IMPACT ASSESSMENT

of Focused Development Program (FDP) P0364

of HDFC Bank CSR

Project Location: Jharkhand

NGO Partner: KGVK

Submitted By:

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EXECUTIVE SUMMARY

ABOUT THE FDP: The Focused Development Program (FDP) P0364 aimed to enhance the livelihoods of rural villagers by promoting sustainable farming practices and encouraging an entrepreneurial mindset. Titled as 'Green-preneurship Promotion Project through Skill and Entrepreneurship Development programme the project aimed to create an enabling learning environment, and to develop employability (self/wage) among rural youths/ farmers/ women by sharpening the existing skills and knowledge to sustain in existing market. The project's primary focus was on providing training in green trades. To achieve the objectives, the program provided training in five key areas: improved cultivation methods, animal husbandry, high-value crops, zero-budget farming, and skill/ entrepreneurial development. The project was implemented between April 2022 and March 2023 by KGVK (primary partner) and other NGOs.

ABOUT THE IMPACT ASSESSMENT: The present study was commissioned by HDFC Bank CSR to conduct an Impact Assessment of FDP project P0364 in Jharkhand. The objective of the Assessment was to provide estimates on impact indicators in key domain areas along with evaluation of the efficacy, effectiveness of the project interventions and sustainability of the project's outcomes., The Assessment followed a cross-sectional study design with a cluster sampling approach incorporating both quantitative and qualitative methods of data collection. For the purpose of the Assessment, data was collected from the sampled districts of Ranchi, Ramgarh, Hazaribagh, and Khunti. Quantitative data was collected from 512 beneficiaries (against the target of 500) using structured questionnaires designed to assess key impact indicators. Qualitative data collection methods included 7 focus group discussions (FGDs), 7 key informant interviews (KIIs), and 3 case studies, aimed at gathering perspectives from farmers, women, youth, and program staff to supplement the quantitative findings. Data collection was conducted between August 23 and September 2, 2024The study applied the OECD DAC framework to evaluate the project's relevance, coherence, efficiency, effectiveness, and sustainability, ensuring a thorough assessment of its overall impact.

KEY FINDINGS

Relevance

To ensure relevance of the trainings**,** the implementing NGOs collaborated with village-level institutions like Village Development Committees (VDCs) and panchayat members to identify suitable participants. To assess entrepreneurial potential, a psychometric test developed by the AD Patel Institute of Technology in Gujarat was administered. Individuals with strong entrepreneurial capacities were selected for training that aligned with emerging agricultural trends and market demands. The quantitative data revealed that the training effectively met participants' occupational goals. Specifically, 47 percent of beneficiaries rated the training as "Highly Relevant" and 35 percent as "Relevant," indicating the programs were well-designed to meet their practical needs. Furthermore, 86 percent of participants found the training content "Very Clear," and over two-thirds (70%) of beneficiaries found the buyer-seller meet useful for their entrepreneurial activities, highlighting the intervention's alignment with their goals.

Effectiveness

The training was well-received, with 97 percent of participants finding it timely and organized, and 84 percent affirming that their questions were effectively addressed. Qualitative feedback supported the positive impact, with beneficiaries successfully adopting sustainable livelihood options and applying the knowledge to new income-generating activities.

The training programs had a considerable impact on participants' livelihoods, with 76 percent of beneficiaries reporting that they either found employment or started their own enterprise post-training. Success stories include a solar equipment repair shop opened by a trainee in alternative energy, and reduced costs for youth groups involved in piggery. The buyer-seller meetings organized by KGVK provided

Beneficiaries who are currently practicing in the respective training areas

Training	Beneficiaries currently practicing
Strawberry Cultivation	67%
Mushroom Cultivation	55 %
Small Vegetable Farming	69%
Floriculture	12%
Commercial Business Vermicomposting	49%
Animal Husbandry	64%
Fishery	56%
Pearl Farming	9%
Lac Bangles and Decorative Art Making	7%
Sticky Trap	30%
Food Processing	11%
Alternate Energy	15%
Pashu Mitra	20%

market exposure and were supported by marketing and negotiation trainings, further helping beneficiaries secure better prices for their produce. These initiatives collectively fostered self-reliance and empowered individuals to sustain their livelihoods.

The table alongside highlights the proportion of beneficiaries who applied their training and are currently practicing in the respective areas of training. Small Vegetable Farming had the highest adoption at 69 percent, followed by Strawberry Cultivation (67%) and Animal Husbandry (64%). Fishery and Mushroom Cultivation were also widely practiced, with 56 percent and 55 percent participation, respectively. Conversely, Pearl Farming (9%), Lac Bangles and Decorative Art Making (7%), and Food Processing (11%) saw the lowest uptake.

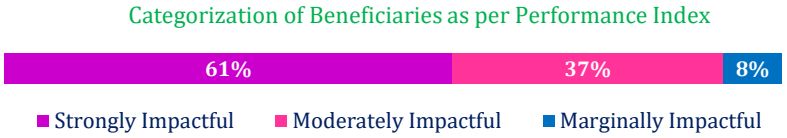
Despite gaining new skills, 41 percent of beneficiaries were unable to apply them. Of this group, 58 percent pointed to a lack of investment as the main barrier, with limited opportunities and other factors also contributing to the challenge.

Impact

The training program not only enhanced skills but also had additional positive impacts, including boosting confidence, with 85 percent of participants feeling confident in applying what they learned. Around 60 percent of the participants reported having fully or partially applied their skills, leading to tangible outcomes such as increased income, new enterprises, improved product quality, and enhanced productivity.

Performance Index

A performance index was created to evaluate the impact of the training, categorizing beneficiaries into three groups based on their aggregate scores from 14 key questions: “Strongly Impactful” (0-3.5), “Moderately Impactful” (3.51-6.50), and “Marginally Impactful” (6.51-9.51The questions in the impact index were mainly aimed at assessing the effectiveness and relevance of the training program, as well as its impact on enterprise development. These questions assessed the timeliness, organization, and clarity of the sessions, along with the trainer's ability to address participants' concerns. They also gauged how much the training has enhanced participants' skills and knowledge, its relevance to their occupation, and the likelihood of applying the practices learned. Follow-up support, overall satisfaction, and participants' ability to implement the knowledge in their livelihood activities, including income generation and market access, are also explored. The figure below suggests that 61 percent of beneficiaries fell into the Strongly Impactful category, 37 percent were Moderately Impactful, and only 2 percent were Marginally Impactful, demonstrating the overall success of the training programs and their positive impact on majority participants.



Women's Empowerment

The project had a notable impact on women, many of whom formed Self-Help Groups (SHGs) and engaged in activities like food processing, jam-making, and mushroom cultivation. Women reported increased financial independence, with several indicating they could now contribute to household expenses without relying on their husbands.

The empowerment extended to decision-making, as women began selling their products independently in local markets, supported by marketing training provided during the project.

Coherence

The project demonstrated strong coherence by aligning its training program with broader environmental and social goals, particularly through its focus on sustainability. About 92 percent of beneficiaries acknowledged that the training emphasized eco-friendly practices, highlighting the importance of sustainable methods. Additionally, the program collaborated with partners like the Agriculture Technology Management Agency (ATMA) and Nilambar Pitambar University to implement government schemes for horticulture and soil conservation, and facilitated connections with banks to help beneficiaries secure funding, further supporting sustainable enterprise development.

Sustainability

The project aimed to empower beneficiaries to sustainably apply the skills, practices, and knowledge acquired from training programs in a manner that is economically viable, environmentally responsible, and socially beneficial over the long term.

Long-term Viability

The outlook for continued use of training practices is promising, with 92 percent of beneficiaries intending to adopt the skills learned, indicating strong commitment to sustainability. Trainings like strawberry cultivation, mushroom farming, and multi-layer farming were found to be giving better results, while sectors such as Floriculture, Pearl farming and Lac bangles faced challenges related to long term viability.

Knowledge Transfer

Having received the training, nearly half (48%) of beneficiaries felt fully equipped to contribute to sustainable community development, with an additional 23 percent feeling largely prepared. This knowledge transfer led to shifts in farming practices, with many beneficiaries transitioning to commercial crop cultivation. Observing these positive changes, others in the community, including younger individuals, chose to remain and engage in local agriculture rather than migrating for jobs.

Environmental Sustainability

Training programs introduced environmentally friendly practices, including solar energy use, organic farming (earthworm manure, fish tonic, homemade pesticides), and sustainable livestock management. Safety measures and eco-friendly practices were also emphasized, particularly in lac bangle production. Broader lessons on environmental stewardship, such as tree planting, were well-received by beneficiaries, who expressed their intent to integrate these sustainable practices.

CONCLUSION

The Green-preneurship Promotion Project successfully enhanced the livelihoods of rural beneficiaries, particularly through increased agricultural productivity and women's empowerment. The project's focus on green entrepreneurship has demonstrated its potential to create economic resilience and environmental stewardship in rural communities, providing a model for future initiatives in rural development and sustainable practices.

However, sustainability challenges were observed for some of the areas, hindering their potential to become viable livelihood options. For instance, in pearl farming, the high cost of raw materials has proven to be a dominant barrier for many beneficiaries, making it difficult to scale operations. Similarly, the production of lac bangles has faced logistical and financial challenges, as raw materials often have to be sourced from distant locations, increasing costs and complicating access. Furthermore, very few individuals are actively practicing floriculture, limiting its impact despite its potential as a sustainable livelihood option. Addressing these challenges demands stronger support systems, including optimized supply chains, financial aid, and locally accessible resources, to ensure the long-term success of green entrepreneurship ventures.

RECOMMENDATIONS

Few key recommendations emanate from the assessment so conducted.

To ensure the long-term success and sustainability of niche trade training programs, following key strategies are recommended to address market, financial, and operational challenges faced by beneficiaries:

- **Market Viability Assessment for Uncommon Trades**: Conduct assessments of demand, competition, and scalability before launching training programs in niche trades like lac bangle production, floriculture, and pearl farming.
- **Access to Capital**: Strengthen partnerships with financial institutions to provide low-interest loans or grants, helping beneficiaries overcome investment barriers.
- **Digital and Mobile Learning**: Leverage digital tools for continuous support and offer mobile learning modules to reinforce skills learned during training.
- **Market Linkages and Skill Development**: Establish buyer-seller networks, offer marketing and negotiation training, and provide refresher or advanced courses to keep beneficiaries competitive.
- **Sustainability and Scaling**: Align programs with government schemes for access to subsidies and encourage the formation of cooperatives or SHGs to help scale ventures and share resources.
- **Post Training Assistance**: Selected participants or community members can be developed into local trainers or "champions," who will offer mentorship and support, thus cultivating a self-reliant knowledge network. In addition, making essential tools and resources affordable will empower individuals to effectively put their newly acquired skills into practice.

INTRODUCTION

Chapter 1

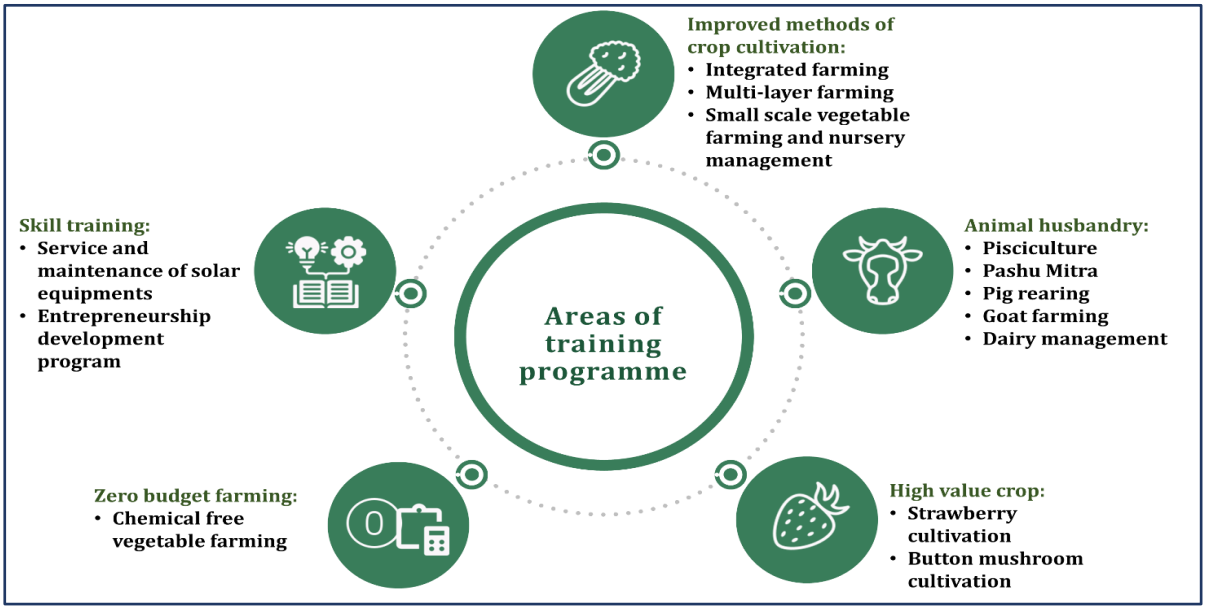
HDFC Bank undertakes its Corporate Social Responsibility (CSR) initiatives under the banner of 'Parivartan', a comprehensive program aimed at addressing key developmental challenges in India. Parivartan emphasizes the upliftment of communities, enabling them to transition from poverty to growth through interventions in various focus areas such as education, rural development, skill enhancement, livelihood improvement, healthcare, and financial literacy. These initiatives strive to empower communities in a sustainable manner, contributing to the country's social and economic development.

Among Parivartan's several impactful programs is the Focused Development Program (FDP), which partners with organizations possessing expertise in critical development areas to improve the well-being of targeted beneficiaries. One such project is the FDP P0364, titled 'Green-preneurship Promotion Project through Skill and Entrepreneurship Development'. Implemented between April 2022 and March 2023 in Jharkhand by KGVK in Ramgarh & Hajaribagh district, NBJK in Ranchi district and Needs in Khunti district, this project aimed to promote sustainable livelihoods through training in green trades, focusing on improved agricultural practices, animal husbandry, and entrepreneurial skills.

The primary goal of this project was to create an enabling environment for rural youth, women, and farmers to build employability—either through self-employment or wage-based work—by enhancing their knowledge and skills in green sectors. This project also sought to foster rural entrepreneurship by promoting sustainable practices that would benefit both the community and the environment. The program interventions included training in improved cultivation methods, high-value crops, zero-budget natural farming, and animal husbandry (Figure 1.1), providing a comprehensive skill set to the beneficiaries.

The objective of this Impact Assessment report is to evaluate the outcomes of project P0364, particularly the impact of training on green trades, focusing on key stakeholders including farmers, youth, and women in the project regions of Ranchi, Ramgarh, Hazaribagh, and Khunti. This study employed both quantitative and qualitative research methods to evaluate the relevance, effectiveness, impact of the project interventions, the degree of knowledge adoption, and the sustainability of outcomes. Through this research, the project's contribution to rural development and its potential for long-term empowerment were closely examined.

Figure 1.1 Major Areas of Training



STUDY METHODOLOGY

Chapter 2

This chapter describes the research methodology adopted for conducting the Impact Assessment of P0364 in Jharkhand.

2.1 RESEARCH OBJECTIVE

The objective of the Assessment was to assess the impact of training provided through FDP Project P0364 "Green-preneurship Promotion Project through Skill and Entrepreneurship Development Programme", among farmers, SHG members and youth in the project areas.

2.2 RESEARCH DESIGN

The study followed a ***cross-sectional study design with a cluster sampling approach*,** using both quantitative and qualitative methods of data collection. The assessment focused on collecting quantitative data from project beneficiaries using a structured questionnaire to arrive at quantifiable results on the impact indicators; the qualitative techniques of data collection were used to gain descriptive insights and complement the overall quantitative findings.

The **mixed method approach** of data collection involved the following methods:

1. Quantitative Survey among Project Beneficiaries – Farmers, Women and Youth
2. Qualitative Focus Group Discussions (FGDs) with Project Beneficiaries
3. Qualitative Key Informant Interviews (KIIs) with project partner (KGVK) staff and key beneficiaries
4. Case Studies of project beneficiaries

For the purpose of analysis, the study adopted the **OECD-DAC Framework** to assess the impact of the project indicators as relevant to the project. The assessment framework assessed components on relevance, effectiveness, impact, convergence, sustainability and replicability with pre and post scenario.

Beneficiaries' Interviews (Quantitative): Within the 13 program districts in Jharkhand which was our sampling frame (given 99% beneficiaries belonged to this state; others being from Bihar & Odisha), it was seen that the number of beneficiaries across districts are widely dispersed, ranging from 1 to 417. Therefore, taking as cut-off 100 beneficiaries in any district, **4 districts** satisfy this criterion – **Ramgarh** (417), **Hazaribagh** (319), **Ranchi** (120) and **Khunti** (111) – were considered as the study districts for this impact assessment.

For determination of beneficiary sample size, considering a coverage of a known population of target beneficiaries, a statistically significant sample size at 95% confidence interval, 5% margin of error and 20% non-response rate was worked out. Additionally, a cluster sampling approach was followed, and a design effect of 1.5 was applied.

The formula used to calculate the sample size is:

Where, N = population size
z = z-score
e = margin of error
p = standard of deviation

$$\text{Sample size} = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + \left(\frac{z^2 \times p(1-p)}{e^2 N}\right)}$$

Hence, the sample size worked out to be 498**,** rounded off to **500,** considered to be sufficient to estimate the indicators of interest.

Given that the beneficiaries under the project included **farmers, women and youth** each being trained on specific areas/ domains, it was deemed necessary to collect data specific to each beneficiary category. Selection of required number of beneficiaries within the village was done randomly with the probability of selection proportional to the size (PPS) of the beneficiary category in that village.

Qualitative Component: For the qualitative component, Focus Group Discussions (FGD), Key Informant Interviews (KIIs) and Case Studies were conducted, in the same villages as the quantitative survey, for gaining deeper insights assessing program impact. Given the varied nature of the trainings provided to beneficiaries, care has been taken to ensure coverage of almost all types of training either through the FGDs or the KIIs. The sample coverage for the qualitative sample was as under:

Table 2.2: Distribution of Qualitative Sample Size

Qualitative component and Respondent category	Sample size

FGD with Beneficiaries:
• Farmers x 2
  ○ Fisheries
  ○ Agriculture (Chemical Free Vegetable Cultivation + Nursey Management)
• Women x 2
  ○ Food Processing
  ○ Animal Husbandry (Goat farming)
• Youth x 3
  ○ Agriculture (Integrate farming)
  ○ Animal Husbandry (Commercial Business Vermicomposting)
  ○ Animal Husbandry (Piggery)
	7

Key Informant Interviews (IDI):
• NGO Program Staff x 2
• Youth x 4
  ○ Designer Lac Bangles & Decorative Products
  ○ Agriculture (Strawberry cultivation)
  ○ Animal Husbandry (Dairy Management)
  ○ Alternate Energy
• Farmer x 2
  ○ Aqua Culture
  ○ Animal Husbandry (Pashu Mitra)
• Women x 2
  ○ Floriculture
  ○ Mushroom cultivation
	10

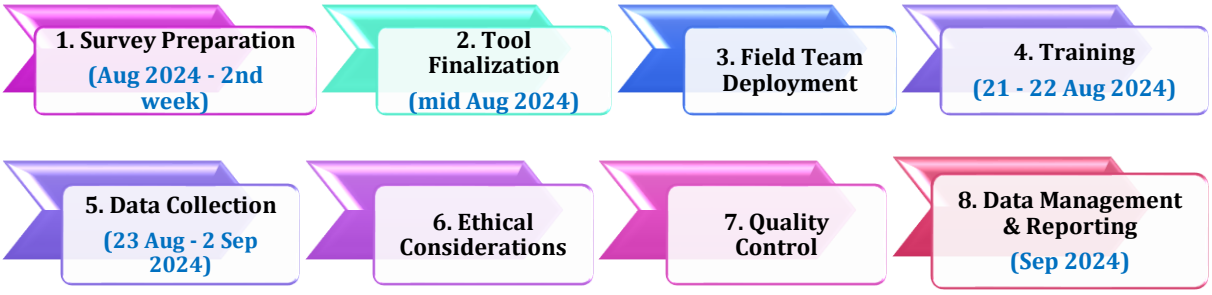
Case Studies:
• Farmer x 2
  ○ Strawberry Cultivation
  ○ Animal husbandry (Goat rearing)
• Women x 1
  ○ Mushroom cultivation and goat rearing
	3

2.3 STUDY TOOLS

The research tools developed were in alignment with the intervention done under the FDP, with the aim to assess the impact and as also the project's efficacy, effectiveness and sustainability of outcome. Project related documents were obtained for HDFC Bank CSR to get detailed understanding of the project and hence develop the tools. The quantitative research instrument was a structured questionnaire with mainly close-ended questions, enabling capture of responses through pre-defined set of (multiple) response choices and was finalized in consultation with HDFC Bank CSR. The qualitative FGD, KII and Case Study Guides had questions to help draw qualitative insights in keeping with the scope of the Assessment, with special attention to assessing the project's efficacy, effectiveness and sustainability of outcome.

2.4 STUDY IMPLEMENTATION

The preparation for the Impact Assessment after commissioning from HDFC Bank CSR began in the second week of August 2024. One of the important initial tasks was to study the project documents shared by HDFC Bank CSR, for developing an understanding of the project. The study tools were then developed and shared with HDFC team for approval. The CAPI digital scripting was also undertaken in preparation for the field launch in addition to other field level preparation. Field Team Training was held on 21st – 22nd August, 2024 at Ranchi for orienting and training the teams on the study protocols and tools. Soon after, data collection was launched from 23rd August onwards and completed by 2nd September. This was followed by data processing, management, analysis and preparation of Report which was completed in the month of September.



Training to the Surveyors

Vegetable Farming

Pearl Farming

Piggery

Nursery Management

Vermicomposting

2.5 DATA MANAGEMENT, ANALYSIS AND REPORTING

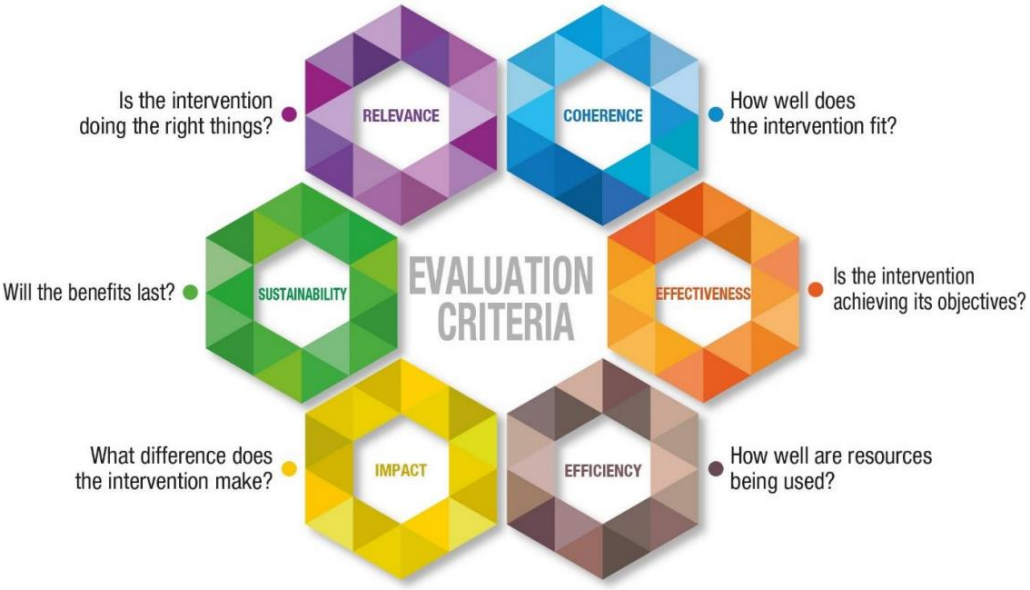
After completion of data collection, final data collation, checking and cleaning of the completed quantitative interviews were done. Like-wise, transcription and further content analysis was undertaken for the qualitative capsule. Once the data was cleaned, it was analyzed and Draft Findings Report prepared on its basis. The aim of the analysis was to evaluate the effectiveness, efficacy of the project interventions and sustainability of the project outcomes, and delve deeper into learnings and insights for what worked, what did not work and what could have been better. Descriptive statistical analysis using SPSS was conducted. Qualitative data analysis helped to supplement the overall findings and data trends reported.

2.5.1 Analytical Framework

This Report on the Impact Assessment of FDP P0364 has made use of the OECD DAC[1] criteria as an analytical framework. This framework defines six evaluation criteria – relevance, coherence, effectiveness, efficiency, impact and sustainability – and two principles for their use. These criteria provide a normative framework used to determine the merit or worth of an intervention (policy, strategy, programme, project

[1] https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm

or activity). They serve as the basis upon which evaluative judgements are made. This framework recommends adapting this framework, wherever feasible and applicable. Application of this framework to the present Impact Assessment study is discussed in detail in the Study Findings chapter (Chapter 3).



The OECD DAC Framework

2.6 FIELDWORK CHALLENGES

The data collection teams for the study did face certain challenges during the fieldwork period. The period for data collection was extended by two days owing to field level difficulties, mainly due to beneficiary unavailability on the ground – owing to reasons such as: beneficiary houses being scattered and sparsely distributed; difficulty in accurately identifying and locating the houses of certain beneficiaries; many youth migrating out of the study area; beneficiary currently out of town; got married and went to husband's place. In order to achieve the sample size, it was recommended that if in a particular village the sample could not be achieved, the remaining sample could be covered from another sampled village. The spread of beneficiaries was scattered across 29 sampled villages across 4 districts (Ranchi, Ramgarh, Hazaribagh and Khunti); and the inter-village distance within a block being greater, thus causing lesser productivity each day and requirement of coverage of more villages to achieve the desired sample size in a district.

STUDY FINDINGS

Chapter 3

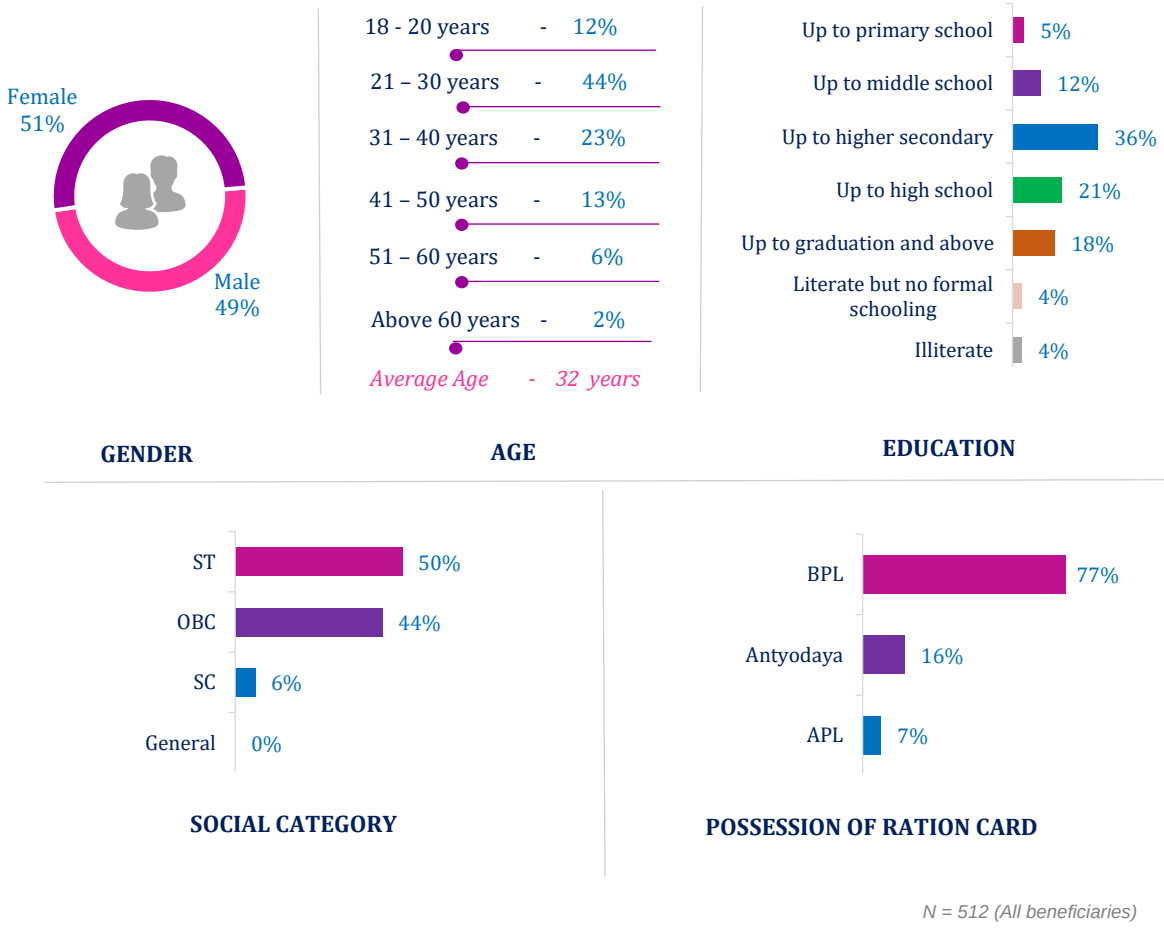
This chapter presents key findings from the impact assessment study, starting with an overview of beneficiaries and their distribution across various trainings. The subsequent sections analyze findings using the OECD DAC framework, focusing on the Relevance, Effectiveness, Impact, Coherence, and Sustainability of the training interventions. The conclusions are based on both quantitative and qualitative data collected from all beneficiary categories.

3.1 GENERAL PROFILE OF THE BENEFICIARIES

Of the 512 beneficiaries interviewed as part of the assessment, 51 percent were females while 49 percent were males (Figure 3.1). The average age of these beneficiaries was 32 years, ranging between 18 to 74 years.

In terms of their educational level, the beneficiaries were mostly found to be literate with 36 percent of them having completed up to higher secondary education, followed by 21 percent who had finished high school and another 18 percent who had completed graduation and above. About 12 percent have reached middle school, and 5 percent have completed primary school. Smaller groups include four percent each of those who were literate but have no formal schooling, or who were illiterate. This highlights that a considerable portion has achieved at least higher secondary education.

Figure 3.1 Beneficiary Profile



Further, majority beneficaries belonged to the Scheduled Tribes (ST) category, making up to 50 percent of the total, followed by Other Backward Classes (OBC) at 44 percent. Scheduled Caste (SC) households account for 6 percent, while none of the beneficiaries come from the General category. In terms of ration card possession, 77 percent of beneficiaries belonged to households possessing Below Poverty Line (BPL) cards, 16 percent were Antyodaya cardholders, and 7 percent belonged to the Above Poverty Line (APL) category.

With regard to occupations that beneficiaries are engaged in, 71 percent are primarily farmers/ cultivators. In terms of secondary occupation, animal husbandry serves as the key livelihood source for 19 percent of the beneficiaries. Another 12 percent also engage as wage labourers. About 42 percent beneficiaries do not engage in any secondary occupation (Table 3.1).

Table 3.1: Occupation of Beneficiaries

Occupation	Primary	Secondar
Farmer/ Cultivator	71%	10%
Wage labour (agriculture/ non-agriculture)	6%	12%
Animal husbandry	2%	19%
Trading/ Small business or enterprise	4%	6%
Salaried service (govt./ pvt.)	8%	6%
Small artisans in household and cottage industry	2%	3%
Selling of NTFP	0%	0%
Others	6%	1%
No Secondary Occupation	N/A	42

A total of 27 specialized training programs were conducted, focusing on 5 areas - Improved methods of cultivation, animal husbandry, high value crop, zero budget farming and skill training. Some beneficiaries participated in multiple trainings, Table 3.2 presents the number of beneficiaries who attended either a single training or more than one. Within the sample, the highest number of participants were those trained in Food Processing (15 percent), Goat Farming (12 percent), and Mushroom Cultivation (10 percent). Women's participation was particularly notable in trainings like Lac Bangles and Food Processing, highlighting the project's potential for empowering women in the community.

Table 3.2: Beneficiaries with Multiple Trainings

Number of Trainings	Number of Beneficiaries
1	421
2	70
3	14
More than 4	4

Table 3.3: Training wise distribution of beneficiaries

Training	Beneficiary percent	Training	Beneficiary percent
Strawberry Cultivation	2	Commercial Business Vermicomposting	6
Mushroom Cultivation	10	Fish Seed Production	2
Small Vegetable Farming	1	Biofloc Technology	1
Floriculture	2	Pisciculture	6
Nursery Management	2	Pearl Farming	2
Integrated Farming	4	Lac Bangles and Decorative Art Making	7
Multi-Layer Farming	3	Sticky Trap	3
Chemical-Free Vegetable Cultivation	3	Food Processing	15
Dairy management	2	Assembling & Repairing of LED Lights	5
Goat Farming	12	Solar & LED Products Assembling Repairing	6
Piggery	5	Pashu Mitra	2
Balanced Nutrition Animal	2		

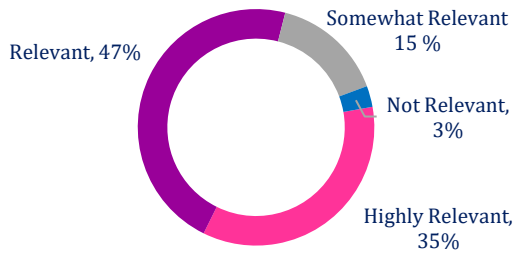
Note: The total percentage can be more than 100%, as some individuals participated in multiple trainings

3.2 RELEVANCE - Is the Intervention doing the right things?

The Green-preneurship Promotion Project was designed to address key insights and learnings developed from the HRDP project: the rural population could achieve self-reliance by acquiring technical knowledge and skills to become entrepreneurs in green trades. According to KGVK personnel, the implementing NGOs took a strategic approach to beneficiary selection to ensure the program's relevance. For example, KGVK worked closely with village-level institutions, such as Village Development Committees (VDCs) and panchayat members, to identify suitable participants. A psychometric test, developed by AD Patel Institute of Technology in Gujarat, was administered to assess the entrepreneurial capacities of potential beneficiaries. Those who demonstrated strong potential were selected for training that aligned with emerging agricultural trends and market demands.

The quantitative data also reveals that the intervention effectively aligned with the occupational goals of the participants. Specifically, 47 percent of beneficiaries found the training to be "Highly Relevant," and 35 percent as "Relevant" (Figure 3.2) reflecting that the training programs were well-designed to meet the practical needs of participants. The skills acquired during the training aligned with participants' desired livelihood goals, underlining the project's relevance.

Figure 3.2: Extent to which beneficiaries found the training relevant



N = 512 [All beneficiaries]

A KGVK staff member explained how training programs were designed to enhance income from agriculture and animal husbandry. For example, strawberry cultivation was introduced as a winter crop to take advantage of high market rates and fill a gap in the farmers' seasonal schedules. After the strawberry harvest, watermelons were grown as a summer crop, allowing year-round farming and maximizing profits. Training on multi-cropping ensured benefits of growing more than one crop, round the year. Women beneficiaries were also oriented on multiple-cropping. This helped them to grow more crops and sell in the market.

> *"There are numerous benefits to multi-cropping. For example, underground crops can be grown for the first three months, followed by spinach and other similar varieties. After that, another set of crops can be planted, optimizing the use of land throughout the year"*
>
> *- Farmer Beneficiary, Gandke Ramgarh*

Qualitative data gathered from Focus Group Discussions (FGDs) also support these findings. Farmers emphasized the relevance of the intervention, noting that before the training, they relied on traditional farming methods and had limited knowledge of modern techniques, seed varieties, and market access. The introduction of rice harvesting machinery *(dhaan katai*) considerably improved crop harvesting efficiency. Additionally, training on solar lights and LED technology addressed local challenges, such as frequent power outages and high electricity costs.

In the context of animal husbandry, KGVK personnel collaborated with veterinary doctors to address common challenges in raising goats, pigs, and fish. They tailored best practices for animal rearing to suit the specific needs of the project areas. This led to considerable improvements in livestock management, as reflected in beneficiaries' experiences,

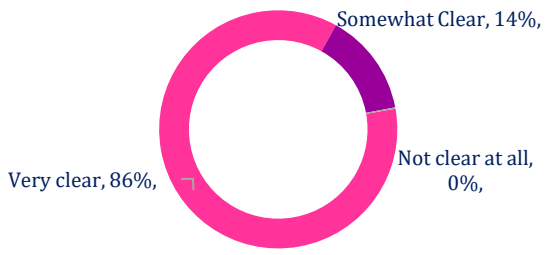
Youth groups trained in pig farming pointed out during the FGD that the training resolved a persistent challenge they faced: high pig mortality rates. They also benefited from forward market linkages, which helped reduce the role of middlemen and increase profitability. Many youth beneficiaries reported having minimal prior knowledge of farming practices but gained valuable skills through the intervention. This combination of technical training and practical application reinforces the program's alignment with the community's economic and livelihood priorities.

"There is a difference (now that we have received the training). Earlier we didn't know how to feed calf and in what amount milk should be fed. "

- Pashu Mitra Beneficiary, Ganeshpur, Ranchi

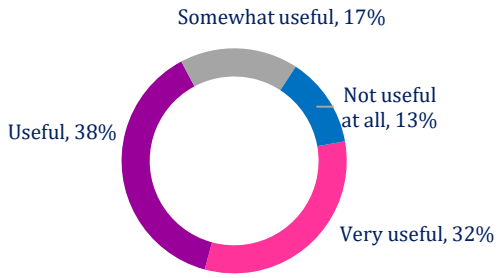
Moreover, 86 percent of beneficiaries (Figure 3.3) indicated that the training content was "Very Clear," demonstrating the program's success in ensuring participant comprehension. This high percentage highlights the program's ability to effectively meet the educational and practical needs of its beneficiaries. In addition, more than two-third (70%) beneficiaries found the buyer-seller meet to be overall useful for their entrepreneurial activities (Figure 3.4), further illustrating the intervention's alignment with beneficiary goals.

Figure 3.3: Extent to which the training content was clear and understandable



N=512 (All Beneficiaries)

Figure 3.4: Extent to which beneficiaries found the buyer-seller meet useful



N=170 (All Beneficiaries who attended buyer-seller meet)

3.3 Effectiveness – Is the intervention achieving its objectives?

The intervention aimed to equip beneficiaries with the skills and knowledge to become entrepreneurs. Central to this objective was the provision of targeted training programs in Improved methods of crop cultivation, animal husbandry, high value crop and chemical-free cultivation. These programs were designed to address local economic challenges and empower participants to improve productivity, increase income, and establish viable enterprises.

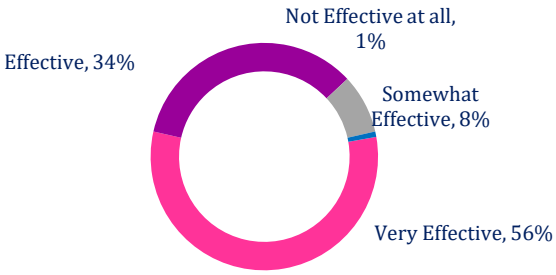
3.3.1 Training

The success of the Green-preneurship Promotion Project's training programs should be measured not only by the outcomes but also by the quality of delivery and the participants' ability to comprehend and apply the knowledge

Figure 3.5: Training Delivery and Responsiveness to Participant Queries

The data indicates that 97 percent of participants found the training to be conducted in a timely and organized manner, while 84 percent confirmed that their questions were effectively addressed by the trainers (Figure 3.5). Additionally, the training programs were highly effective, with 56 percent of beneficiaries mentioning them to be "Very Effective" followed by 34 percent finding them "Effective" (Figure 3.6). These findings indicate that the training was well-delivered and successfully met the participants' needs.

Figure 3.6: Extent to which beneficiaries found the training effective



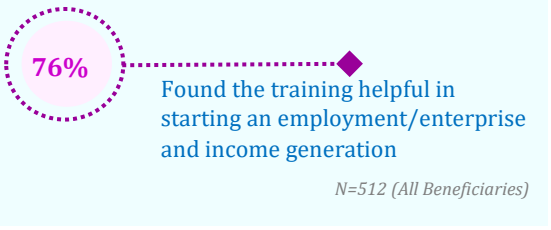
N = 512 [All beneficiaries]

The qualitative data reveals the effectiveness of the training, particularly in its ability to introduce beneficiaries to new and sustainable income-generating activities. As reported by the KGVK personnel, KGVK ensured that the delivery of the training content was good and that the trainees understood what they were being taught. They designed training modules in the form of booklets for each training. The modules were translated in the local language for them to understand easily. Further, whenever they made some changes in their training, the booklets were modified according to it. One of the trainees in pearl farming mentioned that the training provided them with the essential skills and knowledge, allowing them to successfully adopt pearl farming as a sustainable livelihood option.

> *" I am currently implementing everything I learned during the training. I would like to express that I received excellent training, which I will continue to apply in my life. In the future, I aim to do it even better.*
>
> *- Pearl Farming Beneficiary, Gandke Ramgarh*

3.3.2 Self-employment/Enterprise

The training's impact on participants' livelihoods is evident, with 76 percent of beneficiaries reporting that the program helped them start employment or start their own enterprise. This underscores the effectiveness of the initiative in empowering individuals to generate income through entrepreneurial activities and fostering self-reliance.



In one of the qualitative discussions, one of the trainees in alternative energy shared that they successfully applied the newly acquired skills to their existing work, leading to the opening of a shop specializing in solar equipment repairs. A woman beneficiary from the mushroom cultivation training shared her positive experience, highlighting how the knowledge gained has considerably impacted her livelihood and that of

others in her community. Youth groups trained in piggery reported that they were able to obtain five pigs for Rs. 8,000, compared to the market rate of Rs. 4,000 for a single pig. This considerably reduced their costs and helped them jump-start their enterprise.

> *"We are going to the market from here. Yes sir, since we have come here after training of KGVK, we have got a lot of information and we are earning a lot from it. We have not left it with information. People are earning a lot."*
>
> *- Women Beneficiary, Adra Hazaribagh*

In one of the key-informant interviews, a KGVK official also discussed the purpose of the buyer-seller meetings, which were organized to give beneficiaries market exposure. These meetings were complemented by trainings on marketing and negotiation, enabling beneficiaries to improve their communication and negotiation skills, ultimately helping them secure better prices for their produce.

3.4 IMPACT – What difference does the Intervention make?

This section explores the impacts of the intervention that extend beyond the intended outcomes outlined in the effectiveness section. While the primary focus of the training was to achieve specific objectives related to skills enhancement, several additional effects have emerged that contribute to the overall success of the program. The training was impactful in boosting confidence, as 85 percent of participants felt confident or very confident in their ability to implement what they learned. (Figure 3.7)

Figure 3.7: Extent of confidence in implementing skills and knowledge

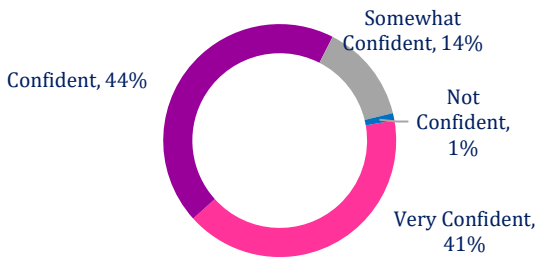
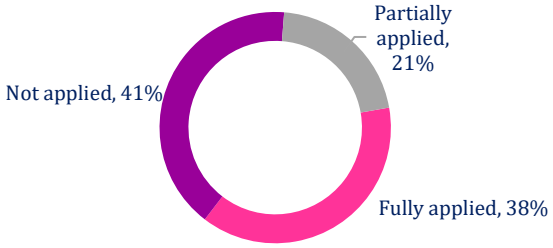


Figure 3.8: Extent of application of skiils and knowledge



N=512 (All Beneficiaries)

The training has had a positive impact, with about three-fifth of the participants (Figure 3.8) mentioning to have either fully (39%) or partially (21%) applied the skills and knowledge acquired from the training in their livelihood activity, leading to tangible outcomes such as increased income, the establishment of enterprises, improved product quality, and enhanced productivity.

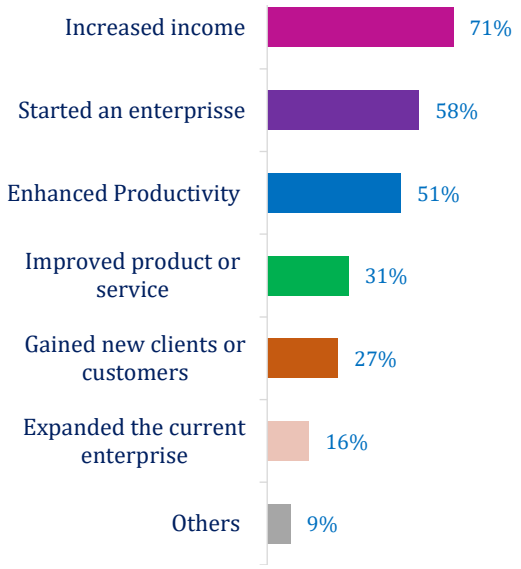
The percentage of beneficiaries who began practicing various agricultural and related activities after receiving training is reflected in Table 3.4. Small Vegetable Farming had the highest uptake, with 69 percent of participants adopting the practice. Strawberry Cultivation and Animal Husbandry also saw strong engagement, with 67 percent and 64 percent of beneficiaries adopting these practices. Fishery and Mushroom Cultivation followed closely, with 56 percent and 55 percent participation.

The least adopted practices included Pearl Farming at 9 percent, Lac Bangles and Decorative Art Making at 7 percent, and Food Processing at 11 percent. These figures reveal varying levels of interest and feasibility across different sectors, with some practices more widely adopted than others.

Table 3.4: Beneficiaries who are currently practicing in the respective training areas

Training	Beneficiaries currently practicing
Strawberry Cultivation	67%
Mushroom Cultivation	55 %
Small Vegetable Farming	69%
Floriculture	12%
Commercial Business Vermicomposting	49%
Animal Husbandry	64%
Fishery	56%
Pearl Farming	9%
Lac Bangles and Decorative Art Making	7%
Sticky Trap	30%
Food Processing	11%
Alternate Energy	15%
Pashu Mitra	20%

Figure 3.9 Respondent opinion on their extent of application of skills and knowledge



N= 324 (Beneficiaries who applied the skills and knowledge)

The data in Figure 3.9 highlights how various aspects of skills application have impacted participants, particularly in terms of financial and business growth. About 71 percent of respondents reported an increase in income, while 58 percent started an enterprise. Additionally, 51 percent saw enhanced productivity, and 31 percent improved their product or service. Other outcomes included 27 percent gaining new clients or customers, 16 percent expanding their current enterprise, and 9 percent citing other benefits.

Even though beneficiaries learned new skills, 41 percent couldn't use them as shown in Table 3.5. Among this group, 58 percent cited a lack of investment as the primary reason for their inability to utilize these skills, followed by a lack of opportunities.

Table3.5 Reasons for Not Applying the Skills and Knowledge Learned from the Training

Reasons	% of beneficiaries
Lack of investment	59
Lack of opportunities	43
Insufficient support or follow-up	15
Challenges in understanding or implementing the skills	22
Unfavorable Market conditions	3
Personal reasons	13
Other	5

N=312 (All Beneficiaries who did not apply the skills and knowledge from the training)

One beneficiary, during a Key Informant Interview, noted that she lacked the necessary funds to invest in cultivation of mushroom. Similarly, for those engaged in Lac bangle-making, the absence of financial assistance or accessible loan options emerged as a major challenge, preventing them from fully utilizing their skills. Women beneficiaries trained in goat rearing were unable to implement fodder and feed, as they did not possess the capital for the same. Another beneficiary, a recipient of training in pearl farming, in a KII noted that there were financial constraints due to the high costs of

necessary materials, such as surgery kits and tanks, and the need to source supplies like fish food from Kolkata.

In the Key Informant Interview, it was also reported that one beneficiary trained in animal husbandry experienced improved financial stability due to increased milk production, which helped cover household expenses such as children's education and medical care.

> *" Income has risen, along with improvements in cleanliness and earnings from milk production The more care and nutrition you provide, the greater the gain will be"*
>
> *Pashu Mitra Beneficiary, Ganeshpur, Ranchi*

3.4.2. Women Empowerment

The project has had a considerable impact on the empowerment of women, fostering increased participation in economic activities, enhancing decision-making capabilities, and promoting financial independence among the female beneficiaries. The personnel from KGVK reported that even young women have stepped up and have started selling their produce in markets. Female SHG groups started food processing and grinding of spices, whereas there were some adolescent girls' group who started mushroom cultivation.

Some women beneficiaries reported that they were able to sell the pickles in markets and earn some money from it. From the trainings on making jams, women have been able to make jams and sell in the markets. They have been able to procure FSSAI certification for their labels to sell pickles and jams.

During FGD, Women beneficiaries have reported feeling more empowered after being trained through this program.

> *"Earlier, the women in the village were not able to step out of the house or go for any kind of training but KGVK has supported as a lot and held us in getting out of house and learning new things. We have learnt many things which help us to know that we can grow things on our own and then do marketing."*
>
> *- Women Beneficiary, Chichi Hazaribagh*

> *"Earlier, we used to depend upon our husband and the money which he used to earn but now, we need not wait for our husband to give money. If we want to buy anything for our kids and for ourselves, we buy it on our own. We are self- sufficient now."*
>
> *- Women beneficiary, Chichi Hazaribagh*

3.5 COHERENCE – How well does the intervention fit?

Coherence, as defined by the OECD DAC framework, looks at how well the different parts of a program fit together and connect with larger goals, like government policies or larger issues like climate change. It ensures that a program doesn't just work in isolation but complements other efforts and contributes to wider objectives. This includes partnerships with other organizations, alignment with policy goals, and contributing to sustainability.

In the context of this project, coherence refers to how well the training program's objectives align with broader environmental and social goals. The program demonstrates this coherence by placing a strong emphasis on sustainability—ensuring that the practices taught are environmentally friendly and support long-term ecological health. For instance, 92 percent of beneficiaries confirmed that the training clearly highlighted eco-friendly aspects, reinforcing the importance of sustainable practices. This focus on green initiatives fits seamlessly with larger global and national environmental goals and the increasing push for green entrepreneurship, where businesses prioritize environmental responsibility alongside profitability. Additionally, the program worked with partners like the Agriculture Technology Management Agency (ATMA) and Nilambar Pitambar University to implement government schemes related to horticulture and soil conservation. They also tried to connect beneficiaries with banks to help them secure funding for their businesses, showing how different pieces of the program work together to support the overall goal of sustainable enterprise development.

3.6 SUSTAINABILITY – Will the benefits last?

Sustainability of the project refers to the long-term viability and lasting impact of its outcomes. It ensures that the benefits provided to beneficiaries continue even after the project ends. A sustainable project equips participants with the skills, knowledge, and resources needed to maintain progress independently, fostering resilience and self-reliance.

3.6.1. Long term viability

The future prospects for adopting the practices learned from the training look promising, with 92% of beneficiaries expressing their intention to continue using the skills they acquired. Of these, 39 percent stated they were "very likely" to adopt the practices, while 53 percent indicated they were "likely" to do so.

Figure 3.10 Likeliness of continuing practices in future

3.6.2 Knowledge-transfer

According to the data, 48 percent of beneficiaries feel equipped "to a very large extent" to provide services that contribute to the community for sustainable development while an additional 23 percent feel prepared to a "large extent."

Figure 3.11 Empowered for Sustainable Community Service

A KGVK official noted a noticeable shift in farming patterns, as many farmers began cultivating crops for commercial purposes after the training. This shift also inspired a broader community response, as the number of beneficiaries grew once others observed the tangible results from fellow farmers. Even younger individuals, who previously preferred migrating for jobs, opted to engage in cultivation after receiving the training, further underscoring the positive long-term impact of these sustainable practices. This indicates that the training has effectively empowered participants with the skills necessary to foster sustainable practices within their communities.

During FGD, beneficiaries also reported that they were able to pass learnings of the training to other beneficiaries.

> *"Earlier, we couldn't even produce enough for our own household, but after these trainings and the use of hybrid seeds, things have improved significantly This knowledge has also been shared with others in my community, so many of us are benefiting and seeing betterment together now."*
>
> *Farmer Beneficiary, Gandke Ramgarh*

3.6.3 Environmental Sustainability

This section highlights the incorporation of sustainable practices across various sectors, as revealed by the qualitative findings. Beneficiaries gained important insights into environmentally sustainable methods through training programs. For instance, one of the beneficiaries noted the benefits of solar energy, particularly its reduced adverse environmental impact compared to conventional energy sources like coal.

Training in organic farming introduced valuable techniques such as using earthworm manure, fish tonic (a mixture of fish bait, jaggery, and cow urine), and homemade pesticides, all of which minimize the need for harmful chemical inputs. This approach not only promotes sustainability by reducing chemical use but also encourages healthier soil management.

In lac bangle production training, the trainers emphasized on adopting eco-friendly practices. The training provided safety guidelines, such as keeping children away from chemicals and ensuring proper hand hygiene after handling hazardous materials.

Additionally, beneficiaries were introduced to sustainable livestock practices, such as reducing disease risks through timely vaccinations and maintaining cleanliness to prevent environmental damage.

The training also emphasized broader environmental sustainability concepts, such as tree planting to combat pollution. Beneficiaries acknowledged these lessons and expressed their intent to integrate these practices into their work, contributing to long-term environmental stewardship.

3.6.4 Sustainability challenges

While the intervention has successfully fostered self-reliance and environmental stewardship among rural beneficiaries, several sustainability challenges have emerged across different training programs.

- **Lac Bangle Production**: The need to source raw materials from distant locations like Kolkata significantly raised costs, further exacerbated by strong competition from cheaper, factory-made glass bangles, making it challenging for participants to sustain their businesses.
- **Pearl Farming**: The high cost of surgical kits required for pearl farming hindered participants from starting or scaling their enterprises.
- **Floriculture**: The limited number of beneficiaries who began practicing floriculture raises concerns about the sustainability and long-term impact of the training.
- **Gaps in Sustained Support:** Across various trainings (multi-cropping, pig farming, etc.), participants faced challenges due to the lack of follow-up support, such as access to capital, market linkages, and ongoing mentoring, which impacted the application of their skills.

3.7 PERFORMANCE INDEX

The performance index was carefully devised to measure the overall impact of training programs on the participants. By evaluating responses to 14 critical questions—12 focusing on the quality of training and 2 on entrepreneurship—it provides a holistic view of the training outcomes. The questions not only assessed basic elements like the regularity of the sessions and the clarity of the content but also measured practical outcomes, such as whether participants applied their newly gained knowledge to generate income.

The questions focused on evaluating the trainings' timeliness, structure, and clarity, alongside the trainer's responsiveness to participant concerns. They also assessed how much the training contributed to enhancing participants' skills and knowledge, its applicability to their work, and the potential for adopting the practices learned. Furthermore, the inquiry examined follow-up support, overall satisfaction, and participants' capacity to apply the knowledge to their livelihood activities, particularly in areas like income generation and access to markets.

Response Normalization and Scoring

Each question was scored on a scale from 0 to 1, where 0 represented the most positive response (i.e., participants were highly satisfied or took effective action post-training) and 1 represented the least positive response (i.e., participants were less satisfied or did not engage in follow-up activities). By normalizing the responses, the data allows for the comparison of diverse aspects of the training with varying numbers of response options.

Once the responses were normalized, an aggregate score was calculated for each individual, providing an overall measure of their experience. These scores were then divided into three key impact categories:

- Strongly Impactful (0 to 3.5): Participants in this category were highly satisfied with the training, found the content clear and effective, and were more likely to have implemented income-generating activities.
- Moderately Impactful (3.51 to 6.50): These participants found the training helpful but may not have fully implemented it or experienced partial success.
- Marginally Impactful (6.51 to 9.51): This group of participants derived limited benefits from the training or were largely unsatisfied with its practical applications.

Figure 3.12 Categorization of beneficiaries as per Performance Index

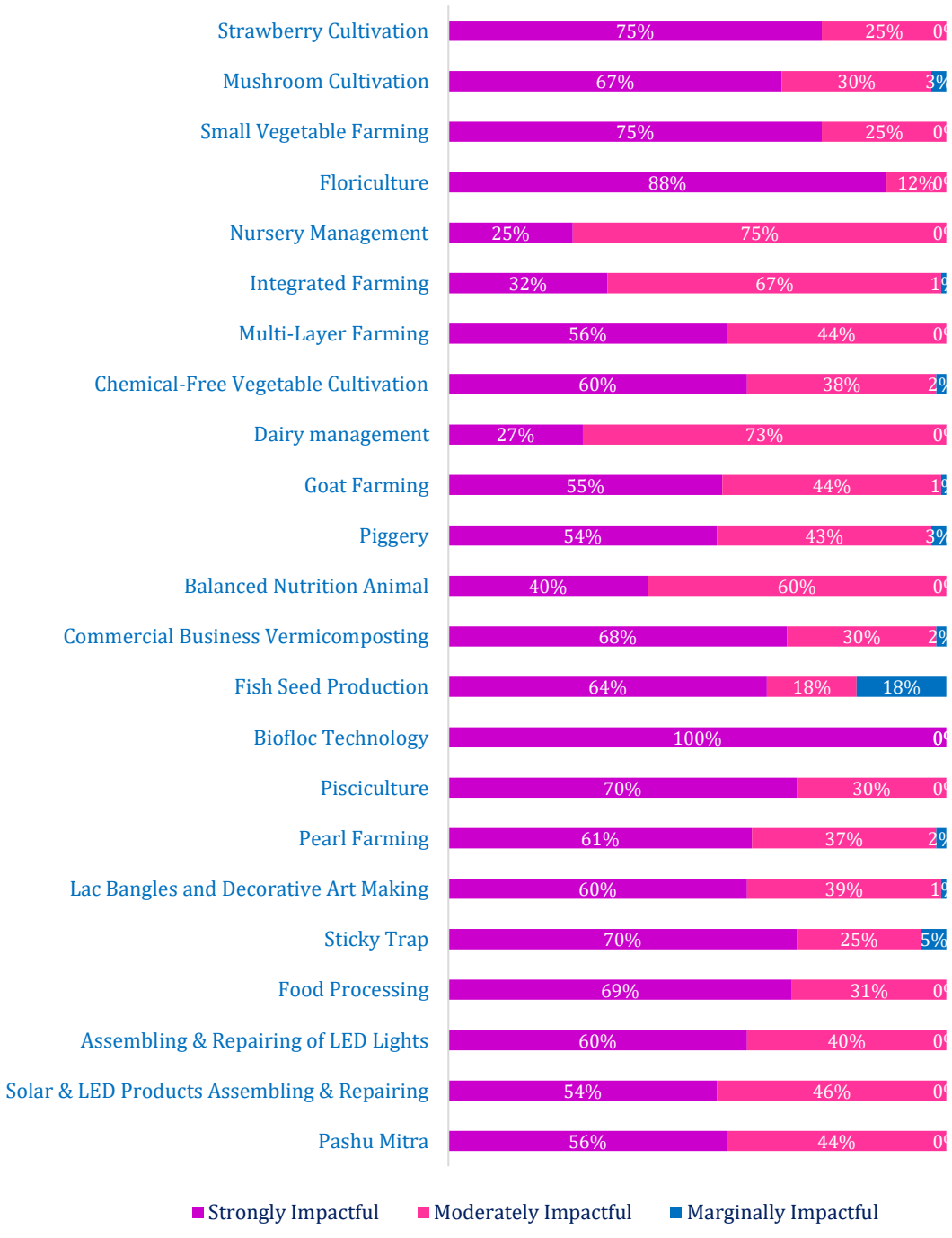
According to the Figure 3.12, 61 percent of beneficiaries fell into the Strongly Impactful category, highlighting a highly positive impact of the training programs on a majority of participants. Another 37 percent were in the Moderately Impactful range, while only 2 percent were categorized as Marginally Impactful. This distribution underscores the overall success of the project, with most participants experiencing considerable benefits from the training.

The overall performance index by training category, classifying the impact of each training into three categories is shown in Figure 3.13: Strongly Impactful, Moderately Impactful, and Marginally Impactful.

Biofloc Technology was rated 100 percent as strongly impactful. Food Processing, Sticky Trap, and Pisciculture showed high impact, with more than 60 percent of respondents rating them as strongly impactful. Training areas like Dairy Management and Integrated Farming were primarily seen as moderately impactful, with 73 percent and 67 percent respectively in this category. Trainings such as Floriculture and Small Vegetable Farming also had a strong impact, with 88 percent and 75 percent of respondents rating them as strongly impactful. Other areas such as Balanced Nutrition Animal and Nursery Management were less impactful, with a larger share of moderate and marginal ratings.

The training program appears to have made a notable impact, as evidenced by the fact that most participants reported experiencing strong or moderate positive outcomes. This suggests that the training went beyond simply imparting knowledge; it fostered meaningful change in the participants' skills, mindset, or performance. The effectiveness can be attributed to several key factors, including the relevance of the content, the logical structuring of the material, and the method of delivery, which likely resonated well with the participants' learning styles and livelihood needs.

Figure 3.13 Training-wise Categorization of beneficiaries as per Performance Index



TRAINING SPECIFIC FINDINGS

Chapter 4

While the previous chapter focused on the general findings across all the trainings, this chapter provides the detailed examination of the findings for each training.

4.1 AGRICULTURE

The following section explores the transformative impact of agricultural training on beneficiaries, focusing on key areas such as awareness, land use, production, and income. The beneficiaries of the project were given training under three major agricultural domains: Integrated Farming, Multilayer Farming, and Chemical-Free Agriculture. The introduction of green farming practices notably boosted participants' knowledge, resulting in widespread adoption of sustainable agricultural methods

4.1.1 Awareness

Table 4.1 Level of awareness after and before the training in Integrated Farming

	After	Before	Change
Crop livestock integration	3.77	0.91	2.86
Soil health management	3.91	0.73	3.18
Water resource management	4.05	1.14	2.91
Diversification of farm activities	3.82	0.77	3.05
Marketing of integrated farm products	3.77	0.68	3.09
Average	**3.864**	**0.846**	**3.018**

Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 22 (Those trained in integrated farming)

The introduction of these three agricultural domains improved beneficiaries' awareness and agricultural practices. Prior to the training, participants had minimal knowledge of green farming practices. However, post-training, there was a remarkable increase in awareness, as indicated by the following data:

The data presented in Tables 4.1, 4.2, and 4.3 compares the levels of awareness among respondents before and after receiving training in various agricultural practices. In all categories, there is a marked improvement in awareness post-training. For instance, awareness of crop-livestock integration increased from 0.91 to 3.77, and knowledge of soil health management improved from 0.73 to 3.91, indicating the effectiveness of the training in enhancing farmers' knowledge.

Table 4.2 Level of awareness after and before the training in Multi-Layer Farming

	After	Before	Change
Crop selection for multi-layer farming	3.94	1.5	2.44
Soil and nutrient management	3.5	1.38	2.12
Water resource management	3.88	1.56	2.32
Pest and disease management	3.94	1.44	2.5
Marketing of multi-layer farm products	3.81	1.44	2.37
Average	**3.814**	**1.464**	**2.35**

Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 16 (Those trained in multilayer farming)

Table 4.3 Level of awareness after and before the training in Chemical Free Farming

	After	Before	Change
Organic pest control/ use of bio pesticide	4.19	1.44	2.75
Soil and nutrient management	4.44	2.00	2.44
Water resource management	4.19	2.25	1.94
Crop rotation techniques	4.00	2.13	1.87
Marketing of chemical free farm products	4.19	1.88	2.31
Farm Yard Manure/ Vermicomposting	4.31	2.13	2.18
Average	**4.28**	**0.53**	**3.75**

Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 13 (Those trained in chemical free farming)

These scores were measured on a 5-point Likert scale, where the values range from 0 to 5. A score of 0 indicates a complete lack of awareness, meaning the individual is entirely unfamiliar with the subject. On the other hand, a score of 5 represents a high level of awareness, indicating that the individual has a thorough understanding or strong familiarity with the topic. The intermediate values (1 through 4) reflect varying degrees of awareness, with higher scores signifying greater knowledge or recognition of the subject matter.

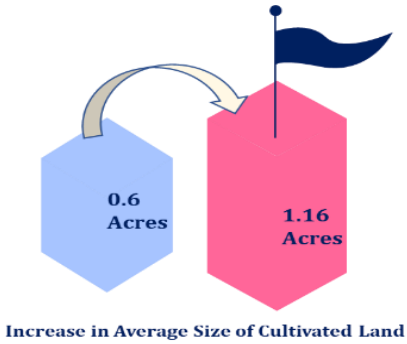
4.1.2 Increase in Land Size

n important outcome of the training provided through the project was the expansion of cultivated land among beneficiaries. Notably, 54% of those who participated in the training (Figure 4.1) reported an increase in the size of the land they brought under cultivation. This shift reflects a direct correlation between the training interventions and improved land utilization practices. On average, the size of cultivated land increased fro0.6 acres to 1.16 acres, marking a substantial growth in land productivity (Figure 4.2). This expansion not only highlights the beneficiaries' enhanced capacity to maximize their available resources but also demonstrates the project's success in empowering farmers to effectively manage and expand their agricultural operations.

54%

Beneficiaries reported to bring more land under cultivation after the training

N=50 [Beneficiaries who have received training in agriculture]



Increase in Average Size of Cultivated Land

The increase in cultivated land can be attributed to several factors emphasized in the training, such as better land preparation techniques, efficient water resource management, and optimized cropping patterns. By implementing these practices, beneficiaries were able to bring previously uncultivated or underutilized land into productive use. The growth in land size also indicates a shift towards more sustainable and intensive farming methods, ultimately boosting agricultural productivity.

4.1.3 Increase in the number of months in a year the land is under cultivation for different crop types

The data (Figure 4.1 and 4.2) indicates a notable increase in the number of months respondents are cultivating their land across different crop types. For Kharif crops, the cultivation period has extended by 1 month, while Rabi crops have seen an extension of 1.5 months. Zaid crops experienced a notable increase of 2 months. For perennial crops, the cultivation duration has grown by 3 months, suggesting more intensive land use and possibly better agricultural practices or resource availability throughout the year

Figure 4.1 Respondents Reporting an Increase in Annual Cultivation Duration Across Various Crop Type

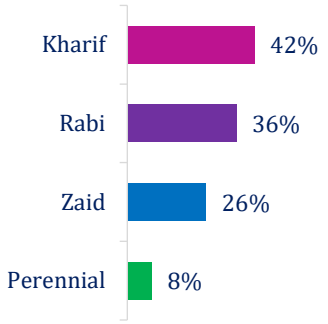
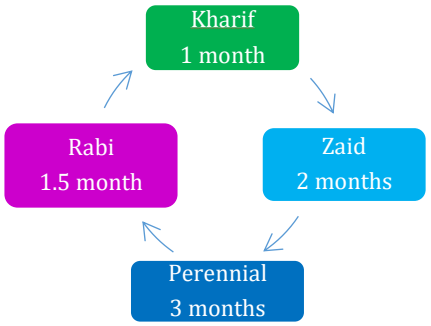


Figure 4.2 Increase in Number of Months the Land is Under Cultivation



N=50 [Beneficiaries who have received training in agriculture]

4.1.4 Decrease in Input Cost

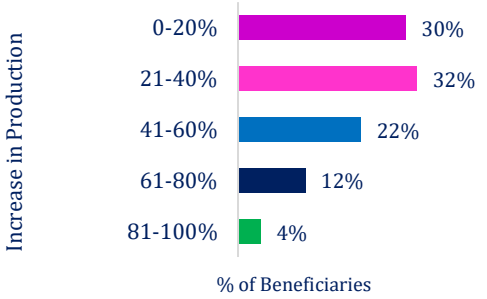
According to the KGVK official, considering the economic conditions of the project areas, the training sessions also included zero-budget farming techniques. These focused on the optimal utilization of resources and a shift towards natural farming practices. By eliminating the use of chemical inputs, this approach also aimed to improve the quality of produce for local communities.

As a result, beneficiaries who participated in the agricultural training reported a substantial reduction in input costs. After learning about hybrid seeds, which require fewer seeds for planting, they experienced lower expenses. This reduction in inputs has, in turn, led to an increase in profit margins, further enhancing the economic benefits for the farmers.

> *"Earlier we could not even produce the required amount for our family but now we produce enough amount so that we can have it for our family and we can sell the left-over amount"*
>
> *- Farmer Beneficiary, Gandke Ramgarh*

4.1.5 Increase in Production

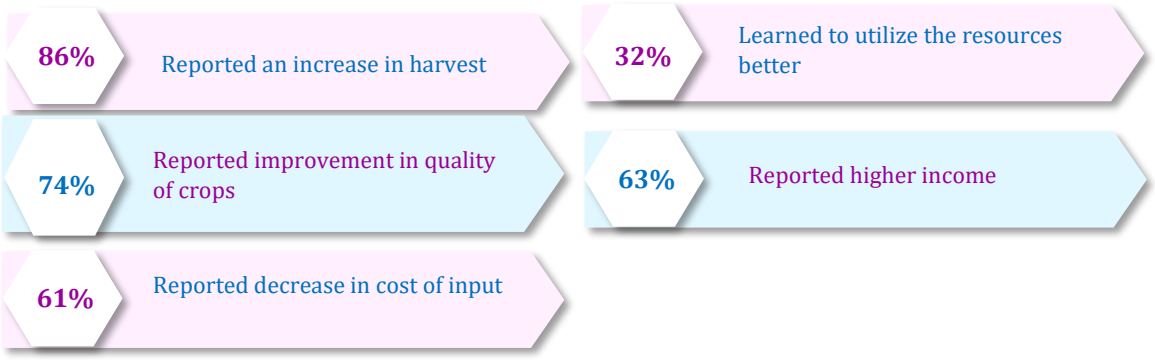
Figure 4.3: Extent of Increase in Agricultural Production



N = 50 [Beneficiaries who attended training in agriculture]

The trainings in the agricultural activities proved highly effective, with 70% of beneficiaries reporting more than 20% increase in production (Figure 4.3). The training had positive impact on harvest, quality of crops, utilization of resources, income of farmers and input costs. The results (Figure 4.4) demonstrate the training's impact on transforming farming methods and boosting overall agricultural efficiency.

Figure 4.4 Post-Training Impact on Agriculture



N = 484 [Who applied skills and knowledge in agricultural practices]

4.1.6 Increase in income

Through the adoption of modern agricultural techniques, including better irrigation systems, multi-cropping, and sustainable farming methods, farmers have been able to optimize land usage and extend the cultivation period. Additionally, the integration of livestock, organic farming, and value-added products has contributed to higher returns.

Positive changes in the lives were reported by women in the FGD; as they have been able to feed their children better and send them to school. Women beneficiaries have reported that they want to expand their enterprise through groups.

> *"We are using that amount for your family for our children's education. Lifestyle has been changed and it is better now. It is so much better now."*
>
> *- Farmer Beneficiary, Gandke Ramgarh*

Due to the positive changes implemented by the beneficiaries, there has been a noticeable improvement in their quality of life. Beneficiaries reported being able to use the money for their family, such as better schooling for their children.

4.2 STRAWBERRY CULTIVATION

The beneficiaries have experienced considerable increase in their level of awareness about the aspects of strawberry cultivation (Table 4.4). About 67 percent of the beneficiaries who received the training have started cultivating strawberry.

Notably, awareness in planting techniques rose dramatically from 0.42 to 4.50, marking a change of 4.08. Similarly, soil preparation knowledge improved by 3.92 points, from 0.58 to 4.50. Pest management and marketing strategies both saw an increase of 3.67 points, reaching 4.17 and 4.42 respectively. Financial management, although slightly lower, still experienced a substantial boost from 0.42 to 3.83, reflecting a

Table 4.4 Level of awareness after and before the training in Strawberry Cultivation

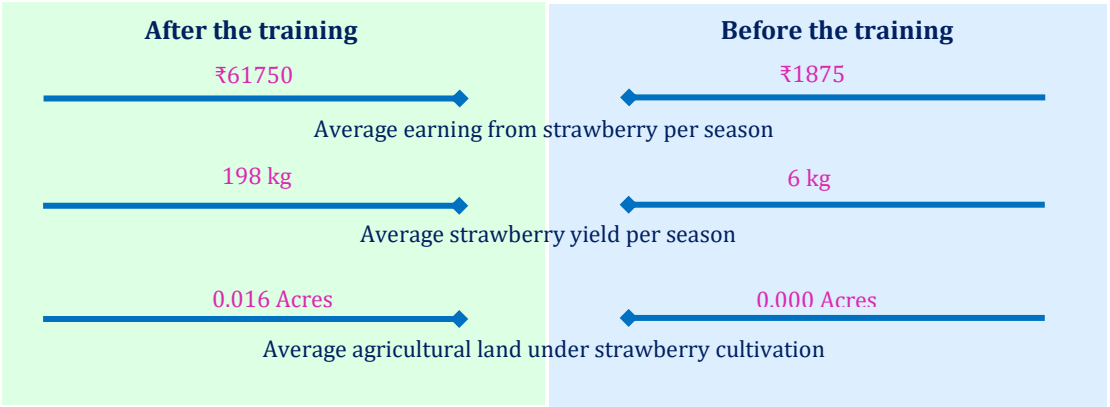
	After	Before	Change
Planting techniques	4.50	0.42	4.08
Soil preparation	4.50	0.58	3.92
Pest management	4.17	0.50	3.67
Marketing strategies	4.42	0.75	3.67
Financial management	3.83	0.42	3.41
Average	**4.28**	**0.53**	**3.75**

Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 12 (Those trained in Strawberry cultivation)

change of 3.41. On average, the level of awareness surged by 3.75 points, highlighting the effectiveness of the training program in elevating participants' expertise across all key areas of strawberry cultivation.

Average earnings from strawberry farming per season increased drastically, from ₹1,875 before the training to ₹61,750 after (Figure 4.5). Similarly, the average yield surged from 6 kg to 198 kg per season. Additionally, the agricultural land dedicated to strawberry cultivation grew from virtually none (0.000 acres) to 0.016 acres, showcasing the impact of the training on livelihood and improving productivity.

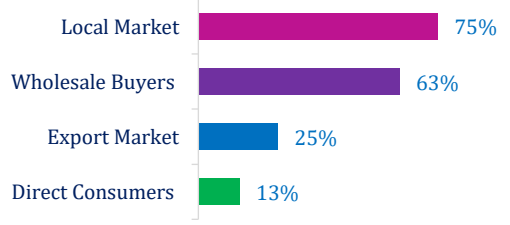
Figure 4.5 Post-Training Impact on Strawberry Cultivation



According to a KGVK official during the Key Informant Interview (KII), many farmers transitioned from subsistence farming to cultivating crops for commercial purposes following the training. Over time, strawberry cultivation emerged as particularly profitable, generating substantially higher income compared to other crops. This transition highlights the effectiveness of the training in promoting more lucrative agricultural ventures for the farmers.

As the farmers gained experience, the official noted, they no longer needed to procure seeds externally. Instead, they developed the capacity to produce their own seeds, optimizing resource use and reducing input costs. This self-sufficiency not only lowered expenses but also boosted profit margins, reflecting a more sustainable and efficient approach to farming.

Figure 4.6 Primary Customers for Strawberry



N = 8 (Those currently engaged in Strawberry cultivation)

Additionally, the local market has been the largest customer base for strawberries, accounting for 75 percent of sales, followed by wholesale buyers at 63 percent. The export market comprises 25 percent, while direct consumers represent the smallest

segment at 13 percent (Figure 4.6). This indicates that the majority of strawberry sales are focused on the local and wholesale markets.

4.3 MUSHROOM CULTIVATION

Table 4.5 Level of awareness after and before the training in Mushroom Cultivation

	After	Before	Change
Spawn preparation for mushroom	2.98	0.43	2.55
Substrate preparation	2.67	0.36	2.31
Pest management	3.88	0.43	3.45
Harvesting and preservation	4.36	0.38	3.98
Marketing strategies	3.64	0.40	3.24
Financial management	3.50	0.43	3.07
Average	**3.51**	**0.41**	**3.10**

Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 58 (Those trained in Mushroom cultivation)

The beneficiaries have considerably enhanced their awareness of various aspects of mushroom cultivation. The data indicates a marked improvement across all categories of mushroom farming practices after intervention, with an average change of 3.10 (Table 4.5). According to the findings from the Key Informant Interview (KII), the beneficiary learned valuable organic farming methods, including the use of earthworm manure, fish tonic (made from fish bait, jaggery, and cow urine), and homemade pesticides. She also reported to have gained insights into maintaining environmental sustainability by reducing the use of chemical inputs in mushroom farming

The KGVK official mentioned that Optimization of resources was also seen in mushroom cultivation. Initially, KGVK personnel used to procure bags of fertilizers for mushroom cultivation. When the women of the project area saw there is profit from mushroom cultivation, they started making those bags. This reduced the input cost as each bag used to cost 100 rupees which now reduced to about 30-40 rupees.

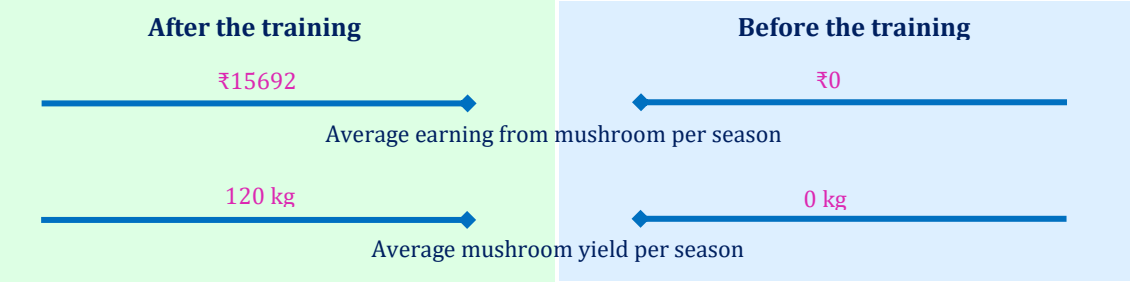
During the Key Informant Interview (KII), the beneficiary emphasized that the training had a positive impact on her household income. She was able to sell mushrooms, and the additional earnings were used to support her children's education.

Recognizing the profitability of mushroom farming, she believes it could greatly enhance her livelihood if issues such as lack of space, funding, and proper monitoring are addressed.

> *"I have benefited from the training and successfully grown mushrooms, but I no longer have enough space to continue cultivating them. I was able to sell mushrooms for around ₹2,000-₹2,500, pricing them at ₹250 for 250 grams, even though the actual rate is ₹250 per kilogram. The training has also significantly increased my knowledge and skills in mushroom farming."*
>
> *- Mushroom Cultivation Beneficiary, Ganeshpur, Ranchi*

The average seasonal earnings from mushroom farming saw a remarkable rise, going from ₹0 before the training to ₹15,962 afterward. Likewise, the average yield increased noticeably from 0 to 120 kg per season (Figure 4.7), highlighting the positive impact of the training on both livelihood and productivity.

Figure 4.7 Post-Training Impact on Mushroom Cultivation



N = 32 (Those currently engaged in Mushroom cultivation)

The majority of beneficiaries reported (Table 4.6) that higher yields (97%) and improved quality of produce (69%) were the primary contributors to their increased income, followed by access to new markets (59%). Additionally, 38 percent attributed their income growth to reduced production costs, while 19 percent noted better pricing strategies as a contributing factor.

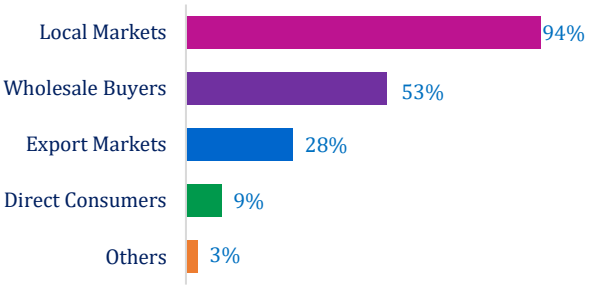
For beneficiaries engaging in mushroom cultivation, the local market constitutes the largest share of sales at 94 percent (Figure 4.8), with wholesale buyers following at 53 percent. The export market accounts for 28 percent of the customer base, while direct consumers form the smallest segment at 9 percent, and other buyers represent 3 percent. This suggests that the majority of sales are concentrated within the local market, with a strong reliance on wholesale buyers.

Table 4.6 Beneficiaries opinion on key factors contributing to increased income through Mushroom cultivation

Higher Yields	97%
Improved quality of produce	69%
Access to new markets	59%
Better pricing strategies	19%
Reduced Production Costs	38%

N = 32 (Those currently engaged in Mushroom cultivation)

Figure 4.8 Primary Customers for Mushroom



N = 32 (Those currently engaged in Mushroom cultivation)

4.4 VEGETABLE FARMING

This section (Figure 4.7) focuses on the impact of training provided for small-scale vegetable farming and nursery management. The greatest increase was seen in seed/variety selection, which rose by 3.37 points from 0.63 to 4.00. Pest management awareness also saw a notable rise of 3.00 points, reaching 4.00 after the training. Similarly, financial management improved by 3.12 points, while watering and irrigation experienced an increase of 3.13 points. Other areas, such as harvesting, packaging, and storage, as well as marketing strategies, saw gains of 2.87 and 2.81 points, respectively. Grafting and budding awareness also increased by 2.69 points. On average, participants' awareness across all categories improved by 3.00 points, underscoring the training's positive impact on their knowledge and skills in vegetable farming.

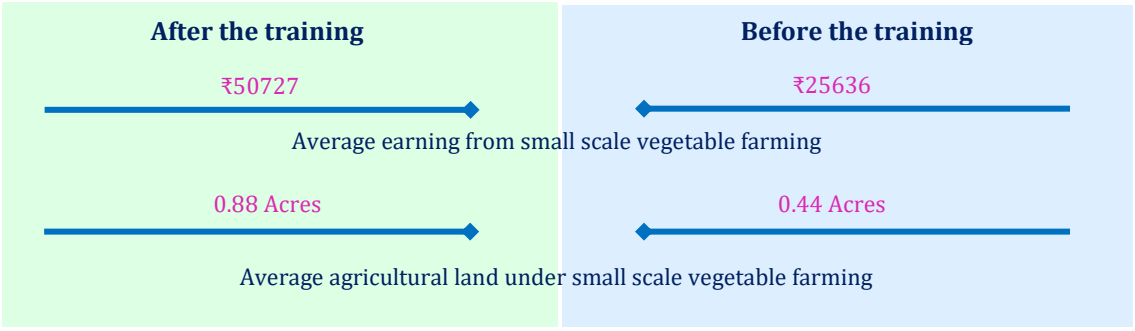
Table 4.7 Level of awareness after and before the training in Vegetable Farming

	After	Before	Change
Seed/ variety selection	4.00	0.63	3.37
Pest management	4.00	1.00	3.00
Harvesting, packaging and storage	3.81	0.94	2.87
Marketing strategies	3.75	0.94	2.81
Financial management	3.81	0.69	3.12
Grafting and Budding	3.69	1.00	2.69
Watering and irrigation	3.88	0.75	3.13
Average	**3.85**	**0.85**	**3.00**

Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 16 (Those trained in Vegetable farming)

The average seasonal earnings from small-scale vegetable farming saw a notable increase, rising from ₹25,636 before the training to ₹50,727 afterward. Similarly, the average agricultural land dedicated to small-scale vegetable farming expanded from 0.44 acres to 0.88 acres, underscoring the positive impact of the training on both income and land utilization for vegetable farming.

Figure 4.9 Post-Training Impact on Vegetable Farming



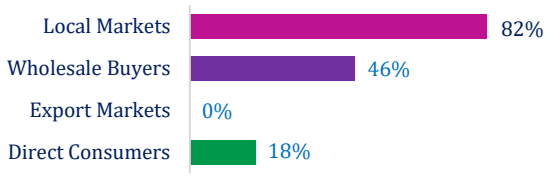
N = 11 (Those currently engaged in Vegetable farming)

Table 4.8 Key Factors Contributing to Increased Income after training in Vegetable Farming

Higher Yields	82%
Improved quality of produce	73%
Access to new markets	36%
Better pricing strategies	36%
Reduced Production Costs	55%

N = 11 (Those currently engaged in Vegetable farming)

Figure 4.10 Primary Customers for Small Scale Vegetable Farming



N = 11 (Those currently engaged in Vegetable farming)

A considerable proportion of beneficiaries (Table 4.8) attributed their increased income to higher yields (82%) and improved quality of produce (73%). Additionally, reduced production costs (55%) played a key role, while access to new markets and better pricing strategies, each cited by 36 percent of beneficiaries, and also contributed to income growth.

The local market constitutes the largest share of sales at 82 percent, with wholesale buyers following at 46 percent. Direct consumers account for 18 percent of the customer base, while there is no contribution from export markets (Figure 4.10). This suggests that the majority of sales are concentrated within the local market, with a considerable reliance on wholesale buyers.

4.5 FLORICULTURE

Table 4.9 Level of awareness before and after the training for Floriculture

	After	Before	Change
Seed selection	3.87	0.25	3.62
Soil and bed preparation	4.38	0.50	3.88
Pest management	3.75	0.38	3.37
Water management	4.25	0.50	3.75
Harvesting and preservation	3.75	0.50	3.25
Marketing strategy	3.38	0.25	3.13
Financial management	3.63	0.62	3.01
Average	**3.86**	**0.43**	**3.43**

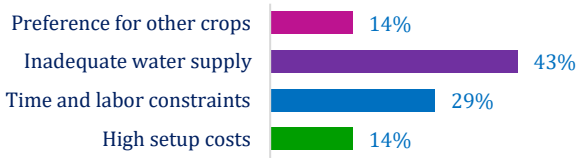
Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 8 (Those trained in Floriculture)

The training resulted in a substantial improvement in overall awareness, showing a notable increase in knowledge across all aspects of the training. On average, there was a substantial improvement of 3.43 across the categories, reflecting the effectiveness of the sessions.

Average seasonal earnings from floriculture rose to ₹25,000 after the training, demonstrating the positive financial impact of the program. Prior to the training, no beneficiaries were engaged in floriculture, making this a new and profitable venture for them. Beneficiaries also highlighted that their primary consumers were exclusively local markets, underscoring the critical role of local demand in boosting earnings. However, only 1 beneficiary of those who received floriculture training continued cultivation after completing the program.

The primary reason for not practicing floriculture after training, cited by 43 percent of beneficiaries, was inadequate water supply. Additionally, time and labor constraints were noted by 29 percent, while high setup costs and a preference for other crops were each mentioned by 14 percent of beneficiaries.

Figure 4.11 Main Reasons for Not Practicing Floriculture After Receiving Training



N=7 (Those not currently practicing floriculture after receiving training)

4.6 COMMERCIAL BUSINESS VERMICOMPOSTING

The training markedly improved participants' awareness of commercial vermicomposting practices, with a considerable increase in knowledge across all key areas. Awareness of composting beds saw the most substantial improvement, rising from 0.51 to 3.82, followed by notable gains in earthworm management and organic waste collection. Participants also developed valuable insights into vermicomposting

Table 4.10 Level of awareness after and before the training for commercial business Vermicomposting

	After	Before	Change
Composting beds	3.82	0.51	3.31
Earthworm management	3.68	0.54	3.14
Organic waste collection	3.53	0.57	2.96
Vermicomposting harvesting	3.50	0.59	2.91
Harvesting and preservation	3.55	0.62	2.93
Marketing strategies	3.43	0.51	2.92
Financial management	3.41	0.49	2.92
Average	**3.56**	**0.55**	**3.01**

Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 37 (Those trained in commercial business vermicomposting)

harvesting, marketing strategies, and financial management, all critical for successfully running a commercial vermicomposting business. The average awareness level increased from 0.55 before the training to 3.56 afterward, highlighting the training's comprehensive impact. Additionally, 49 percent of beneficiaries reported actively practicing vermicomposting after the training, reflecting a strong adoption of the skills and knowledge acquired.

The majority of beneficiaries reported appreciable benefits from implementing vermicomposting practices on their farmland (Table 4.11). Improved soil fertility and better crop yield were observed by 90 percent of participants, highlighting the positive impact of vermicomposting on agricultural productivity. Additionally, 78 percent of beneficiaries experienced increased income, while 67 percent noted a reduction in waste, demonstrating the environmental and financial advantages of adopting these practices.

During the FGD, youths who received training in vermicomposting shared that they now understand the use of organic fertilizers as beneficial for both health and the environment. Organic fertilizers help maintain soil health without negatively impacting the environment. The beneficiaries also noted a decrease in the use of chemical fertilizers and an increase in the adoption of organic alternatives.

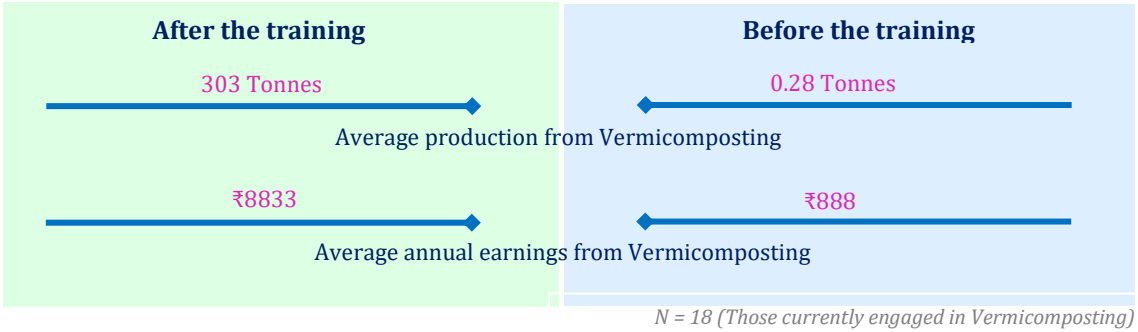
Table 4.11 Observed Benefits by beneficiaries from Implementing Vermicomposting Practices on Farmland

Increased Income	78%
Improved Soil Fertility	90%
Reduced Waste	67%
Better Crop Yield	90%

N = 18 (Those currently engaged in commercial business vermicomposting)

The training had a remarkable impact on vermicomposting production and earnings as depicted in Figure 4.8. Average production skyrocketed from just 0.28 tonnes before the training to 303 tonnes afterward, showcasing a considerable increase in productivity. Likewise, the average annual earnings from vermicomposting saw a substantial rise, increasing from ₹888 before the training to ₹88,333 after the training. These figures underscore the effectiveness of the training in boosting both output and income from vermicomposting.

Figure 4.12 Post-Training Impact on Vermicomposting



N = 18 (Those currently engaged in Vermicomposting)

The primary customers for beneficiaries' products primarily include local markets, which account for 55 percent of sales. Wholesale buyers make up 22 percent of the customer base. Additionally, 44 percent of beneficiaries indicated "other reasons" for using their products, with the majority of these beneficiaries utilizing the products on their own farms. This distribution highlights a diverse customer base while emphasizing notable internal use.

4.7 ANIMAL HUSBANDRY

Table 4.12 Level of awareness for Dairy management, Goat farming, and Piggery after and before the training

	After	Before	Change
Animal health and nutrition	3.86	0.82	3.04
Milking techniques	2.56	0.56	2.00
Dairy farm management	3.19	0.65	2.54
Fodder production and management	3.98	0.90	3.08
Marketing of livestock/ dairy products	3.02	0.68	2.34
Financial management	3.33	0.70	2.63
Balanced Nutrition Feeding	3.81	0.79	3.02
Average	**3.39**	**0.73**	**2.66**

Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 103 (Those trained in Dairy management, Goat farming, and Piggery)

This section (Table 4.12) highlights the impact of training in animal husbandry, specifically covering dairy management, goat farming, piggery, and balanced animal nutrition. The training greatly enhanced participants' knowledge in various aspects of livestock and dairy management. Before the training, awareness levels were particularly low in key areas such as animal health and nutrition, dairy farm management, and the marketing of livestock products. Post-training, participants demonstrated a considerable boost in understanding, especially in fodder production, balanced nutrition feeding, and animal health.

These improvements underscore the training's success in providing essential skills for effective livestock management and promoting financial sustainability in dairy farming. Overall, there was an average increase of 2.66 in awareness across all areas, reflecting the program's positive impact.

Table 4.13 Level of awareness for balanced animal nutrition after and before the training

	After	Before	Change
Animal nutrition and feed formulation	4.10	0.80	3.30
Feed storage and handling	4.10	0.90	3.20
Feed quality assessment	3.90	0.90	3.00
Cost-effective feed production	3.90	0.80	3.10
Average	**4.00**	**0.85**	**3.15**

Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 10 (Those trained in balanced animal nutrition)

The training led to a considerable increase in participants' awareness of balanced animal nutrition. Before the training, awareness levels were relatively low across all areas, particularly in feed formulation, storage, handling, and quality assessment. After the sessions, participants exhibited substantial improvements, with notable gains in understanding feed formulation (3.30) and feed storage (3.20). On average, awareness improved by 3.15 across all categories, reflecting the training's overall effectiveness in enhancing knowledge of balanced nutrition and cost-effective feed production.

After receiving the training, 63 percent of beneficiaries reported that they are currently practicing animal husbandry, demonstrating the practical application of the skills and knowledge gained from the training. When asked about the impact of the training on animal health, 43 percent of beneficiaries reported that it has moderately improved the health of their animals, while 33 percent noted that it has improved.

According to the findings from the KIIs, the beneficiary was unable to fully implement all the knowledge due to health issues. His family has adopted practices such as proper feeding, cleanliness, and vaccinations. The training emphasized sustainable livestock practices, focusing on reducing disease risks through timely vaccinations and maintaining cleanliness to prevent environmental harm.

Table 4.14 Comparison of herd size before and after receiving training

	After	Before	Change
Cow	1.01	0.61	0.40
Buffalo	0.12	0.13	-0.01
Goat	9.03	4.94	4.09
Pigs	2.28	1.03	1.25
Ox	0.33	0.52	-0.19

N = 69 (Those currently practicing Animal husbandry)

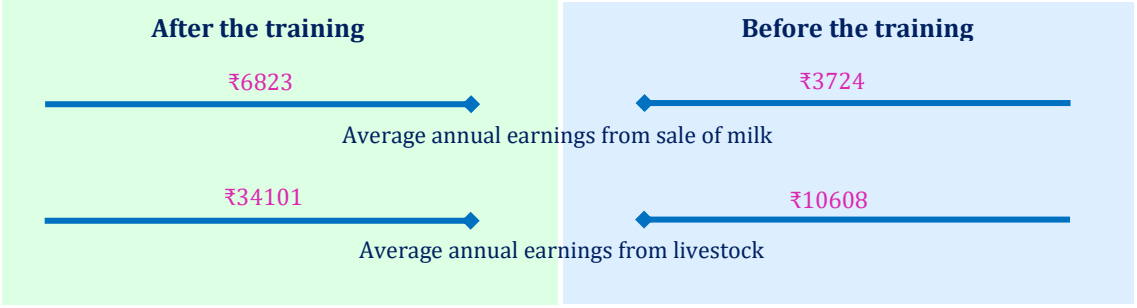
The training led to an average increase in herd size across various animals. Goat herd size saw the most substantial growth, rising from an average of 4.94 to 9.03. Pigs followed with an increase from 1.03 to 2.28, while cows experienced a moderate rise from 0.61 to 1.01. The average number of buffalo remained almost unchanged, and oxen saw a slight decline from 0.52 to 0.33. These averages reflect the overall positive impact of the training on herd management and livestock productivity.

The training has fairly improved the financial outcomes for participants, particularly in the livestock and dairy sectors. A beneficiary of the training in animal husbandry from Ganeshpur, Ranchi, highlighted the positive outcomes of the training, stating:

> *" Income has risen, along with improved cleanliness and increased milk production. The more care and food you provide, the greater the increase will be."*
>
> *- Animal Husbandry Beneficiary, Ganeshpur, Ranchi*

The average annual earnings from the sale of milk nearly doubled, increasing from ₹3,724 before the training to ₹6,823 afterward. Likewise, the average annual earnings from livestock saw a notable rise, jumping from ₹10,608 before the training to ₹34,101 post-training. These improvements underscore the positive impact of the training on income generation and livestock management.

Figure 4.13 Post-Training Impact on Animal Husbandry

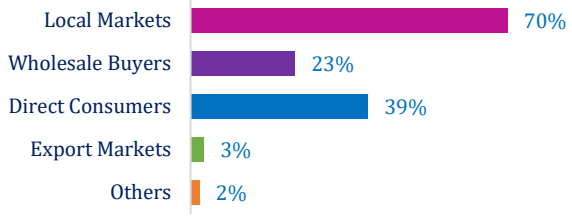


N = 69 (Those currently engaged in Animal husbandry)

The primary customers for dairy products are largely concentrated in local markets, which account for the majority of sales at 70 percent. This indicates that a significant portion of dairy producers are targeting

nearby consumers, likely due to the logistical ease and immediate demand in these areas. Wholesale buyers make up 23 percent of the customer base, while export markets represent a smaller portion at 3 percent (Figure 4.14). Other customer segments, including restaurants or food service providers, are minimal, with virtually no participation. This indicates that dairy sales are heavily reliant on local markets and direct consumers for the majority of revenue.

Figure 4.14 Primary customers for dairy



N = 69 (Those currently engaged in animal husbandry)

4.8 FISHERIES

In an interview, KGVK personnel described how they designed trainings for fisheries. They met with veterinary doctors to identify common challenges associated with fish farming. They also noted best practices for rearing fish and assessed which of these practices would be most suitable for the specific context of the project areas.

Table 4.15 Level of awareness after and before the training in Fisheries

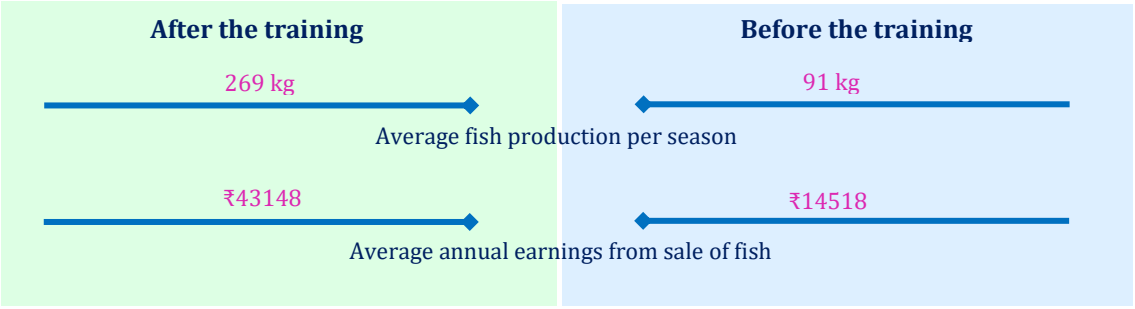
	After	Before	Change
Fish Breeding Techniques	3.50	0.33	3.17
Water Quality Management	3.48	0.33	3.15
Feed Formulation and Management	3.73	0.25	3.48
Fodder production and management	3.71	0.27	3.44
Disease Control and Management	3.33	0.29	3.04
Marketing of Fish Products	3.81	0.35	3.46
Average	**3.59**	**0.30**	**3.29**

Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 48 (Those trained in Fisheries)

The following data in Table 4.15 focuses on the impact of training in fishery, specifically addressing Biofloc Technology, pisciculture, and pearl farming. The training resulted in a substantial increase in participants' awareness of fish seed production practices across multiple areas. Considerable improvements were observed in fish breeding techniques, water quality management, and feed formulation, all of which saw marked growth from previously low levels of knowledge. Awareness of fodder production, disease control, and fish product marketing also experienced notable gains.

This comprehensive enhancement in understanding key aspects of fish seed production demonstrates the training's effectiveness in providing participants with the necessary skills to advance their fish farming practices. After the training, 56 percent of beneficiaries reported actively practicing fishery, showcasing a high adoption rate of the techniques learned. Furthermore, 66 percent of beneficiaries stated that the training had relatively improved the health of their fish. On average, there was a remarkable change of 3.29 in awareness across all categories. The training had a considerable positive impact on both fish production and earnings. After the training, the average fish production per season increased from 91 kg to 269 kg. Alongside this, average annual earnings from the sale of fish saw a substantial rise, growing from ₹14,518 before the training to ₹43,148 afterward. These improvements highlight the effectiveness of the training in boosting both productivity and profitability in fish farming.

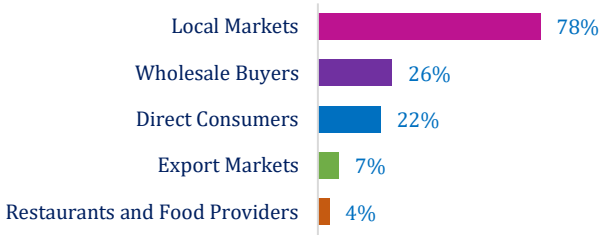
Figure 4.15 Post-training impact on Fish production



N = 27 (Those currently engaged in Fisheries)

The primary customers for fish seed production are predominantly local markets, which account for 78 percent of sales. Wholesale buyers also play a considerable role, making up 26 percent of the customer base. Direct consumers represent 22 percent of the market, while export markets contribute a smaller portion at 7 percent Restaurants and food providers make up the smallest segment, accounting for 4 percent of sales. This distribution indicates a strong reliance on local and wholesale markets for fish seed production sales.

FIgure 4.16 Primary Customers for Fishery



N = 27 (Those currently engaged in Fisheries)

4.9 PEARL FARMING

In the KII, the beneficiary shared that they learned essential techniques for pearl farming, including the delicate surgical process and post-surgery care. They emphasized the importance of maintaining a clean environment and proper oxygen and pH levels in the tanks to ensure the pearls' survival. The training was implemented through careful adherence to the taught techniques, such as tank maintenance, proper feeding, and managing the pearls post-surgery. Discussions on environmental sustainability were also part of the training, including the significance of planting more trees to reduce pollution, which the beneficiary acknowledged and plans to apply in their work.

Table 4.16 Level of awareness after and before the training in Pearl Farming

	After	Before	Change
Pearl Nucleation Techniques	3.64	0.00	3.64
Water Quality Management	3.82	0.09	3.73
Feed Formulation and Management	3.55	0.00	3.55
Disease Control and Management	3.36	0.00	3.36
Marketing of Pearls	3.45	0.00	3.45
Average	**3.56**	**0.02**	**3.55**

Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 11 (Those trained in Pearl farming)

The training resulted in a considerable improvement in participants' awareness of essential practices in pearl farming. Prior to the sessions, knowledge in critical areas like pearl nucleation techniques, feed formulation, disease control, and marketing was virtually nonexistent. The training, however, led to considerable gains, especially in water quality management and pearl nucleation techniques.

The beneficiary in KIIs expressed that he aims to expand their operation from 1,000 to 5,000 pearls if the initial trial proves successful. They successfully implemented practical skills like pearl

surgery, which boosted their confidence in managing the farm. The focus on proper pearl care and maintaining a balanced environment—such as ensuring adequate oxygen levels and changing the water every 15 days—reflects sustainable practices.

The beneficiary sees the potential for increased income from pearl farming and anticipates a considerable improvement in their financial situation once the two-year farming cycle is complete. They expressed that the knowledge gained from the training has empowered them and will contribute to ongoing improvements in their work, ultimately leading to a better future for their family.

Despite these improvements in awareness, the overall adoption of these practices in the region has been limited, with only one of the beneficiaries currently engaged in pearl farming. Many participants cite challenges such as the complexity of managing water quality and the high initial costs as barriers to adopting the practices learned. This suggests that while the training effectively increased knowledge—evidenced by an average change of 3.55—additional support is necessary to facilitate wider implementation of these skills.

4.10 FOOD PROCESSING

During an FGD, it was reported that women received training in making a variety of products, including *madua laddoos*, pickles, chocolates, and jams. From the trainings on making jams, women have been able to make jams and sell in the markets. They have been able to procure FSSAI certification for their labels to sell pickles and jams. This has helped authenticate their products for sale. However, women beneficiaries in FGD have reported not having received adequate training on packaging and marketing.

> *"After the labeling, the credibility of the products improved, and people began to trust that they were of good quality. There was increased interest in purchasing the products, with customers perceiving them as part of a reputable brand."*
>
> *Women Beneficiary, Adra Hazaribagh*

Awareness of FSSAI certification improved but remains relatively low compared to other areas, with only 33 percent of those involved in food processing having obtained certification. This indicates a potential need for greater emphasis on FSSAI certification in future training programs.

Table 4.17 Level of awareness after and before the training for Food Processing

	After	Before	Change
Making the product	3.71	0.34	3.37
Checking product quality	3.42	0.27	3.15
How to package product	3.92	0.22	3.70
How to make products last longer	3.85	0.33	3.52
How to sell products (labelling)	3.59	0.26	3.33
Marketing	3.35	0.31	3.04
Understanding FSSAI certification	2.79	0.14	2.65
Average	**3.70**	**0.28**	**3.41**

Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 86 (Those trained in Food processing)

As observed also from the survey data (Table 4.17), the training led to a noticeable increase in participants' awareness of crucial food processing practices, including product creation, quality control, packaging, shelf life extension, and marketing. Prior to the training, knowledge in areas like product packaging and selling techniques was very limited, but there were notable improvements afterward.

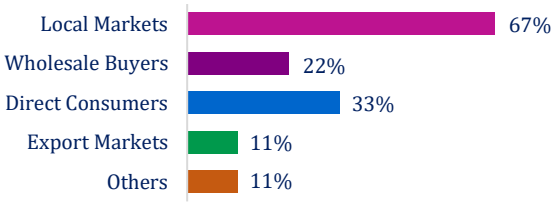
Despite these gains, only 11 percent of beneficiaries are actively engaged in food processing. Among those who continued, there was a substantial rise in average income from ₹3,300 to ₹12,800, highlighting the financial benefits of applying the skills acquired. However, the lower engagement rate suggests that additional support or resources may be necessary to foster wider participation. The average awareness change across all areas was 3.41.

Figure 4.17 Post-Training Impact on Food Processing

N = 10 (Those currently engaged in food processing)

In the food processing sector, local markets dominate as the primary customer base, with 67 percent of beneficiaries indicating that they sell their products locally (Figure 4.14). Direct consumers also play a considerable role, accounting for 33 percent of sales. Wholesale buyers make up 22 percent of the customer base, while export markets and "others" represent smaller portions, each contributing 11 percent. This distribution highlights the strong reliance on local markets and direct consumers for the sale of food processing products.

Figure 4.18 Primary Customers for Food Processing



N = 10 (Those currently engaged in food processing)

4.11 LAC BANGLES AND DECORATIVE ART MAKING

In the KII, the beneficiary shared that she received training in crafting designer lac bangles, learni8g intricate designs that incorporate materials such as mustard seeds, wheat, and rice. She also acquired skills in creating personalized bridal bangles, including the ability to add the names of the bride and groom. In addition to bangles, she was trained in making other beauty items like earrings, mangalsutra, and bindis.

Table 4.18 Level of awareness after and before the training in Lac Bangles and Decorative art marking

	After	Before	Change
Design Techniques	3.91	0.63	3.28
Quality Control	3.79	0.47	3.32
Marketing and Branding	3.33	0.49	2.84
New Tools and Technologies	3.60	0.35	3.25
Average	**3.66**	**0.49**	**3.17**

Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 43 (Those trained in Lac bangles and decorative art making)

Before the training, knowledge was notably low in crucial areas such as design techniques, quality control, marketing, and the application of new tools and technologies (Table 4.18). After the training, there was a substantial increase in awareness across all these areas, with the most considerable gains observed in design techniques and quality control. The average awareness level improved from 0.49 before the training to 3.66 afterward, demonstrating the training's effectiveness in providing artisans with essential skills to enhance the quality, marketability, and technological advancement of their products.

The training also covered important aspects such as packaging techniques and safety guidelines, ensuring minimal environmental impact. For example, participants were advised to keep children away from chemicals and wash hands thoroughly after handling them. Those who continued with lac bangle production saw their income rise considerably, from ₹8,000 to ₹15,000. The training was informative, and the beneficiary appreciated the knowledge gained, expressing a desire for even broader skill coverage.

Despite these successes, the beneficiary encountered several challenges. The main hurdle was the financial barrier to purchasing raw materials, which had to be ordered in bulk from Kolkata, costing ₹10,000-12,000. Without financial assistance or loan options, affording these materials was difficult. Additionally, local demand favored glass bangles, which she was not trained to make, limiting her market. Marketing also proved challenging, as local shopkeepers preferred external suppliers, making it hard for her to compete. The high cost of raw materials and lack of capital further strained the process. Not being part of a collective group for sourcing materials also increased her costs.

Only 7 percent of participants continued making lac bangles and decorative items after the training, underscoring the need for additional financial support and training in trending designs and more popular items, such as glass bangles, to meet local market demands. While the training was effective for those who adopted the practices, broader participation and sustained engagement in this craft may require further support, especially in areas of financing, market access, and product diversification.

4.12 STICKY TRAP

Table 4.19 Level of awareness after and before the training in Sticky trap

	After	Before	Change
Design Techniques	3.98	0.15	3.83
Quality Control	3.80	0.20	3.60
Marketing and Branding	3.60	0.00	3.60
New Tools and Technologies	3.25	0.05	3.20
Average	**3.66**	**0.10**	**3.56**

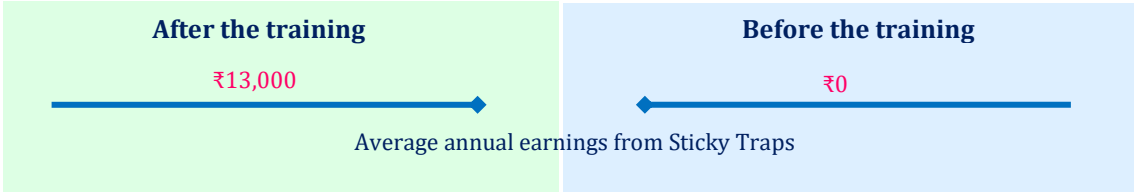
Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 20 (Those trained in Sticky trap production)

The training considerably enhanced participants' awareness of key practices related to Sticky Trap production (Table 4.19). Before the training, knowledge was extremely low in areas such as design techniques, quality control, marketing, and the use of new tools and technologies. After the training, there was a substantial improvement across all these areas, with the most considerable gains observed in design techniques and quality control. The average awareness increased from 0.10 before the training to 3.66 afterward, reflecting a notable advancement in understanding.

Despite the significant improvements brought by the training, only 30 percent of the beneficiaries are actively engaged in producing Sticky Traps for sale. This relatively low participation suggests that while the skills to create Sticky Traps were successfully transferred, other factors—such as market access, production costs, or interest in entrepreneurship—may be limiting broader adoption for commercial purposes. However, an encouraging trend is that many participants who are not producing Sticky Traps for sale have still started using them on their own farms. This shift indicates a growing recognition of the benefits of Sticky Traps as an effective alternative to chemical insecticides. By integrating these traps into their farming practices, farmers are not only reducing their reliance on harmful chemicals but also promoting more sustainable agricultural methods.

Among those who have continued with the commercial production of Sticky Traps, the financial impact is notable. As observed from Figure 4.19, their average income from sales rose from zero to ₹13,000, showcasing the tangible economic benefits of applying the skills gained from the training.

Figure 4.19 Post-Training Impact on Sticky Traps



N = 6 (Those currently engaged in Sticky trap production)

4.13 ALTERNATE ENERGY

This section on alternative energy covers the training impact in assembling and repairing LED lights, as well as solar and LED products assembly and repair. As informed by the beneficiary in the KII, the training covered the assembling and repairing of solar panels, teaching key concepts such as how to use low-voltage power effectively and cleanly.

Table 4.20 Level of awareness after and before the training in Alternate energy

	After	Before	Change
Product Assembly	3.76	0.68	3.08
Repair Techniques	3.81	0.87	2.94
Quality Control	3.48	0.58	2.90
Marketing and Branding	3.37	0.66	2.71
New Tools and Technologies	3.50	0.71	2.79
Average	**3.58**	**0.70**	**2.88**

Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 62 (Those trained in Alternate energy)

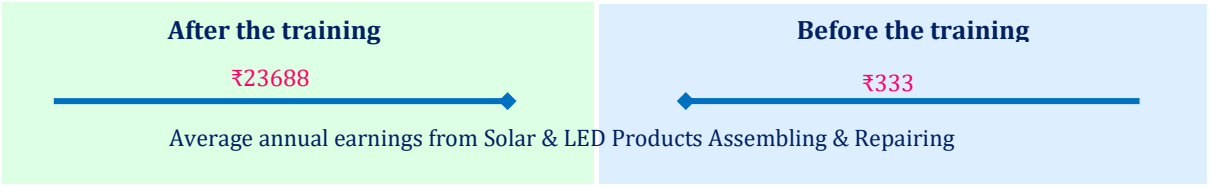
The training markedly enhanced participants' awareness of key practices in assembling and repairing Solar and LED products. Prior to the training, knowledge levels were relatively low in areas such as product assembly, repair techniques, quality control, marketing, and the use of new tools and technologies (Table 4.20). After the training, there was a notable increase in understanding across all these areas, with the most considerable gains observed in repair techniques and product assembly. Awareness also grew considerably in marketing and branding, as well as in the adoption of new tools and technologies. The average awareness improved from 0.70 before the training to 3.58 afterward, reflecting the training's effectiveness in providing participants with crucial skills for both the technical and commercial aspects of the Solar and LED light industry.

> *"After opening my shop, I started getting customers for repairs, but ever since the training, more and more people have been coming to me for their solar equipment repairs."*
>
> *- Alternate Energy Beneficiary, Gandke Ramgarh*

When asked about the usefulness and application of the training, the beneficiary shared in the KII that it provided practical knowledge in assembling and repairing solar equipment, which was directly applicable to his work as a mechanic. He also gained an understanding of the environmental benefits of solar energy compared to traditional sources like coal. After completing the training, he successfully applied these new

skills to open a shop for repairing solar equipment. He mentioned that more engineers and mechanics began seeking his services for repairs, highlighting the immediate impact of the training. Additionally, the emphasis on solar energy was recognized as not only being more environmentally friendly than coal-based power but also reducing overall energy consumption.

Figure 4.20 Post-Training Impact of Alternate Energy



N = 62 (Those currently engaged in Alternate Energy)

For those who did continue, their average annual earnings increased considerably, rising from just ₹333 before the training to ₹23,688 afterward. Surprisingly only 15 percent of participants are currently working on Solar and LED lights. This suggests that while the training was effective in building knowledge, additional support or resources may be needed to encourage more participants to apply these skills in practice.

4.14 PASHU MITRA

Table 4.21 Level of awareness after and before the training of Pashu Mitra

	After	Before	Change
Overall animal health – prevention & cure	3.65	0.85	2.80
Timely vaccination of cattle	3.65	0.98	2.67
Various fodder crops and their usefulness	3.72	1.06	2.66
Balanced nutrition feeding of animals	3.76	1.19	2.57
Appropriate breeding of animals	3.30	0.76	2.54
Animal husbandry schemes at village level	3.37	0.72	2.65
Average	**3.58**	**0.93**	**2.65**

Response on a scale of 0 to 5, where 0 = Not aware and 5 = Fully aware
N = 54 (Those trained as Pashu Mitra)

The training resulted in a considerable enhancement in participants' awareness of various aspects of animal health and management as Pashu Mitras. Before the training, knowledge was relatively low in critical areas such as animal health prevention and cure, timely vaccination, balanced nutrition, and breeding practices. After the training, participants showed a notable increase in understanding, with the most substantial improvements observed in balanced nutrition feeding and the benefits of different fodder crops. Awareness of village-level animal husbandry schemes and appropriate breeding practices also experienced considerable growth. The average awareness level improved from 0.93 before the training to 3.58 afterward (Table 4.21), demonstrating the training's effectiveness in equipping participants with essential skills for better animal health and management. However, despite these improvements, only 20 percent of beneficiaries continue to work as Pashu Mitras after the training, indicating that additional support may be needed to encourage broader participation in this role. The training had a considerable impact on the earnings of Pashu Mitras as shown in Figure 4.21. Average annual earnings increased notably, rising from ₹3,454 before the training to ₹11,136 afterward. This substantial increase demonstrates the positive financial benefits of the training, as it enabled Pashu Mitras to provide more services and improve.

Figure 4.21 Post-Training Impact on Pashu Mitra

N = 11 (Those currently engaged as Pashu

Table 4.22 Average Number of Animals Catered to as a Pashu Mitra Before and After the Training

	After	Before	Change
Cow	2.73	0.36	2.37
Buffalo	0.18	0.18	0.00
Goat	17.73	2.36	15.37
Pigs	11.09	0.27	10.82
Ox	0.82	0.64	0.18

N = 11 (Those engaged as Pashu Mitra)

The training had a considerable impact on the number of animals Pashu Mitras provided services to each month. After the training, there was a substantial increase in the number of goats and pigs catered to, rising from 2.36 to 17.73 for goats and from 0.27 to 11.09 for pigs. The number of cows served also increased, from 0.36 before the training to 2.73 afterward. The number of buffaloes remained unchanged, while oxen saw a slight increase in services provided. These figures (Table 4.22) demonstrate the positive effect of the training on the scope of services offered by Pashu Mitras, particularly for small livestock like goats and pigs.

CASE STUDIES

Chapter 5

CASE STUDY I: PROMOTING GOAT FARMING THROUGH TRAINING- A SUCCESS STRORY FROM HAZARIBAGH

In the rural village of Haram in Hazaribagh, Jharkhand, many families depend on small-scale farming and livestock for their livelihood. One such farmer, Jainath Kumar, had been practicing goat farming for over a decade. However, frequent disease outbreaks, such as PPR (Peste des Petits Ruminants), severely impacted his herd, especially during the rainy season. Before receiving training, Jainath lost up to half of his goats to diseases, which significantly affected his family's income.

To address such challenges, HDFC CSR, in partnership with KGVK, introduced capacity-building training for local farmers to improve goat farming practices. The training aimed to teach better animal husbandry techniques, focusing on disease prevention, vaccination, and improved herd management. Jainath participated in one of these training programs in Ranchi in April 2022, where he learned critical skills that transformed his farming approach.

The training taught us to vaccinate the goats for PPR, ED, and FMD. Before, we didn't know about these injections, and many goats died, especially in the rainy season. Now, thanks to timely vaccinations, the goats are healthy," shared Jainath during the interview. The training emphasized keeping goats dry during the rainy season, maintaining hygienic shelters, and using the Black Bengal breed, which is well-suited to the local climate. With regular vaccinations and improved livestock management, the mortality rate of Jainath's goats dropped dramatically. His herd grew from 7-8 goats to around 25-30, significantly improving his financial situation. "I now sell live goats at Rs. 350/kg, especially during festivals like Durga Puja, and it's a good income source," he explained.

Despite these successes, Jainath still faces challenges. Stall feeding, though recommended for better goat health, incurs higher costs, leading him to rely on grazing. He also mentioned the lack of proper space for a shed, forcing him to house his goats in an old building, which is not ideal.

Jainath's story highlights the transformative impact of well-designed training programs on rural livelihoods. The interventions not only improved his goats' health but also helped him generate a stable income. His children now attend private school, a milestone that was previously out of reach.

> *"Our family's quality of life has improved. Before, we couldn't afford a private school, but now, both my son and daughter are attending one"*
>
> *- Jainath, Haram Hazaribagh*

This case study illustrates how targeted training can create lasting improvements in rural communities, empowering farmers to enhance their livelihoods. However, it also underscores the need for continued support, especially in helping farmers overcome the economic barriers to adopting all best practices.

CASE STUDY II: EMPOWERING FARMERS THROUGH COMMERCIAL STRAWBERRY FARMING: THE SUCCESS STORY OF MOHAN SANGWHA

Mohan Sangwha, a farmer from Argori village in Kutijila district, experienced a significant transformation in his farming practices after attending a strawberry farming training program. Organized by an NGO in partnership with HDFC Bank's CSR and KGVK, the training took place between April 2022 and March 2023. The goal of the program was to help farmers shift from traditional subsistence farming to commercialized agriculture, introducing them to modern techniques and sustainable practices to improve their livelihoods.

Before attending the training, Mohan faced numerous challenges with traditional farming methods, which yielded limited financial returns. He struggled to make ends meet, and his farming techniques lacked the efficiency needed to increase productivity. However, the training provided a comprehensive introduction to commercial farming. Mohan learned valuable techniques, such as drip irrigation, organic fertilizer usage, and water conservation, which helped him save resources while increasing crop yields. These practical lessons were essential in guiding his transition to more market-driven farming.

One of the main takeaways from the training was how to cultivate strawberries, a crop Mohan had never considered before. Despite initial fears about selling the produce, the training equipped him with marketing strategies to connect with local buyers. "Before I am scare that where I will sell this strawberry but I cultivate it in very small quantity so it easy for me to manage, I sell it easily in local market," Mohan explained. His early success with small-scale production encouraged him to continue strawberry farming.

In the first year after completing the training, Mohan cultivated strawberries on a 35 to 40 decimal plot of land. While he initially faced challenges like plant damage and market access concerns, his determination paid off. Mohan managed to harvest and sell his strawberries, earning over one lakh rupees in his first year. This income allowed him to invest in much-needed farming equipment, such as a tractor, significantly improving his productivity and household income.

> *"Before my family condition was not so good but after doing Strawberry farming it got improved and I have purchased tractor also."*
>
> *- Mohan Sangwha, Argori, Kutijila*

Although the training provided valuable knowledge, Mohan realized that scaling up his operations required stronger marketing support. He faced difficulties selling strawberries in larger quantities and needed access to bigger markets. The training connected him with local buyers, but expanding his business would require more robust marketing channels and a better understanding of financial planning. Additionally, while Mohan embraced organic farming practices, he admitted to using a small amount of chemical fertilizer to increase yields, indicating the need for more guidance on fully transitioning to organic methods.

Mohan's journey highlights the impact of targeted training programs in empowering small farmers. The knowledge and skills he gained through the program helped him transition to commercial farming, increase his income, and improve his family's financial well-being. However, challenges such as marketing support and scaling up operations remain, signaling the need for continued assistance. His story serves as an inspiration to other farmers in his community, demonstrating how modern agricultural practices can lead to better livelihoods while also revealing areas for further development in farmer training programs.

CASE STUDY III: EMPOWERING RURAL LIVELIHOODS THROUGH GOAT REARING AND MUSHROOM CULTIVATION

Monica Kumari, a graduate from the village of Gadke, has been involved in traditional goat rearing since childhood. In April 2022, she participated in a training program organized by KGVK and HDFC's CSR initiative. The training aimed to improve her livestock management skills and introduce sustainable agricultural practices to enhance her income alongside her small digital shop. This marked a turning point for Monica, who was eager to apply the new knowledge.

Before the training, Monica reared goats using traditional methods, unaware of how unsanitary conditions affected their health. As she explained, "Earlier we used to keep goats and cows ox together. The difference is that because of training we got to know to keep goats and cows-ox separated." The training taught her the importance of maintaining a clean environment and building raised platforms to keep the goats dry. These methods significantly reduced disease and improved the overall health of her herd.

One of the key impacts of the training was the increase in Monica's income. By introducing Ajola grass, a high-protein feed, her goats became healthier and gained more weight, fetching higher prices in the market, especially during festivals. These improvements in livestock management allowed her to sell goats at a higher value, which increased her earnings and helped her support her family more effectively.

Additionally, the training introduced Monica to mushroom cultivation, which became a new source of revenue. She started growing mushrooms during the October-February season, providing for both her household and the local market. Reflecting on this success, she said, "We eat, sell, and give in relation people also." The demand for mushrooms was high, and this additional income stream helped Monica diversify her financial resources, further securing her family's future.

Despite initial resistance from her family, who questioned the need for change, Monica's results convinced them otherwise. Her family saw the benefits of healthier goats and increased earnings. The training also encouraged her to shift from chemical fertilizers to organic methods in her farming.

> *"Earlier we used to add chemical fertilizer and now use organic fertilizer so Whether it's pesticides or other inputs, we now make them from cow dung or leaves and add those instead"*
>
> *- Monica, Gadke Ranchi*

In conclusion, the training transformed Monica's livelihood. With improved goat-rearing practices and the addition of mushroom farming, she is now a confident and independent businesswoman. Monica plans to pass these skills on to her children, ensuring sustainable livelihoods for future generations. The knowledge and practices she gained have empowered her to continue thriving in both agriculture and livestock management.

PROCESS EVALUATION

Chapter 6

This chapter presents a detailed process evaluation of the FDP P0364 program, which aimed to improve livelihoods through sustainable farming, allied activities and entrepreneurship. The information in this chapter is largely derived from Key Informant Interviews (KII) conducted with KGVK personnel, in addition to data from the Project Closure Report. It provides insights into the program's planning, implementation, and key outcomes.

Source for Activities and Outcomes: Project Closure Report - KGVK

PLANNING

The main objective of the program was to improve the livelihood of the villagers through sustainable farming. Before the program intervention, it was observed by KGVK that the community members of the project area cultivated mostly for self-consumption and the surplus which was left with them was sold for a small income. However, it was also felt, that in the long run this would not be enough as the yield might even reduce given that the land size would be the same. With this problem statement in mind, KGVK came up with the idea of developing a business mindset among the community members such that they do not see their produce just for fulfilling their basic needs but also see their source of livelihood as business. In order that the community members treat their source of livelihood as a business, it was necessary to instil a sense of entrepreneurship in their minds. This was how the objective of this program was developed.

The idea was to help the beneficiaries improve their income through their existing livelihood activities like, agriculture and animal husbandry, by introduction of new technology.

Before the implementation of the program, KGVK conducted an orientation meet with all the partners. Due to COVID-19, the meeting had to be conducted virtually and the program rolled out post COVID.

KGVK personnel met with key stakeholders and the village-level institutions like VDCs and panchayat members in order to find out beneficiaries who would be interested and also be suitable to take up the trainings. The district government officials also supported KGVK in the implementation of their training program.

For the selection of beneficiaries, a psychometric test, developed by AD Patel Institute of Technology. Gujarat, was conducted to have a sense of their enterprising capabilities. The people who scored the most were considered for the training program.

RATIONAL BEHIND 'GREEN TRADE'

The farmers in the project area used to cultivate their crops mostly for self-consumption. A very small proportion of their produce was sold from which the income was not much. According to KGVK personnel, the concept of 'Green Trade' was hence inspired by this, focusing on business and entrepreneurship through agriculture. In this context 'Green' refers to sustainable agriculture and 'Trade' refers to business or entrepreneurship (Entrepreneurship with relation to agriculture and allied activities). Hence the project emphasized on enhancing entrepreneurship, developing a business mindset for beneficiaries through sustainable agriculture eliminating usage of chemicals. This also included allied activities pertaining to animal husbandry.

> *"If we are farming, it is green trade. We did not involve chemicals. Whatever is being cultivated has to be done for business purposes. The agriculture part in itself is green."*
>
> - *Arvind Sahay, Secretary – KGVK*

Additionally, solar alternate energy was also integrated in it, where the youth were imparted training in repair and maintenance of solar equipment.

TRAINING PROCESS

The training program was designed keeping in mind the new trends and trades in agriculture, especially high value crops and quality rearing practices in animal husbandry. The trainings were given in classroom mode and further demonstration of the same was done on fields. For this purpose, KGVK had created farmer field school (FFS) in each village where beneficiaries could have a hands-on learning experience and had also kept equipment like weeder there. So, if any farmer wanted to use them, they could come, use and learn. For the purpose of training, labs were also set up at various places.

Various skill trainings were provided with respect to cultivating various types of crops including high value crops like strawberries, mushroom and chia seeds. This was furthered by skilling on business and enterprise management – training farmers to think like businessmen and entrepreneurs so that they use the skills of farming and use them with a business mindset. The already existing SHGs were provided skill training on enterprise management.

KGVK also organized few buyer-seller meets. This was done for the beneficiaries' exposure to the markets. This was supplemented with trainings on marketing and negotiation by which the beneficiaries could improve their communication and negotiation skills, helping get a good price for their produce.

With respect to training on repair and maintenance of solar equipment, 10 beneficiaries were selected from each village to be provided training on it.

Follow ups were also conducted post training. The first follow up would generally be after 15 days, the next follow up after another 15 days, another after a month up till 6 months. This would enable beneficiaries reach out to KGVK in case they needed any further support.

QUALITY MEASURES FOR TRAINING

> *"If there is a training of 4-5 days, after that to follow up, our different teams used to go and visit randomly. We also had a designed follow up system in which the trained people were called after a certain period of time for 2-3 times to discuss about the challenges and problems to understand the execution of the training content so that they take up quality training that we have imparted fruitfully."*
>
> *Sandeep Vishwakarma, Deputy General Manager - KGVK*

It was ensured by KGVK personnel that the delivery of the training content was good and that the trainees understood what they were being taught. To this effect, training modules were designed in the form of booklets for each training. The modules were translated in the local language for trainees to understand easily. Further, whenever any changes were made in the training content, the booklets were modified according to it.

> *"If someone is cultivating strawberries then we created a booklet for them and if someone is cultivating mushroom, we designed a booklet for them in the same way, so that they understand. Their understanding is important for us."*
>
> *- Sandeep Vishwakarma, Deputy General Manager - KGVK*

Faculties and subject matter experts were also invited to facilitate the trainings; personnel from the government and Jharkhand State livelihood Promotion society (JSLPS) were also invited for facilitating the training sessions. For a particular training on cultivation of high value crops, the farm manager of Mahendra Singh Dhoni's farm had also been invited.

During the trainings, KGVK personnel sat in the classrooms where the training was being conducted to monitor whether the training was being conducted as per the training modules. They also gave their inputs whenever they felt the need to do so during the training. This also helped them to understand whether there was need to modify or change the training contents.

For each training, the trainers conducted pre and post evaluation of the knowledge of the trainees. This helped to understand the impact of the training sessions and how much the trainees were able learn from them.

> *"It was told to them (trainers) to take a pre-test before the training and after the training they can again take a test. Then could see the difference in both."*
>
> *- Arvind Sahay, Secretary - KGVK*

KGVK personnel also visited the trainees' houses in the villages and even their units where they had set them up to see how they are utilizing the knowledge received during training. Any support needed by the trainees were addressed even after they started practicing them.

RELEVANCE

The various trainings given to the beneficiaries were decided based on enhancing the income from agriculture and animal husbandry and existing market demands. For instance, strawberry cultivation was introduced as it could be cultivated during the winter season when the farmers did not grow any other crops. Also, the income from strawberry cultivation was quite high as compared to other crops as the market rates were high. Another example is the introduction of growing watermelons which could be grown after strawberries were harvested to be sold during the summers. This meant that cultivation of both strawberries and watermelons went hand in hand.

For skilling in animal husbandry, KGVK personnel met with veterinary doctors to understand the issues that generally arise when raising goats, pigs and fishes. They took note of the good practices for rearing animals and discussed which of them would be most suitable in the context of the project areas.

Given the economic status of the project areas, trainings were provided on zero-budget farming. This was focused on optimum utilisation of resources and moving towards natural farming. This would also remove usage of chemical providing good quality of produce to the people.

Skill trainings pertaining to starting up and management of enterprises was provided which included financial management courses, resource management courses and operations management courses. This was provided to the beneficiaries keeping in mind that they would start they own small enterprises pertaining to agriculture or animal husbandry.

CHALLENGES FACED

One of the biggest challenges lay in making the beneficiaries understand why the training program was being introduced and what kind of benefits would they have from it. Initially many farmers did not turn up for the training. The plan was to start with small batches of 30 trainees, but of them about only 10 people turned up. These small batches, however, inspired others to come in for the trainings once the results started showing up.

Another challenge was changing or modifying the training modules for the betterment of the trainings. These small changes were deemed to be necessary and had to be done during the course of the project.

Since strawberry cultivation was new to the project area, the seeds had to be sourced initially from other cities. This was however overcome over the time period of the project when the farmers started making strawberry nurseries of their own.

Another challenge was making and marketing of lac bangles. Lac also had to be sourced from elsewhere and above all profit from lac bangles was low given the input cost. This did not seem to scale up much.

KEY OUTCOMES AND SUSTAINABILITY

Many farmers have started cultivation for commercial purposes as compared to earlier. The number of beneficiaries also increased once they saw the results of the training through other farmers. Even the youth who preferred migrating for jobs started cultivation after getting the trainings.

It was seen after a certain time period that through proper training strawberry cultivation garnered more income from as compared to other crops. On top of that, over a period of time, farmers did not need to procure seeds from outside and could develop it themselves, optimizing resources and reducing the input costs.

Optimization of resources was also seen in mushroom cultivation. Initially, KGVK personnel used to procure bags of fertilizers for mushroom cultivation. When the women of the project area saw there is profit from mushroom cultivation, they started making those bags. This reduced the input cost as each bag used to cost 100 rupees which now reduced to about 30-40 rupees.

Communication and negotiation skills of beneficiaries have also seemed to improve through setting up of stalls in highways and fairs. Even young women have stepped up and have started selling their produce in markets. Female SHG groups started food processing and grinding of spices, whereas there were some adolescent girls' group who started mushroom cultivation.

INTEGRATION WITH EXISTING GOVERNMENT SCHEMES

KGVK has partnered with Agriculture Technology Management Agency (ATMA) and Nilambar Pitambar University to carry out government schemes pertaining to horticulture and soil conservation. Along with it they also tried linking the beneficiaries with banks so that they could avail financial resources.

RECOMMENDATIONS GIVEN

One of the stakeholders suggested that people should be trained or taught on a single skill from the very beginning. This would help them enhance the skill in which they are interested in. Maybe after mastering the particular skill, they can explore something else or another skill which would help build on it.

It was also suggested that right people at the right time with the right resources are needed to make any project a success. People who genuinely need and are interested in taking up a certain skill only should be included in the pool of trainees. A focused training would provide genuine results.

CONCLUSION & RECOMMENDATIONS

Chapter 7

5.1 CONCLUSION

The Green-preneurship Promotion Project, under the Skill and Entrepreneurship Development Programme (FDP Project P0364), was designed to foster rural self-reliance through sustainable agricultural practices and renewable energy adoption. Traditional farming in India often results in lower productivity and inefficiency, making it challenging for farmers to sustain livelihoods. This project addressed these challenges by offering targeted training in improved methods of cultivation, animal husbandry, high-value crops, zero budget farming, and various skill trainings. By encouraging farmers to treat their work as a business, the initiative aimed to boost income, improve self-sufficiency, and promote environmental responsibility.

Data from the impact assessment showed that the training programs were well-designed and relevant, effectively meeting the needs and priorities of participants. The strategic selection of capable beneficiaries, through methods like psychometric testing, ensured the program was well-targeted. Most beneficiaries found the training content clear, the delivery timely, and their questions adequately addressed. With 76% reporting that the program helped them start income-generating activities—such as multi-cropping, mushroom cultivation, LED light assembly —the initiative successfully enhanced agricultural productivity and opened new entrepreneurial pathways. However, the training in lac bangle production faced challenges due to high input costs, as raw materials had to be procured from distant locations like Kolkata. Similarly, entrepreneurship development in pearl farming was hindered by the high costs of essential surgical kits, making it difficult for participants to initiate these enterprises.

These enterprises not only created new sources of income but also lowered operational costs through better resource utilization, as demonstrated by the reduced feed costs in pig farming.

The training programs also had a profound impact on women's empowerment. Female beneficiaries formed Self-Help Groups (SHGs) and engaged in activities like jam-making, pickling, and mushroom cultivation, which enhanced their financial independence. Several women reported feeling more self-reliant, as they could now contribute to household expenses without depending on their husbands. This empowerment extended to decision-making and market participation, with women starting to sell their products independently in local markets, thanks to marketing training provided during the project.

Additionally, the program's emphasis on sustainable practices has fostered long-term environmental stewardship among participants. Many beneficiaries adopted eco-friendly methods such as organic farming and solar energy usage, which reduced their reliance on chemical inputs and conventional energy sources. These practices not only promoted environmental sustainability but also improved soil health and overall productivity.

While most beneficiaries acknowledged the training as impactful, the absence of necessary follow-up support and critical resources diminished its overall effectiveness. For instance, women trained in goat farming faced difficulties in retaining the skills they had acquired. These challenges highlight the need for continued investment and access to opportunities, showing that while the knowledge transfer was effective, participants struggled to apply their learning in real-world contexts. Additional post-training support—such as access to capital, market linkages, and sustained mentoring—would have greatly enhanced the chances of successful skill implementation. Despite these barriers, the project's focus on green entrepreneurship, financial independence, and sustainable practices brought notable benefits to beneficiaries, particularly women. This emphasis fostered long-term self-reliance and economic resilience in their communities, demonstrating the program's potential for a transformative impact."

The following table outlines the key strengths of the program alongside the challenges that limited its full potential, providing a more detailed view of its outcomes and areas for improvement.

Strengths	Challenges
• Psychometric testing, along with consultations with local village members, ensured the selection of motivated and capable beneficiaries • Training modules were regularly updated and tailored to new agricultural trends (e.g., high-value crops like strawberries and mushroom cultivation). • Delivered by experienced trainers with hands-on demonstrations in Farmer Field Schools (FFS) • Training was delivered on schedule with clear, well-structured content, ensuring participants understood key concepts. Pre- and post-training evaluations measured knowledge gains • Women, including young girls, were empowered through training, with many stepping up to start businesses such as mushroom cultivation and spice processing. • A few buyer-seller meets were organized, offering limited opportunities for market exposure and improving basic negotiation skills for some farmers. • All trainings emphasized eco-friendly practices, promoting sustainable farming methods and zero-budget farming • Follow-ups were conducted post-training (every 15 days to 6 months) to ensure beneficiaries could seek further assistance	• Women in the program faced social and mobility challenges, which limited their ability to engage fully in entrepreneurial activities, particularly in traveling to sell their products in markets or fairs • Limited local market opportunities for niche products like lac bangles, limiting profitability. • Certain ventures like pearl farming and lac bangles required expensive raw materials, limiting scalability. • Some beneficiaries, particularly in mushroom cultivation and goat rearing, lacked the necessary funds and resources, such as space, fodder, and infrastructure, to implement their training effectively

5.2 RECOMMENDATIONS

To address the challenges in the Green-preneurship Promotion Project and ensure long-term impact, few recommendations are proposed:

1. **Assessing Market Viability of Uncommon Trades**: Before launching training programs in niche trades like lac bangle production, floriculture, or pearl farming, a comprehensive market viability assessment should be conducted. This includes evaluating local demand, competition, and scalability, ensuring that beneficiaries are equipped to compete with existing players and that sustainable market opportunities are available.

2. **Access to Capital**: Strengthen partnerships with microfinance institutions, banks, and government schemes to offer low-interest loans or grants, helping beneficiaries overcome investment barriers.
3. **Leverage Digital Tools for Continuous Support:** Establish digital support groups where beneficiaries can raise questions, share progress, or receive real-time advice from trainers and peers in between formal follow-ups.
4. **Mobile Learning Modules:** Provide short, easy-to-understand mobile learning modules or videos that beneficiaries can access anytime to reinforce the skills and techniques learned during training**.**
5. **Market Linkages**: Establish regular and frequent buyer-seller networks, facilitate partnerships, and provide marketing and negotiation training to connect beneficiaries with sustainable markets and improve their pricing power.
6. **Post Training Support**: To enhance the sustainability of these programs, it is recommended to provide post-training assistance such as access to capital or sustained market linkages. Selected beneficiaries or community members can be trained as local trainers or "champions" who can take over the mentoring and support roles, creating a self-sustaining network of expertise. Additionally, ensuring affordable access to essential tools and inputs will empower participants to effectively implement the skills gained during training.
7. **Leveraging Government Schemes for Project Sustainability:** Align the project with relevant government schemes (e.g., MGNREGA, livestock support, horticulture missions) to give beneficiaries access to subsidies, grants, and other forms of assistance for sustainability.
8. **Scale Through Cooperatives**: Encourage beneficiaries to form cooperatives or self-help groups (SHGs) for shared access to resources, marketing, and business development, which can help scale their ventures.