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THE BUSINESS CASE FOR WOMEN'S EMPOWERMENT IN THE PEPSICO POTATO SUPPLY CHAIN IN WEST BENGAL, INDIA

FINAL REPORT

INTEGRATED LAND AND RESOURCE GOVERNANCE PROGRAM

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Cover Photo: Women farmers from Moloypur, West Bengal, who leased land and joined the PepsiCo potato supply chain independently for the first time. Photo credit: Subarna Maitra/ILRG.

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LIST OF ACRONYMS

CA	Community Agronomist
CAL	Community Action Learning
CCW	Change Catalyst Workshop
CFT	Cool Farm Tool
EET	Empowered Entrepreneur Training
GALS	Gender Action Learning Systems
GBV	Gender-Based Violence
GDA	Global Development Alliance
GHG	Greenhouse Gas
IDIQ	Indefinite Delivery/Indefinite Quantity
ILRG	Integrated Land and Resource Governance
kg	Kilograms
kgCO _{2e} /MT	Kilograms of Carbon Dioxide Equivalent per Metric Ton
LLG	Land Leasing Group
PGR	Participatory Gender Review
POP	Package of Practices
PPE	Personal Protective Equipment
Pro-WEAI	Project-Level Women's Empowerment in Agriculture Index
SFP	Sustainable Farming Program
SHG	Self-Help Group
SRLM	State Rural Livelihoods Mission
STARR II	Strengthening Tenure and Resource Rights II
USAID	United States Agency for International Development
WEE	Women's Economic Empowerment

EXECUTIVE SUMMARY

Between 2019 and 2023, USAID and PepsiCo partnered to test the business case for women’s empowerment in the PepsiCo potato supply chain in West Bengal, India. Women are heavily involved in potato farming in West Bengal but often in overlooked areas of work such as seed cutting and seed treatment, which are typically done at home. As a result, most PepsiCo registered farmers are men. The partnership hypothesized that increasing women’s visibility and participation in PepsiCo’s supply chain would positively contribute to important tangible and intangible business metrics for the company, including increased productivity and profitability for farming families, adoption of sustainable farming practices, increased supplier base size and retention, and improved brand loyalty. The four-year partnership, implemented through the Integrated Land and Resource Governance (ILRG) program, worked with women and men farmers in 11 target communities, as well as with PepsiCo employees to increase gender equality awareness and women’s access to productive resources. Activities with men and women farmers included:

- Agronomy training for 1,888 women farmers;
- Deployment of 17 women Community Agronomists (CAs) to increase outreach to women;
- Support to seven women’s land leasing groups (LLGs);
- Land literacy training for 838 farmers (542 women and 296 men);
- Support to 11 women-led demonstration farms that showcased proper PepsiCo practices, visited by 305 people (225 women and 80 men);
- Entrepreneurship training for 26 people (21 women and 5 men); and
- Gender norms training for 289 farmers (174 women and 115 men).

In addition, ILRG also strengthened the gender capacity of all PepsiCo staff in West Bengal through in-person training on gender equality, women’s empowerment, and gender-based violence (GBV), asynchronous microlearning via WhatsApp, the development of written resources, and ongoing mentoring and support.

ILRG collected quantitative and qualitative data to measure impacts related to women’s empowerment and business results. The project-level Women’s Empowerment in Agriculture Index (Pro-WEAI) assessment found that overall women’s empowerment decreased for all women in the region from baseline to endline, which could be attributed to the economic and social repercussions of the COVID-19 pandemic. Although the Pro-WEAI empowerment score worsened for both women in the treatment and control groups, the decline was less pronounced for women in the treatment group, suggesting ILRG interventions could have provided some protection for women’s empowerment in a challenging environment. The broader body of quantitative and qualitative data collected shows progress in specific domains of women’s economic empowerment (WEE), including self-efficacy and confidence, access to knowledge, control of resources, control of income, decision-making power, acceptance by family and community members, and collective agency. There was a notable shift in women being recognized as farmers, instead of “farmers’ wives.” Women reported greater decision-making power over decisions related to the use of land, agriculture production, and use of income. Influential male champions were crucial to shifting harmful gender norms at the community level through positive role modeling and helping project staff overcome initial resistance of some men to the activities.

The data shows positive business results. Over 97 percent of women applied skills gained through agronomy training, positively impacting potato productivity and profitability. Families with trained women had better gross and net yields. In Year 4, 84 percent of women farmers reported an increase in their farm yield compared to the previous year, 76 percent reported a decrease in rejection rates, and 77 percent reported experiencing a positive change in their household income since associating with PepsiCo. The overall Sustainable Farming Program (SFP) score improved by 170 percent in the target

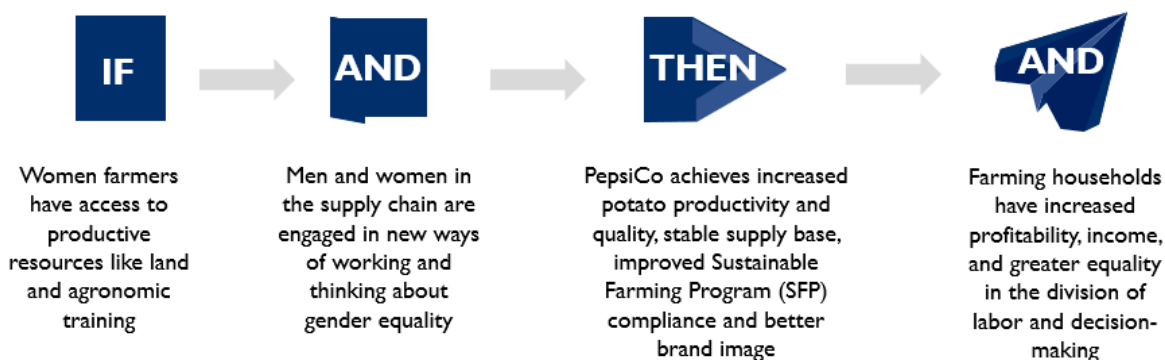
communities but remained low compared to other areas (overall sustainability score of 74 percent versus 77 percent in Year 4). There is emerging evidence that reaching and empowering women can lead to greater stability and growth of the PepsiCo supply base in West Bengal, with women joining the supply chain at a higher rate than men. Additionally, women have been responsible for recommending PepsiCo potato cultivation to others. Finally, the data shows a marked shift in PepsiCo's staff attitudes, knowledge, and behaviors toward gender equality. At the end of the project, 76 percent of PepsiCo staff agreed that women's participation adds value to the business and 84 percent said they observed positive changes in farming communities or PepsiCo's business metrics that they attribute to women's empowerment activities.

Despite challenges related to the COVID-19 pandemic and untimely rains that led to significant losses in Year 3, the results demonstrate that there is a business case for promoting women's empowerment in PepsiCo's potato supply chain in West Bengal and potentially in other markets with a similar supplier model. However, some elements of the project proved difficult to pursue, such as the land component. There is room for improvement and a need for better data points for future and continued assessment. These areas include early alignment on business case elements and sustainability of interventions; strengthening women's ownership, access to, and control over land; promoting equitable work sharing at the household level; increasing women's representation in the entire supply chain (as suppliers, aggregators, and PepsiCo staff); and setting up efficient data monitoring and governance processes.

1.0 INTRODUCTION

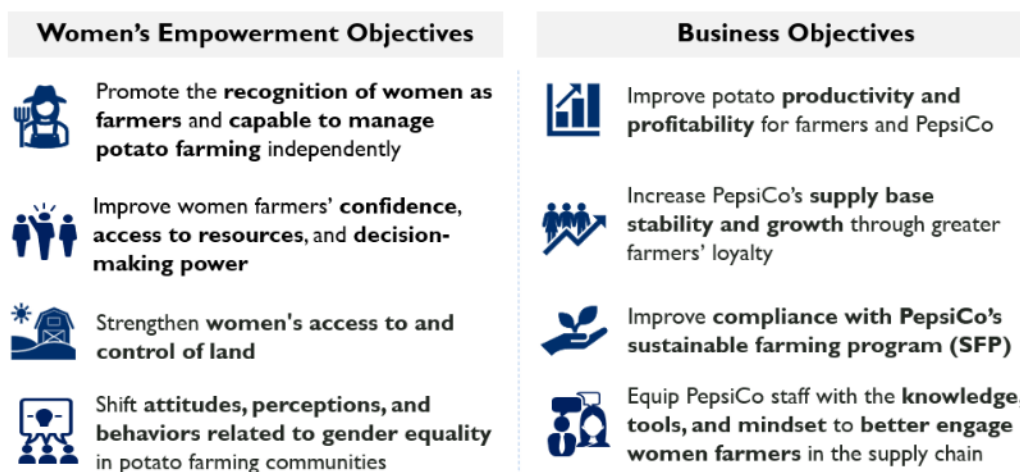
USAID partnered with PepsiCo to make the business case for economically empowering women in PepsiCo’s potato supply chain in West Bengal, India. Women are heavily involved in potato farming but are often in overlooked areas of work such as seed cutting and seed treatment, which are typically done at home. As a result, most PepsiCo registered farmers are men. The partnership tested the hypothesis that improving women’s empowerment contributes positively to key tangible and intangible business metrics, including the adoption of sustainable farming practices, expanded supply base, increased supplier retention, improved brand loyalty, and increased productivity and profitability for farming families.

FIGURE 1. THEORY OF CHANGE



This four-year partnership (2019–2023) was implemented by the Integrated Land and Resource Governance (ILRG), a global mechanism managed by Tetra Tech with Indian and international subcontracting partners. The pilot included interventions with women and men farmers and PepsiCo employees to increase gender equality awareness and women’s access to productive resources, with the following objectives:

FIGURE 2. OBJECTIVES



Over the four years, ILRG collected data to monitor the effective delivery of activities (outputs) and measure impacts related to women’s empowerment and business results. Quantitative data included a baseline and endline survey using the project-level Women’s Empowerment in Agriculture Index (Pro-WEAI) with control and treatment groups, annual beginning and end of season surveys with women farmers (Years 3 and 4), baseline and endline surveys with PepsiCo staff, training and activity attendance

data, potato yields and rejection rates, and Sustainable Farming Program (SFP) compliance data. Qualitative data was obtained through interviews, focus group discussions, and observations with men and women farmers, PepsiCo staff, and other stakeholders. Subcontractors were engaged to collect and analyze the Pro-WEAI data and to analyze the whole body of ILRG quantitative and qualitative data to produce a business case report.

Section 2 presents an overview of the activities delivered, and Section 3 highlights key women's empowerment and business outcomes achieved. Section 4 summarizes the main challenges and lessons learned, while Section 5 lays out final conclusions and recommendations for USAID and PepsiCo.

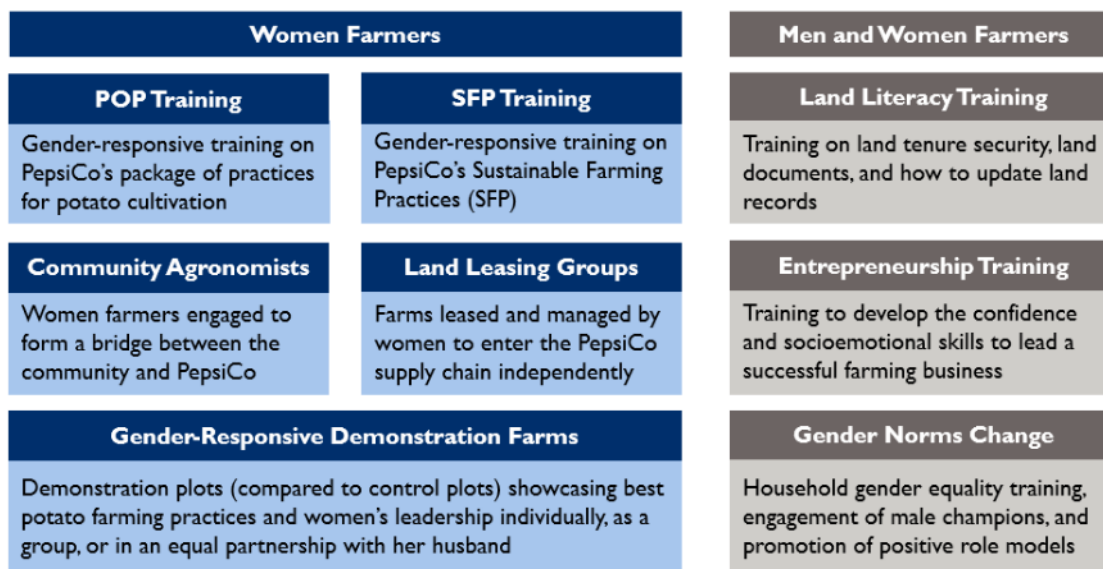
2.0 ACTIVITIES DELIVERED

2.1 ACTIVITIES WITH WOMEN AND MEN FARMERS

In West Bengal, potato production is a family business. Each season, smallholder farming families decide whether to plant PepsiCo or table potato varieties (for household consumption or to be sold at local markets) in plots ranging from 0.25 to 2 acres. PepsiCo sources potatoes through aggregators, independent intermediaries who act as a bridge between farmers and the company. Aggregators advance PepsiCo seeds to farmers at the beginning of the season and buy production back according to quality criteria established by PepsiCo. Aggregators—who are mostly men—tend to be relatively wealthy individuals who can assume financial risk and have the networks to ensure volume targets are met.

Most farmers on the aggregators’ supplier lists are men, as more men than women tend to own land due to legal barriers and gender norms that restrict rural women’s land rights in West Bengal and throughout India¹. This in turn limits women’s access to agronomy training and control of income derived from agriculture. Nevertheless, women are a critical part of potato production, performing tasks throughout the production cycle as members of farming households and/or as paid laborers. Despite their key contributions to potato cultivation, women’s roles remain overlooked, undervalued, and often unpaid, and they are rarely recognized as farmers, but rather as farmers’ wives. Women landowners and women independently cultivating PepsiCo potatoes are rare. To change this scenario, USAID and PepsiCo implemented a series of interventions in 11 target communities² to shift gender norms and provide women with increased access to critical productive resources:

FIGURE 3. ACTIVITIES WITH FARMING COMMUNITIES



2.1.1 AGRONOMY AND SUSTAINABLE FARMING PRACTICES TRAINING

ILRG revised existing PepsiCo training materials to increase gender-responsiveness and make them more participatory—adding drawings and illustrations, interactive training tools and approaches, pictures

¹ According to the Ministry of Health and Family Welfare 2019–20 National Family Health Survey, only 22.5 percent of rural women own a house and/or land, alone or jointly with others.

² Aswinkota, Balitha, Barasat, Boragori, Dhuluk, Harishchandrapur, Hijaldiha, Kanaipur, Narayanpur, Moloypur, and Teligram in three districts (Bankura, Hooghly, and Purba Burdwan). The pilot initiative started in 12 communities but one (Shibnagar) was dropped in 2020 due to low presence of PepsiCo farmers and lack of interest from the local aggregator.

of women, and discussions of women’s roles within the potato supply chain. Flipcharts and handouts in Bengali and training video clips were developed to support training. The content and approaches were revised over the four years to reflect participant and PepsiCo staff feedback; for instance, the Package of Practices for potato cultivation (POP) training was adapted from six phases in Year 1 to three phases in subsequent years. POP training covered topics like land preparation, seed preparation and planting; soil fertility and nutrient management; common potato pests, diseases, and treatment; personal protective equipment (PPE) use; storage and disposal of agrochemicals; harvesting; grading; and recordkeeping. Delivered in three phases, SFP training focused on areas with the highest non-compliance rates in the region that women tend to have a greater level of influence over, like safe agrochemical use and storage, waste management, and crop residue management.



Women farmers attend potato agronomy training. ILRG

All training sessions lasted approximately two hours and were delivered by two ILRG women Field Agronomists (and a male Agronomy Trainee in Year 4). POP was delivered during the potato season and SFP in the off-season. Women Community Agronomists (CAs) (described below), PepsiCo Agronomists, and aggregators mobilized women in communities to participate. As part of the sustainability and scalability strategy, in Year 4 a team of seven PepsiCo SFP Agronomists (four men and three women) delivered

POP training independently to women farmers in 37 new communities across West Bengal. ILRG provided them with training-of-trainers and ongoing support.

Over the four years, 1,862 women farmers attended POP training and 648 women attended SFP training. Although training targeted women, interested men were allowed to attend (37 men attended POP, and 8 men attended SFP). Around 90 percent of trained women said the usefulness of content was a key motivator for their participation. Training content retention was high, with 77 percent of women saying they understood all or most of the content shared. The training methods used were highly appreciated, especially participatory activities and quizzes and flipcharts with images.

“I like the way training is conducted—games, question-answers, charts. These trainings helped me to understand the details of farming—fertilizer doses, how to cut the seed and why, plant spacing, diseases and pests.”
Tanushee De, woman farmer

FIGURE 4. WOMEN TRAINED ON POTATO AGRONOMY

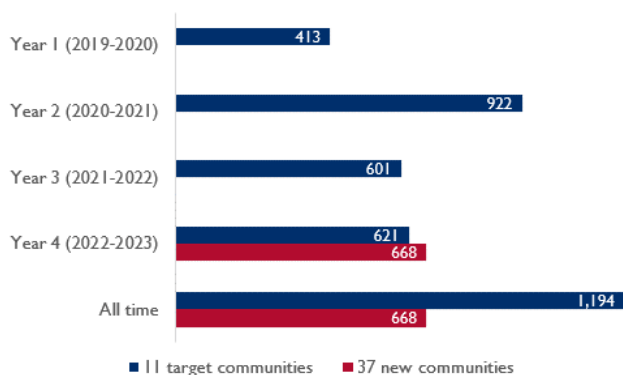
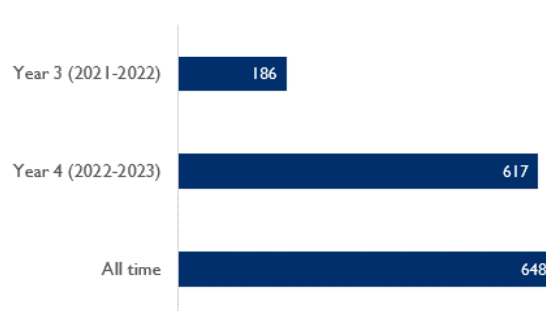


FIGURE 5. WOMEN TRAINED ON SFP



A key challenge in delivering POP and SFP training was initially convincing stakeholders about the need for agronomy training for women, who are generally referred to as “farmwives” or farm assistants. As such, getting buy-in from aggregators and men and women was challenging in the first years. Most

women have limited education levels (especially those from Scheduled Tribes or Castes³), and gender norms limit women’s ability to freely voice their opinions. Initially, women were hesitant to participate, but the training included several icebreakers and participatory methods to build their confidence and engagement. Despite implementing a gender-responsive approach to scheduling training sessions, reaching consensus on the best venue and time was not always possible in all communities, affecting women’s ability to attend. Women farmers frequently struggled to attend all sessions, especially during peak farming season. The main reasons for non-attendance were competing time constraints due to unpaid household and care work (35 percent), lack of awareness about training (25 percent), and inconvenient location. In the 37 new communities where PepsiCo staff delivered training for the first time in Year 4, the main reasons for non-attendance (multiple responses allowed) were lack of awareness about training (52 percent), competing time constraints with unpaid work (42 percent), and inconvenient training time (17 percent). Finally, the COVID-19 pandemic hindered the delivery of SFP training in the first two years of the pilot, as training timing coincided with peak infection rates and strict social gathering restrictions.

2.1.2 COMMUNITY AGRONOMISTS

ILRG engaged 17 part-time CAs to increase outreach and support for women potato farmers in all 11 target communities. These women were selected through a transparent and competitive process based on set criteria, such as previous experience farming PepsiCo potatoes and communication skills. As CAs were women from and based in the ILRG target communities, they could make field visits and provide advice to farmers on a fairly frequent basis. The CAs also conducted surveys, collected data from farmers, and prepared reports related to farming practices. This was particularly important during the COVID-19 pandemic when field visits by ILRG and PepsiCo staff were severely constrained.

ILRG provided frequent training for the CAs on gender equality, women’s empowerment, gender-based violence (GBV), agronomy, adult education and participatory training approaches, data collection, and entrepreneurial skills. CAs reported a few challenges, especially resistance from men farmers, conflict with family members due to new demands on their time, and low levels of confidence. With knowledge acquired from training and ILRG mentoring, the CAs noted they were largely able to overcome these challenges by developing their self-awareness and renegotiating the division of labor in the household.

“I loved working as a Community Agronomist. I feel so elated when other farmers come to me with queries. I am overwhelmed with the respect I receive for my work.”

*Sharbani Charchari,
Community Agronomist*

Based on positive feedback on the CA model, two aggregators in non-target communities deployed two CAs independently to provide training and support for women farmers. ILRG provided capacity-strengthening support to these CAs. These aggregators expressed that engaging the CAs has had an initial modest positive impact on their business in the short-term, and they foresee larger potential impacts in the long run. They noted that they have seen better relationships with farmers and improvements in the application of best potato farming practices like seed cutting, seed treatment, agrochemical storage, use of PPE, and waste disposal in communities where CAs are engaged.

2.1.3 DEMONSTRATION FARMS

Demonstration farms are part of the strategy to advance [PepsiCo’s Pep+](#) and regenerative agriculture goals, as they provide an opportunity for farmers to observe and learn from their peers about locally relevant best practices during “Farmers’ Field Days.” Using a “seeing is believing” approach, demonstration farms feature a demo and a control plot to showcase technologies and practices that can

³ Scheduled Castes are members of the lowest Hindu social class. They are listed (or “scheduled”) in the Constitution and receive special government support due to their historically disadvantaged position in society. Scheduled Tribes are recognized Indigenous groups and are similarly “scheduled” and provided with government protection and outreach.

increase productivity, profitability, and resilience to climate change events. ILRG used a gender-responsive approach to demonstration farms, (i.e., in addition to displaying the benefits of implementing best farming practices, women-led demo farms intentionally acknowledged and showcased women as lead farmers who perform key roles in the potato farming process).

In Year 2, ILRG supported a group of women to run a demonstration farm in Moloypur on their leased land. In Year 3, ILRG supported 11 demonstration farms, one in each target community, in a combination of demo farms led by women individually, as a group, or in equal partnership with their husbands. ILRG and PepsiCo staff provided technical guidance to demo farmers and supported independent soil testing to determine the proper dosage of agrochemicals, and PepsiCo partner Bayer provided agrochemical kits to all demo farms. Every year, three Farmers' Field Days were organized at strategic points in the potato cultivation cycle on all demonstration farms and attended by men and women farmers from nearby villages. A total of 305 farmers attended Farmers' Field Days in Years 3 and 4 (225 women and 80 men).



Woman demo farmer explains the practices adopted during a Farmers' Field Day.
ILRG

2.1.4 LAND LEASING GROUPS

Women—and particularly women from Scheduled Tribes and Castes and religious minorities—have difficulty accessing land in West Bengal. Legal provisions restrict joint titling of purchased land and land leasing is formally forbidden.⁴ Despite legal constraints, informal land leasing is widely practiced and provides a viable opportunity for women to access land, cultivate potatoes independently, and enter the value chain as PepsiCo suppliers. To increase women's access to and control of land, ILRG subcontractor Landesa worked with aggregators and PepsiCo staff to support women's land leasing groups (LLGs), who leased land to collectively cultivate PepsiCo potatoes. Landesa supported two LLGs in Years 1 and 2 and seven LLGs in Years 3 and 4.⁵

Working as a group allowed women to spread risks associated with leasing land and farming potatoes independently from their families and provided support against community pushback for breaking gender norms by farming alone. ILRG leveraged existing women's Self-Help Groups (SHGs)⁶ to form LLGs, as women in these groups had experience working together. Landesa developed a series of criteria to assess potential LLGs, paying special attention to group dynamics and financial literacy. Landesa worked closely with aggregators, land lessors, and PepsiCo staff to select and support LLGs across the four years, providing capacity-strengthening support to aggregators so they could support existing groups and potentially help facilitate new ones in the future.

Nearly all members of the LLGs are from minority groups, including Scheduled Tribes, Scheduled Castes, and religious minorities (Muslim). The initial gender assessment found that women from

⁴ In Years 1–3 ILRG partner Landesa conducted desk and field research to explore options for law and policy reform, especially to ease restrictions on agricultural land leasing and to permit joint titling of land by married couples. Landesa drafted sample amendments to the West Bengal Land Reforms Act (WBLRA) to address these issues and conducted advocacy with the state government to promote such reforms. This work was deprioritized in late Year 3 and Year 4 to focus on shorter-term activities such as land literacy training and land record updating support for farmers.

⁵ Most LLGs had five to eight members.

⁶ Women's SHGs exist throughout rural India and are typically made up of 10 to 20 women. They are often established by non-governmental organizations (NGOs) or government departments to help women access finance and generate income, and to empower women within their communities.

Scheduled Tribes and Scheduled Castes were more likely to have farming experience and be willing (and permitted by social norms) to participate in field farming and interact with men in the supply chain.

“I think they [women in LLG] were up to the mark if not beyond everybody’s expectation. They ended up with a good harvest that exceeds several male counterpart’s output. This women’s group has proved their case before an obsessed patriarchal society which minces no words to criticize women’s efforts.”

T.C., land lessor and women’s empowerment champion

Women from religious minority groups traditionally have more limited mobility and ability to work in farm fields, which required more encouragement and support from Landesa and local male champions. Although minimum financial literacy and experience working as a group were some of the LLG selection criteria, navigating group dynamics and gaps in financial literacy were persistent challenges that affected some groups’ ability to organize work and plan expenditures. This reveals how women’s financial literacy remains a broader challenge in the area. Finding and negotiating suitable land for leasing was also a challenge, especially during and after the COVID-19 pandemic.⁷

The financial results of LLGs varied from year to year and across groups, with some LLGs experiencing losses or minimum profit and others performing comparably (and in some cases above) farmers in their areas. The two LLGs participating in Years 1 and 2 made a profit, with the Muslim group Eid Mubarak making a significant profit in Year 2. In Year 3 all LLGs, like most potato farmers in West Bengal, incurred losses due to devastating floods across the state. Financial outcomes were mixed in Year 4, with three groups making a profit, three groups incurring modest losses, and one group experiencing a significant loss. This was due to a variety of factors, including management of labor expenses, lack of rain, and higher lease costs.

While production and financial outcomes varied among the groups and across the years, overall, the LLGs demonstrated that groups of women farmers are able to manage farms independently and that committed women, with training and support, can successfully cultivate PepsiCo potatoes at a production level on par with other farmers. Moreover, all participating women reported significant improvements in confidence, skills, knowledge, business relationships, and individual and collective agency. Women developed confidence interacting with stakeholders in the supply chain and negotiating with landowners. Significantly, they came to view themselves as farmers rather than helpers or laborers. There have also been shifts in household and community perceptions regarding women’s aptitude for managing a commercial farm.



Members of a women’s LLG share their profit after the potato season.
LANDESA

2.1.5 LAND LITERACY TRAINING

Many PepsiCo farmers cultivate land that their family owns but whose land records are out of date. Many people are not aware of the procedure to update land records after an ancestor dies or after land is transferred by sale. Failure to maintain updated land records jeopardizes farmers’ land tenure security and productive potential, as they are unable to access private credit or a range of government support programs without up-to-date documents.

⁷ The COVID-19 pandemic affected the land leasing market because landowners who would usually migrate outside of villages for work stayed home and preferred to farm their own land or leased land for income. With reduced supply and rising demand, less land was available for lease and lease prices increased.

To bridge these gaps, ILRG subcontractor Landesa developed a two-hour land literacy training program with interactive sessions and five short informative films, based on a similar training module created for the West Bengal State Rural Livelihoods Mission (SRLM)—a government initiative to support the rural poor and other vulnerable groups to develop diversified livelihoods. Landesa delivered land literacy training to 838 farmers (542 women and 296 men) to improve their understanding of land rights, including land documents and land administration processes. Participants expressed that the land literacy training was useful and informative, with many highlighting that this was the first time they received such knowledge. Many had no previous understanding of what land documents looked like, their purpose, or how they could be updated, especially using new online platforms. For women, this information was highly important as knowledge about land records increases women’s confidence to participate in household decision-making, helps ensure their tenure security in the event of the death or divorce of a spouse, and better equips them to interact with government officials, land lessors, and others in the supply chain.

“The issues discussed today were completely new to me and I believe to most of the participants, even for the men. The video clips used are so helpful to understand the land issues. The folder distributed at the end of training will help me greatly. I’m told by my husband that the family land records are updated, but I will check when I reach home.”

Rupali Gorai, woman farmer

Following the land literacy training, 48 people (12 women and 36 men) with issues or questions related to their land records approached Landesa for further assistance, showing the training prompted farmers to pursue tangible next steps to update their records. Common requests included support for writing applications, help to check plot details on the government’s website, or assistance reviewing documents and answering specific questions, such as about a chain deed.

ILRG faced initial difficulty building interest in the land literacy training with PepsiCo staff. Landesa began to organize training sessions with the women’s LLG members, finding that once it organized a land literacy event in one location, local PepsiCo stakeholders appreciated its importance and helped organize training with the other PepsiCo supply chain farmers in the area. Indeed, local PepsiCo staff have acknowledged that information on land rights is critical for smallholder farmers and supports the stability of the supply base in the long run.

2.1.6 ENTREPRENEURSHIP TRAINING

Lack of entrepreneurial skills is a main barrier for women to recognize themselves (and be recognized) as farmers and to succeed in potato farming in West Bengal. ILRG worked with subcontractor Johns Hopkins University to adapt the Empowered Entrepreneur Training (EET) for women potato farmers. This approach uses “agency-based empowerment” to support women entrepreneurs in overcoming business challenges. It focuses on the skills needed to surmount social and psychological obstacles and strategies to work creatively around external limitations and structural barriers.

The training was delivered in May 2022⁸ in a residential format over three days for women farmers and their partners or spouses. Out of the 21 women trained, 17 were CAs and four were members of the Eid Mubarak LLG. Out of the seven men trained, two were sub-aggregators and five were PepsiCo farmers also engaged in parallel small business activities. The training was well-received, and participants expressed a new understanding that their farming activities are in fact businesses and therefore should be conducted as such to succeed.

Participants found creating a clear plan of action with SMART (Specific, Measurable, Achievable, Realistic, and Time-Bound) goals challenging, but with some support and follow-up, they were able to do so. EET

⁸ Initially planned for Year 1, EET was delayed because of the COVID-19 pandemic and natural disasters affecting the region. The delays allowed for further refinement of the curriculum and training format.

is not a one-off training, but a process of change and empowerment, so over the course of a year ILRG followed up periodically with participants to reinforce and clarify concepts, provide mentoring, and monitor progress toward goals. Monitoring assessed participants' position in the five steps of the behavior change ladder: Pre-contemplation (presence of doubts or lack of awareness about the need to change), Contemplation (awareness of a problem and starting the process to set a goal), Preparation (goal is set with a plan that identifies barriers and strategies to overcome them), Action (concrete steps to achieve goal and course correct), and Maintenance (maintenance of changed behavior and/or enjoyment of benefits from goal achieved, often leading to setting a new goal).

Most of the 28 participants made progress toward fulfilling their goals, and all could identify immediate actions needed to progress. Some had to adapt their goals due to circumstantial issues or changes of interest and priorities. ILRG observed large shifts among most participants regarding their level of confidence, planning, and financial management. Many participants chose goals related to farming and started to expand their area of cultivation and treat farming as an enterprise. There was also significant progress in participants' status on the behavior change ladder. One year after training, all participants had securely moved from the two initial stages, with nine participants in the Maintenance stage, 16 in the Action stage, and three in the Preparation stage.

2.1.7 GENDER NORMS CHANGE

Empowering women in the potato supply chain requires increasing their access to critical productive resources like inputs, land, and knowledge, but also shifting the enabling environment so they can make decisions about resources and income and enjoy benefits derived from potato farming.

ILRG implemented two gender norms change approaches with men and women farmers in select communities to change harmful gender norms that limit women's participation in agriculture and their recognition as farmers. Gender Action Learning Systems (GALS) and Nurturing Connections are household-level methodologies that focus on changing beliefs and behaviors within households to drive broader and sustained social norms change. In particular, they focus on beliefs, behaviors, and norms around equitable distribution of labor, decision-making, and access to and control over assets.

Household methodologies used by ILRG

GALS uses a participatory and collective peer learning process and simple diagramming tools to identify individual and joint goals, as well as the barriers and resources to achieve them. GALS is implemented in three phases: CCW, CAL, and PGR.

Nurturing Connections aims to transform gender roles and relationships, challenging harmful practices that hinder women's empowerment. The curriculum recognizes that behavior change is a process that requires internalizing new concepts and that adults learn best through action and experience. Nurturing Connections is divided into four blocks with men and women separately and two blocks together.

The GALS process (described in the box below) was interrupted early on due to the COVID-19 pandemic, which required a revision to compress the sessions into a shorter period of time and reduce the number of participants. After completion of the first phase (Change Catalyst Workshop [CCW]), ILRG found that the communities still need refreshers before entering the second phase (Community Action Learning [CAL]) because of significant time between CCW sessions. Short two-to-three-day refreshers were conducted in five communities and one community did not show interest in continuing the process. Community diffusion did not happen to the extent expected at the CAL phase, but some couples came forward as champions in all communities, which accelerated the peer learning process. The participatory gender review (PGR) phase took place in five communities, and participants reviewed their progress in shifting gender norms through participatory exercises. Due to GALS delays, Nurturing Connections started in February 2022 and was fully completed in two communities. One community dropped out after six sessions due to low interest, especially from men. ILRG decided to not start

Nurturing Connections in the additional two communities planned, as it would not have been possible to finalize the process before project closure in July 2023.

Implementing both approaches as originally designed is a lengthy and resource-intensive process (GALS takes about 18–36 months to complete and Nurturing Connections 12–18 months), requiring multiple visits to the communities and considerable time commitment from farmers. Facilitators worked around farmers' schedules during the less busy months of the year, and ILRG adapted and condensed content as much as possible. Men also showed lower motivation to participate, potentially because gender-focused training may feel more abstract to farmers without an immediate and tangible benefit like agronomy training. Given these challenges, both GALS and Nurturing Connections reached fewer people than initially planned: GALS reached 212 people (134 women and 78 men), or 71 percent of the target, and Nurturing Connections reached 77 people (40 women and 37 men), or 32 percent of the target. In total, 289 farmers attended at least one session of either household gender norms dialogues (174 women and 115 men).

It is important to note that other ILRG interventions beyond the GALS and Nurturing Connections contributed to the overall observed changes in harmful gender norms at the household level. Providing agronomy training to women challenged prevailing beliefs and attitudes around women's role in potato farming. Women took on new roles such as CAs, LLGs, and demo farmers that invited communities to rethink gender stereotypes and increasingly accept women as capable farmers. Finally, ILRG was intentional about engaging influential male champions like PepsiCo staff, aggregators, and land lessors, who advocated for women's empowerment and served as role models for other men in farming communities. These interventions complemented each other. To catalyze this multi-pronged approach, ILRG organized community events and competitions to recognize men and women champions and provide space to publicly showcase support for women farmers.



PepsiCo staff celebrate men and women farmers in a community event on International Women's Day in March 2021.

ILRG

2.2 ACTIVITIES WITH PEPSICO STAFF AND AGGREGATORS

PepsiCo works with over 16,000 registered potato farmers in West Bengal, divided into five zones overseen by five PepsiCo Area Managers (at the time four men and one woman). PepsiCo Agronomists work with aggregators and farmers and are focused on marketing and securing potato targets, with limited background in agricultural extension or social behavior change and training facilitation. Initial assessments found that PepsiCo staff had little to no knowledge of gender equality and women's empowerment and seldom interacted directly with women farmers.

The buy-in and expertise of local PepsiCo staff was critical to the success and sustainability of the interventions, so ILRG implemented a series of strategies to strengthen their capacity on gender equality and women's empowerment. In 2019 ILRG provided initial training on gender and women's roles in agriculture to 41 PepsiCo and Control Union⁹ staff: 30 PepsiCo Agronomists from across West Bengal (all men), six management-level staff (all men), three Control Union staff (two men, one woman), and two women agronomists from another state. The participatory gender sensitization curriculum included basic gender concepts, gender roles, women's time poverty, women's marginalization in agriculture,

⁹ PepsiCo engages Control Union as a contractor to develop SFP training and assessment in select markets, including West Bengal.

strategies to empower women in potato production, and linking women’s empowerment to PepsiCo goals.

Promoting women’s empowerment can lead to pushback, and in some cases, to GBV; indeed, women in male-dominated institutions and supply chains can be more vulnerable to GBV. To equip PepsiCo staff with knowledge on GBV, ILRG developed a series of longer primers and shorter summary handouts on key GBV concepts, how it can affect PepsiCo’s potato supply chain, and what PepsiCo staff can do to prevent, mitigate, and respond to GBV. These handouts provide quick and actionable resources for PepsiCo staff. A virtual two-hour orientation on GBV was delivered to six PepsiCo/Control Union management staff (all men) in September 2020. ILRG and a local GBV organization Consultants Partnering for Change (CPC) designed and delivered a tailored and participatory GBV training to 41 PepsiCo and Control Union field and management staff (38 men, three women) in May 2022. Pre- and post-training assessments showed that participants retained knowledge about GBV definitions, different types of GBV, and GBV consequences. Participants also demonstrated shifts in perceptions about GBV, moving from seeing it as a “personal/family matter” to one that impacts the business and supply chains.

A main challenge in strengthening PepsiCo staff capacity was time constraints to participate in planned events and training sessions, especially during the potato growing season. Lack of time also influenced PepsiCo staff’s ability to engage in and lead women’s empowerment activities, which added to their already busy workloads. To respond to time constraints, ILRG explored other training approaches to strengthen PepsiCo staff capacity. In early 2022, ILRG designed and delivered a microlearning training program on gender equality and women’s empowerment delivered via WhatsApp. For eight weeks, 71 PepsiCo staff and aggregators received short weekly messages (in English or Bengali) with key gender and women’s empowerment concepts, including short videos and interactive quizzes. The microlearning program was well received by participants who enjoyed receiving a refresher on gender concepts in a quick-read and asynchronous manner. To further encourage asynchronous learning and leave behind a set of practical tools and resources for PepsiCo, ILRG developed a series of How-To Guides in Bengali and English (for use in other PepsiCo markets) on topics including engaging women farmers, addressing GBV, identifying land issues affecting women farmers, working with women’s LLGs, running women-led demonstration farms, mobilizing men champions, and working with women agronomists.

PepsiCo staff appreciated the different training provided by ILRG. During the endline survey, 68 percent said that training had an extreme or very important contribution to their knowledge about gender equality and women’s empowerment, and 84 percent said the training was very important or important to improving their ability to perform their assigned tasks. The participatory nature of the training was particularly appreciated. Concerning written materials, all staff remembered receiving POP training materials, 96 percent receiving the How-To Guides, 84 percent the GBV primers, and 72 percent the GBV handouts. All PepsiCo staff said they had shared gender learning with others, including community members (76 percent), family members (68 percent), colleagues at PepsiCo (68 percent), and friends (52 percent).

ILRG staff worked alongside and in close collaboration with PepsiCo staff and aggregators to deliver all farmer-facing activities, which allowed for ongoing mentoring and helped PepsiCo staff gain practical skills and confidence directly engaging with women farmers. For PepsiCo staff who started delivering POP training to women farmers independently in Year 4, ILRG delivered training on the revised POP and SFP modules and participatory and adult learning approaches. A critical element of women’s empowerment is engaging influential men as champions. ILRG identified and supported key PepsiCo staff and aggregators who acted as agents of change and role models for their counterparts and men farmers

“It is not only about making policies or even implementing them in action. It is more about wanting change and working together to make changes. It’s a process of growing and evolving as a human being and an ideal employee. And this is the first step that we have taken here today.”

PepsiCo Manager during GBV training

in the communities. ILRG developed “kudos” messages highlighting men champions for PepsiCo managers to share with their staff. PepsiCo also started to recognize aggregators and staff who invested in women’s empowerment activities in public forums. For instance, every year PepsiCo recognizes aggregators based on performance metrics, such as seed selling, yield, and rejection rates. In 2021, for the first time, PepsiCo also recognized two aggregators and one sub-aggregator for their active role in promoting women’s empowerment in the supply chain. This approach was followed in subsequent years.

Building PepsiCo staff’s understanding of gender equality and the linkage between women’s empowerment and business outcomes, as well as getting buy-in from multiple levels of the company, takes time and continued effort. While West Bengal staff demonstrated a growing awareness of the importance of empowering women and the impact of this empowerment for the PepsiCo business model, they often raised concerns about carrying out activities currently implemented by ILRG after the project ends considering their competing responsibilities and time constraints.

3.0 KEY RESULTS

3.1 WOMEN'S EMPOWERMENT RESULTS

The impact of the partnership on women's empowerment and shifts in harmful gender norms were assessed using quantitative data from the Pro-WEAI and beginning and end-of-season surveys with women farmers in Years 3 and 4, as well as qualitative data from interviews, focus group discussions, and observations of men and women farmers and other stakeholders in the supply chain.

3.1.1 WOMEN'S ECONOMIC EMPOWERMENT

The Pro-WEAI assessment found that overall women's empowerment decreased for all women in the region from baseline to endline, which could be attributed to the economic and social repercussions of the COVID-19 pandemic, as stated by emerging evidence and research.¹⁰ However, although the Pro-WEAI empowerment score worsened for both women in the treatment and control groups, the decline was less pronounced for women in the treatment group, suggesting that ILRG interventions could have provided some protection for women empowerment in a challenging environment.

The broader body of quantitative and qualitative data collected by the project shows progress in specific domains of WEE, including self-efficacy and confidence, access to knowledge, control of resources, control of income, decision-making power, acceptance by family and community members, and collective agency.

Self-Efficacy and Confidence

There was a notable shift in women perceiving themselves as farmers, and no longer “farmers’ wives” or “farmers’ helpers.” Indeed, most women participating in ILRG activities recognized themselves as farmers by Year 4. Recognition as farmers has important benefits for women, increasing the likelihood of being named in official supplier lists and being able to access government schemes for farmers and join farmers’ cooperatives. Despite their systematic exclusion from productive resources and decision-making in farming, women said that the support offered by USAID and PepsiCo gave them increased confidence to engage in farming activities. Women were confident in their ability to influence farming decisions in their households, take on potato farming independently, interact with actors in the supply chain, and manage farming operations—be it in LLGs, on their own, or operating demo farms. This was validated by PepsiCo staff, with 91 percent saying they have observed improved confidence and decision-making abilities among women farmers over the four years. This increased confidence provided women the necessary resilience to face adverse farming situations like potato diseases and extreme weather.

FIGURE 6. INCREASE IN WOMEN'S CONFIDENCE



¹⁰ Studies show that rural Indian women in informal jobs accounted for 80 percent of job losses in early 2021. Economic hardship has impacted women and girls disproportionately. It is estimated that women's share of unpaid care work increased by 30 percent during the pandemic, adding to the workload of already overburdened women. Finally, GBV has increased, with 2.5 times increase in domestic violence in early 2020. Source: <https://www.unwomen.org/en/news/stories/2021/7/faq-women-and-covid-19-in-india>

Greater confidence led to improved social mobility and the ability to meet and talk to people outside of their household, with 96 percent of women saying they are able to freely attend training. Women reported that they used to seek permission from husbands and other men in the family like in-laws before going anywhere, but now mostly inform them instead of seeking permission. Many women, especially those from Muslim backgrounds, said that they did not get to go out of their houses often before the program so appreciated having more opportunities to socialize and go out as a group to attend training and visit their farms. Women also reported an increased ability to visit institutions like banks, credit societies, and agrochemical stores.

“Today, I am not just a potato farmer, but also a trainer and a motivator. The training from PepsiCo–USAID was my first formal training on farming, and I have learned about sustainable farming practices and the role of women in farming. I understand gender dynamics and how they deter women’s empowerment in my community. My example will encourage more and more women in my village to come forward.”

Sujata Pramanik, woman farmer and Community Agronomist

Women CAs also reported increased self-awareness, confidence, and the ability to overcome personal and social barriers related to public speaking and biases towards women in agriculture. They were excited to take on a role that is overwhelmingly seen as a man’s job and prove to themselves and others that women are equally capable of learning new techniques and skills. They expressed enjoyment in becoming mentors, trainers, and change-makers within their communities. Having women CAs as role models encouraged women farmers to step out of their comfort zones and established gender norms. For

example, Chandana Sing, a member of an LLG, started driving a motorized rickshaw (cart) to transport seeds and the women from her group to the field. The aggregator working with this LLG remarked on how Chandana had become a strong positive presence in the community and had taken on many activities usually reserved for men, such as driving a rickshaw.

Access to and Application of Knowledge

A key component of the project was providing women with access to agronomy training (POP and SFP training). This was the first time women farmers in the target communities received agronomy training. Many expressed that before they felt that training was only for men and, as a result, were unsure why they were being called to attend, as men were considered lead farmers in their communities. Despite this initial hesitancy, women now report that access to agronomy training is universally valued, and women feel seen and valued in the supply chain. Training complemented and enhanced women’s many years of hands-on potato farming experience, exposing them to best practices to increase and improve productivity and protect their family’s health and the environment. Having more knowledge and a broader skill set directly influenced other empowerment metrics like confidence and decision-making power, with women reporting feeling recognized as a source of knowledge by their families and neighbors. 85 percent said they felt comfortable using their knowledge to influence others. Over 97 percent of women trained said they applied at least one skill gained, and 67 percent felt confident to take on new, non-traditional farming roles like land preparation, weeding, irrigation, pest management, and harvesting. Finally, training provided women with the opportunity to learn new skills beyond farming. Several women were illiterate or had limited education but started to learn how to sign their names on training attendance sheets; a few even decided to pursue formal education.

Despite these positive results, some challenges persist. Women are still overlooked in key stages of potato production; for instance, only men typically attend the initial meeting when PepsiCo announces the buy-back price for the season and seed distribution. ILRG worked with aggregators to adapt the timing of these meetings and developed leaflets to encourage women to attend, but these events remained male-dominated. In a Muslim community (that was later dropped as a target community due to low interest, despite repeated sensitization) women had limited social mobility and only men showed up

for POP training. Gender norms across communities often restrict the farming roles considered suitable or traditional for women, leaving them with fewer opportunities to apply gained skills.

Assess to and Control of Resources

Ownership, access to, and control over productive resources, especially land, is a major challenge for women in West Bengal, as it is for women across India. According to the Ministry of Health and Family Welfare 2019–20 National Family Health Survey, only 22.5 percent of rural women in West Bengal own a house and/or land, alone or jointly with others. Official land ownership records are one metric of land tenure security, with perceptions of ability to use resources and perceptions of tenure security being other measures. Overall, women farmers who feel able to freely use resources like land, tools, and equipment increased from 57 percent in Year 3 to 87 percent in Year 4. However, land ownership and tenure security remain a long-term challenge, particularly for women from marginalized backgrounds, as evidenced by data collected using the [Perceptions on Property Rights Index \(Prindex\)](#) as part of the Pro-WEAI assessment (Figures 7 and 8). Limited land ownership has a direct negative impact on women’s engagement in the PepsiCo potato supply chain, as land ownership is required to be included in aggregators’ official supplier lists.

FIGURE 7. SELF-REPORTED LAND OWNERSHIP (FROM PRO-WEAI ENDLINE SURVEY)

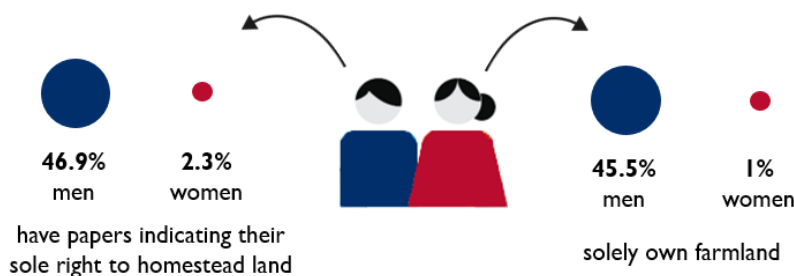
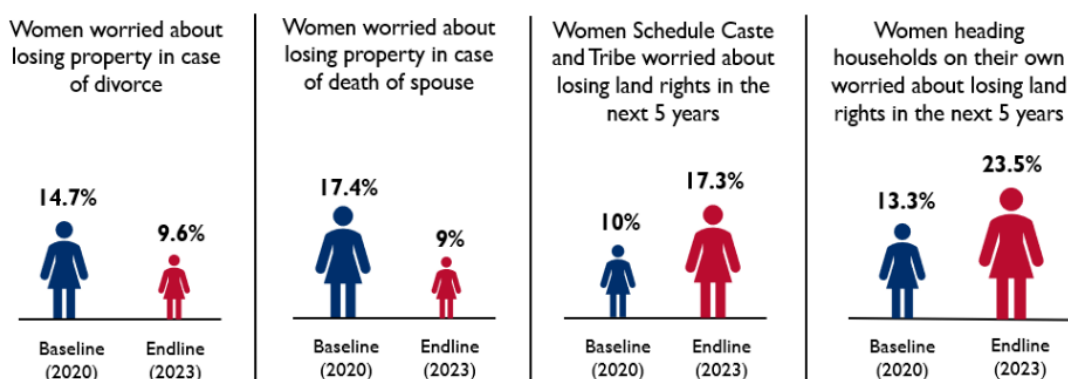


FIGURE 8. PERCEPTIONS OF LAND TENURE SECURITY



Women from marginalized backgrounds, like women from Scheduled Tribes and Caste and women heading households on their own felt more insecure about their land tenure. This could be due to their increased awareness of the precarity of their land tenure situation after receiving more information about land rights through the land literacy training provided by Landesa.

Financial Autonomy and Control of Income

The ILRG intervention aimed to increase women’s confidence and technical skills to improve potato productivity, which in turn would contribute to increased household income and women’s access to

independent income earning opportunities. In Year 4, 94 percent of women farmers felt recognized as equal contributors to household income and the same percentage reported improved opportunities to determine how household income is spent. Women who started to cultivate potatoes independently—on their own, with other women, or in LLGs—claimed they were able to keep the profits they earned, which allowed them to make personal purchases, save, and invest. They enjoyed not being dependent on men’s income for everything and being able to support their households, especially in the context of the COVID-19 pandemic that affected families’ livelihoods.

Women’s improved access to income enabled them and their families to invest in economic activities. Women reported that they used profits as a deposit for the next potato season, to lease land for the rice season, to buy goats, and to save for future emergencies. Women’s achievements also influenced broader farming decisions by their families. For instance, when a farmer’s husband saw that she made a profit by growing PepsiCo potatoes on part of their land, he decided that the following year, they would start cultivating PepsiCo potatoes on all of their land. Entrepreneurship and gender norms change training, combined with role modeling from other women, encouraged women to increasingly treat their farming venture as a business and set financial goals and actionable plans to achieve them.

“There is an entrepreneur in every woman”

During the EET, potato farmer and CA Madhumita Porel set a goal to add a story to her home by 2027. To accomplish her goal, she planned to increase the area of PepsiCo potato cultivation from 3 bighas (1.9 acres) to 5 bighas (3.1 acres) by taking a loan from her women’s SHG. She bought two goats right after EET and has now increased her herd to six goats and bought 15 ducklings. She is making a good profit from selling goat and duck meat and duck eggs.

She arranged a training on mushroom culture for her group and plans to take it up as a venture. Madhumita has a plan to reach her dreams and is working hard to follow her plan. “Every woman should be financially independent, and it can be started from the boundary of the home. There is an entrepreneur in every woman.”



Decision-Making Power

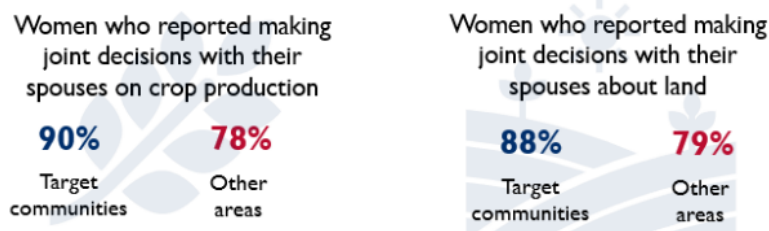
Confidence and knowledge gained, as well as incremental shifts in gender equality perceptions and gender norms, led women in the target communities to report greater joint decision-making in the household, especially related to crop production and use of land (Figure 9). Given women’s limited land ownership, decision-making power over land use is important.

Women felt empowered to contribute to and lead farming decisions that were normally controlled by men. The knowledge and skills gained through agronomy training provided women with the bargaining power to justify their suggestions. Women farmers remarked that before training they merely followed their husband’s instructions, but now they feel increasingly able to speak up and influence decisions that can increase their families’ economic security and protect the environment through the adoption of sustainable farming practices.

“My husband reaches the field early in the morning but waits for my arrival to discuss tasks before initiating them. My son says, ‘My father is a laborer and works under my mother in the field.’”

Purnima Kora, woman farmer and member of a women’s LLG

FIGURE 9. JOINT DECISION-MAKING (YEAR 4)



Acceptance by Family and Community Members

By the end of the project, 85 percent of women said they felt recognized as farmers by their families and communities. Women reported that before the intervention, their husbands and other relatives were skeptical about women’s skills and participation in project activities like agronomy training. Skepticism also came from aggregators, but continued sensitization led them to shift their beliefs and attitudes about women’s role in potato farming. An aggregator noted that even though women have always been involved in farming, women had not farmed independently in his area before the project. Another aggregator claimed he was initially doubtful about involving women in agronomy training, but after seeing results, he now believes women can farm on their own. He added that the success of pilot LLGs could serve as an example for other women who may be inspired to take up group farming. PepsiCo Agronomists and aggregators are influential and trusted actors in farming communities, and their role as champions was crucial to gain support from women’s male relatives, as they answered questions, dissuaded concerns, and role-modeled positive behaviors.

From Skepticism to Support: Azjul’s Journey

Azjul Rahaman, who runs a bicycle business in Moloypur, initially resisted his wife Anwara’s efforts to join a women’s LLG. “I was not comfortable and frankly told her to stay away from this activity. There are clear distinctions practiced by our [Muslim] society regarding what women and men can do, and field farming is not meant for women. How was it possible that women can farm independently?” He was also concerned about how family members might react to her participation. He changed his mind because Rafikul Islam, the local aggregator, took the time to speak with him and explained the LLG concept and how his own wife was joining.



Azjul respected the aggregator and trusted that he would support his wife and her group. After experiencing a successful first season, he became supportive of his wife’s participation in group farming. He also noted that the perceptions of other women in his family have changed after seeing Anwara’s contribution to the household’s income. “Now I leave it to her to continue with group farming in the coming years, provided Rafikul is there; his involvement and support are important to me”, Azjul said, underscoring the importance of engaging male gender champions to drive change.

Outside of their households, in the first years of the project women frequently mentioned receiving negative remarks from community members, often disguised as light-hearted but negative comments and jokes about women’s farming ability. Over the final years of the project though, women reported that such reactions have decreased remarkably or stopped all together. Women attending agronomy training and taking leading roles as demo farmers and CAs have started to change perceptions around women’s role in potato farming. PepsiCo staff have likewise observed this community attitude shift; 65 percent said that men farmers having greater respect for women farmers was a key positive result of the

intervention. Similarly, CAs reported gaining respect from farmers and other stakeholders in the supply chain. Despite initial resistance, they now feel valued by men and women farmers for the technical knowledge they bring. Support from PepsiCo staff helped increase the acceptance of CAs, and they are now referred to as “Pepsi Didi” (a local term of endearment and respect). PepsiCo staff and aggregators have recognized the CAs’ role as pivotal, contributing to increased farmer loyalty; improved communications between PepsiCo staff, aggregators, and farmers; and better data collection. Local agriculture cooperative societies started to approach CAs for their support to reach their members and to strengthen their networks.

“I have been able to prove that I can do this. Initially, my husband doubted my ability to perform this job. It took almost two months for him to acknowledge my efforts. Now I have not only acceptance but respect from other women and men farmers.”

Arati Besra, Community Agronomist

Collective Agency

A final empowerment outcome was strengthening women’s collective agency. The partnership worked in part through women’s SHGs, drawing upon existing strong group dynamics that increase women’s collective bargaining power. Women reported that working in groups increased their ability to negotiate certain aspects of their participation in the potato value chain, including within their households and with key stakeholders like land lessors and aggregators. Moreover, ILRG found that women laborers often work in small groups of five or more at the village level. 71 percent of women reported that the small group labor leader negotiates terms and wages on behalf of the group with PepsiCo farmers.

3.1.2 SHIFTS IN HARMFUL GENDER NORMS

Gender norms are the unwritten or informal rules about what is typical or appropriate in a setting, based on biological sex and/or social perceptions of gender. Gender norms determine how people should or should not behave according to their gender and how people of different genders should interact. Adhering (or failing to adhere) to prevailing gender norms can lead to real or perceived consequences that can be positive (rewards) or negative (sanctions). Not all gender norms are negative, but harmful gender norms can normalize and reinforce gender inequality and limit women’s access to resources and decision-making power. Gender norms are *collective* informal rules that inform and at the same time are informed by *individual* beliefs, attitudes, and behaviors.¹¹ Because of their collective and pervasive nature, changes in gender norms involve a long-term process, and assessing change can be challenging, especially for short-term interventions. Therefore, ILRG assessed shifts in gender norms by using proxy measures at the individual level, particularly changes in perceptions of gender equality and overall adherence to certain norms to determine whether initial “cracks” in established norms were observed. Although ILRG attempted to quantify such shifts as much as possible, most data used was qualitative.

“Gender-focused training helped in understanding the importance of joint decision-making and why it is essential and how husband and wife should work towards a healthy family through proper conflict resolution.”

Arati Besra, woman farmer and Community Agronomist

¹¹ Attitude refers to how an individual evaluates a behavior, idea, object, person, or situation favorably, unfavorably, or neutrally. Belief is a feeling, opinion, assumption, or conviction that a person holds to be true, whether proven or unproven. Behavior is the action or set of actions performed by an individual. Although norms are linked to attitudes, beliefs, and behaviors, they do not always align and can, in fact, be at odds. For instance, a man can have a belief that husbands should share the caregiving of children and has a positive attitude towards it. However, the prevailing norm in his setting is that men do not share caregiving. Worried about potential social sanctions (e.g., ridicule) if he does not conform to the norm, he does not perform the behavior of sharing caregiving with his spouse, despite his individual belief and attitude.

The Pro-WEAI assessment with 300 men and 300 women farmers in treatment and control communities at baseline and endline found positive and statistically significant progress in attitudes towards gender equality in the communities participating in ILRG interventions. The mean scores for gender equality (an index score assessing attitudes towards gender equality across various domains) among women in the treatment group increased from 3.55 to 3.69, while scores for women in the control group remained mostly unchanged. This was validated by ILRG’s pre- and post-season surveys with women farmers in Years 3 and 4. The share of women who believed that women are able to do all kinds of farm work increased from 69 percent at the beginning of Year 3 to 85 percent at the end of Year 4. Agreement with the statement that women are able to lead a farm increased from 62 percent to 95 percent. The share of women who believe that tasks around the household should not be assigned based on gender grew slightly from 57 percent to 63 percent.

Changes in perceptions reflect shifts in individual beliefs and attitudes and do not necessarily translate into shifts in norms. To capture that, as part of the initial gender assessment and the gender norms change training, ILRG identified key gender norms influencing women’s recognition in the potato supply chain, access to productive resources, and decision-making power. Through observation and semi-structured interviews and focus group discussions with men and women farmers, aggregators, and PepsiCo staff, ILRG assessed shifts in the norms identified, finding that emerging and, in some cases, substantial change took place and that different stakeholders in the supply chain attributed such changes to the interventions. A survey with PepsiCo staff found that 84 percent observed positive changes in farming communities due to women’s empowerment activities. Table I lists the key gender norms identified and summarizes the extent to which shifts were observed in each area.

TABLE I. CHANGES IN KEY GENDER NORMS

Norm	How the Norm Manifests	Change Observed
Potato farming is a man’s business	<p>Companies and aggregators traditionally engage with men for contract farming.</p> <p>Companies and farmers consider that women do not have technical knowledge of potato cultivation and are not able to meet the requirements and standards.</p> <p>Women are not invited to training or key events during the potato season (e.g., farmers’ meetings, seed distribution) and are not registered as suppliers in aggregators’ lists.</p>	<p>Several PepsiCo employees and aggregators admitted their initial hesitation in engaging women farmers but gradually exhibited greater confidence in women’s abilities. By Year 4, PepsiCo staff and aggregators recognized women’s abilities to perform on par with men farmers, to adopt proper potato cultivation practices, and to manage farms on par with men’s. PepsiCo agronomists now acknowledge women when visiting the fields and assist them as needed.</p> <p>Upon observing women in their families engaging in PepsiCo farming, young women and girls are becoming more interested in farming as a livelihood. Women started bringing their daughters and daughters-in-law to the field with them to learn and help with farming tasks.¹²</p> <p>Women feel welcome at agronomy training. However, little to no change was observed in women being invited to and participating in key PepsiCo meetings on seed distribution and</p>

¹² In Scheduled Tribe families this distinction is less prevalent because men and women both worked in the fields before the project.

Norm	How the Norm Manifests	Change Observed
		potato price, or being registered as suppliers with their husbands.
Women from middle-class families do not work in the field	Women from rural middle-class families and/or from the general caste do not go to the fields. Instead, they perform farming activities from home, such as seed cutting, storage of agrochemicals, and labor management. Women only work in the field only when men are absent. Women and their family members face taunts and ridicule from the community if they work in the fields.	Most men and women feel that this norm is changing. Women expressed being able to go to the fields, which they had never done before, and attributed this change to both receiving agronomy training and critical mass (more women going to the fields normalizes it and makes it more acceptable). Agronomy training has not only widened women's knowledge but emphasized women's contribution to family farming, whether tasks are performed in the field or from home.
Women are not considered farmers but rather farmers' wives	Women in farming families have always been involved in critical farming tasks from home, even if they do not go to the fields. Despite this active engagement, women do not self-identify as farmers, but rather as the daughters and wives of male farmers. Equally, communities and households do not recognize women as farmers, viewing women's work in agriculture as an extension of household work.	Participants reported a marked shift in women considering themselves as farmers, and many feel recognized as such by others in their household. However, both men and women felt that this change was limited to the families involved in ILRG activities. Even though men and women started acknowledging women's contribution to farming, significant portions of the community still do not believe that women can be considered farmers. Agronomy training has increased women's confidence to proudly voice their identity as farmers, which has created a buzz in society. Women felt that although they recognize themselves as farmers and are proud of their identity, there is still a long way to go to gain broader recognition at the community level.
Women do not have land in their name	<p>The land is always inherited by male descendants. Although the law gives equal rights for women to inherit property from their parents, they are often coerced (explicitly or implicitly) to relinquish their rights.</p> <p>Legal restrictions prevent women from jointly owning purchased land. Although land leasing is legally prohibited for men and women, it is widely practiced informally. However, land lessors do not lease land to women as they believe women are not farmers and lack farming and financial management skills required to earn a good profit, and hence the ability to pay their rent.</p> <p>The land is often transferred to women's names only to access government benefits or avoid taxes.</p>	<p>Very little change was observed in this area. Few women own land independently. Some women jointly own land with their spouses, but this does not give them control over the land. A few families transferred land to the woman's name; however, this was not because of increased awareness of the value of women's land rights, but in order to access government benefits. A few men participating in gender norms training expressed interest in buying or transferring land to their wife's or daughters' names.</p> <p>In terms of land leasing, women's groups were able to negotiate lease terms and rates, with support from aggregators and Landesa. In Muslim communities, landowners were largely unwilling to lease land to women because they feared that the women would not follow the lease terms. In other communities, landowners expressed the opposite view, reporting that</p>

Norm	How the Norm Manifests	Change Observed
	Even then, women do not access or control related income benefits.	they preferred leasing land to women because they keep their commitments.
<p>Men are the breadwinner and head of the household, making all important decisions</p>	<p>Men have the sole burden of providing for the family. Men are humiliated and insulted if they are unable to earn a living to provide for their families.</p> <p>Men make all important decisions related to farming, such as land acquisition/disposal/lease, purchase of inputs, and deployment of labor. Women are not consulted, and even if they are, men have the final decision.</p> <p>Women have limited choice, and often no choice, to work independently. Women do not have control over the money earned from the family farming business. If women earn income independently, in most cases they need spouse approval before spending it. This approval is not required for men.</p> <p>There is a perception that women lack math skills and experience to make financial decisions.</p>	<p>Participants expressed an increasing understanding of women’s role in the economic stability of the household. Men acknowledged women’s income generation potential and how this could benefit the whole family and reduce pressure on men. The majority of men and women consulted said they did not think that providing for the family was the sole responsibility of men. This shift helped build trust among men that gender equality is not limited to women’s rights and created further acceptance of the need to change other harmful gender norms.</p> <p>Recognition of farming as a family enterprise was key to men accepting that women have an equal right to on-farm earnings. Most women farmers reported feeling recognized as contributors to household income and having increased decision-making power over income. Women earning money from potato farming independently (e.g., in LLGs) reported the ability to fully decide how to use their earnings. Families reported shifts in financial management practices, including depositing a share of farm earnings in women’s accounts, consulting each other before making financial decisions, establishing savings accounts in women’s names, etc.</p> <p>Men and women participating in gender norms change training expressed an understanding of the benefits of consultation and joint decision-making and started practicing it in their households. Increased knowledge of farming by women as a result of agronomy training also contributed to this change, raising their credibility within the household. Women’s participation in land leasing and demo farms also increased their credibility, helping them gain experience in financial and operational management. However, higher levels of illiteracy and lower numeracy skills are persistent challenges; many members of farming households and actors in the supply chain still consider women less apt as managers or financial decision-makers.</p>
<p>Unpaid household and caring responsibilities</p>	<p>While men are responsible for financially supporting the household, women are tasked with all unpaid household and caring responsibilities. If</p>	<p>Changes in this norm were observed mainly among families participating in the gender norms training. Most men and women reported that they no longer believe that</p>

Norm	How the Norm Manifests	Change Observed
<p>are the sole responsibility of women</p>	<p>in need of support, women are helped by other women in the family, such as an unmarried daughter or a daughter-in-law.</p> <p>Men rarely take on any responsibility for household tasks or caring work. Men who perform such tasks are subject to ridicule and public humiliation, as are their wives, who are perceived as “bad” wives or mothers.¹³</p>	<p>household tasks are the sole responsibility of women. Women reported that their husbands have started to share household responsibilities. This has given women time to rest and participate in income-generating activities, which was acknowledged by men as a benefit to the whole family.</p> <p>As women took on additional training and farm work, some men and other household members adjusted their schedules and assumed a greater share of unpaid household and caring responsibilities. In more restrictive communities (e.g., Muslim majority communities), women reported more incremental changes in household roles; for example, women would prepare food for the family before they left for the fields, but men would serve themselves. However, changes in household division of labor are not yet observed in all ILRG families or across the target communities more broadly. The percentage of women who report that their partners share household tasks decreased from 59 percent in Year 3 to 44 percent in Year 4. Some men expressed continued resentment that women are committing increased time to farming work and growing more independent.</p>

3.2 BUSINESS RESULTS

3.2.1 POTATO PRODUCTIVITY AND PROFITABILITY

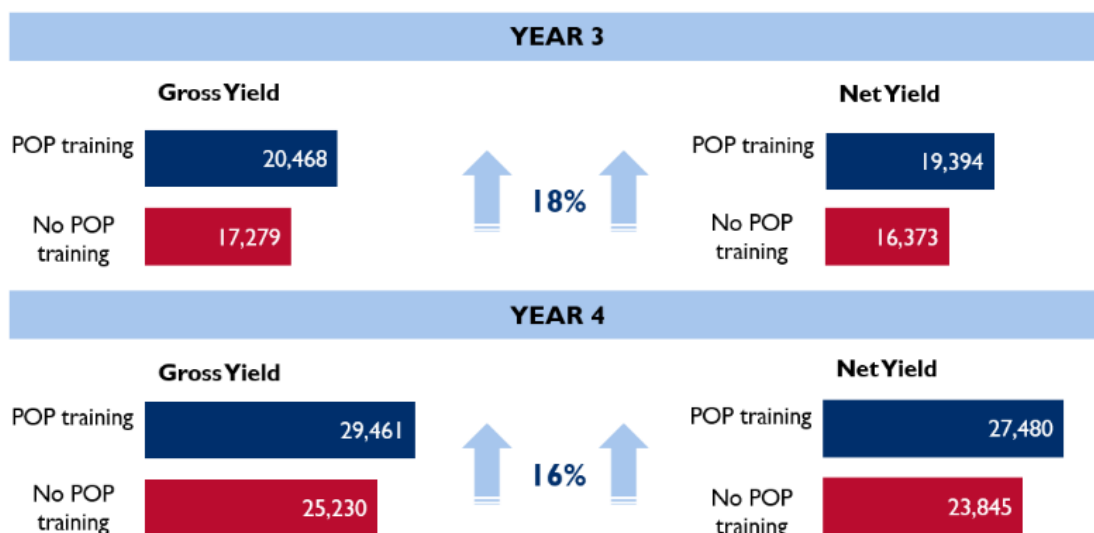
As previously detailed, 97 percent of women applied at least skill gained through training. 98 percent shared this knowledge with others, especially men in their families (98 percent), other women in their households (85 percent), women laborers (71 percent), other women outside their households (63 percent), men laborers (57 percent), and men outside of their household (35 percent). This shows that training women has a multiplier effect for PepsiCo, especially as women who were consulted remarked that after attending training, men often forget what they learned and rarely shared with others in the household.

Women’s application of agronomy knowledge and skills was directly linked to increased potato productivity and quality. According to self-reported yield data, families of women farmers who participated in agronomy training had higher gross and net yields (Figure 10). In Year 4, 84 percent of women farmers reported an increase in their farm yield compared to previous years and 76 percent reported a decrease in rejection rates. This was validated by PepsiCo staff, who considered reduced rejection rates and better yields as the most impactful results of the project. Aggregators reported that

¹³ This scenario was common across all villages, except for Teligram and Harishchandrapur, where there was already a slightly more balanced sharing of unpaid household work, but still not fully equal.

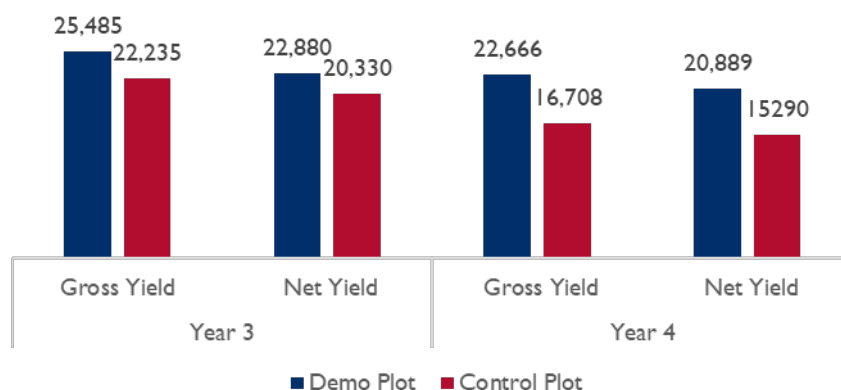
potato grading has become less contentious, and 87 percent of PepsiCo staff said that a key positive change from empowering women was that farmers better understand PepsiCo’s rejection criteria.

FIGURE 10. SELF-REPORTED GROSS AND NET YIELDS (IN KILOGRAMS [KG]/HECTARE)



Results from the women-led demonstration farms also demonstrate the impact of applying the recommended potato agronomy practices. The demonstration plots had consistently better gross and net yields compared to the control plots (Figure 11).

FIGURE 11. DEMONSTRATION FARMS YIELD (YEARS 3 AND 4) (KG/HECTARE)



Improved yields and lower rejection rates directly impacted farming families’ income from potato production. In Year 4, 87 percent of women farmers in the ILRG communities experienced an increase in target income from PepsiCo farming, compared to 62 percent of women in other areas.

3.2.2 ADOPTION OF SUSTAINABLE FARMING PRACTICES

The adoption of sustainable farming practices had mixed results. PepsiCo contractor Control Union conducts annual assessments of SFP compliance with a small sample (approximately 30–40 farming households) in ILRG treatment communities and comparable control households. The results showed that ILRG families performed worse overall in terms of SFP compliance, although there might be methodological issues with data collection and analysis. For instance, out of the 31 sample households in Year 4 in control areas, Control Union was able to visit only 19 (61 percent), so the score could have

been more reliable if all farmers had been assessed. In addition, “awareness generation” among farmers had more weight than the implementation of practices. The overall sustainability sourcing score improved by 170 percent in the target communities but remained low compared to other areas (overall sustainability score of 74 percent versus 77 percent in Year 4). Adoption of foundation sustainable farming practices (management systems and farm profile) in ILRG communities increased from 37 percent in Year 3 to 72 percent in Year 4. The adoption of environmental sustainable farming practices increased from 44 percent in Year 3 to 67 percent in Year 4).

Other evidence showed the benefits of providing women with SFP training. For the women-led demonstration farms, ILRG collected data that Control Union analyzed using the Cool Farm Tool¹⁴ to assess environmental impact. Demonstration plots had lower average emissions: 165 kilograms of carbon dioxide equivalent per metric ton (KgCO₂e/MT) for demo plots compared to 231 KgCO₂e/MT for control plots. Demo plots performed better in the main categories contributing to emissions: fertilizer application (78 KgCO₂e/MT versus 111 KgCO₂e/MT), fertilizer production (58 KgCO₂e/MT versus 76 KgCO₂e/MT), and seed production (19 KgCO₂e/MT versus 33 KgCO₂e/MT).

Trained women have consistently articulated what they learned about sustainable farming and how they changed their cultivation practices as a result, especially in terms of safe use of agrochemicals, safe waste disposal, and soil conservation. CAs also demonstrated initiative and developed farm waste disposal mechanisms with locally available resources and installed 20 waste bins across five communities that encouraged nearby farmers to take active steps for adequate waste disposal.

3.2.3 SUPPLY BASE STABILITY AND GROWTH

ILRG results show emerging evidence that reaching and empowering women can lead to greater stability and growth of the PepsiCo supply base in West Bengal. This is particularly important for the company because every year smallholder farmers decide whether and how much PepsiCo potatoes to cultivate compared to other potato varieties. Aggregator and PepsiCo data showed that overall, farmer participation has increased over the past four years. The total number of men farmers grew by eight percent annually in the target areas between 2019 and 2023. The number of women farmers increased by 22 percent annually during the same period, revealing that more women are motivated to cultivate PepsiCo potatoes. However, the representation of women farmers in PepsiCo’s official supplier lists remains low (2.1 percent in 2023) compared to men farmers (97.9 percent) and has increased only marginally from 2019 (1.8 percent). Structural barriers still exist that prevent women from entering PepsiCo’s supply chain as official suppliers, including land ownership requirements and the practice of listing one supplier name per household (often by default a man).

“In the beginning, there were two or three women farmers who took it [PepsiCo potato farming] up because of the death of their husbands but now the number has increased to 30 out of 400 registered farmers.”

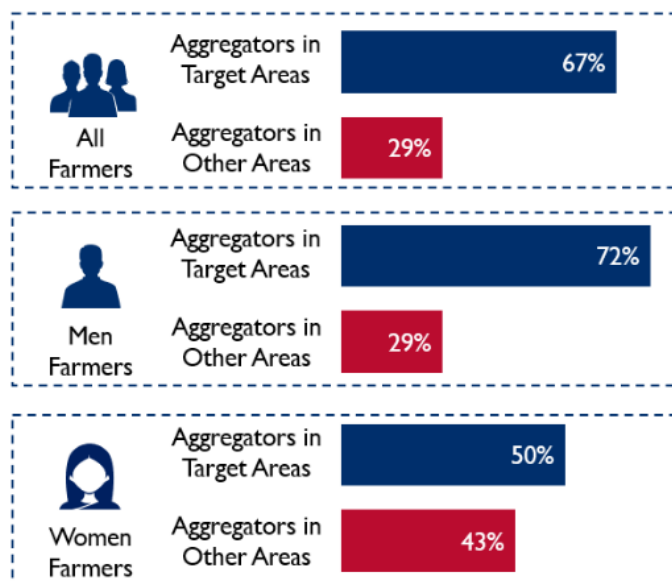
Shyamal Pal, aggregator in Bailitha

Supplier lists are one indicator of supply base expansion, but not the complete story. Aggregators often have a broader view of the farmer base they source potatoes from, regardless of whose name is officially listed on supplier lists, which include members of PepsiCo farming households, day laborers, and other farmers who informally sell to aggregators. Self-reported data from a sample of aggregators show that across the board, aggregators have seen their farmer base increase in recent years. This could be due to the COVID-19 pandemic, when more men who normally engage in circular migration to cities stayed home and farmed. ILRG data suggests that a higher portion of aggregators in ILRG treatment areas observed an increase in the farmer base compared to other areas, which qualitative data suggests was

¹⁴ The Cool Farm Tool (CFT) is an online calculator that enables farmers and companies to measure farm-level greenhouse gas (GHG) emissions. The CFT expresses all GHG emissions in Kg/CO₂e, which is a global metric used to compare the emissions from various greenhouse gasses based on their global-warming potential (GWP).

due to increased engagement with women farmers through ILRG activities (Figure 12). Overall, more rigorous data collection is needed to accurately gauge the impact of ILRG activities on both the formal and informal PepsiCo supply base.

FIGURE 12. AGGREGATORS REPORTING AN INCREASE IN THEIR FARMER BASE (YEAR 4)



The findings suggest that women have the potential to be a driving force in the stability and growth of PepsiCo’s supply base. The share of women farmers who recommended cultivating PepsiCo potatoes to others increased from 70 percent in Year 3 to 91 percent in Year 4, demonstrating growing confidence in and satisfaction with the PepsiCo business model. Out of the women who recommended PepsiCo farming to others in Year 3, 74 percent confirmed that the people they recommended it to in fact joined the supply chain the following year.

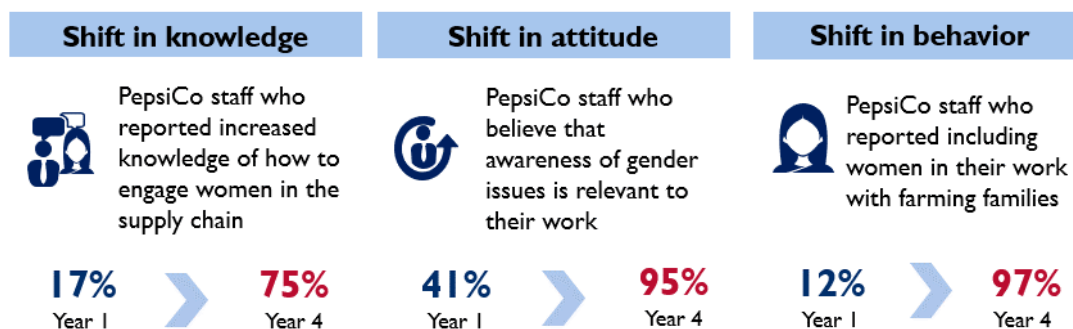
Another benefit of better engagement with women farmers was that it allowed PepsiCo to gain insight into the reasons women opt to cultivate PepsiCo potatoes. These reasons include fixed purchase price (90 percent of women), provision of seeds in advance (88 percent), availability of training and support (81 percent), opportunity for good profit (73 percent), and opportunity to engage with a large, known company (67 percent). These factors speak directly to women’s specific needs, including a preference for lower risk and a lower need for initial investment (as potato seeds are provided in advance on credit). The price for other varieties of potatoes (table potatoes) fluctuates from season to season and during the same season, depending on supply and demand. Although this can lead to a higher profit than PepsiCo potatoes, it can also lead to losses depending on the market conditions. Several women reported influencing their household to grow more PepsiCo potatoes due to the fixed price. Indeed, 57 percent of women farmers surveyed by ILRG in Year 3 said that they intend to continue growing PepsiCo potatoes even if the price for other potato varieties is higher. This was validated by 69 percent of PepsiCo staff who considered greater farmer loyalty as one of the most positive results of empowering women.

3.2.4 PEPSICO CAPACITY, RELATIONSHIP WITH FARMERS, AND SUSTAINABILITY

As a result of different training and ongoing mentorship and support provided by ILRG, PepsiCo staff became better equipped to engage women farmers, with 88 percent reporting in Year 4 that they felt comfortable providing agronomy training to women farmers independently and 96 percent reporting improved gender knowledge and skills. Baseline and endline data revealed important shifts in their

knowledge, attitudes, and behaviors (Figure 13). PepsiCo staff also expressed increased buy-in for the business case for women’s empowerment. At the end of the project, 76 percent of PepsiCo staff agreed that women’s participation adds value to the business and 84 percent said they observed positive changes in farming communities or PepsiCo’s business metrics that they attribute to women’s empowerment activities.

FIGURE 13. CHANGES IN PEPSICO STAFF KNOWLEDGE, ATTITUDES, AND BEHAVIORS



Before the USAID–PepsiCo partnership, PepsiCo agronomists and aggregators did not actively reach out to women in farming households. In Year 1, 89 percent of PepsiCo staff stated they did not exclude anyone from participating in PepsiCo work based on gender, but all said they did not organize as many PepsiCo meetings with women as with men. Now, the percentage of PepsiCo staff who report actively including women in their routine work grew to 97 percent in Year 4. This represents staff understating the importance of moving from a “gender-neutral” approach to a “gender-responsive” approach, i.e., moving from a perceived position of “all are welcome” to intentionally engaging women and addressing the barriers they face to participate in the supply chain. Aggregators also reported observing improved and more frequent interaction between PepsiCo staff and women farmers. PepsiCo staff also claimed that they have started to consciously refer to women as “women farmers,” and not “wives of farmers.”

The previous lack of intentional targeting by PepsiCo staff was highlighted by women. For instance, women farmers mentioned feeling overlooked in the past when PepsiCo took men farmers to the nearby factory to show them how the potato chips were produced; women were not invited. They also said there were women who had cultivated PepsiCo potatoes for 10 years but had never received any training before, noting that PepsiCo Agronomists only worked with men in farming families. Now women report feeling seen as part of supply chain; receiving training has increased their appreciation for the overall support PepsiCo provides to farmers. Alhadi Mandi, a woman farmer from Dhuluk, observed this shift firsthand. “Earlier the PepsiCo Agronomist never used to recognize us, but now whenever we meet him, he asks us [women] about our work.” This change has improved PepsiCo’s image in farming communities, which can positively influence farmer loyalty. By the end of the project, 99 percent of women farmers said they have a positive opinion of PepsiCo, and 84 percent said members of their community have a positive opinion of PepsiCo.

There have been critical changes in institutional practices since the program began, including PepsiCo’s interest in sustaining and expanding women’s empowerment activities. In 2021, PepsiCo and USAID launched a Global Development Alliance (GDA) to promote women’s empowerment in five countries, including another Indian state, Uttar Pradesh. ILRG collaborated closely with the GDA global and India teams, sharing approaches, tools, and lessons learned. When the partnership in West Bengal started, PepsiCo had no women agronomists working in the field, although women agronomists had been hired in India in the past. In October 2020 PepsiCo hired three new women agronomists and in 2022 another three SFP agronomists, who delivered POP training independently to women farmers in Year 4. ILRG provided support to onboard these new hires, including training on gender equality, women’s

empowerment, and participatory training approaches. Coupled with the shifts in male staff's attitudes and behavior detailed above, this points to an initial positive change in company buy-in and support for gender equality.

At the end of Year 4, ILRG consulted West Bengal PepsiCo staff about sustainability and necessary changes in institutional practices. Over 84 percent considered it important or very important for PepsiCo to continue women's empowerment activities in the area. They reported that continued women's empowerment work would positively impact PepsiCo's rejection rates (92 percent), SFP compliance (76 percent), farmer loyalty (76 percent), brand image (64 percent), yields (64 percent), and supply base stability (60 percent). Despite this positive outlook, PepsiCo staff raised concerns about the impact of continuing women's empowerment activities on their already heavy workloads. Indeed, 76 percent of PepsiCo staff said that a dedicated team to manage women's empowerment activities was the most important thing for project sustainability, followed by continued capacity strengthening for staff (68 percent), improved gender balance in PepsiCo personnel (68 percent), incentives for aggregators to buy from women farmers (64 percent), and a clear mandate and specific budget (64 percent).

“Benefits of involving women farmers have been acknowledged by Area Managers, who have realized that the program is adding positive value for the company. A significant change has been seen in the approach of employees at the leadership as well, as they have accepted that involving women farmers is necessary to create lasting impact.”

Prabal Ray, PepsiCo Area Manager

These points were further discussed during the project's final event in West Bengal in May 2023, when representatives from USAID, PepsiCo Global, PepsiCo India and West Bengal, ILRG, and the GDA discussed the project's main outcomes and pathways for sustainability. PepsiCo committed to directly onboard most of ILRG's local staff to continue and expand interventions in West Bengal and closely collaborate with the GDA team in Uttar Pradesh. This next phase of women's empowerment activities will focus on the areas of ILRG's work that PepsiCo staff considered most impactful to business metrics: agronomy training for women farmers, women CAs (engaged through aggregators), land literacy orientation for men and women farmers, and a simplified gender awareness (including gender norms) training for men and women farmers.

4.0 CHALLENGES AND LESSONS LEARNED

The project was implemented from 2019 to 2023 and as such heavily affected by the COVID-19 pandemic. Several activities were interrupted or repeatedly delayed, and some had to be adapted for smaller groups, leading to fewer people reached than originally planned. Other external factors affected not only project activities but the broader agricultural sector in West Bengal, including potato disease in Year 1, farmers' protests in Year 2, state elections in Year 2, and devastating floods in Year 3. These factors affected farmers' livelihoods and understandably their ability to participate in project activities. Key lessons from these challenges were the importance of flexibility, adaptability, and building strong relationships between the project team, farmers, and other stakeholders.

In general, community members were initially reluctant to engage with ILRG staff and skeptical of the deliberate effort to target women for agronomy training. This was particularly prevalent in communities where women do not normally work in the fields or enjoy less physical and social mobility. Over time though, the team gained trust and buy-in from key champions, and communities became receptive to women's empowerment activities. Repeated sensitization, the development of trust through the presence of CAs, and PepsiCo agronomists and aggregators acting as male champions were critical for success. However, initial resistance persisted in one of the initially targeted communities, and despite repeated sensitization efforts, work in the community was discontinued.

Shifting harmful gender norms is critical to empower women in agricultural value chains, helping to improve the enabling environment and to sustain the impacts of interventions to increase women's access to productive resources. Both approaches implemented under ILRG, GALS and Nurturing Connections, have merits and drawbacks to facilitate shifts in harmful gender norms. Both were participatory and allowed participants to identify harmful norms and pathways for change themselves, increasing ownership. However, both approaches were time and resource-intensive, and a small number of families could be reached at a time, limiting impact at scale. PepsiCo can continue and establish new partnerships with international, governmental, and non-governmental institutions (through corporate streams or through the PepsiCo Foundation), to implement norms shifting interventions with its farmers. An alternative approach would be PepsiCo directly implementing a more streamlined and less resource-intensive approach to gender training, aligned with social behavior change communication strategies. Future PepsiCo activities on women's empowerment could adapt gender norms change activities within a broader gender sensitization module for men and women and include some of the life skills components from the Nurturing Connections curriculum into agronomy training, especially active listening, effective communication, assertiveness, negotiation, and decision-making. GALS vision-building exercises could be integrated into agronomy or other training to help women and men see farming as a shared enterprise and collectively set household goals.

PepsiCo agronomists also identified prevailing gender norms and concerns about men engaging with women farmers as a key challenge. Men agronomists strongly felt that women attended ILRG training because of the presence of women Community and Field Agronomists engaged by the program. Men agronomists still have some concerns and reservations about reaching out to train women farmers on their own, unless and until it is organized through cooperatives and facilitated by women. As previously mentioned, PepsiCo recently hired six women agronomists for field engagement in West Bengal, although they are facing some challenges. Farm visits are usually organized around farmers' schedules, and most women farmers prefer evening training sessions, which makes it harder for women agronomists to facilitate, due to travel safety concerns, gender norms about women's social mobility, and their need to attend to their own household responsibilities in the evenings. In addition to recruiting and adequately supporting more women in farmer-facing positions like agronomists, another powerful pathway to reach women farmers and shift restrictive gender norms in farming communities is to engage CAs. One of the pilot's main successes was engaging women CAs who increased outreach to women,

served as role models, and strengthened PepsiCo's positive image in farming communities. Incentivizing aggregators to engage women CAs can help PepsiCo expand and maximize this approach.

Women's time poverty was a major challenge for training engagement, since women hold a disproportionate share of unpaid care and household responsibilities in the target areas (and globally). Women farmers struggled to balance domestic obligations, training attendance, and farming responsibilities. These multiple time demands may make independent farming impractical or harder for most women, but group farming can offer an alternative, allowing women to take turns managing the various farm tasks required. Women working together also offers a powerful pathway to shift social norms and perceptions of what women can and should be doing, including working in fields, communicating with outsiders, and negotiating with service providers. Targeting women in group settings for training and support can also make male PepsiCo staff more at ease in light of strict gender norms regulating interactions between men and women.

Despite their time poverty, women said that more training would be helpful for them, and they would strive to make time for it. They felt that training allowed them to gain knowledge and share their experiences, serving as an incentive for them to persevere amidst challenges and pushback. Women remarked that training was focused on agronomy, but they would like guidance and group exchanges on how to navigate issues related to gender inequality, especially within the household. This underscores the importance of more widespread gender awareness training, especially since the gender norms change training only reached a small portion of farmers in target communities. In addition, given their time poverty and limited literacy, women said they would appreciate support setting up home-based enterprises.

Other challenges remain for women in the potato supply chain. Despite the remarkable change in their recognition as farmers, they still face barriers to owning land and are a small percentage of farmers officially registered in aggregators' lists. They also remain largely excluded from influential positions, be it within PepsiCo or as aggregators. Aggregators need not only farming skills, but the ability to mobilize farmers to join the supply chain, good interpersonal and communication skills, and financial integrity. The initial investment needed, the lack of acceptance by families and communities, competing household responsibilities, and pervasive gender norms are deterrents for women to take on this role in the supply chain. Nonetheless, several women that have engaged with ILRG over the past two years have these attributes that could be fostered with additional training and mentorship. In addition, because of gender norms that regulate men-women interactions, women are in a unique position to reach out to other women farmers. Targeted investment in women to become aggregators could be highly transformational in the supply chain, as well as changing requirements that can exclude women, such as attaching land ownership to inclusion in official suppliers' lists.

At the strategic level, commitment to women's empowerment by PepsiCo global signaled to local PepsiCo staff that engaging with women and supporting women farmers was a company priority. However, gaining buy-in and ownership from the local team was a longer process. At times, local PepsiCo staff informally expressed they felt this initiative was imposed top-down and they needed to see the improvements in core business metrics to be convinced of its importance. Over time, local PepsiCo teams agreed that women's empowerment was important not only as a social justice issue but for the business as well. However, staff were concerned about how a focus on women's empowerment would add to their already heavy workloads and expressed the need for external expertise to support implementation. This underscores the importance of aligning global and local expectations and needs, as well as adopting a sustainable implementation model from the beginning.

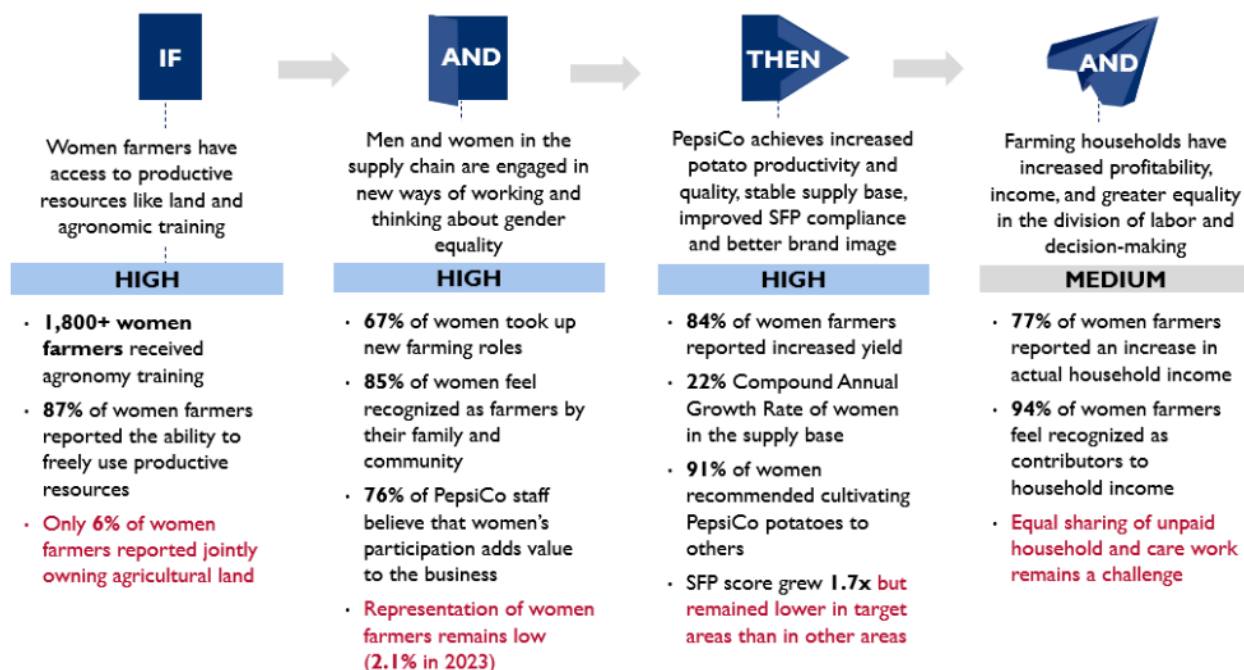
Finally, measuring impact and particularly the business case, was challenging. There were challenges obtaining data on farmers' yields from PepsiCo, and ILRG had to rely on self-reported data from farmers. Historical data for intervention and control groups on business metrics like yields, rejection

rates, and profitability would have enabled a better analysis of the impact of the intervention, allowing the project team to compare whether farming families in the target communities fared better or worse than control families. Finally, the very concept of what constitutes the business case evolved and expanded over time to capture primary metrics like yields and indirect metrics like supply base strength and brand image. Attaining expressive increases in potato yields was a challenge in West Bengal, as PepsiCo local staff acknowledged that the productivity is already close to maximum in the area. Other pressing business challenges remain for PepsiCo though, especially maintaining a stable and growing supply base. In addition to helping PepsiCo understand what motivates farmers to cultivate PepsiCo potatoes, the pilot helped the company identify gaps in its data collection systems and farmer outreach strategies, providing opportunities for institutional shifts that can expand women's participation as a pathway for supply base growth.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The USAID–PepsiCo partnership in West Bengal aimed to demonstrate that increasing women’s engagement and empowerment in the potato supply chain would increase business performance, benefiting women, their families, communities, and PepsiCo. The women’s empowerment and business results discussed above demonstrate that there is a business case for promoting women’s empowerment in PepsiCo’s potato supply chain in West Bengal and potentially in other markets with a similar supplier model. The results show high achievement for most elements of the theory of change (significant achievement on most indicators) and medium achievement in one element (partial achievement on indicators).

FIGURE 14. THEORY OF CHANGE RESULTS



However, certain areas require either improvement or better data points for future and continued assessment, especially considering the challenges experienced during implementation and the short time frame of the project. These areas include early alignment on business case elements and sustainability of interventions; strengthening women’s ownership, access to, and control over land; promoting equitable work sharing at the household level; increasing women’s representation in the entire supply chain (as suppliers, aggregators, and PepsiCo staff); and setting up efficient data monitoring and governance processes. The key recommendations for PepsiCo’s continued efforts to empower women in its supply chains and for future public-private partnerships on women’s empowerment are summarized below:

5.1 RECOMMENDATIONS AT THE PROGRAM DELIVERY LEVEL

5.1.1 SENSITIZATION, MOBILIZATION, AND TRAINING DELIVERY

- Leverage multi-channel training mobilization (e.g., posters, videos, door-to-door outreach) through the support of aggregators (or other supply chain intermediaries), CAs, and PepsiCo field staff so women and men farmers see the value and importance of initiatives as validated by high-influence stakeholders.

- Engage men as champions to increase support for women's participation in activities, recognition of women's engagement as profitable, and recognition of women as not just laborers and producers, but also as potential aggregators, agronomy specialists, and leaders. Identify community champions to achieve higher participation of men farmers.
- Tailor POP and SFP training to the roles women have in potato production and focus on harder to change, or "sticky" areas of SFP compliance, where women farmers noted they needed additional support to apply new practices (e.g., seed preparation, safe home storage of agrochemicals, soil fertility, and manure management, promoting the use of PPE, recordkeeping, crop residue management, and use as animal feed).
- Streamline and simplify gender norms training as a broader gender sensitization approach for men and women farmers.
- Integrate life skills components into agronomy training, especially on active listening, effective communication, assertiveness, negotiation, and decision-making skills. Integrate a vision-building exercise during agronomy or other training, as this helps farmers perceive family farming as a business and allows men and women to work together towards common goals.
- Always consult men and women farmers about the best venue, date, and time for training, identifying and addressing potential practical and social barriers.
- Optimize the time availability for training through hybrid delivery of training, using text messages and other media such as TV to reach farmers.

5.1.2 PEPSICO CAPACITY AND INTERNAL PRACTICES

- Revise potentially exclusionary criteria for farmers to join the supply chain, such as land ownership, to promote greater participation of women in the farmer base.
- Promote and support women taking up farmer-facing and management roles, including by setting minimum quotas for women.
- Revise job descriptions and advertisements to reach more women candidates.
- Continue to strengthen local PepsiCo's staff capacity on gender equality and women's empowerment, developing a gender core competency training program and creating mechanisms for staff to exchange experiences (e.g., community of practice or another platform).
- Provide tailored support for PepsiCo women agronomists, assessing the main challenges they face and developing appropriate solutions.
- As agronomists have heavy workloads, adapt job descriptions and Key Performance Indicators to include WEE components to act as a monitoring and incentive structure to increase engagement with women.
- Establish incentives and recognition for aggregators to work with women farmers, both as suppliers and by engaging women CAs to increase outreach to women.

5.1.3 MONITORING, EVALUATION, AND ADAPTIVE MANAGEMENT

- Deploy rigorous data collection and analysis within PepsiCo to inform ongoing activity modification and better track their impact on business outcomes.
- Develop an impact-aligned branding strategy to highlight the "double bottom line" impact of sourcing from women farmers.
- Ensure targeted delivery of agronomy training, including SFP practices, through rigorous data collection and monitoring to assess on-farm implementation.
- Support PepsiCo data collection on women's participation in the supply chain.

5.2 RECOMMENDATIONS AT THE STRATEGIC AND PARTNERSHIP LEVELS

- Identify key barriers to women’s supply chain participation in each context and levers to overcome them. For instance, identify key productive resources women cannot access and control and key harmful gender norms, with corresponding approaches to address them.
- When working with multinational companies, make sure that buy-in at the global level translates into buy-in from local company teams, so they have the motivation and ownership needed to implement women’s empowerment activities.
- Weight early on the pros and cons of different approaches to delivering women’s empowerment activities:
 - Separate team: A distinct team is responsible for delivering women’s empowerment activities, working in collaboration with but separately from the company’s team (the ILRG model in West Bengal).
 - Embedded team: The team implementing women’s empowerment activities is part of the company’s workforce, reporting directly to company management structures. This could be done by attributing additional responsibilities to existing staff or by recruiting new positions with a discrete responsibility over women’s empowerment activities.
- Define early, revisit, and refine what the “business success” looks like for women’s empowerment, including what is expected from women in the supply chain, the changes in the business performance envisioned, and tangible and intangible elements of the business case.
- Develop a long-term and medium-term vision and road map, with the resources necessary (human and financial) and specific roles and responsibilities to sustain and scale women’s empowerment activities.

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