

Impact Assessment Study Of Holistic Rural Development Programme (HRDP)

Punjab



Prepared For:



HDFC Bank CSR

Prepared By:



NR Management Consultants India Pvt Ltd.

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Executive Summary

As part of HDFC Bank's CSR initiative, programs are supported to deliver holistic rural development. The assessed HRD program was in **two clusters: Fazilka and Sri – Muktsar, Punjab**. The major focus areas were **Natural Resource Management (NRM), Skill Development and Livelihood Enhancement, Healthcare and Education**.

For the study impact assessment study conducted, both quantitative and qualitative methodologies were used. In this cluster, eight intervention villages were selected for the study. All the intervention villages were selected as sample villages. Sample from each village was selected by using Probability Proportionate to Size (PPS) sampling method. **The list of beneficiaries was obtained from the implementing partner Centre for Advanced Research & Development (CARD)**. Since beneficiary selection was undertaken independently for each program, the selection of more than one beneficiary from a single household was probable. The total sample size covered for the quantitative study was 410 households and for the qualitative, 9 focus group discussions and 10 In-depth interviews were conducted. **The impact assessment aims to evaluate the implementation and performance critically and objectively, to add value by showcasing successful initiatives, to recommend possible ways to add value by showcasing successful initiatives, to determine the reasons why certain results were achieved or not, to draw lessons, and to derive good practices and lessons learned.**

NRM: The project can be deemed effective in **creating noticeable changes in the income generation capacity of farmers through improved productivity, reduced input cost, and capacity building of farmers to adopt sustainable and innovative agricultural practices**. HDFC Bank interventions for water management in the region to increase land for agriculture have also been adopted and followed up by farmers after the project intervention. Furthermore, the project also brought about changes in facilitating access to clean energy solutions such as solar streetlights. The key focus in the region must be on **reducing chemical and pesticide input in agriculture instead of complete dependency on organic agriculture, as without proper market linkages, the sustainability proves to be difficult as maintaining crop yield through organic agriculture alone is still not well versatile and connected through markets for produce in the region.**

Skill and Livelihood Enhancement: The project activities within the skill and livelihood enhancement also have opened economic opportunities not just for farmers, but for SHG women in the community. These beneficiary categories, who otherwise have limited access to economic opportunities benefitted from the project by gaining the skills, technical support, and physical capital to undertake and expand entrepreneurial activities during the project period. While sustained profit generation is yet to be achieved, the project was successful in initiating entrepreneurial activities in the community among women that have motivated more women to start their own income generation activities. Livestock interventions through animal health camps and the distribution of goats and poultry helped small and marginalized farmers to have an extra source of income which

was especially beneficial during the Covid-19 lockdown in the region. Adequate institutional support for FPOs is required for their functioning.

Health and Sanitation: For project activities in health and sanitation, the construction of **wastewater soak pits has resulted in adequate water management in households**. Most of them are still functional. Through the construction of toilets in disadvantaged households, much relief has been provided to women and the elderly in terms of access to safe defecation facilities. Households with toilets are also benefitting the larger community as these are often accessed by members of neighboring households. **Project interventions for sanitation practices have been successful in the region. There is a need to focus on NCDs in project villages for better resources and information on the same.**

Promotion of Education: HDFC interventions in promoting education have been the most effective in the region, **as smart classrooms and science labs in selected schools have benefitted students to take more interest and regularize their attendance in schools**. Additionally, the **repairment of school toilets is safe and hygienic for children to use during school hours**. Additionally, to encourage school children to wash their hands and use sanitation equipment diligently, various awareness generation activities have been beneficial in the region. While sustained interventions in education have been carried out in project villages leading to better infrastructure, there is a need to focus on children’s learning outcomes and their measurability in the learning and retaining aspect through such interventions.

HRDI Indicators: HRDI has been calculated through baseline and endline values of 8 key themes of the intervention programme. There has been a significant change in the HRDI scores in the interventions of health and education. This is mainly due to awareness generation activities and the establishment of structures that last for a long time.

Table 1: Summary of HRDI scores

Domain	NRM		Skill and Livelihood		Health and Sanitation		Education		Overall HRDI	
	Baseline	Endline	Base line	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
HRDI Score	0.13	0.15	0.10	0.20	0.14	0.19	0.08	0.21	0.45	0.73
% Change	15%		100%		36%		163%		62%	

Table 2: Summary of key income indicators

Income Indicators (based on median)	Before	After	% Change
Average Net Income from Agriculture (INR)	1,73,750	1,78,750	3%
Average mean monthly income from SHG development*	660	2483	276%
Average mean monthly income from livestock	200	1000	400%

Figure 1: Overview of project impact

	Health and Sanitation	Skill Training and Livelihood Enhancement	Natural Resource Management	Promotion of Education
Overview of Activities	Construction of Sanitation Units, Development of Kitchen Garden	Formation of FPO'S, SHG, VDC in project village, Entrepreneur trainings, Agriculture skill training	Solar streetlights, irrigation management, drip system, wells etc., organic farming training	Construction of toilet, BaLa, smart classroom, science labs in schools
Areas of Improvement	Health Camps for communicable/ non communicable diseases	Market Linages for self help group, continued training after program.	Sustainability of organic farming	Need for better teaching training program
Challenges	Maintenance of toilet units	Sustained impact after project	Low maintenance of solar streetlights, less focus on clean energy	Project school interventions with the strengthening of SMC's
Recommendations	Need to focus on NCD's in convergence with government schemes	Need for strengthening FPO'S and VDC's in project villages	Need to limit chemical fertilizers with market linkages for organic yield	need to focus on children's learning outcomes and its measurability in the learning and retaining aspect through such interventions

1. Introduction

1.1. Background of the Study

As part of HDFC Bank's CSR initiative, programs are supported to deliver holistic rural development. Within Parivartan, the "Holistic Rural Development Program" (HRDP) is the flagship CSR program, under which non-governmental organizations across the country are supported to deliver development interventions. The vision of these programs is to create happy and prosperous communities in terms of socio-economic and ecological development which is sustainable. The holistic approach supports the lives of communities by providing necessary inputs on issues like shaping economic independence through skilling, providing basic infrastructural development, and establishing a better ecosystem thereby promoting better living conditions.

In the assessed HRD program in two clusters; Fazilka and Sri – Muktsar, Punjab the implementation partner was The Centre for Advanced Research & Development (CARD). The major focus areas for intervention were Natural Resource Management (NRM), Skill Development and Livelihood Enhancement, Healthcare and Sanitation, and Promotion of Education

1.2. Partner Organization: Centre for Advanced Research & Development (CARD)

Established in 1992 with its headquarters at Bhopal, Madhya Pradesh, CARD started by developing a strong grassroots presence in some distinct regions of Central India that had a high incidence of poverty among scheduled tribes, scheduled castes and backward classes. After experimenting for over two decades, CARD has started sharing the learnings in operations across 30 locations in Haryana, Punjab, Chhattisgarh, Maharashtra, & UP. The decision-making & project execution process is informed by comprehensive empirical studies, research, & high-quality data evaluation.

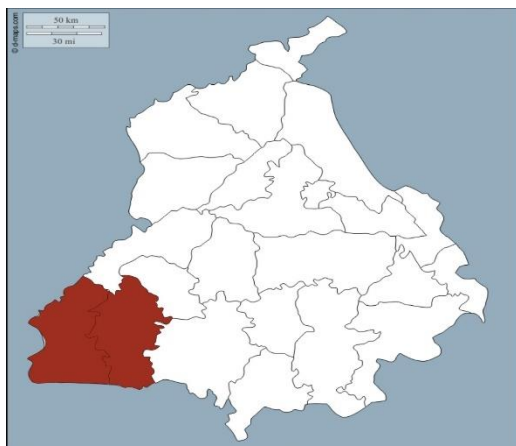
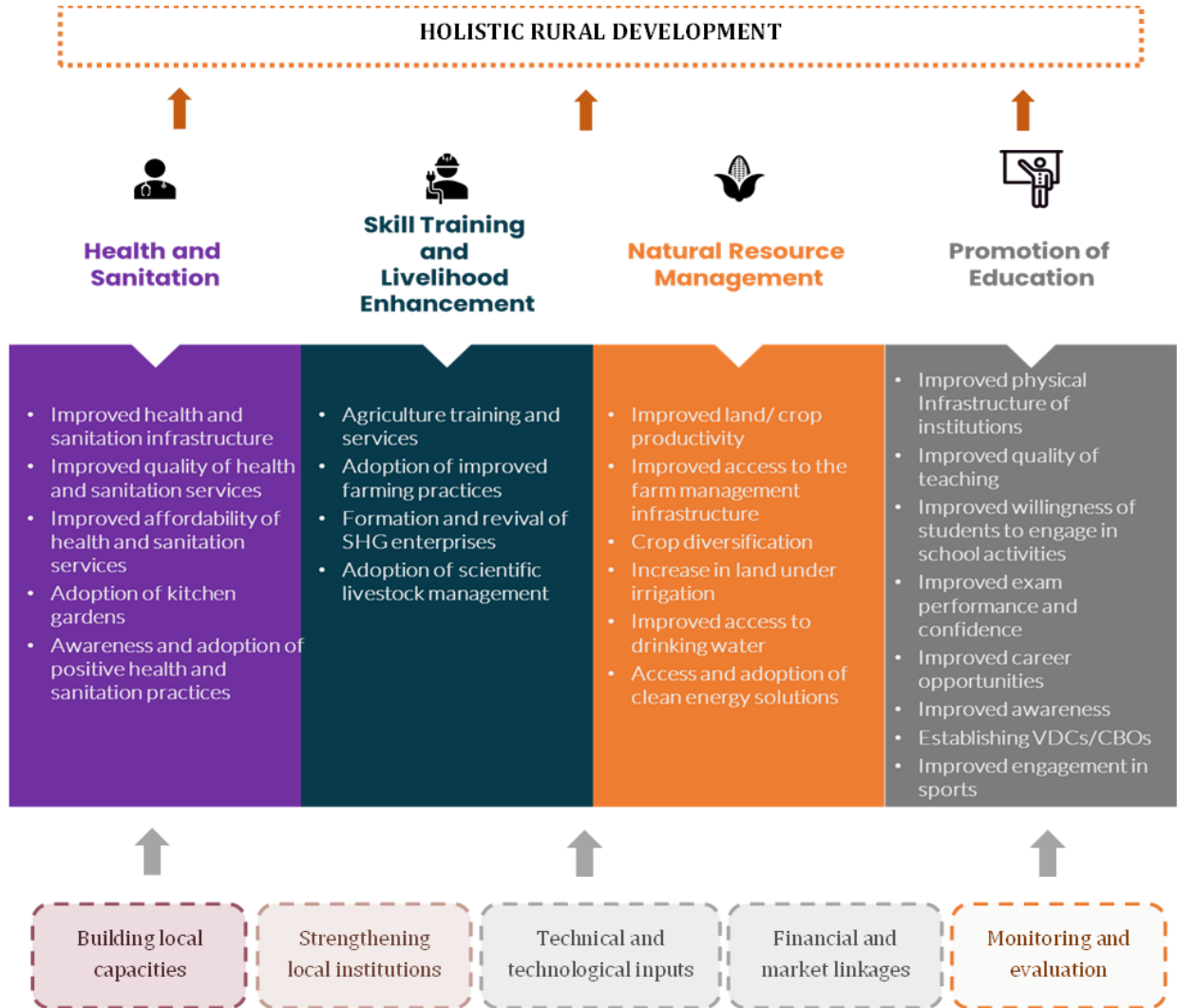
The focus of work is the holistic development of farming communities as well as a vulnerable section of society such as landless and small farmers, children, adolescents and women, working across different development themes. CARD's programs and activities are designed to be a catalyst that helps bring development to the rural population, raising their standard of living.

1.3. Purpose and objectives of the study

The impact assessment aims at understanding the overall process undertaken by HDFC Bank and partner organizations in implementing the program activities, key milestones achieved, impact created by these activities, challenges faced, and the manner in which such challenges were handled. The guiding philosophy behind this study is to add value by showcasing successful initiatives and recommending possible ways to address challenges that exist. The impact assessment aims to evaluate the implementation and performance, determine the reasons why certain results occurred or not, draw lessons, and derive good practices and lessons learned critically and objectively. The study is expected to provide evidence-based findings which would inform HDFC Bank in taking operational and strategic decisions while planning and funding partner organizations for such

programs. The evaluation was also an opportunity to learn about the relevance of the programs implemented and the effectiveness of such programs. The conceptual framework employed and the area covered under the study are depicted below.

Figure 2: Conceptual framework of the implementation



In this scenario, holistic interventions were planned and executed in 2 districts in Punjab covering 8 villages and 5,000 households from the year 2017 to 2021 with the goal to ensure sustainable development of marginalized rural communities through capacity building of individuals and institutions.

Figure 3: Areas covered under the study

2. Research Methodology

The assessment used both qualitative and quantitative methods. For each cluster and thematic area, activities completed were identified. The impact generated by these activities was assessed using the criterion of **Relevance and Convergence, Effectiveness and Impact, and Sustainability and Replicability**. The evaluation process was carried out in a consultative manner involving interactions with both HDFC Bank and the CARD team at key junctures.

Under the criteria of relevance and convergence, the evaluation sought to answer whether the design of the program interventions is aligned with the state's plans and priorities for rural development. In addition, the evaluation examined whether the design and implementation of the program were relevant to the local needs of the most vulnerable groups. The study has examined if there has been a convergence/ use of the existing resources of the government and whether different stakeholders involved have worked together to achieve the outcome of the program.

To assess the impact and effectiveness¹ of the program, the findings seek to establish the values of outcome indicators of all the thematic interventions. These findings are assessed against the outcome indicators finalized during the outcome harvesting stage. Further, through qualitative evidence, the evaluation tries to understand whether and how the program impacted the lives of the community members in the program areas. This was done through analysis of program outcomes in light of certain variables identified in consultation with HDFC Bank. The findings from primary quantitative data have been substantiated by the information gathered from discussing with the communities/beneficiaries, teachers, students, entrepreneurs, and local institutions at the village level. Through primary data, the study has tried to understand if the program has worked on strengthening the community's capacity to ensure sustainability, and whether any of the activities or strategies adopted have been/could be replicated.

2.1. Design and Methodology

A review of various program documents including HDFC's CSR Policy, Program log-frame (Logical Framework Analysis), Rapid Rural Appraisal Reports, Program implementation timelines, Communication, and Documentation Products, and other relevant reports/literature related to the program was utilized for a secondary review.

The primary research included a quantitative household survey as well as in-depth interviews and focused group discussions with program beneficiaries, the partner NGO, and the HDFC Bank program team. The outcome mapping and result chain development were undertaken in consultation with the HDFC team. The exercise resulted in the identification of standardized key outcomes and indicators related to each of the program thematic areas. Based on the standardized list of outcomes and outputs, the questionnaire for the state was developed.

¹ While from an evaluation perspective impact and effectiveness are two different aspects, in the report, these are used interchangeably

2.2. Sample Size and Distribution

The sample size covered during the field is as follows:

Table 3: Quantitative Sample Covered

District	Total Households	NRM	Skill Training and Livelihood Enhancement	Health and Sanitation	Promotion of Education
Fazilka	360	92	89	90	89
Sri - Muktsar	50	13	13	12	12
Total	410	105	102	102	101
Planned	400				

Since 7 out of the 8 project villages were from Fazilka District and 1 from Sri-Muktsar, the sample covered was according to the spread of intervention villages in the districts.

Table 4: Qualitative sample size covered

District	FGDs			IDIs		
	VDC	SHG	Farmer Interest Group	Key Interview	Informant	Key Informant
Fazilka	2	3	2	3		3
Sri- Muktsar	1	1	1	2		2
Total	3	4	3	5		5
Planned	3	3	3	5		5

Teams of local enumerators, with requisite education and experience, were hired for data collection. Two days of training in Punjab were provided to enumerators and supervisors by the NRMC team.

Image 1: Training of field team held at Punjab



3. Program Review

3.1. Program Design and Implementation

The program interventions are decided on an annual basis, with an annual budget allocation based on the proposal by CARD to HDFC Bank. In Punjab, a larger focus on improving natural resource management, sanitation, health, and other awareness-generating activities was present.

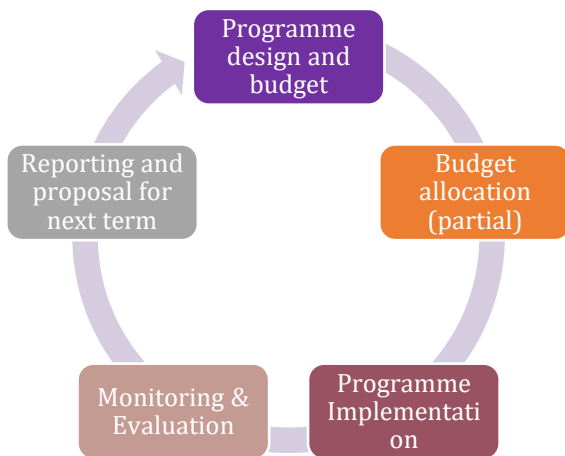


Figure 4: Project Planning and implementation process

Monitoring of the intervention by HDFC Bank is frequently undertaken and resources from different levels are deployed to monitor the activities frequently, however, such monitoring visits focus on the output aspects such as infrastructure and access while the usage and community-level challenges are usually not considered.

3.2. Program Relevance

The community of this largely agrarian Malwa region is involved in agriculture, horticulture & dairy activities. Most of the farmers practice green revolution-based agriculture characterized by the intensive use of chemical fertilizers, agrochemicals and controlled irrigation and newer methods of cultivation, including mechanization. The area is mainly a cotton and kinnow growing belt which has replaced the rice-wheat system to a large extent. It is a fertile area and is one of the biggest cotton-producing regions in North India; it is also known for very high citrus fruit production mainly 'kinnow'. Apart from this, the farmers also grow some vegetables in the project villages.

People in the Malwa belt are struggling on several fronts – poverty (considering that a large section of the people here is landless), caste, illiteracy, poor returns from agriculture, indebtedness, high incidence of farmers suicides, rising incidence of diseases (like cancers ascribed to increased pesticide use), drug abuse, inadequate access to water, poor capacity to cope with climate change impacts, etc.

The excessive use of synthetic nitrogen fertilizers and pesticides without using any safety precautions or by ignoring instructions has led to pollution of soil and water apart from the risk to the community's health. Excessive extraction of groundwater due to irrigation pumps has led to depleting groundwater levels; the canal systems in the area too are performing below optimum and are mismanaged leading to over-dependence on tube wells. The nutrients in the soil were depleted by repeated crop cycles meant to ensure higher crop yield. Farmers used more fertilizer to fulfil the need for new varieties of seeds. The use of these alkaline compounds caused the pH level of the soil to rise. Beneficial pathogens were eliminated by toxic chemicals in the soil, which further decreased production.

The farmers especially in the case of cotton face problems covering their monthly expenses after paying for the labour, fertilizers, pesticide, irrigation, seed, and transportation costs. Meanwhile, the landless community members have very limited livelihood options when the production of a crop like cotton plummets such as this year. They are compelled to migrate to as far as Gujarat's cotton belt during the cotton-picking season apart from migrating for wage labour work to Abohar/Amritsar. Additionally, the lack of basic infrastructures such as toilets, irrigation channels and educational facilities in schools, lack of access to potable water, diligent veterinary services, and public conveniences such as roads and electricity is the main concern of the villagers of this region.

In 2017, during the participatory rural assessment of 8 villages of district Fazilka and Muktsar prior to project interventions, the need for agricultural innovation and integrated natural resource development was identified when problems such as dilapidated ponds, excessive waterlogging, high soil erosion and surface runoff, conventional farming of water-intensive crops, excessive use of chemical fertilizers and pesticides presented themselves. Seeing these obstacles as opportunities for growth, HDFC Bank's interventions through the implementation partner CARD undertook strategic initiatives to bring in and apply technologies for conservation, management, and sustainable utilization of natural resources to ensure food, nutrition, and environmental security.

Image 2: Water infrastructure built under HRDP in Punjab



The largely agrarian population of district Fazilka and Muktsar has traditionally depended on agriculture for livelihood, and with a large percentage of the population being landless or having marginal land holdings, skill development and livelihood enhancement were urgently required. CARD with HDFC Bank's support has implemented various initiatives to help villagers develop relevant skills to undertake initiatives to support themselves and supplement their incomes. Additionally, HDFC Bank with CARD as its implementing agency has actively worked towards providing better healthcare and sanitation facilities to eradicate non-communicable diseases and build accessible sanitation facilities.

Through HDFC Bank interventions, Anganwadi, primary and secondary schools have also been key areas for change and the HRDP goal of changing the way economically marginalized students seek education has been realized by providing fair opportunities to excel through the program design and execution.

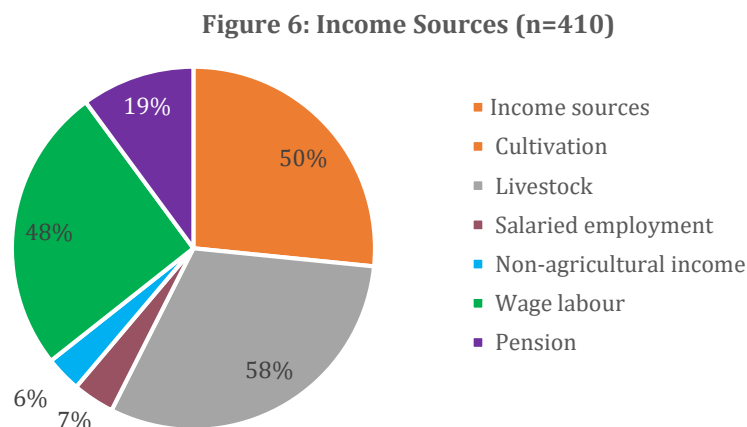
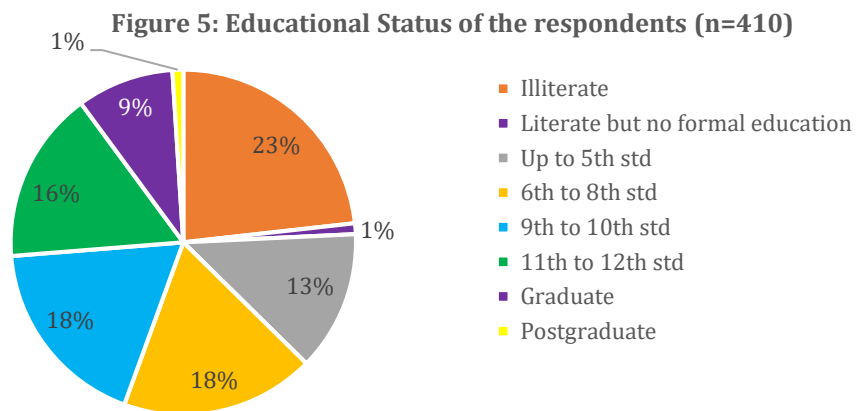
4. Study Findings

4.1. Demographic profile

The project villages are spread across Malout, Abohar and Arniwala blocks. **23% of the population is illiterate while only 13% have studied till 5th standard.** The figure below indicates that the main activity in the region is cultivation and livestock management. This section provides the demographic profile of the respondents covered in the sampled program villages under the assessment².

55% of the total sample are women while 45% of the sample are men. The age group of **26-35, 36-45 and 46-55 have 35%, 24% and 18% of the sample as respondents.** **39% of the sample are Scheduled Caste (SC),** while 15% are Other Backward Classes (OBC) in the region. 40% of the sample have BPL cards and 44 have APL cards.

Main occupation in the region is Livestock management (58%) followed by cultivation (50%).



² The total number of respondents for the survey were 410, across 8 project villages

4.2. Natural Resource Management

In Punjab, 35.6% of the workforce is engaged in agriculture, according to Census 2011. HDFC Bank interventions in the region aim to promote sustainable agriculture practices and better farm management for the improvement of soil health, reduce the cost of cultivation, produce safe food, and reduce the health risks of consuming food with high pesticide residues. The formative years of the intervention (2017 onwards) aimed at project mapping and understanding the nature of aid to be given to the villages while the latter half of the interventions focuses on aiding farmers by creating Farmer Interest Groups, promoting organic farming through soil and water management interventions, increasing green cover in the region, exposure visits and capacity building for various sustainable means of agriculture.

Table 5: Activities under NRM in Punjab

Activity Category	Activities
Irrigation Management	Inlet Channel Construction, Pond Development, Drip Irrigation
Soil Management	Soil Testing and Training
Clean Energy	Solar Streetlights
Plantation	Tree plantation awareness drives and distribution, Plantation of Fruit Trees

4.2.1. Effectiveness and Impact

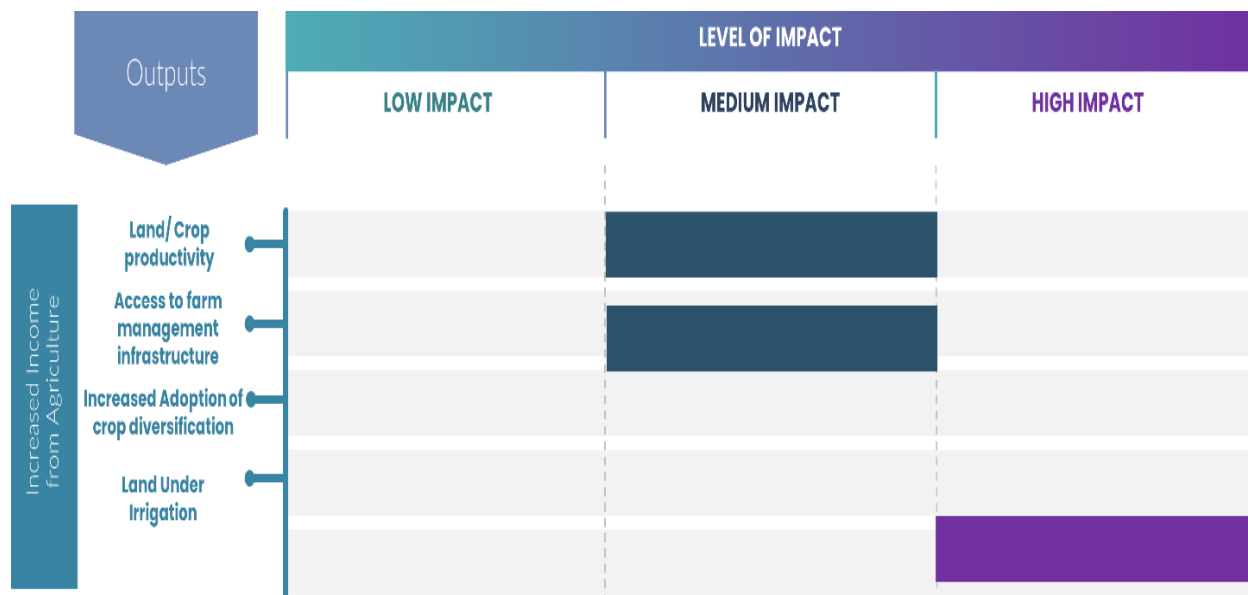
Due to a lack of proper infrastructure in the form of canal outlets and channels to the farmers field built at the head of the water course to connect the field with the minor or distributary system, the villagers were leaving their lands unirrigated. The unlined channels were leading to water logging, and heavy soil erosion apart from the high costs that farmers had to incur on controlling the weed infestation in the unlined channels. HDFC Bank project intervention built 6,620 meters of inlet channels in 8 project villages, benefitting 400 farmers directly and 3,000 farmers indirectly. Additionally, a total of 4 farm ponds, were constructed in villages Ramsara, Wahbwala, Johar Khara and Narayanpura respectively aiding irrigation practices in the region. The intervention on the drip system was undertaken to increase the irrigated area in the project location, encouraging farmers to adopt agricultural innovations, commercial vegetables, and cash crops along with conserving water. A total of 16 drip irrigation units were installed on a pilot basis in 7 project villages,

For better soil management, 1,280 soil samples were taken in all 8 villages, covering 1,280 acres of farmland. The farmers were also taught how to read the reports and identify the micronutrients and macronutrients in the soil and adjust the fertilizer dosage of the soil accordingly. 3,000 fruit trees were distributed to 350 rural households improving their nutrition and wellbeing. 650 villagers including school children, teachers, and Village Development Committee (VDC) members were made aware of the positive impacts of tree plantation. 12 streetlights have also been installed as part of the project intervention.

The qualitative study indicates that cotton, whose productivity is normally 10-12 qtl/acre in the area, fared poorly this year due to whitefly infestation. This has reduced the productivity to around 6

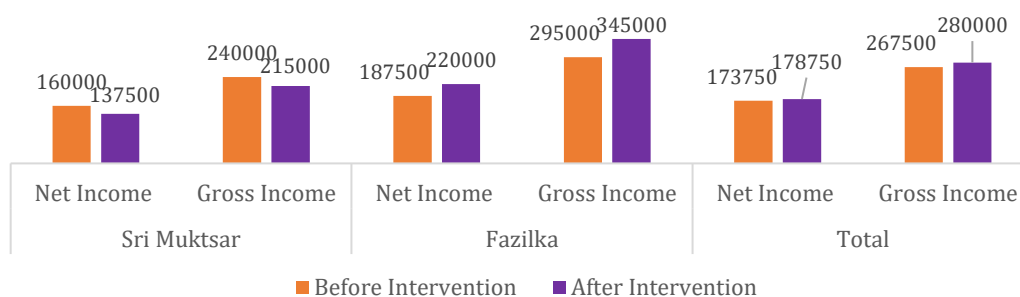
qtl/acre in this cotton belt of Punjab leading to a serious economic setback for farmers. The price received for cotton fluctuates; it is Rs 8000/qtl. now but can go up to Rs. 16000/qtl. Storage is a major problem faced by the farmers growing cotton. Farmers tried neem-based biopesticides but have now shifted to chemical pesticides as the government also has advised them to spray recommended chemicals to save the crop. Whitefly had impacted the cotton crop last year too. The farmers said that the cotton acreage in the area too witnessed a sharp decline this year considering last year's poor yield. It is also being said that the whitefly pest problem was greater in cotton crops that were planted near orchards (kinnow) as the fruit crop provided conditions conducive for the pest to grow and attack the cotton crop. This point is ratified by the Agriculture Department too. The farmers now need a massive training program to encourage them to grow the crop with useful tips on cultivation and pest control.

Figure 7: An overview of project effectiveness and impact in NRM



Income from agriculture: Farmers have taken up farming on additional patches of land that were otherwise left uncultivated due to the unavailability of water. Further, the project focused on irrigation management such as the construction of farm ponds, each pond has a size of 60x60x10 feet, and a capacity of 5 lakh liters. The combined water storage capacity of the 4 farm ponds is 20 lakh litres of water, and the farmers now irrigate their fields year-round and have increased the area under irrigation by 20%. Due to the lack of proper irrigation infrastructure (channels) for directing canal water to agricultural fields, the villagers were leaving their land unirrigated. The unlined water channels were resulting in water logging and heavy soil erosion. Due to the inlet channels constructed through HDFC Bank interventions, the agriculture area subsequently increased, giving better yield to farmers, which led to an overall increase in income.

Figure 8: Increase in annual agricultural income ³in Rs. (Based on median) (n=84)



Since the agricultural area is majorly dependent on rain, irrigation management interventions have benefitted the community in the increase of income as risks due to climate uncertainties have a major impact on the livelihood security of the households. On noticing that the soil quality was deteriorating due to the heavy use of chemical fertilizers resulting in problems such as the increase in input costs, depletion of organic carbon and reduction in the market price of the agricultural produce, the farmers were introduced to organic composting techniques such as vermi composting, NADEP pits and Azolla pits in all 8 villages. 50% of the project respondents attribute the training on these as the main factor for the increase in income. Irrigation interventions also subsequently increased the area under cultivation of crops resulting in a change in income.

Figure 9: HRDP interventions that contributed to the increase in income (n=150)

Perceived Benefits	Intervention			
	Paddy	Wheat	Cotton	Kinnow
Interventions in seeds and tools	0%	30%	18%	18%
Interventions in irrigation	12%	26%	24%	39%
Interventions in organic farming	62%	52%	52%	41%
Interventions in soil testing and land treatment	0%	28%	18%	6%
The increased area under cultivation of crops	0%	9%	5%	9%

Table 6: Average Production of crops in Kg before and after HRDP interventions (n=229)

Crop Name	Average Production (Kg) Before	Average Production (Kg) After
Paddy	7000	9600
Wheat	6600	6800
Kinnow	22000	24500

With the help of HDFC Bank interventions, farmers in the villages continued to grow wheat, paddy, cotton, kinnow and various vegetables using sustainable agriculture approaches. For growing paddy, farmers were trained in the practice of vermicomposting, which gives better paddy yield. This

³ The gross income includes all receipts from the sale of crops, while the net income is the gross income minus all cash expenses, such as for seed, fertilizer, pesticide, irrigation, labour, cost of machines used, rent etc.

training has been beneficial for farmers. The agricultural seed bank in the villages and routine distribution of high-quality seeds as part of the project intervention helped farmers in growing various vegetables and thereby diversify their crops. Cotton seeds (Variety RCH-776) were also procured as part of the project intervention. All farmers who adopted other crops apart from their previously grown crops due to HDFC Bank interventions have benefitted from demonstrations and training on pesticides and fertilizers.

Figure 10: Types of crops grown by crop diversification beneficiaries before and after HRDP intervention (n=164)

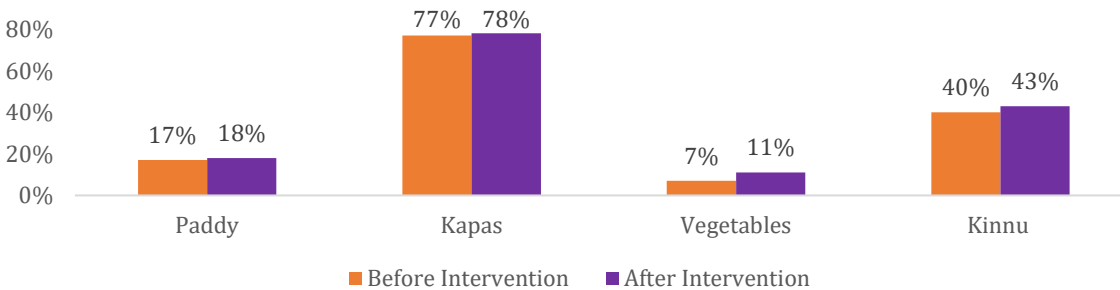


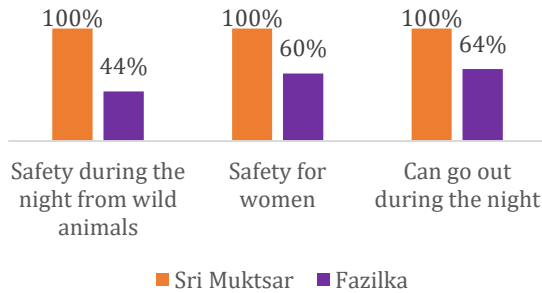
Figure 10 references the number of farmers growing different crops before and after interventions. Crop diversification in the area in terms of shifting from the regional dominance of the rice-wheat cropping system had taken place before the project was initiated when kinnow and cotton gradually substituted the rice-wheat crops and had eventually emerged as the major crops in the area. The challenge faced in the area is of maintaining the soil health and the dynamic equilibrium of the agroecosystem under this new crop mix. An important component of the HDFC project was to shift farmers to vegetables apart from promoting technological innovations for sustainable agriculture without compromising productivity and income.

An area of improvement could be to organize more awareness training of farmers for diversification to vegetables for additional income generation, apart from capacity building on the restoration of soil fertility, agro-processing, value addition of crop produces to make farming a profitable enterprise, and practical options on reduction of stubble burning. There is a need for improving the forward linkages of both the agriculture/horticulture value chain i.e., the marketing aspect. Within the agriculture sector, the project should shift its focus from enhancing agricultural productivity to developing the value chains for agricultural products (kinnow and cotton) as well as the post-harvest segment of the dairy value chain.

The post-project follow-up component should play a role in developing partnerships with banks or financial institutions that offer loan financing of NRM projects. Synergies should be developed with other private sectors to link the project with larger players in the value chains and protect farmers from price fluctuation risks. A study on the value chain assessment of cotton and kinnow can be conducted to understand the key areas where focused interventions could improve efficiencies and provide better market linkages to the farmers. The challenges and opportunities related to value addition, marketing, season ability of operations, appropriate capacity utilization, product development, and innovation need to be identified.

Use of clean energy solutions: To ensure the village is properly accessible to everyone at night, 12 solar streetlights were installed in the project villages. These solar lights have greatly benefitted people as women and children are able to move more freely at night and the light helps look out for wild animals in the area. The solar lights are set up in all key roads of the village, making the main alleyways light up at night

Figure 11: Perceived benefits of solar streetlights (n=51)



Most of the solar streetlights in the area are functional except for the Arniwala block where the lights are not functional. The solar light distributed in the area while benefiting the people only works for a short duration but is still cost-effective and helps in reducing electricity costs.

Green Cover: The development of the rural blocks - Abohar, Malout and Arniwala, including roads

and infrastructure development has resulted in the cutting of trees. Moreover, the farmers as well as local women were not fully aware of the advantages of trees. To increase awareness about trees and encourage their plantation, 40 awareness drives and tree distribution initiatives were carried out in all 8 project villages.

3,000 fruit trees were distributed to more than 350 rural households improving their nutrition and wellbeing. 650 villagers including school children, teachers and VDC members were made aware of the positive impacts of tree plantation. More than 15 varieties of fruit trees like mango, guava, pear, plum, neem, jackfruit etc. were distributed and planted in the villages.

4.2.2. Case Study

Development and deepening of Farm Pond in Johar Khera and Ramasara

Abohar is a naturally dry area where ground water is not suitable for agricultural use. The traditional irrigation method of using canals to irrigate the fields leads to water shortage in summer and wastage of water during the rainy season. Hence, a water storage infrastructure was required. A total of 4 farm ponds, were constructed in villages Ramsara, Wahbwala, Johar Khera and Narayanpura respectively. Each farm pond has a size of 60x60x10 feet, and a capacity of 5 lakh litres. The combined water storage capacity of farm ponds is 20 lakh litres of water, and the farmers now can irrigate their fields year-round.

One such farmer in Johar Khera, Mr Manpreet Singh was struggling for years to irrigate his fields. Through HDFC Bank interventions, he gets access to a total of 420 feet of inlet channel for his 2 acres of agricultural land. He says that through this intervention, the input cost of farming has been substantially reduced making the process of irrigating farmland more convenient.

4.3. Skill Training and Livelihood Enhancement

The largely agrarian population of districts Fazilka and Muktsar has traditionally depended on agriculture for livelihood. But with a large percentage of the population being landless or having marginal land holdings, skill development and livelihood enhancement were urgently required. Through HDFC Bank interventions, various initiatives to help villagers develop relevant skills to undertake initiatives to support themselves and supplement their incomes have been implemented. The project intervention has also addressed the skill gap of farmers in adopting agricultural innovation. Additionally, support was provided for women to contribute outside of the home-based jobs by practicing stitching, kitchen gardening, goat rearing etc. to develop an additional source of income.

Table 7: Activities under skill training and livelihood enhancement in Punjab

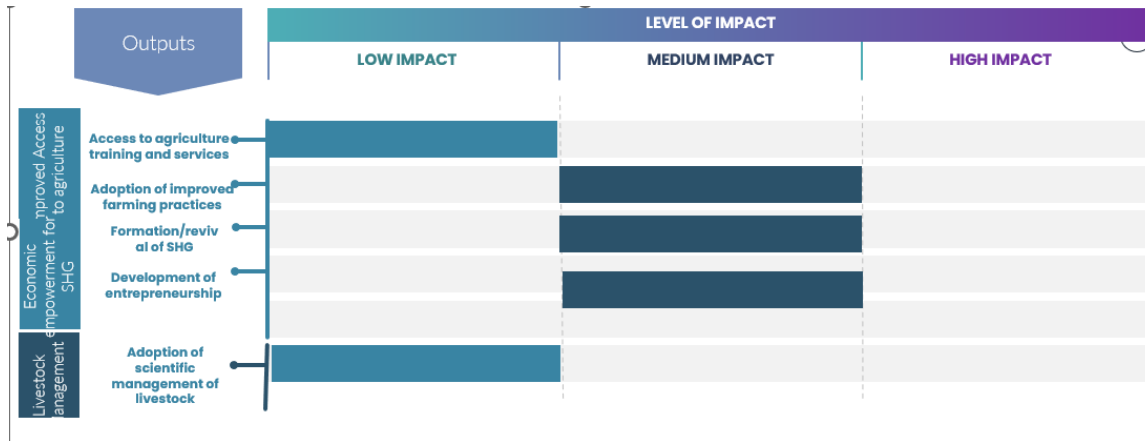
Activity Category	Activities
Formation of Village Groups	Farmer Interest Group (FIG), Farmer Producer Organization (FPO), Village Development Committee (VDC)
Agriculture Training and Support	Training and Exposure Visits of Farmers, Promotion of Organic Composting, Demonstration of best Agronomic practices
SHG-Based Women Empowerment	Formation and development of SHG - Self Help Group
Skill Training	Promotion of Beekeeping (Apiculture), Food processing training, Stitching training
Livestock Management	Promotion of Poultry Farming, Promotion of Goat Rearing

4.3.1. Effectiveness and Impact

59 Farmer's Interest Groups (FIGs) that foster collaboration, information exchange, and adoption of best practices amongst the farmers have been created in all 8 project villages. Through FIGs, training and practical demonstrations were provided to farmers so that they could adopt modern technologies as well as undertake subsidiary occupations in the best agronomic practices available. A total of 1,368 farmers were trained, in the sustainable production of Kharif and rabi crops, mushroom production, beekeeping etc. Interventions for poultry and goat farming were also introduced for not just extra income but would also to ensure better nutrition for the people in project villages. For the financial independence of women in the region, 68 SHGs were created in districts Fazilka and Shri Muktsar. The SHG model has made women more self-reliant and collaborative, empowering them to solve their own problems. The skill development and training initiatives have upskilled 1,856 women and 171 women have availed of loan facilities till date. Food processing training was also conducted for 18 SHGs. Additionally, raw materials and cooking equipment were also distributed.

All the following interventions were implemented through the formation of VDCs as a part of the HDFC Bank interventions. Through VDC meetings, the needs and problems of the people were highlighted. Additionally, all the development work was done in the VDC's presence, ensuring people's active participation in and ownership of different development initiatives.

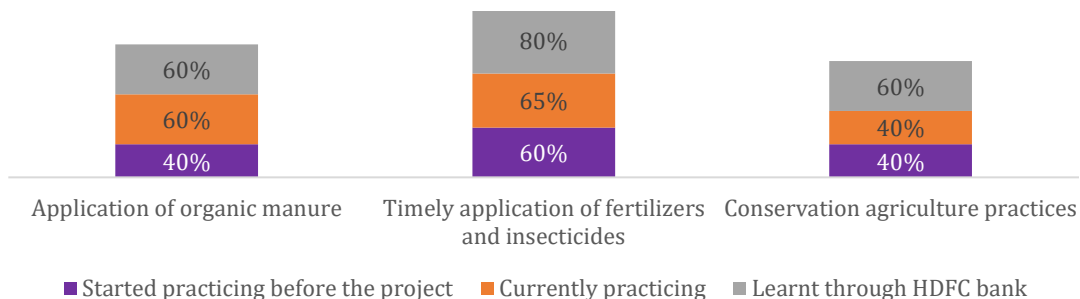
Figure 12: An overview of project effectiveness and impact and skill training and livelihood enhancement



The next phase of the project should use the FIGs and the FPO set up currently (as a single point entity to market the farmers’ cotton produce) under the project as a mechanism for aggregating the final produce for better prices in the market. Right now, the FPO is in its initial stage and is barely able to manage financially due to a lack of working capital. The base of shareholding farmers needs to be increased, credit linkages improved and the FPO needs to be involved in aspects other than running the custom hire shop and agri-input outlet. The project promoted innovation in the institutional arena by federating farmers initially into FIGs that acted as a foundational ground for the formation of the FPOs. FPO strengthening needs to be taken up now as a single activity to improve access to investment, technology, and inputs apart from dealing with information gaps. Impetus is needed for the provisioning of financial products and services to the unbanked and underbanked segments in the area (landless tenants in the area).

Agriculture training and services: During the initial participatory rural assessment, it was observed that farmers were facing issues in taking up jobs and secondary occupations after the sowing due to a lack of skills. Additionally, the farmers were wanting to move from conventional agriculture but were unable to do so due to a lack of practical training.

Figure 13: Agriculture practices that were started before the project; learnt through HDFC Bank training, and are currently practicing (n=17)



The farmers showed interest in adopting the interventions made by FIG during the years 2017-18 and were willing to try and adopt the latest agronomic practices to increase yield and income. Hence, training, and practical demonstrations were provided to farmers so that they could adopt modern technologies as well as undertake subsidiary occupations.

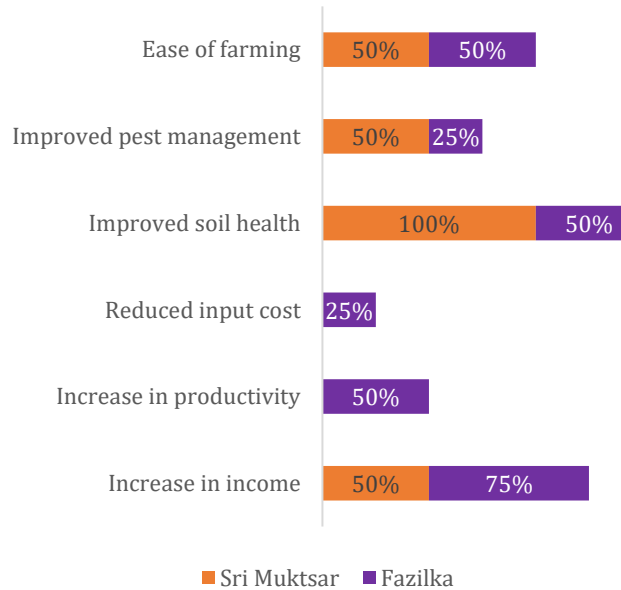


Figure 14: Perceived improvements due to the adoption of agricultural practices (n=17)

In addition to high rates of continued adoption, the trained beneficiaries also identified several benefits in response to adopting innovative agricultural practices namely in the areas of ease of farming, improving soil health, and improving pest management. Most of the respondents in the Fazilka district mention increase in productivity, increase in income and reduced input cost to be key benefits of the training provided. Together with soil treatment and organic manure, the region has benefited through agriculture training and support for better crop yield.

Economic empowerment through collectivization: In all the project villages, women SHGs were formed through HDFC Bank interventions. Routine meetings were organized by CARD with SHG members for a situation analysis of the area to map out small enterprises that could be implemented with training in the area. The findings of the study served as the basis for village-level workshops that were held with members of self-help groups who were trained in bookkeeping, maintaining records, opening bank accounts and management of credit and thrift activities. While 80% of SHG beneficiaries reported HDFC intervention in establishing the units, 40% of SHG members reported bank linkages for their groups. Additionally, training on the backyard kitchen garden, stitching, backyard poultry, goat rearing, and food processing were all conducted under the program intervention.

68 SHGs have been created in districts Fazilka and Shri Muktsar (40 SHGs groups formed in 2018 and 28 SHGs groups formed in 2019). Around 650 women are part of the SHG with 10 members per group. The SHG model has made women more self-reliant and collaborative, empowering them to solve their own problems. On getting to know that village women wanted to upskill themselves to supplement their incomes, food processing training was conducted for 18 SHGs as a part of the HDFC Bank interventions. In addition to training, cooking equipment & raw materials support like Kadai, gas, bhujia making machines, package sealing machines, weighing machines, bakery trays, food-grade plastic tubs and boxes, jars, thermometers, and refractometers were provided to SHG members and market linkages with the village FPO was also established. 163 SHG members of 52 SHGs were also trained in stitching and tailoring in all the project villages. In addition to 3-month training, the raw material was provided to SHGs members to practice and hone their skills. During the training,

stitching of garments such as palazzo, *sharara*, frock, school dresses and masks was demonstrated. The skill development and training initiatives have upskilled 1,856 women and 171 women have availed of loan facilities to date.

Figure 15: Support provided for groups through HRDP (n=11)

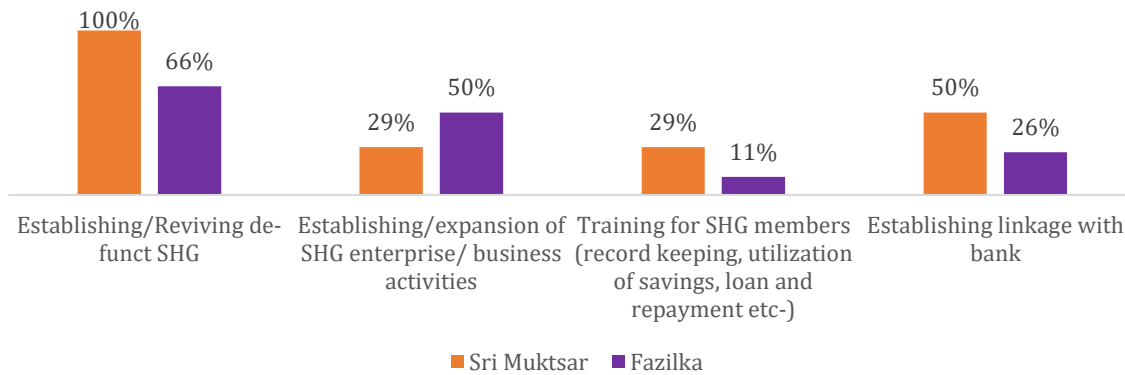
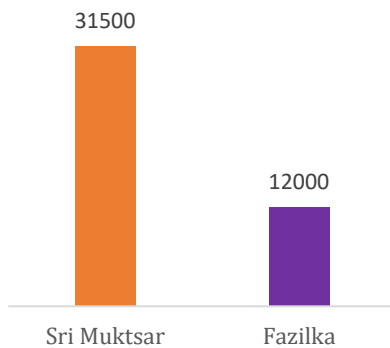


Figure 16: Changes in income from SHG after project intervention since project inception (In INR) (n=11)



60% of the SHG members report an increase in income through HDFC Bank interventions such as formulating/ reviving SHG’s, expansion of SHG enterprises, training for SHG members, establishing bank linkages etc. Additionally, the savings of the SHGs have improved through the business activities undertaken by SHGs and circulating loans. 44% of the respondents reported the use of HDFC training for improving skills to manage enterprises whereas 77% reported the use of training in minimizing losses in enterprises.

Support for setting up need-based micro-enterprises and small community enterprises (such as tailoring etc.,) through exposure visits and training sessions for SHG members has largely resulted in the empowerment of women as they are more aware of the enterprises they can start. They have expressed a motivation to engage in this sector and were producing for household purposes but are facing issues of scale and non-accessibility to markets. The trained women were facing challenges related to accessing buyers, lack of scale and hence unwieldy transportation charges, lack of negotiating power and sudden drops in prices.

Livestock Management: Through livestock interventions in poultry, 64 sheds in 7 project villages were established. Additionally, a total of 4,500 chicks of pure Rhode Island Red (RIR) variety were distributed to 64 beneficiaries and 60 quintals of feed (starter & runner) worth Rs. 96,000 were distributed.

Classification - Internal

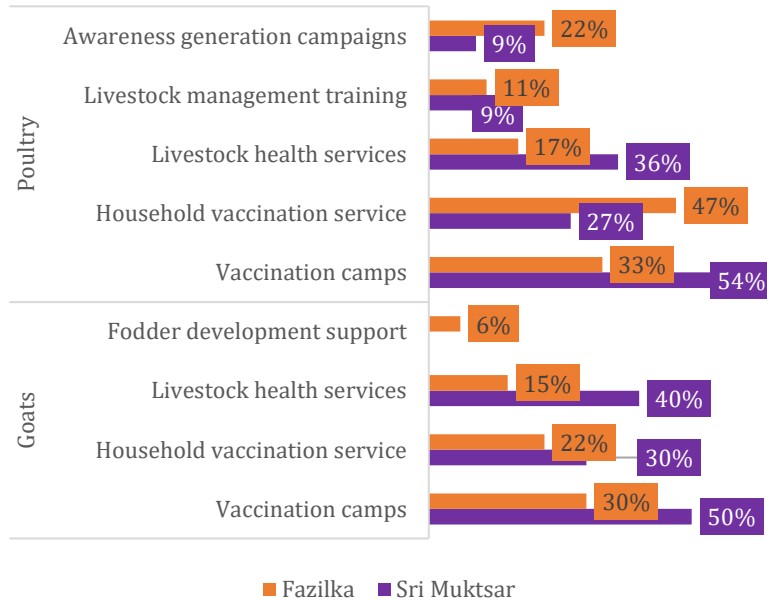


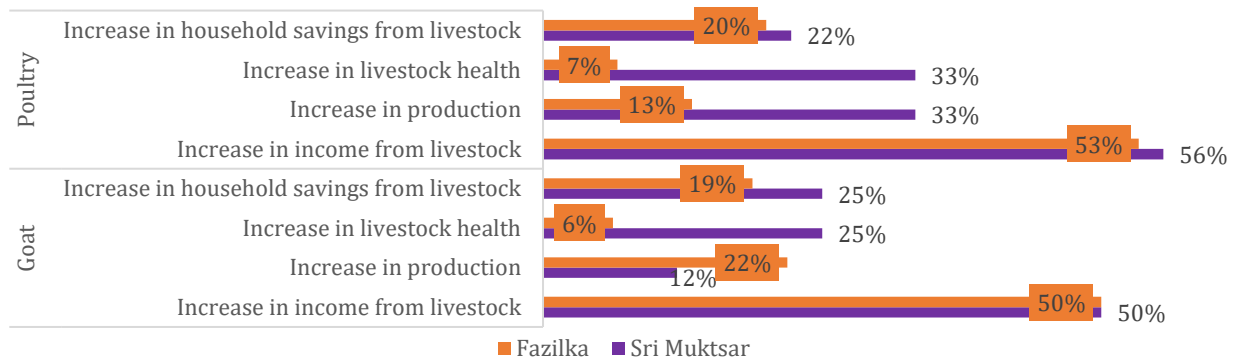
Figure 17: Livestock management services availed through HRDP (n=113)

Three vaccination drives were also carried out to prevent chick diseases. 64 beneficiaries were trained in the upkeep of chicks. A total of 184 beetle-breed goats were distributed to 88 beneficiaries in all 8 villages. 32 health camps were organized and about 200 people were trained in goat rearing.

Figure 18 shows the benefits of livestock interventions, majority of the respondents have shown an increase in household income from

livestock, especially from goat and poultry farming. As a source of nutrition and an additional source of income, livestock interventions in the region have also aided in the increase in livestock health and production.

Figure 18: Perceived primary benefits of livestock interventions (n=79)



The quantitative study indicates that while the primary benefits from the livestock interventions were many, and it fared well as regards production and income in both Fazilka and Sri Muktsar. The qualitative study in Fazilka in certain villages such as Wahbwala and Ramsara pointed to the various constraints that backyard poultry owners faced during the project. The backyard poultry production was fine even for owners who had barely any poultry farming experience. Poultry rearing was mainly tended by women who reared the birds in a semi-intensive system with little supplementary feeding in terms of broken rice, kitchen waste etc., apart from the feed provided initially as a part of the HDFC Bank project. The production level observed was reasonable and comparable to the area's averages. Natural hatching was the main source of chicks. A drawback was that most households whose poultry intervention failed did not take systematic care of the poultry about disease management. The project

helped in carrying out the vaccination of the birds in all the villages surveyed and had also provided intensive training on disease management.

During a disease outbreak, due to lack of space in village Wahbwala, the prevalent ingenious method of isolating the healthy birds in temporary sheds constructed elsewhere could not be followed in the area with the result that all the birds perished in many cases. Sometimes farmers would sell the healthy birds in a hurry fearing the spread of the disease outbreak. Many poultry beneficiaries indicated that they faced the challenge of attack by predators and limited scavenging areas available for birds. This hampered poultry activity as a part of the CARD project, despite the good work designed under the HDFC Bank project in terms of the introduction of hybrid variety suitable for the area, intensive training and skill upgradation of the beneficiaries on feeding, housing and disease prevention management. The establishment of market linkage was not a challenge considering that there was a ready market available in the village/nearby towns itself. The project experience indicates that in fast urbanizing villages adjacent to towns or peri-urban areas backyard poultry farming may face issues related to lack of space and therefore the beneficiaries should be chosen carefully.

The project had introduced goats with the idea of providing multiple livelihood options to increase incomes, nutrition as well as risk management in case of crop failure due to drought etc. Discussions with the beneficiaries indicate that the goats received could reach good body size and provided good milk yield (150 to 250 litre/lactation) and also had a good kidding rate. Some beneficiaries suggested that there is a potential for developing dairy goat in the area especially as the demand for goat milk was very high due to dengue and many other conditions that lead to low platelets. They added that they provided the milk for free as they had received the goats under the project. The situation of the goat rearing too was somewhat similar to that of poultry under the project in village Wahbwala. While most beneficiaries agreed that goat rearing played a great role in income and nutritional security of the household, rearing them posed a lot of challenges especially related to intensive/stall feeding. Some of the beneficiaries were used to extensive to semi-intensive management of goats in the past and found it difficult to shift to intensive management. The beneficiaries suggested that they benefitted from good body weight, better milk yield, better breeds, timely vaccination of the goats and high survivability as a result. All this helped them bring in high incomes from goat rearing. The project could in future charge beneficiaries for part cost of goats, full cost of inputs and only those who show interest in paying for deworming, vaccination, feed-mineral mixture as well as for buck should be included in the project. Providing feed and fodder in this congested urbanized villages such as Wahbwala was difficult because of limited pastures nearby and high cost of feed, as per some beneficiaries. The project initially provided good quality feed to the beneficiaries, but it became difficult to sustain it beyond the project period. For, both poultry and goat rearing, the project should focus on developing better linkages with banks to provide loans to farmers for the purchase of animals, so this component can be scaled up in the villages it succeeded.

4.3.2. Case Study

Goat and Poultry Rearing in Jhurar Khera and Balluana village

Suman Kumari from SHG Baba Deep Singh was provided with 2 goats through HDFC program interventions and through the training provided by HDFC Bank in goat rearing and free animal health camps, she grew her goats to 12 in number. She has currently sold off 9 goats till date & uses goat's milk to supplement her family's nutrition. She now has an annual income of Rs 15000 that was beneficial during the onslaught of Covid -19 virus.

Saroj Rani, A member of SHG Group Satguru after getting 45 chicks through HDFC Bank interventions in poultry, grew her chicks to 100. After attending the training sessions provided through the interventions, she was able to take diligent care of chicks. She has now earned a net income of about ₹ 20,000/annum and is looking forward to continuing her poultry initiative.

4.4. Health and Sanitation

Health and sanitation interventions in the district were aimed to improve health-seeking behavior and improve nutrition in the disadvantaged section of the village community along with creating structures for proper sanitation in the villages. The interventions took place during the period 2017 to 2020 wherein the formative years aimed at village mapping and later years were at project execution. As per the project mapping, it was observed that sanitation & hygiene condition is very poor in the proposed villages and open defecation is common. Therefore, health and sanitation interventions are aimed at creating awareness and long-term structures that can benefit marginalized communities in preventing diseases born out of stale water and open defecation practices.

Table 8: Activities under health and sanitation in Punjab

Activity Category	Activities
Sanitation	Construction of Household Toilets,
Kitchen Garden	Development and Training for Kitchen Gardens

4.4.1. Effectiveness and Impact

Despite the high coverage of water (95%) and sanitation (71%) in Punjab (as per the World Bank Data)⁴, the rural water and sanitation sector continues to face major challenges. Around 70% of the houses with toilets in Punjab are either covered by sewers or have septic tanks⁵, but the effluent from most of these toilets leads into ponds or rivers and continues to be a health hazard. The Punjab Pollution Control Board⁶ confirms that human excreta are the main source of pollution in the state's rivers including the Beas and Ravi resulting in various diseases, such as typhoid, dysentery, cholera, hookworm diseases, ascariasis, and viral hepatitis. Unsafe drinking water, inadequate availability of water for hygiene, and lack of access to sanitation together contribute to about 88% of deaths from diarrheal diseases.

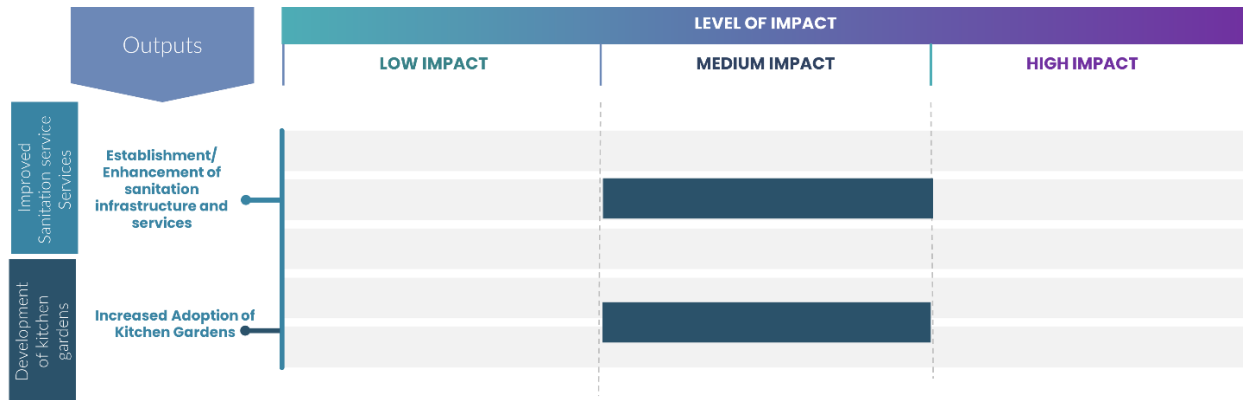
With the help of VDC, beneficiaries that did not have access to toilets were selected. In HDFC Bank interventions beneficiaries were supported to construct household toilets in all 8 project villages and a total of 110 household toilets were constructed in the houses. Additionally, wastewater soak pits in selected common spaces were constructed to safely dispose of unusable water. A total of 407 kitchen gardens in 8 project villages were also constructed. The people were trained in the methods of sowing, harvesting and taking care of different vegetables.

⁴<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/658221498205457047/india-in-punjab-rural-water-and-sanitation-sector-improvement-project-p150520-implementation-status-results-report-sequence-06>

⁵ Source: <https://dwss.punjab.gov.in/>

⁶ Central Ground Water board, Government of India <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/658221498205457047/india-in-punjab-rural-water-and-sanitation-sector-improvement-project-p150520-implementation-status-results-report-sequence-06>

Figure 19: An overview of project effectiveness and impact on health and sanitation

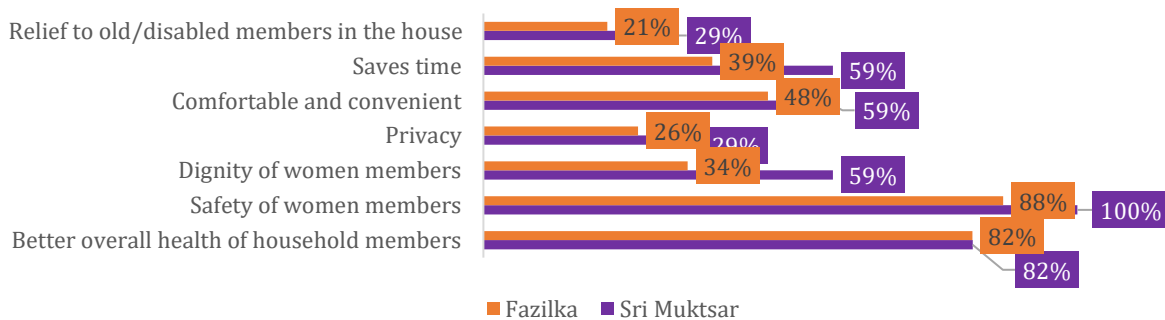


Sanitation infrastructure and services: The construction of wastewater soak pits has resulted in adequate water management in households. Most of them are still functional. Through the construction of toilets in disadvantaged households, much relief has been provided to women and the elderly in terms of access to safe defecation facilities. Households with toilets are also benefitting the larger community as these are often accessed by members of neighbouring households. Project interventions for sanitation practices have been successful in the region.

The intervention for sanitation units has been key in giving dignity to women members of the household. Unsafe and open defecation facilities had led to women getting routine infections through the process. Figure 20 shows the benefits of household sanitation units. 90% of the respondents claim the use of sanitation units is beneficial for women. 82% of the respondents also mark the better overall health of the household through the proper and adequate maintenance of toilets.

Though the sanitation component provided cost support for constructing the sanitation units for toilet-less households, the much-needed support for providing information, education and communication (IEC) to attain an open defecation status at the village level was lacking. In the absence of this, it was difficult to trigger behavioral changes among individuals.

Figure 20: Perceived benefits of household sanitation units (n=113)



Kitchen Garden: To provide a sustainable and healthy quality of life to households, HDFC Bank interventions aimed at developing kitchen gardens in households. This was done by providing materials for construction, distributing organic, good-quality seeds to households and training for

better farming practices. The households that also sold through their kitchen garden, reported an average saving of Rs. 500 per month from the kitchen garden produce.

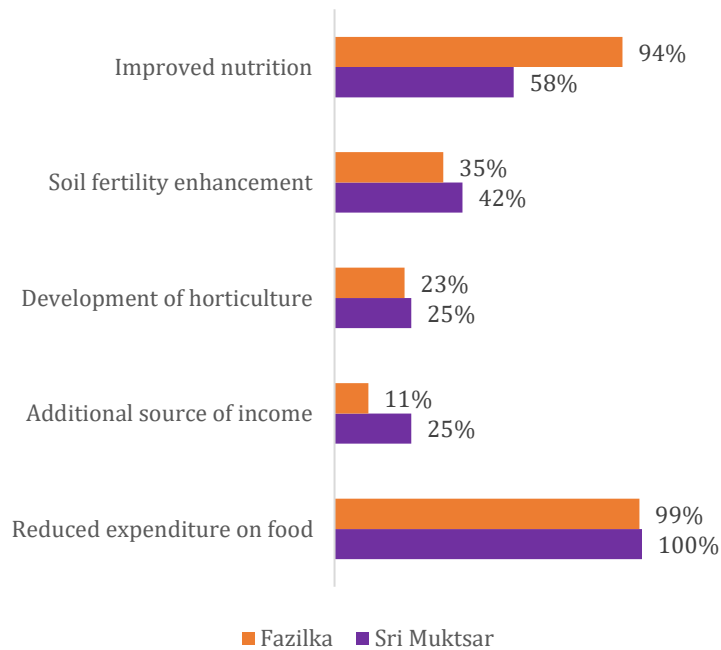


Figure 21: Perceived benefits of HRDP-supported kitchen gardens (n=139)

HDFC Bank collaborated with the SHGs and trained the members to use their respective backyard spaces to grow vegetables. The training included the plantation techniques that covered the method of sowing, the time of sowing and best practices related to irrigation, and the effective use of bio-fertilizers and bio-pesticides. Vegetables such as broccoli, cabbage, cauliflower, brinjal etc. have been produced seasonally in household kitchen gardens. The women in the villages have taken up the primary responsibility for the maintenance of the same. Figure 21 shows 99% of the respondents note the reduction of expenditure on food

due to the homegrown kitchen gardens while 65% of the respondents note the improvement in the nutrition of household members. 40% of the respondents are highly satisfied with the kitchen garden intervention in project villages.

Awareness and health-seeking behavior: HDFC Bank project interventions were beneficial in creating awareness around general health and sanitation practices that includes cleanliness, liquid, and solid waste disposal. This was done through training of village youth that then took forward the activity to create house-to-house awareness regarding better practices.

There has been a 9% increase in the disposal of waste in closed pits and an 8% decrease in burning it in the open. While most of the population is still openly throwing waste, there is an urgent need to create waste management structures to properly dispose of waste.

4.5. Promotion of Education

Under the HDFC Bank program, the purpose of improving the quality of education in government schools is a key objective. The needs of the educational institutions in the area were centred on school capacity, amenities and utilities, drop-out rates, age-grade distortion, student performance and student attendance. The project intervention aimed at infrastructural development in government schools that can have a lasting impact on children and their education. For the same, wall repair, development of smart classrooms and repair/ construction of school toilets were all taken up as part of the intervention. Additionally, routine workshops were conducted to make school an enriching space to learn life skills. Adolescent girls were trained in safe menstrual practices, and pad machines were installed for the same. Additionally, it was observed in schools that the teachers are mostly understaffed and thus, Math and English teachers were appointed along with teacher learning materials for reducing the burden of government educators. In the final stages of the project, Anganwadi rooms in primary schools were also repaired with BaLa wall paintings. This is reflected by an increase in the attendance of students in these schools during the current academic session.

Table 9: Activities under education in Punjab

Activity Category	Activities
Educational Institutions Development	Construction of Smart Classrooms, Development of Model Schools, Bala Paintings in Schools, Construction of School Toilets
Education Support	Distribution of Teaching Materials, Math, and English teachers
Awareness Generation	Training of Adolescent Girls, Installation of Sanitary Pad Machines, Handwash Training in School

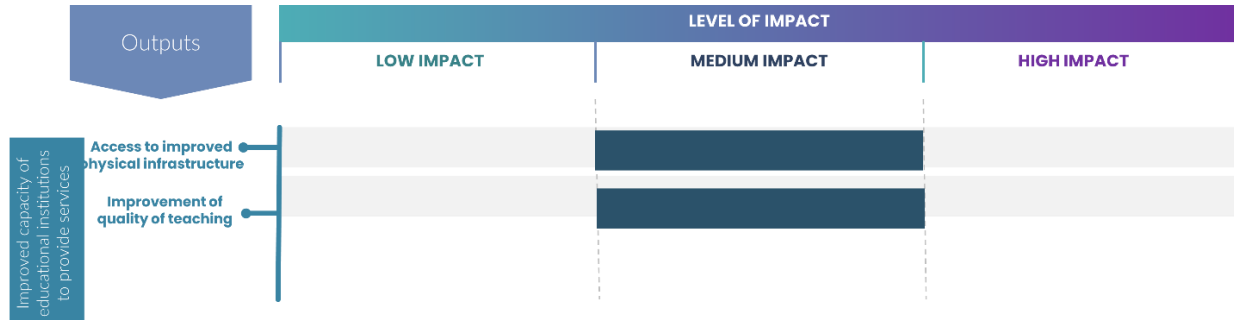
4.5.1. Effectiveness and Impact

Smart classrooms were constructed in 8 government schools (1 Primary, 2 Middle and 5 Senior) of all the project villages. The smart classes were outfitted with a projector, audio system, white and green board, microphone, and BaLa paintings making learning interactive and introducing students to the use of technology. 30 teachers were trained in the use of technology for teaching the students through videos, simulations, and presentations. Two model schools - Govt. Sen. Sec. School in Johar Khera and Govt. Sen Sec. Schools in Pakki Tibbi were also developed through HDFC Bank interventions. The schools have been provided with and upgraded through Smart Classrooms, Science Labs with equipment for physics, chemistry and biology like Ohm's apparatus, compound microscopes, skeleton structures, Ph testing kits, beakers and measuring cylinders, concave lenses & magnetic needles with stands etc.

The computer labs were updated by providing the schools with 10 computers in total. Teacher Learning Materials such as 3,200 notebooks, 1,500 pens, 350 interactive charts, 100 flash card sets & 1,500 drawing books were also distributed to students of 8 primary schools of the project. A total of 2000 students were assisted with teaching and learning materials. Adolescent women in schools were also given training in better health and hygiene practices. For the same, sanitary pad vending machines and disposal units were installed in a total of 2 schools in Ramsara & Baluana villages.

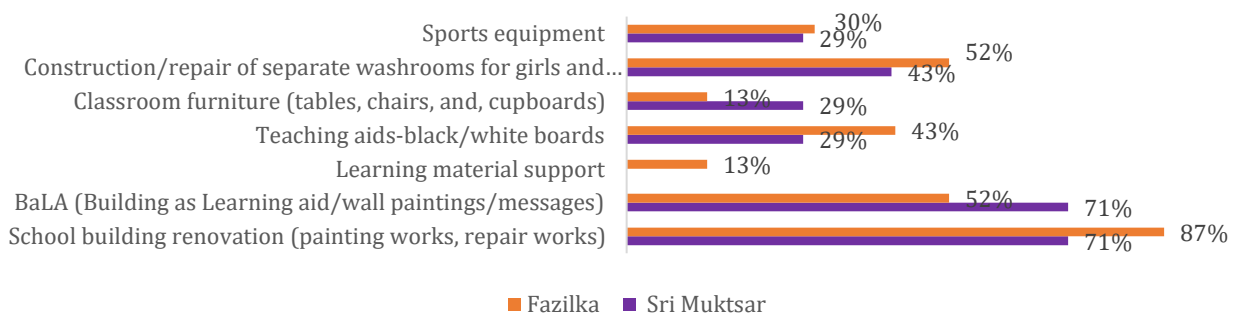
Additionally, the girls were trained to use them diligently. The machines are installed in girls' toilets, and the girls can get a sanitized pad after putting a Rs. 5 coin in the machine. The money accumulated is then used to buy and install new pads.

Figure 22: An overview of project effectiveness and impact on Education



Educational Institutions: It is necessary for children to have good, well-maintained bathrooms in schools so that they don't have to go home between classes. For the same, HDFC interventions repaired school toilets that are safe and hygienic for children. Additionally, the whitewashing of school walls and BaLa paintings in Anganwadi rooms and other school walls have improved the children's interest in going and playing around the school campus. A total of 8 sanitation units (toilets) consisting of separate girls' and boys' toilets with taps for hand washing were constructed in all the project villages. 1 unit was constructed for each government school in each village, covering 8 rural schools in the Fazilka & Sri Muktsar districts. This has combated the spread of disease in schools. Additionally, to encourage school children to wash their hands and use sanitation equipment diligently, HDFC Bank organized 8 hand washing workshops in the schools of all the project villages. A total of 2,061 girls and boys were demonstrated with best practices of washing hands and maintaining diligent hygiene. The training workshops lead to long-term benefits with regard to children's health and well-being by ensuring proper use of all the facilities installed at the schools. 2 support teachers were arranged with the help of HDFC Bank in each of the Senior Secondary schools of the 8 project villages. The teachers supported the government school staff in teaching English and Maths to the students of classes 6th, 7th and 8th. The support teachers taught the selected students each day during the working hours of the school, teaching 3 hours/per day.

Figure 23: Infrastructural services through project intervention (n=55)



Upon asking the beneficiary students about the interventions, many students stated that it became easier to go to school because of the construction of school toilets. The teacher aid through Math and Science teacher, smart classrooms and stationery equipment have made school a fun experience for students directly resulting in increased attendance in classrooms. To ensure the proper well-being of young women, training workshops and the installation of pad machine has contributed to combatting the stigma around menstruation in and around the school campus. All of the following interventions have hugely impacted the development of schools that give rise to better modes of learning and motivation for students.

Table 10: Perceived benefits of infrastructural services according to teachers/ students (n=55)

Perceived benefits	Lessons are more interesting	Lessons are easier to understand	Syllabus covered faster	Lessons are easy to remember
Intervention				
Science Labs	87%	87%	50%	50%
Smart class	96%	69%	24%	45%
Learning Material	100%	44%	66%	0%
BaLa Painting	100%	72%	44%	89%
Black/ White boards	91%	54%	27%	73%

While education infrastructure in the form of school toilets, classrooms, laboratories, and equipment are crucial elements of the learning environment and is known to improve student outcomes, facilitate better instruction and reduce dropout rates, a strategic and holistic approach is needed focusing on social-emotional learning, student’s academic progress and one which is data-driven and centred on measuring student’s learning outcomes and overall quality of education. While the project was successful in creating a conducive learning environment in the schools, more needs to be done to engage with the community. The project needs to create greater awareness among the SMC members on the RTE (right to education Act) as well as their roles and responsibilities towards school development.

4.6. Sustainability

The HDFC Bank project interventions focused on NRM resulted in a shift to sustainable agriculture at a limited scale for self-consumption. The shift at a large scale towards organic farming and away from the harmful practices of conventional agriculture such as the rampant use of pesticides and synthetic fertilizers will take place only when appropriate market linkages for the produce are developed. The institutional base for this in the form of the creation of FPOs has been developed and the skills needed by farmers in terms of using the agricultural techniques that sustain the ecosystem's quality without impacting productivity significantly.

Support provided for NRM	Structures established	Technical Know-how	Usage	Maintenance
Irrigation Management	✓	✓	✓	✓
Soil Management	✓	✓		
Clean Energy	✓	✓	✓	✓
Plantation	✓	✓	✓	

Under the thematic area of 'Skills and Livelihoods', the project provided limited support to continue even after the program ended. Support provided for setting up of the micro-enterprise such as tailoring shops, craft work, etc., has in some cases resulted in economic empowerment of the weaker sections who were working as agricultural laborer before the intervention. In most cases, however, the enterprise development activities were unable to continue or were moderately sustainable in terms of limited scale as well as establishing backward and forward linkages.

The SHG groups have been functioning well even after the program support has stopped. The women make regular contributions and keep a record of their financial activity. There were cases where the members of the group were not literate therefore, they were supported by others in the bookkeeping activities. More hand-holding support is required to promote leadership skills among these groups so that they can continue to perform their functions. The training sessions that were provided to the SHG women and farmers have brought a change in behavior towards the enterprise development or skill development activity. The women have expressed a motivation to engage in this sector after witnessing returns and a general improvement in their economic conditions. However, an outlet for market linkage needs to be established to ensure that any enterprise-based activity continues after the closure of the project support. There is a need to continuously build the women's capacities and therefore, the presence of trained local persons would ensure the sustainability of the intervention.

While the activities carried out to improve agricultural skills have been helpful to the beneficiaries and are continuing after the completion of the project, the work on custom hiring and setting up of FIGs and FPO stands out. Many of the farmers in the FPOs are small and marginal farmers and the idea was to shift them away from the traditional value chain networks where the returns to them are low towards newer value chain networks which provide a supportive environment, low transaction costs with the institutional and infrastructural system (agri-input outlet). However, the limited share capital available with the FPO is becoming a barrier towards accessing adequate resources from banks/government programs. Also, in the absence of full person power support for this new entrant to business, there are limitations to doing effective coordination with the input suppliers/market

players. The organization is at a nascent stage and with adequate institutional support can overcome these challenges.

Support provided	Structures established	Technical Know-how	Usage	Maintenance
Formation of Village Groups	✓	✓	✓	✓
Agriculture Training and Support	✓	✓		
SHG-Based Women Empowerment	✓	✓	✓	✓
Skill Training	✓	✓		
Livestock Management	✓	✓	✓	✓

In terms of sustainability under the thematic area 'Health and sanitation, options for convergence with government schemes should be looked at in close consultations with the community and respective sarpanch of the village. While the program focused on creating awareness of the need for frequent health checks and timely diagnosis of disease, the intervention was disrupted due to the COVID-19 pandemic as the social gathering was completely avoided.

Support provided	Structures established	Technical Know-how	Usage	Maintenance
Sanitation	✓	✓	✓	✓
Kitchen Garden	✓	✓	✓	✓

The interventions in the thematic area 'Education' have performed well in most aspects of the program, which has resulted in creating a conducive environment by achieving improved sanitation facilities such as the creation of separate washrooms, use of smart classrooms for better delivery of courses, upgraded infrastructure and even the installation of RO filter. All these have had direct positive results and have encouraged higher attendance and enrollment. Post-follow-up intervention can ensure the sustainability of the program in the future. Besides this, training of school management committees on the importance of effective community participation would entail a sense of responsibility and obligation on the parents towards a better future for their children.

Support provided	Structures established	Technical Know-how	Usage	Maintenance
Educational Institutions Development	✓	✓	✓	✓
Education Support	✓	✓	✓	✓
Awareness Generation	✓	✓	✓	✓

4.7. Holistic Rural Development Index (HRDI)

HRDI is a composite index developed to measure and rank the clusters and thereby the NGO partners based on their performances on key outcome indicators across these domains. HDFC Bank in its document explaining HRDI stated that since the aim of HRDP was to achieve holistic rural development through a multitude of interventions that would lead to overall improvements across related dimensions and therefore the program introduced significant variability in the interventions. Therefore, it was not possible to ascribe a single impact indicator that might be able to accurately, capture the overall performance of HRDP. Since the aim of the index was to create comparability across the various clusters, similar indicators were used for the calculation of HRDI in the project area in Punjab.

Basis our calculation, the HRDI for the studied cluster is presented in the table below, since the program did not have an available baseline, the baseline was captured through recall during the study.

Table 11: Holistic Rural Development Index for Punjab

Domain	NRM		Skill and Livelihood		Health and Sanitation		Education		Overall HRDI	
	Baseline	Endline	Base line	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
HRDI Score	0.13	0.15	0.10	0.20	0.14	0.19	0.08	0.21	0.45	0.73
% Change	15%		100%		36%		163%		62%	

The outcome indicators included in the HRDI were obtained from different domains and are consequently, measured on different scales. Therefore, to ensure the comparability of these indicators, all the indicators were converted into discrete variables such that the indicators could be measured between 0 and 1. Indicators such as productivity and income which were measured on a continuous scale were converted to discrete variables by setting a cut-off. The 50th percentile of these indicators at baseline was chosen as the cut-off point. Thus, a change in the indicator could be captured by recording the proportion of beneficiaries above the cut-off at two distinct points in time.

The detailed HRDI methodology and indicators are available in the annexure.

5. Conclusion

5.1. Summary of Findings

The HRDP project is aimed to support the lives of communities by adopting a holistic approach to development. This involved providing necessary inputs on issues like shaping economic independence through skilling, providing basic infrastructural development, and establishing a better ecosystem thereby promoting better living conditions. The development of human capital, natural resources, and infrastructure in poor and backward villages was expected to bring about their socioeconomic transformation.

In the assessed HRD programs in 3 blocks of Malout, Abohar and Arniwala of Punjab, the major focus areas for intervention were Natural Resource Management (NRM), Skill Development & Livelihood Enhancement, Healthcare & Hygiene and Promotion of Education. The project can be deemed effective in creating noticeable changes in the income generation capacity of farmers through improved productivity, reduced input cost, and capacity building of farmers to adopt sustainable and innovative agricultural practices. HDFC Bank interventions for water management in the region to increase land for agriculture have also been adopted and followed up by farmers after the project intervention. Furthermore, the project also brought about changes in facilitating access to clean energy solutions such as solar streetlights. 3,000 fruit trees were also distributed to more than 350 rural households improving their nutrition and well-being half of them are still planted to provide green cover in the region.

The project activities within skill and livelihood enhancement also have opened economic opportunities not just for farmers, but for SHG women in the community. These beneficiary categories, who otherwise have limited access to economic opportunities benefitted from the project by gaining the skills, technical support, and physical capital to undertake and expand entrepreneurial activities during the project period. While sustained profit generation is yet to be achieved, the project was successful in initiating entrepreneurial activities in the community among women that have motivated more women to start their own income generation activities. Livestock interventions through animal health camps and the distribution of goats and poultry helped small and marginalized farmers to have an extra source of income which was especially beneficial during the Covid-19 lockdown in the region.

For project activities in health and sanitation, the construction of wastewater soak pits has resulted in adequate water management in households. Most of them are still functional. Through the construction of toilets in disadvantaged households, much relief has been provided to women and the elderly in terms of access to safe defecation facilities. Households with toilets are also benefitting the larger community as these are often accessed by members of neighbouring households. Project intervention for sanitation practices has been successful in the region.

HDFC interventions in promoting education have been the most effective in the region, as smart classrooms and science labs in selected schools have benefitted students to take more interest and regularize their attendance in schools. Additionally, the repair of school toilets is safe and hygienic for children to use during school hours. Additionally, the whitewashing of school walls and BaLa

paintings in Anganwadi rooms and other school walls have improved the children's interest in going and playing around the school campus. Additionally, to encourage school children to wash their hands and use sanitation equipment diligently, various awareness generation activities have been beneficial in the region.

5.2. Recommendations

Based on the observations and analysis of primary and secondary data in the field, the study recommends strategies for the program to meet the desired outcomes better. These are:

Natural Resource Management

The key focus in the region must be on reducing chemical and pesticide input in agriculture instead of complete dependence on organic agriculture, as without proper market linkages, sustainability proves to be difficult as maintaining crop yield through organic agriculture alone is still not effective. While the project's internal logic is strong and depended on institutional development, right now the VDCs were playing a limited role in implementation. The project needs to focus more on social mobilization, on organizing of community members into VDCs through organizational learning processes, developing better institutional arrangements to take equity into consideration, capacity building of members of the VDCs to improve their effectiveness in planning, implementation as well as monitoring.

The project needs to focus on leveraging resources of government programmes/ departments that are providing support to beneficiaries on the agriculture front such as in aspects of pre-production like input, finance, training, and in production such as package of practices and technical support. The HDFC Bank project can thus direct its resources to focus more on post-production (e.g., market linkages) and in development of FPO. The FPO intervention if initiated right at the onset of the project would have led to creation of a stable institution by now; future project design should consider at least four-five years for FPO development. Since the institution shows promise, it is highly recommended that the HDFC Bank project provide 'a bridge institutional support' of two years exclusively for FPO to overcome the challenges it is facing now. The biggest problem faced by the FPO was lack of collaterals and credit history, limited farmer base and support for accessing cheap credit. A FPO incubation/facilitation agency can be engaged/set up by HDFC Bank to support such FPOs in initial stages. This can help in putting in place aspects/systems related to inputs/outputs, advice, credit/insurance and post processing linkages and once these are in place and can be effectively managed by the FPO, the facilitation agency can exit from the project (in about 1.5 to 2 years).

Skill and Livelihood Enhancement

Careful design of interventions for the distribution of Poultry and Goatry is required with proper selection of beneficiaries to make interventions for livestock much more impactful. Additionally, adequate institutional support for FPOs is necessary to increase market linkages and negotiating power of the community for a better price for yield. Finally, proper design of microenterprise components at scale with proper financial linkages and market development is required for the continuation of business enterprises.

Health and Sanitation

There is a need to focus on NCDs in project villages for better resources and information on the same. Additionally, with better convergence with government programs, the project intervention in health awareness behaviour will be much more beneficial. As drinking water is a crucial requirement in the region during monsoon floods, it becomes pertinent for more people in the districts to be supported by drinking water interventions.

Promotion of Education

While sustained interventions in education have been carried out in project villages leading to better infrastructure, there is a need to focus on children's learning outcomes and their measurability in the learning and retaining aspect through such interventions.

6. Annexures

6.1. Detailed Activity List

S. No	Focus area	Category	Sub-category	Activity	Beneficiary Type
1	Promotion of education	Educational Institutions Development	Infrastructure development	Smart classrooms were constructed in 8 Govt. schools (1 Primary, 2 middle and 5 senior) of all the project villages.	School
2	Promotion of education	Educational Institutions Development	Infrastructure development	Model Schools with Science labs, BaLa Painting etc. for the rural population of Govt. Sen. Sec. School in Johar Khera and Govt. Sen Sec. School in Pakki Tibbi were constructed	School
3	Promotion of education	Educational Institutions Development	Infrastructure development	A total of 8 sanitation units (Toilets) - consisting of separate girls and boys toilets with taps for hand washing constructed in all the project villages.	School
4	Promotion of education	Education Support	Education Support	Students of 8 primary schools of the project villages provided with 3,200 notebooks, 2,000 pencils, 1,500 pens, 350 drawing books distributed interactive charts, 100 flash cards sets & 1,500 10 schools provided with 108 dustbins, 32 whiteboards with stands and 40 globes. a total of 2,940 students assisted with teaching and learning materials	Students
5	Promotion of education	Education Support	Education Support	For Math and English 2 teachers each in all the Senior Sec. schools of the 8 project villages were arranged	Students
6	Promotion of education	Awareness Generation	Awareness Generation	130 hygiene kits distributed to 1,040 children in primary schools of all 8 project villages. Components of Hygiene kit : Hand wash soap, Nail cutter, Sanitizer	Students
7	Promotion of education	Awareness Generation	Awareness Generation	Handwash Training was conducted in all project schools	Students

Classification - Internal

8	Promotion of education	Awareness Generation	Awareness Generation	Sanitary pad vending machines and disposal units were installed in total of 2 schools of villages Ramsara & Baluana.	Students
9	Health and sanitation	Sanitation	Community Toilets Construction/ Renovation	Total 110 household toilets constructed	Community
10	Health and sanitation	Health	Kitchen Garden	407 kitchen gardens in 8 project villages were constructed.	Community
11	NRM	Farm Management	Soil Testing	Training was provided to 400 farmers, 1,280 soil samples were taken in all 8 villages, covering 1,280 acres of farmland.	Farmers
12	NRM	Green Cover	Plantation drives	Close to 3,000 fruit trees distributed to more than 350 rural households improving their nutrition and wellbeing	Farmers
13	NRM	Water Management - Agriculture	Drip Irrigation System	A total of 16 drip irrigation units were installed on pilot basis in 7 project villages, (except Balluana) in each unit in 0.5 acre of agricultural land.	Farmers
14	NRM	Water Management - Agriculture	Inlet Channel Construction	6,620 meter of Inlet channel constructed in 8 project villages, benefitting 400 farmers directly and 3,000 farmers indirectly.	Farmers
15	NRM	Water Management - Agriculture	Pond Development and Deepening	4 Farm ponds were constructed in villages Ramsara, Wahbwala, Johar Khera and Narayanpura respectively.	Farmers
16	NRM	Clean Energy	Street Solar Lights installation	Solar streetlights were installed in project villages	Community
17	Skill development and livelihood enhancement	Skill Training	Skill Training	Farmer Support and Training	Farmers
14	Skill development and livelihood enhancement	Skill Training	Skill Training	Training in Food Processing and Packaging	Community
15	Skill development and livelihood enhancement	Skill Training	Skill Training	Promotion of Organic Composting for project villages were conducted	Farmers
16	Skill development and livelihood enhancement	Skill Training	Skill Training	Mushroom Cultivation training	Farmers

Classification - Internal

17	Skill development and livelihood enhancement	Skill Training	Skill Training	Promotion of Beekeeping	Farmers
18	Skill development and livelihood enhancement	Entrepreneurship Development	Formation of SHG	Self Help Groups were established in all project villages	Women
19	Skill development and livelihood enhancement	Entrepreneurship Development	Formation of FPO	FPO'S were established in all project villages	Farmers
20	Skill development and livelihood enhancement	Entrepreneurship Development	Formation of VDC	VDC's were established in all project villages	Community
21	Skill development and livelihood enhancement	Livestock Management	Goatry	A total of 184 beetle breed goats were distributed to 88 beneficiaries in all 8 villages.	Community
22	Skill development and livelihood enhancement	Livestock Management	Piggery	4,500 chicks of pure Rhode Island Red (RIR) variety were distributed to 64 beneficiaries and 60 quintals of feed (starter & runner) worth Rs. 96,000 were distributed.	Community

6.2. Sampling Methodology

The quantitative household survey was administered for 4 thematic areas in each district.

6.2.1. Quantitative Sample Size Calculation

For this study, the formula for the calculation of finite sample size for a one-time cross-sectional survey (Cochran's 1977), has been deemed appropriate. The formula used to estimate the sample size for the quantitative household survey is given below:

$$N = Z_{1-\alpha}^2 \times P(1 - P) \times D_{eff} \div (S_e)^2$$

Where,

N = sample size

P = key characteristic of the population, set at 50%;

$Z_{1-\alpha}$ = standard score corresponding to the confidence interval, set at 95% (1.96 for two tailed test);

S_e = margin of error, set at 5%;

D_{eff} = factor for design effect, set at 1 (no design effect)

Thus, the estimated maximum sample size is 400

Quantitative Sampling Methodology

Stage 1 - Selection of villages

All 8 villages were sampled for the survey. The cluster sampling method was adopted for the sample selection for the quantitative survey.

Stage 2 – Selection of beneficiaries:

The list of beneficiaries while available for the study helped in sampling the field in terms of villages where interventions took place. After the sampling plan per village per thematic area, the beneficiaries were obtained through the process of random sampling where the enumerators went on the field to ask people about the benefits availed through project interventions. The beneficiaries obtained through this method acted as the sampling frame for that program. Since one household might avail more than one benefit from the holistic program, there is a possibility of more than one beneficiary from a single household or a household having more than one intervention area benefit.

6.2.2. Qualitative Sample Size Calculation

Qualitative tools of In-depth Interview (IDI) and Focus group discussions (FGD) were administered for obtaining information about the remaining themes as well as to enrich the household survey information with a deeper understanding.

Since there was no baseline available for this evaluation, recall method was used in the household survey to assess the change that has happened over time. For this purpose, the respondents were asked to recall the value of critical indicators at the start of the program.

6.3. HRDI Methodology

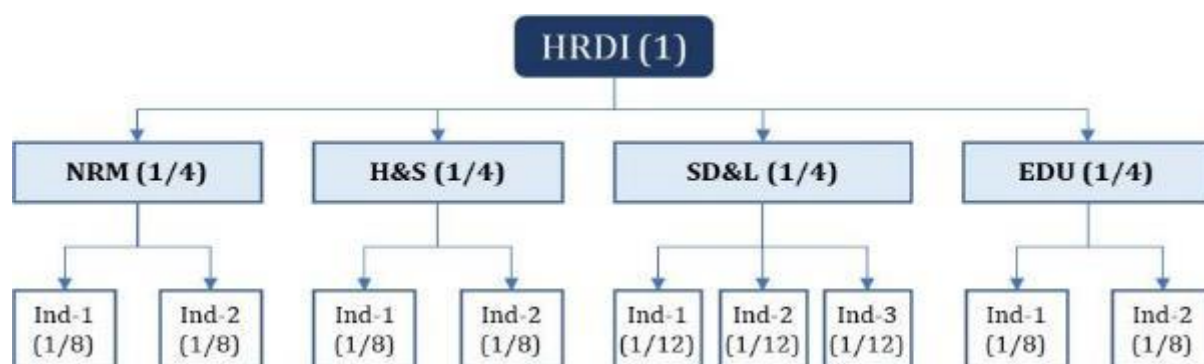
The outcome indicators included in the HRDI were obtained from different domains and are consequently measured on different scales. Therefore, to ensure the comparability of these indicators, all the indicators were converted into discrete variables such that the indicators could be measured between 0 and 1. Indicators such as productivity and income which were measured on a continuous scale were converted to discrete variables by setting a cut-off. The 50th percentile of these indicators at baseline was chosen as the cut-off point. **Thus, a change in the indicator could be captured by recording the proportion of beneficiaries above the cut-off at two distinct points in time.**

Indicator Weights

Weights were applied to each of these indicators, along similar lines to the HRDI calculation. Attribution of equal weights to all the domains was done in order to create a standard HRDI for each cluster.

Equal weights were assigned to each of the four domains. Further, the domain weight was equally distributed among the indicators of that domain; thereby ensuring that equal weightage of the domains was maintained overall.

Domain and indicator weights⁷



The example above is indicative. The domains, as well as indicators, were different across all projects, and hence the weights were changed slightly for the purpose of the study, following the principle stated above.

Project X		
<i>Natural Resource Management</i>	Average productivity of crops (3 major crops) grown (quintal per acre)	$(1/4) \times (1/3) = 0.125$
	Percentage of farmers reporting access to irrigation	$(1/4) \times (1/3) = 0.125$
<i>Health and Sanitation</i>	Percentage of households with access to vegetables in nutrition garden	$(1/4) \times (1/2) = 0.125$
	Percentage of households with access to improved toilet facility	$(1/4) \times (1/2) = 0.125$
<i>Livelihoods and Skill development</i>	Percentage of SHG members participating in rural enterprises	$(1/4) \times (1/2) = 0.125$
	Percentage of households with improved skills in agriculture	$(1/4) \times (1/2) = 0.125$
<i>Education</i>	Percentage of students reported functional smart class before/after project	$(1/4) \times (1/2) = 0.125$
	Percentage of students having learning material before/after the project	$(1/4) \times (1/2) = 0.125$

Once all the indicators were standardized and weighted, a sum of these weighted indicators was utilized to calculate the value of HRDI.

Analysis Plan: HRDI for each cluster/ NGO was calculated at two points in time i.e., before and after HRDP and can be compared cross-sectionally to understand which domains contributed to an increase or decrease in HRDI value. Concurrently, the NGOs can be ranked according to the HRDI score based on their performance across different domains, but care should be taken as the project context varies for each area. Since the value attribution of the indicators is in proportions, the HRDI value numerically ranges between 0 and 1.

⁷ NRM: Natural Resource Management | H&S: Health and Sanitation | SD&L: Skill Development and Livelihoods | EDU: Education

Method to calculate HRDI

Step 1: All the indicators were cleaned and adjusted for outliers. Only those beneficiaries were considered for the analysis where data on outcome indicators was available for both pre- and post-intervention.

Step 2: A cut-off value was calculated by taking the 50th percentile for each indicator before HRDP (baseline). For instance, consider the indicator- average annual income of farmers, at baseline, then sorted all the farmers across the seven clusters in ascending order based on their income. The 50th percentile i.e., the median value of the income was taken. This median or 50th percentile was taken as the cut-off (baseline cut-off to be precise).

Step-3: Calculated the proportion of beneficiaries above the set cut-off value at the baseline for each indicator.

Step-4: Calculated the same at the end-line i.e., the proportion of beneficiaries above the baseline cut-off for each indicator.

Step-5: Multiplied each proportion of the indicators with the set indicator weights.

Step-6: Sum all the indicators (i.e., weighted sum) to calculate the HRDI value at baseline and end-line.

Step-7: Calculated the relative change in the HRDI value from baseline to end line.

Step-8: Ranked the clusters based on relative change brought about in the HRDI value i.e., the cluster that brought the maximum change in the HRDI value received the first rank.

Domain	Indicators	Baseline	Weight	HRDI	Endline	Weight	HRDI
NRM	Average productivity of crops (3 major crops) grown (quintal per acre)	20	50%	0.13	21	50%	0.15
NRM	Percentage of farmers reporting access to irrigation	80%	50%		100%	50%	
H&S	Percentage of households with access to vegetables in nutrition garden	90%	50%	0.14	100%	50%	0.19
H&S	Percentage of households with access to improved toilet facility	21%	50%		50%	50%	
Skill	Percentage of SHG members participating in rural enterprises	16%	50%	0.10	80%	50%	0.20
Skill	Percentage of households with improved skills in agriculture	66%	50%		80%	50%	
ED	Percentage of students reported functional smart class before/after project	20%	50%	0.08	66%	50%	0.20

ED	Percentage of students having learning material before/after the project	44%	50%		98%	50%	
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6.4. Overview of Impact Methodology

The overview of Impact in the effectiveness section was calculated based on the averages of quantitative output indicators as demonstrated below.

Outputs	Output Indicators		Output Avg	Impact Level
Increased income from agriculture				
Land/ crop productivity	Proportion of farmers reporting an increase in production of crops that were supported under HRDP	30%	47%	Medium
	Proportion of farmers reporting increased input efficiency after the intervention	65%		
Access to the farm management infrastructure	Proportion of beneficiaries satisfied with the quality of available services (in farm management)	72%	52%	Medium
	Proportion of farmers reporting project interventions in seeds, tools, and irrigation leading to an increase in production	62%		
	Proportion of farmers currently practicing organic farming/conservation agriculture/other sustainable practices	44%		
	The proportion of farmers reporting an increase in the use of natural fertilizers?	30%		
Increased adoption of crop diversification	Proportion of farmers diversifying their crops with project support.	8%	22%	Low
	Proportion of farmers who report income increase due to crop diversification (base = farmers who adopted crop diversification)	37%		
Land under irrigation	The proportion of farmers who received support for irrigation	80%	80%	High
SA. Improved access to agricultural training and services				
S.A.1 Access to Agriculture training and services	Proportion of farmers who reported project training services are useful	1%	23%	Low
	Proportion of farmers who demonstrate awareness regarding sustainable farming practices	45%		
S.A.2.Adoption of improved farming practices	Proportion of farmers who adopt scientific agricultural practices	35%	53%	Medium
	Proportion of beneficiaries reporting an increase in productivity due to better farm management	50%		

Classification - Internal

	Proportion of farmers reporting increased income	75%		
SB. Economic empowerment through collectivization (Only for SHG members)				
SB.1 Formation/revival of SHG-based Enterprises	Proportion of members who received support with establishing/reviving SHGs	66%	45%	Medium
	Proportion of members whose SHGs are currently functioning	24%		
SB.2 Development of entrepreneurship	Proportion of SHG members who received training	70%	45%	Medium
	Proportion of SHG members undertaking entrepreneurial activities	13%		
	Proportion of SHGs with increased savings	77%		
	Proportion of SHG members reporting improved income	22%		
SD. Improved capacity to generate income through livestock management				
SD.1 Adoption of scientific management of livestock	Proportion of beneficiaries who received support in livestock management services	24%	34%	Low
	Proportion of beneficiaries reporting an increase in income from livestock management	55%		
	Proportion of beneficiaries reporting improved livestock health	24%		
H.B. Improved sanitation infrastructure and services				
HB.1 Establishment/enhancement of sanitation infrastructure.	Proportion of beneficiaries who gained access to sanitation services	28%	44%	Medium
	Increase in no of HHs with access to sanitation infrastructure/ facilities	56%		
	Proportion of beneficiaries reporting benefits due to improved access	48%		
H.C. Development of Kitchen gardens				
HC.1 Increased adoption of kitchen gardens	Proportion of HHs reporting income gains from kitchen gardens	11%	53%	Medium
	No of HHs received seeds/training in the kitchen garden	54%		
	Proportion of HHs reporting improved nutrition	94%		
Outcome E.A. Improved capacity of educational institutions to provide services				
EA.1 Access to improved physical infrastructure	Proportion of students/schools who report gaining access to functioning smart classrooms/ Bala/science labs/libraries/learning aid/furniture/sports equipment	41%	64%	Medium
	Proportion of schools who gained access to clean and functioning sanitation units	87%		
EA.2 Improvements in	Proportion of teachers regularly utilizing smart classrooms/libraries/smart class	77%	55%	Medium

Classification - Internal

quality of teaching	Proportion of students who prefer/regularly use smart classrooms/science labs/ libraries for lessons	50%		
	Proportion of parents/students/teachers who report improvements in teaching quality	38%		

Change	Impact Level
0%-40%	Low
>40% - 70%	Medium
>70%- 100%	High
