char Gharey as a small enterprise starting in rural Nepal. It took well over 5 months to receive results from government tests conducted on legume samples for their nutritional composition, which has significantly delayed the planned launch of the product in the national market. As a smaller enterprise focused on women's economic empowerment, it has been difficult for Char Gharey to navigate the intricacies of the policy environment.

The project faced another legal obstacle when the Ministry of Industries delayed SLAC's registration as a company; so the project had to undergo a separate registration process for a company under the co-operative. The process was further extended when Char Gharey had to be registered as a brand.

Despite these initial challenges, Char Gharey Rajma of Ramechhap has become a brand in the market. A visible outcome is that the farmer's income rose by at least 20 percent as compared to last year. Similarly, the selling of the legume in Kathmandu, facilitated by project intervention, has increased the cooperative-run enterprise's income by 12.5 percent. Besides direct growth in income, these engagements have also helped women address gender-based constraints within households and the small business ecosystem.

Moreover, the engagement in setting up the enterprise and engagement in collection and marketing provided vital learning opportunity to understand how smaller enterprises can work around such issues. Such knowledge can contribute to making SLAC a resilient institution capable of contributing to the local economy and future policy development. Similarly, this experience can also be used to build a case for what roadblocks made it difficult for SLAC to independently take on marketing and branding independently, and what support they needed from this partnership to successfully launch Char Gharey.

5.4 Synergy and common ground between different stakeholders

CREW's intervention with legume production in Ramechhap is unique in its process of close coordination with multiple stakeholders from different disciplines. While SIAS comes with the social science and research background needed to analyze the multidimensional issues faced by women farmers in Ramechhap, ARIA provides the equally crucial technical support and knowledge to actualize proposed interventions. SLAC, another important body facilitating some of these interventions while also undergoing them, comes with its own institutional background and experiences. The project is also working closely with the local government and national level institution on issues of policy implementation.

However, working with such an interdisciplinary team with varied backgrounds has also come with its own set of challenges. A pressing challenge through project implementation has been in developing common understandings and expectations across team members about issues like the complexities of software development, terminologies, and the dynamics of the different interventions. Similarly, the project comes with various needs—from policy analysis and advocacy to software development and distribution—that all partners do not have equal levels of expertise in due to their varied backgrounds. Consequently, here have also been challenges with delineating responsibilities and tasks for project implementation, which not all parties are equally comfortable with.

As the interventions with Char Gharey have progressed, a key lesson has been the value of establishing common expectations and understandings across team members who come from varied backgrounds. Addressing the challenge, the project focused on more clearly delineate roles and responsibilities based on expertise for different levels of interventions—from advocacy and policy analysis to the more technological interventions contributing to effective execution of the intended interventions and documentation of the process and learnings.