Impact Assessment Study under Holistic Rural Development Programme (HRDP) Koriya, Chhattisgarh-P0300

Prepared For:

HDFC BANK | PARIVARTAN
A step towards sustainable progress

HDFC Bank Corporate Social Responsibility (CSR)

Prepared By:

intellecap
AAVISHKAAR GROUP

Intellecap Advisory Services Pvt. Ltd.

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List of Acronyms

APL	Above Poverty Line
BaLA	Building as Learning Aid
BPL	Below Poverty Line
CSR	Corporate Social Responsibility
FGD	Focus group discussions
WOTR	Watershed Organization Trust
HH	Household
HRDI	Holistic Rural Development Index
HRDP	Holistic Rural Development Programme
IDI	In-depth Interview
KII	Key Informant Interview
NADEP	Narayan Deotao Pandharipande Pits (named after the famer who designed it)
NRM	Natural Resource Management
SHG	Self-Help Groups
SMC	School Management Committees
SRI	System of Rice Intensification

Executive Summary

The Holistic Rural Development Programme (HRDP) is the flagship programme of HDFC Bank implemented in several states through non-governmental organizations (NGOs). Its primary objective is to provide tools and means to the rural population to grow and prosper both socially and economically. It primarily addresses the critical needs of the communities in chosen villages that are identified in consultation with the village communities in a particular geography. This impact assessment report is for the project P0300 which was implemented in eight villages of Baikunthpur block in Koriya district, Chhattisgarh. Watershed Organization Trust (WOTR) was the implementing partner and facilitated implementation of key activities under four focus areas i.e. Natural Resource Management (NRM), Skill Training and Livelihood Enhancement (ST&LE), Health and Sanitation (H&S) and Promotion of Education (PoE). The project was implemented in a total of eight villages and data collection for this report was carried out in all the villages. Both quantitative (418 beneficiary households) and qualitative interviews (7 FGDs, 8 IDIs, and 5 KIIs) were conducted for assessing the impact of the project interventions over the communities in the above-mentioned focus areas. The project was implemented during October 2019 to September 2022.

Natural Resource Management

Field (farm) bunding, farm ponds, check dams, community well and gabion structures were constructed with the support of the project to ensure water retention and lifesaving irrigation to the crops. For water distribution to fields, irrigation tools such as tank-based micro drip irrigation systems were provided to the farmers. In addition, installation of solar streetlights, setting up biogas *chulha*, establishment of vermi-compost tanks were implemented for better management of the natural resources for income generation. The above interventions resulted in a 42 percent decrease in input costs, 83 percent increase in irrigated land, 19 percent increase of paddy production and 19 percent increase of wheat production over the baseline. These composite outcomes resulted in a net income increase from INR 40000 to INR 68000 over baseline. The key factors that worked for realization of this impact are timely distribution of quality seeds, availability and increased use of agriculture tools, access to irrigation facilities, and shift to organic farming. Over 74 percent of the farmers reported a noticeable improvement in soil health and efficiency in farming due to access to tools, equipment and know how. About 79 percent of the beneficiaries expressed increased agricultural productivity by adopting the recommended practices. This was validated from the data where, average productivity per acre for three major crops (paddy, maize, arhar) has increased by 24 percent over baseline (from 608 kg/acre to 737 kg/acre).

The solar streetlights installed under the project were effective, with 66 percent of beneficiaries confirming that these streetlights are operational and about 98 percent beneficiaries expressed a sense of safety for women and young children during evening.

Skill Training and Livelihood Enhancement

The project promoted livelihoods diversification among the beneficiaries through introduction of bio-flock fishing (4 farmer groups), supply of poultry cages (16 widows) and installation of rice/ flour mills (4 farmer groups). In addition, one kilogram of fingerling was supplied to eighty farmers in all the eight project villages for fishing in their ponds. These beneficiaries were trained by the implementation partner in their respective livelihood activities by the implementing partner. In addition, skill and entrepreneurship development training for self-employment was provided to twenty-four beneficiaries, out of which 35 percent are currently running their

enterprise post one year of completion of the project. For effective project execution and post project sustainability, the Village Development Committees (VDCs) members were trained and exposed to various other projects. Four dedicated sessions and eight exposure visits were conducted for the VDC members. It is evident from the interaction with the VDC members and other beneficiaries, that the VDCs are continuing the initiatives particularly the operations and maintenance of the assets created one year after the project closure.

Health and Sanitation

For better health and hygiene practice in the project villages, installation of soak pits, common drinking water facilities (water taps), promotion of nutritional (kitchen) garden were promoted in addition to awareness camps and health camps. While these interventions were universal across all the project villages, about 27 percent beneficiaries could recall the information that they received during health and hygiene related awareness sessions and 29 percent beneficiaries remembered the information provided in mobile van mass awareness campaign. The health camps conducted during the project duration increased health awareness among women particularly the reproductive health, in addition to better understanding about health and hygiene practices, importance of eating green vegetables. Use of soak pits for safe disposal of household wastewater has impacted household cleanliness and people get rid of the wastewater accumulation in front/back yard. Seventy-nine percent of the respondents reported that they have been using the water taps (stand points) provided under the project for fetching clean drinking water for the past two years.

Promotion of Education

Overhead LED projectors with screen were provided to seven schools in eight project villages for improving the quality of learning among school children using audio visual learning materials. Teachers from these schools reported that the use of audio-visual equipment for teaching helped them explain complex subjects to children and that the children also found it easy to understand. In addition, these schools were provided with sports kits to ensure physical activities and generate interest for sports among the school children. Teachers mentioned that the sports kits were quite useful in generating interest in sports, with 71 percent of responses indicating that the kits made the students eager to participate in sports competitions.

The following table outlines the achievements of key income indicators across the baseline and endline of the project. It is noteworthy that the enterprise activities were initiated during the project's final stages and are yet to yield results. Additionally, there was no provision for supporting livelihood activities through SHGs in the project.

Table 1: Summary of Key Income Indicators

Income Indicators (based on median)	Before	After	% Change
Average Net Income from Agriculture (INR)	40000	68000	70%
Average Productivity of 3 major crops (Quintal/Acre)	6	7	24%
Average Income from Skill (income from enterprises) (INR)	-	-	-
Average Income from SHG (INR)	-	-	-

HRDI Indicators

The Holistic Rural Development Index (HRDI)[1] score for P0300 indicates a medium impact at 0.6[2] from the baseline HRDI of 0.28. There is a 44 percent increase in NRM HRDI score, which could be attributed to better access to farm and water management, tools and equipment, and better knowledge on agricultural practices. Health and sanitation show a notable one hundred percentage change in HRDI score over baseline, which is primarily due to better awareness, knowledge, and adoption of health and hygiene practices among women members. Educational initiatives led to a 167 percent change in HRDI score because of introduction of smart classroom and use of audio-visual teaching equipment and sports facilities. The HRDI score for H&S and PoE are 100 percent or more due to low baseline score. The low baseline is attributed to the remoteness of the project villages, where the reach of mainstream development services was limited. This underscores HDFC Bank's effective targeting with the HRD programme. The following table provides the thematic area wise HRDI score.

Table 2: Summary of HRDI Scores

Domain	NRM		ST&LE		H&S		PoE		Total	
HRDI Score	Base line	End line	Base line	End line	Base line	End line	Base line	End line	Base line	End line
	0.09	**0.13**	**0**	**0.04**	**0.10**	**0.20**	**0.09**	**0.24**	**0.28**	**0.60**
% Change	**44%**		**-**		**100%**		**167%**		**114%**	

Recommendations

- Regular operations and maintenance of the farm ponds and irrigation structures need to be done by the beneficiaries to ensure continued benefits from these assets. With the support of implementation partner, the VDC may initiate collection of user fees from the beneficiaries to create a corpus for maintenance of these assets.
- Biogas produced is not adequate to meet the energy needs of the households. This is due to lack of availability of cow dung and other input materials. Such activities may only be promoted after carefully reviewing the feasibility of input availability.
- There is a need for continued credit support to the rural enterprise beneficiaries to meet their working capital need and capital for expansion of the enterprise. The implementing partner needs to connect them with financial institutions to access credit from various government schemes such as PM Mudra Yojna and other bank finance schemes.
- Kitchen gardens promoted under the project are accepted by the communities and now they have access to nutritious vegetables in addition to supplementary income. Similar initiatives may be promoted in schools where children can learn kitchen gardening and it will reach out to more households through them.
- Irregular and fluctuating electricity supply is causing interruptions to operate the Smart Classroom equipment (such as screen projector) and damaging the equipment. Solar based power supply system may be provisioned along with the smart class equipment to ensure better longevity of these equipment and increased usage during the class hours.

[1] To evaluate the impact of the interventions, the study has employed the existing HRDI created by the programme. The HRDI is arrived at by defining key outcome indicators for each of the domains and developing a composite index.

[2] Overall HRDI scores for different clusters will range from 0 to 1, with: 0 being Low/Poor and 1 being High/Best
- For instance: 0 to 0.33: Poor/Low; 0.34 to 0.66: Moderate/Medium; 0.67 to 1: High/Best (Good)

1 Introduction

The rural areas of India have traditionally functioned as agrarian communities, with a primary focus on paddy cultivation. Agriculture and allied sectors contribute to the income generation of approximately 80 percent of the rural population in Chhattisgarh. Within this demographic, close to 46 percent constitute marginal farmers who predominantly depend on rainfed mono-crop agriculture[3]. This renders them highly susceptible to the adverse effects of climate change. Rainfed agricultural systems are increasingly vulnerable as monsoons become erratic. The central Indian state of Chhattisgarh has experienced the impact of diminishing monsoons. A gradual shift towards more efficient sources of irrigation is the way forward in this condition. Improving agricultural productivity is crucial and plays a vital role in ensuring food and nutritional security, especially for economically disadvantaged small and marginal farmers.

1.1 About HRDP

Under the aegis of *Parivartan*, the Holistic Rural Development Programme (HRDP) is HDFC Bank's flagship CSR programme in collaboration with non-governmental organizations nationwide. The programme focuses on developing human capital, managing natural resources, and improving infrastructure in villages, with the ultimate goal of bringing about a positive socio-economic transformation in the lives of the rural population. Interventions are primarily undertaken in four thematic areas:

a) Natural Resource Management
b) Skill Training & Livelihood Enhancement
c) Health and Sanitation
d) Promotion of Education

The primary objective of HRDP is to provide tools and means to the rural population to grow and prosper both socially and economically. The HRDP takes a comprehensive approach by addressing various community needs, including promoting economic independence through skill training and livelihood opportunities, enhancing basic infrastructure, and establishing a healthier ecosystem for improved living conditions.

1.2 Objectives of Impact Assessment

This impact assessment study is to evaluate the tangible effects and outcomes of project initiatives. The study has analysed the influence of HRDP on the targeted areas and populations. The assessment provides insights into the effectiveness and sustainability of the project interventions. The study aims at understanding:

- Overall process undertaken for implementing HRDP activities
- Key milestones achieved
- Impact created by HRDP activities
- Challenges faced and how they were managed

The guiding philosophy behind this study is to add value by showcasing successful initiatives and recommending possible ways to address existing challenges.

The study seeks to:

- Critically and objectively evaluate implementation and performance

[3] Verma, A. (2019). Agriculture is taking the hardest hit of climate change in Chhattisgarh. *Mongabay.* https://india.mongabay.com/2019/04/agriculture-is-taking-the-hardest-hit-of-climate-change-in-chhattisgarh/

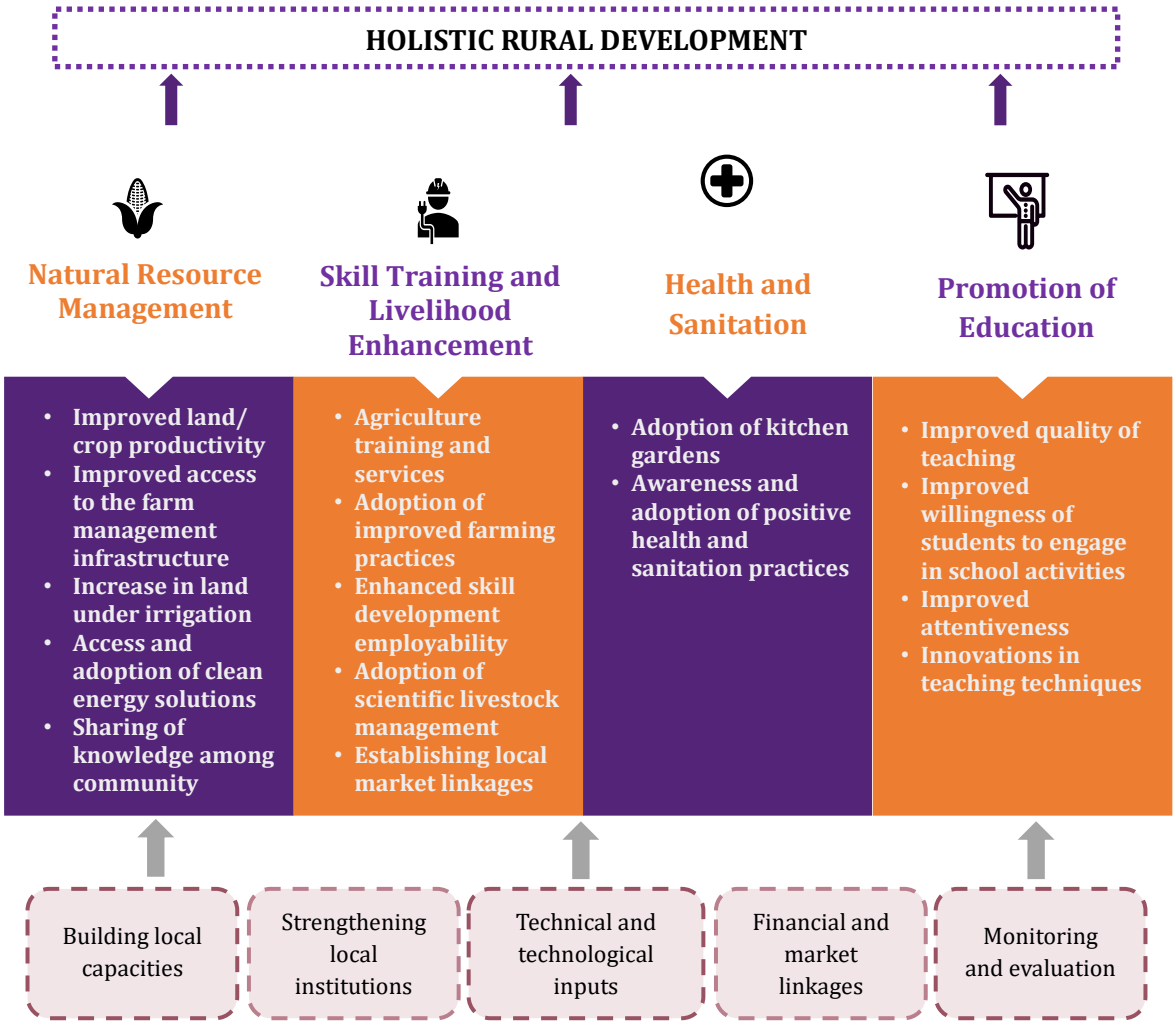
- Determine reasons for certain outcomes or lack thereof
- Derive lessons learnt and good practices
- Provide evidence-based findings to inform future operational and strategic decisions while planning and funding partner organisations

This study was also an opportunity to assess the on-ground relevance and effectiveness of the programme.

1.3 Conceptual Framework Adopted

The conceptual framework and the areas covered under the assessment are depicted below (see Figure 1). The aim is to build local capacities and strengthen local institutions, while giving technical inputs and conducting evaluation across the four thematic areas. The objectives under NRM, ST&LE, H&S and PoE are enumerated in the figure below.

Figure 1: Conceptual Framework



1.4 About the Project Area

The assessment furnishes an independent report on the interventions implemented by HDFC Bank in Koriya district of Chhattisgarh. The programme was initiated in eight villages, namely Jampara, Champadhar, Piperdand, Jampani, Mudhijhariya, Chilka, Surmi, and Mansukh under Baikunthpur block of Koriya district, Chhattisgarh. The extent of the work in each village was

undertaken based on the need and varied from village to village. The assessment study was carried out from October 2019 to September 2022.

1.5 Implementing Partner in the District

Watershed Organisation Trust (WOTR) was the implementing partner in the district. WOTR commenced its operations to empower rural communities facing challenges such as land degradation and water scarcity, through watershed development. The overarching mandate of WOTR is poverty reduction by mobilizing the self-help capacities of individuals and communities to rejuvenate the eco-spaces or watersheds they inhabit. Operating across six states—Maharashtra, Andhra Pradesh, Madhya Pradesh, Rajasthan, Jharkhand, and Odisha—the organization focuses on major programs encompassing watershed development, climate change adaptation, agricultural productivity enhancement, and health and nutrition for women and children.

WOTR marked its initial entry into Chhattisgarh, with this HRD programme. The core objective of the project was to consistently improve the quality of life by ensuring water, food, and livelihood security in rural communities within the eight villages.

2 Research Design and Methodology

The assessment used both qualitative and quantitative methods. The evaluation process was carried out in a consultative manner involving interactions with both the HDFC Bank and WOTR team at key junctures.

2.1 Criteria for Assessment

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
- Sustainability

Under the criterion of **relevance and convergence**, the team assessed whether the design of the programme interventions was:

a) Aligned with the State's plans and priorities for rural development.
b) Relevant to the local needs of the most vulnerable groups.
c) Convergent with (and making use) of the Government's existing resources.
d) Enabling different stakeholders to work together to achieve the intended outcomes of the programme.

The assessment determined the **impact and effectiveness**[4] of the programme by examining the values of outcome indicators associated with thematic interventions. These findings were evaluated against the outcome indicators. Qualitative evidence was used to assess the programme impact on the communities. This involved analysing programme outcomes in relation to variables identified (in consultation) with the HDFC Bank. Primary quantitative data findings were supplemented by insights gathered through discussions with community members, teachers, students, entrepreneurs, and local institutions at the village level. The study also evaluated the community's ability to sustain project activities after the project closure.

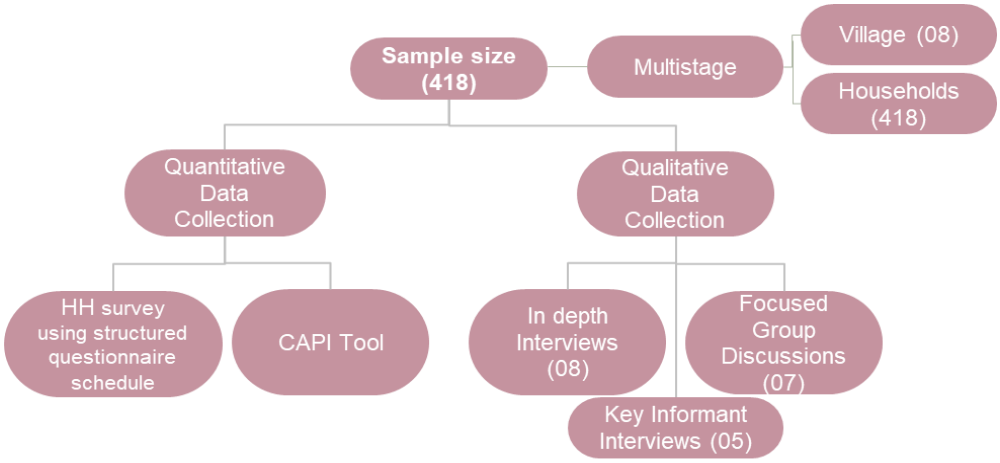
2.2 Primary and Secondary Data Sources

The primary research included quantitative household survey as well as In-Depth Interviews (IDIs), Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) with programme beneficiaries, and WOTR programme team. A total of 7 FGDs, 8 IDIs, and 5 KIIs were conducted. These interactions involved various stakeholders including Village Development Committee members, Self-Help Groups (SHGs), community members, farmers, panchayat Pradhan, and primary school teachers. The outcome mapping and result chain development was undertaken in consultation with the HDFC team. The exercise resulted in identification of standardized key outcomes and indicators related to each of the programme thematic areas. Based on the standardized list of outcomes and outputs, the questionnaire for the state was developed.

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

[4] While from an evaluation perspective impact and effectiveness are two different aspects, in the report, these are used interchangeably.

Figure 2: Sampling design



2.3 Sample Size and Distribution

Beneficiaries were selected from all eight villages in Koriya where the project was implemented, using purposive random sampling from a list of beneficiaries obtained from WOTR. Since beneficiary selection was undertaken independently for each thematic area, the selection of more than one beneficiary from a single household was probable. Similarly, there were instances where a single beneficiary received multiple benefits and support across the four thematic areas. Inclusion of beneficiaries for all thematic areas was ensured. The target sample size across the study villages was 400, out of which 418 sample respondents were reached. The sample size covered during the field is as follows (see Table 3).

Table 3: Quantitative Sample Covered

Thematic Area	Name of village								
	Jamparа	Champadhar	Piperdand	Jampani	Mudhijhariya	Chilka	Surmi	Mansukh	Total
NRM	63	60	63	67	23	25	55	56	412
ST&LE	12	5	17	23	8	13	12	8	98
PoE	0	27	27	21	0	1	16	10	102
H&S	56	5	16	31	0	2	32	3	145
Total	**131**	**97**	**123**	**142**	**31**	**41**	**115**	**77**	**418**

Data for this report was collected from all the eight study villages. An average of 12 percent or 52 households were surveyed from each of the villages. Out of the total 418 respondents, **82 percent own kutcha houses, 15 percent are residents of semi-pucca houses** and the rest reside in pucca house. Major proportion (45 percent) of the households had access to public tap or standpipes in their respective locality followed by 24 percent of the study group who use tube well or borehole water for drinking purpose. **Only 6 percent of the respondents had access to piped water in their plot.** The study area is entirely electrified as reported by all the respondents.

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

2.4 Training of Enumerators

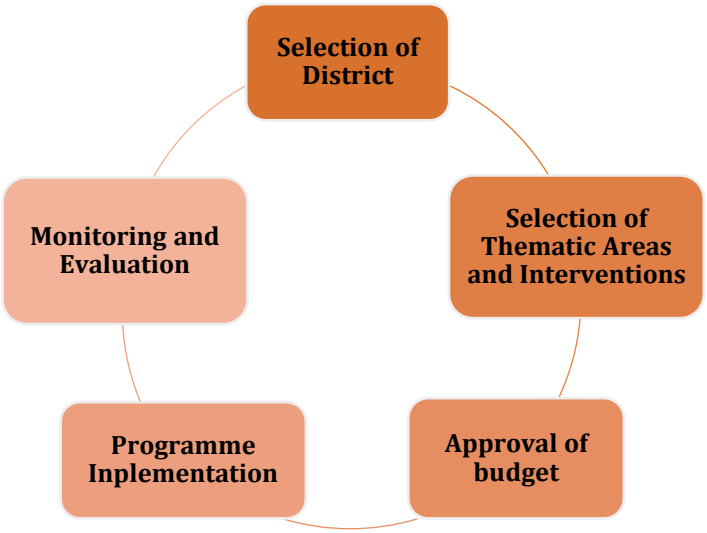
Teams of local enumerators with requisite education and experience were hired for data collection. Two days of training was conducted for enumerators and supervisors by the Intellecap team at Gaurella, Chhattisgarh.

Image 1: Training of field team held at Koriya, Chhattisgarh

3 Programme Planning and Implementation

The planning and implementation of the programme involved five stages: selection of project area viz. district, block, villages, selection of thematic areas and interventions, approval of budget, programme implementation, and monitoring and evaluation. These stages are further explained below.

Figure 3: Planning and Implementation Process



3.1 Selection of Project Area

Koriya district is divided into three tehsils and two subdivisions—Baikunthpur and Sonhat, comprising a total of 653 villages (Census 2011). The eight project villages are situated at a distance of 60-65 kilometres from the district headquarters. The village landscape is faced with the challenge of water runoff during the rainy season, leading to soil erosion and a long-term decline in land productivity. The district primarily cultivates paddy as its main crop. With restricted options of crop selection due to regular availability of water, productivity levels remain relatively low. Fallow land plots are a common occurrence in the villages, and with limited livelihood opportunities, the younger population opt for long term/ seasonal migration to nearby districts. Therefore, enhancing land and water management has the potential to improve the living standards of the local communities.

Figure 4: Areas covered under the study

3.2 Selection of Thematic Areas and Interventions

The HDFC project has strategically targeted the developmental gaps in designated regions. It placed a direct focus on strengthening livelihood options, enhancing their resilience through

knowledge and skill training to ensure their sustained viability. In alignment with the state's development strategy, the integration of social development, infrastructure improvement, and effective governance is imperative for achieving high-quality outcomes. The HRD programme incorporated these sectors into its planning, utilizing institutional mechanisms to facilitate efficient farm management practices that contribute to income generation. The project focused on skill-building initiatives that could be readily replicated in areas extending beyond its immediate scope. The agricultural sector witnessed progress through diverse interventions, including farm bunding, community wells and farm ponds, and the adoption of organic farming methods. The project also equipped educational institutions by incorporating visual aids as a pedagogical tool.

The project generated income growth for villagers which occurred as a result of increased agriculture production, water resource development, entrepreneurship opportunities, infrastructure improvements, and capacity building. Stability in income reduced seasonal and distressed out-migration from the region.

3.3 Project Implementation

The interventions comprised a combination of providing direct materials and services such as seeds and fertilizers as farm inputs and implements, along with raising awareness about new agricultural techniques. In addition, kitchen gardens, and community orchards were some of the other activities carried out.

Under NRM, the programme supported in improving the capacity of farmers in farm management with activities that would provide solutions to the scarcity of water as well. Land treatment through farm bunding, trenching, installation of vermi tank, developing farm pond were some of the action areas. Water resource management was a focal area for the implementation design with activities including gabion structures, community well construction, check dam construction. Clean energy was also a focus area where biogas-*chulha* was distributed and solar lights were installed at important junctions in the villages.

Under ST&LE, the programme laid emphasis on creating entrepreneurship opportunities among the beneficiaries. Activities included installation of flour and rice mill, and setting up bio-flock fish farming.

Under H&S, existing community taps were repaired and some new ones were installed.

Under PoE, screen projectors were provided to primary schools as part of the Smart Classroom initiative. As per the teachers, sports kit was used on a regular basis.

Table 4: Activities under Four Thematic Areas in Koriya

Activity Category	Activities	Output Indicators
NRM		
Water Management	Water resource management, gabion construction, community pond, check dam repair, irrigation method (drip), water pump, check dam construction, farm pond construction, well construction	Income from agriculture
Farm Management	Area treatment, land treatment through farm bunding, trenching, installation of vermi tank, tools for agriculture demonstration, vegetable kit	
Clean Energy	Solar street light installation, biogas chulha	Clean energy
ST&LE		

Agriculture Training and Support	Crop demonstration through PoP, training of farmers on PoP, farmers field school, farmers field day at demo plots, exposure visit	Access to Agriculture Training and Services
SHG-Based Women Empowerment	Training on income generating activities	Skill and Entrepreneurship Development
Skill Training	External resource support/IEC material, Training/Awareness program for VDC/VO and Panchayat Members, Exposure of VDC/VO and panchayat members for water resource management and NRM	Skill and Entrepreneurship Development
Livestock Management	Exposure visit, training on improved goat rearing practices, external resource support/IEC material	Livestock Management
Entrepreneurship Development	Bio flock installation, promotion of bio flock fish farming	
H&S		
Sanitation	Soak pits	Sanitation Infrastructure and Services
Drinking Water Management	Handpump repair, community tap installation	Health Infrastructure and Services
Kitchen Garden	Seeds, training, demonstrations, fertilizers	Health Infrastructure and Services
PoE		
Educational Institutions Development	Wall projector, sports kit, toilet repair	Infrastructure in Educational Institutions

3.4 Monitoring and Evaluation

The HRDP adhered to a standardized monitoring and evaluation methodology, as endorsed by the implementing partners. This included periodic submission of progress reports on project implementation to the HDFC Bank. Furthermore, the programme implementation team from the bank conducted scheduled visits to the project villages, reviewing the project work sites, and interacted with project beneficiaries.

The HDFC Bank requested project information from the implementing partner. The partner managed project data, detailing village-wise activities, beneficiaries, and expenditures. The partner submitted an annual progress report along with the plan for the next year to the HDFC Bank. This document summarized activities implemented, outputs delivered, and outcomes achieved.

In addition, the HDFC Bank hired Intellecap as an external agency to conduct impact assessment of the project after one year of project completion. This was an independent assessment that evaluated using four criteria: relevance and convergence, impact and effectiveness, sustainability, and replicability. This is backed by the creation of a Holistic Rural Development Index (more details in Annexure B) based on selected outcome indicators. The impact (Annexure C) of each activity has also been calculated and classified as high, medium, or low impact. The annexure goes into greater detail on these.

4 Study Findings

This chapter has explored the findings from the four thematic areas. The first section delves into NRM, covering topics of irrigation management, income from agriculture, crop diversification, and the adoption of clean energy solutions. Following this, the chapter examines the impact achieved through ST&LE, with a focus on agriculture training and services, economic empowerment, skill and entrepreneurship development. The next section is on H&S that covers insights on health and sanitation infrastructure, management of drinking water, and the establishment of kitchen gardens. The concluding chapter on PoE presents findings on infrastructural development, for e.g., BaLA, in educational institutions. Each of the sections are accompanied by impact observations and case studies.

4.1 Demographic Profile

This section provides an overview of the demographic composition of households surveyed in the eight villages within Baikunthpur block, under Koriya district. The majority of the population, around 99 percent, engages in cultivation primarily of paddy in the region. Additionally, 83 percent of the surveyed households worked as wage labourers. In terms of educational attainment, 9 percent reported being illiterate, while 19 percent indicated having completed education up to the eighth standard. The highest percentage of the population (82 percent) are scheduled tribe, while other backward castes account for 17 percent. More than half the respondents (57 percent) are living below the poverty line.

Age of the respondent		**Social Category**		**Status of Education**		**Sources of Income**	
18-25 yrs	6%	Scheduled Caste (SC)	1%	Illiterate	9%	Cultivation	99%
26-35 yrs	31%	Scheduled Tribe (ST)	82%	Literate but no formal education	23%	Wage labour	83%
36-45 yrs	26%	Other Backward Classes (OBC)	17%	Up to 5th std	19%	Pension	12%
46-55 yrs	22%	**Poverty Status**		6th to 8th std	19%	Salaried Employment	10%
56-65 yrs	10%	Antyodaya	34%	9th to 10th std	17%	Non-agricultural income	9%
More than 65 yrs	5%	BPL	57%	11th to 12th std	10%	**Gender of the respondent**	
		APL	7%	Graduate	3%	Male	71%
		Do not have ration card	2%	Post graduate	1%	Female	29%

Figure 5: Distribution of sample (n=418)

The following sub-sections highlight the key findings from the field survey conducted to assess the impact of the programme after its completion.

4.2 Natural Resource Management

In Koriya district, 242 beneficiaries received agricultural and farm-related benefits, and 366 households were recipients of clean energy initiatives. Beneficiaries under the NRM categories (including farm management and clean energy) are mutually inclusive.

4.2.1 Irrigation Management

The farming community faced challenges in year-round source of irrigation. In addressing this issue, initiatives of farm ponds, farm bunding, community wells, and drip and lift irrigation systems were relevant for the community.

Figure 6: Proportion of HHs reporting change in total irrigated land (n=179)

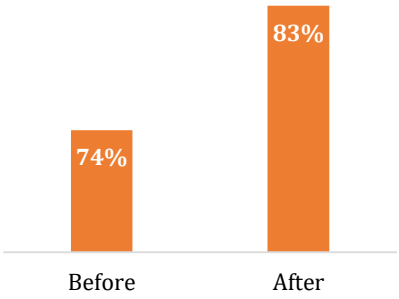
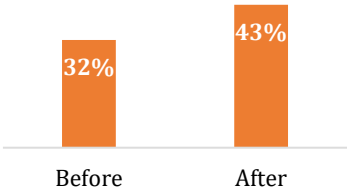


Figure 7: Proportion of farmers reporting access to irrigation (above median range) (n=179)



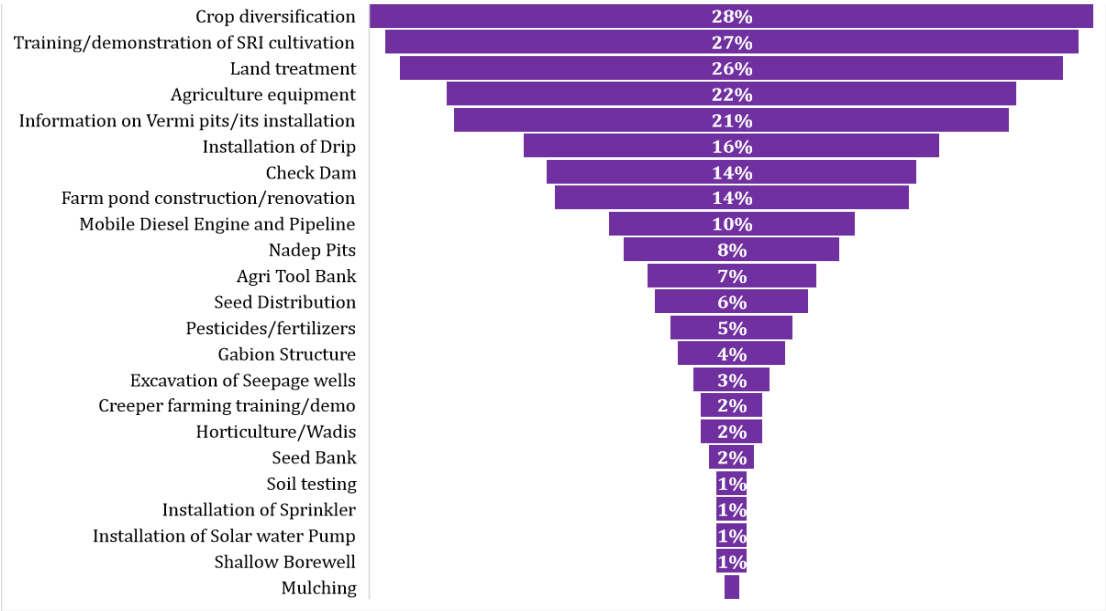
Over 83 percent of the respondents reported having irrigated land which increased from the baseline of 74 percent. This suggested a positive impact on irrigation access, potentially improving agricultural practices and productivity in the surveyed households.

The data also indicated a rise in the proportion of farmers reporting access to irrigation within the above-median range. Prior to the intervention, 32 percent of farmers reported such access, and this figure increased to 43 percent after the intervention.

4.2.2 Income from Agriculture

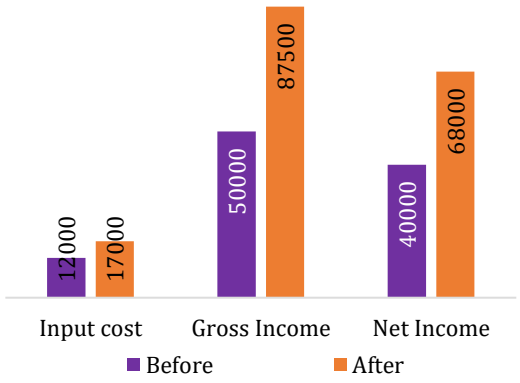
The interventions under farm management included crop diversification (for e.g., arhar, urad, wheat, mustard and potato) to promote agricultural diversity. Training and demonstrations focused on System of Rice Intensification (SRI) cultivation techniques, land treatment methods (for improved soil health), and the provision of essential agriculture equipment. Additionally, vermi pits were installed and information was shared on its optimum usage.

Figure 8: Project interventions that led to increase in income from agriculture (n=168)



The gross income saw a substantial rise from INR 50,000 before the intervention to INR 87,500 after. Despite the higher input costs (from INR 12,000 to INR 17,000), net income increased from INR 40,000 before the intervention to INR[5] 68,000 after. The rise in input costs could be attributed to various factors, as indicated by the respondents. Some of the factors were expanding cultivated areas for crops, shifting towards high-value crops, and awareness among farmers. While these factors contribute to the overall increase in input costs, it reflects a sense of awareness and motivation among the farmers to improve on their techniques. **After conducting a 2-sample z-test on agricultural income, the p-value was 0.6 against a z-statistic of 10.8 (at 95 percent confidence level), indicating that it is significant**. The detailed calculations are reflected in the Annexure (D).

Figure 9: Increase in Agricultural Income (in INR)



Farm interventions led to an increase in productivity per acre for paddy, wheat, maize and other vegetables. **Data indicated an increase of 19 percent productivity for paddy (from 1300 to 1552 kgs/acre) and 13 percent for wheat (from 800 to 900 kgs/acre).** Beneficiary households attributed the increased production of paddy to project interventions on irrigation (53 percent) and credited organic farming for improved per acre production (42 percent). For wheat cultivation, 58 percent reported interventions in seeds and tools to be beneficial.

Figure 10: Produtivity per acre, median value (in Kgs) (n=179)

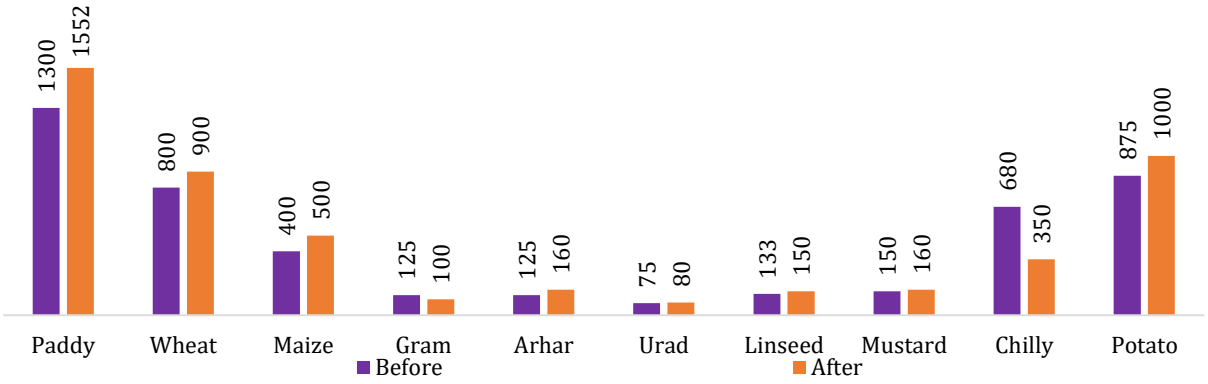


Table 5: HRDP Interventions and their Contribution in Increased Production of Crops

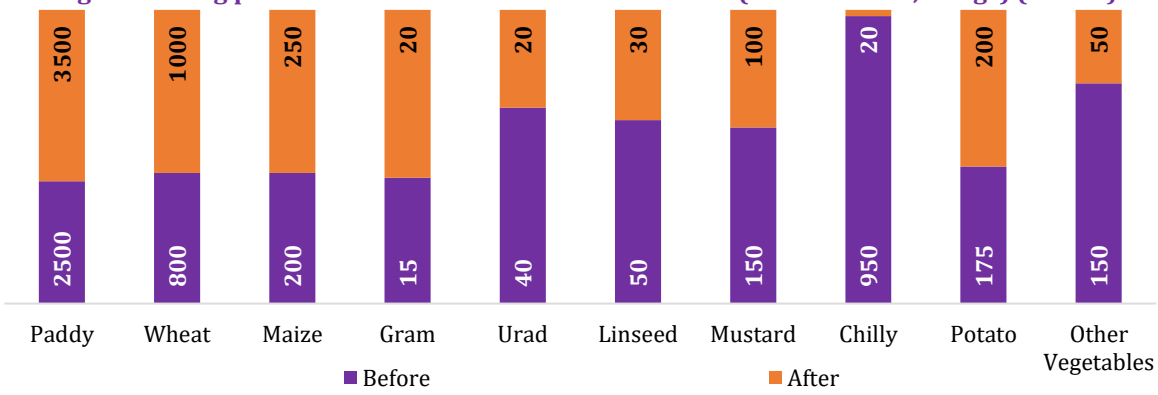
Intervention	Paddy	Wheat	Maize	Arhar	Urad	Mustard	Potato
Seeds and tools	22%	58%	13%	14%	12%	29%	0%
Irrigation	53%	46%	63%	59%	52%	0%	100%
Organic farming	42%	50%	19%	52%	52%	43%	50%
Soil testing and land treatment	24%	54%	19%	31%	40%	43%	0%
Farming techniques	26%	38%	6%	21%	12%	14%	50%
Agricultural installations	1%	0%	0%	0%	0%	0%	0%

[5] **Note:** Net and Gross Income based on median

Crop insurance	0%	8%	0%	3%	4%	0%	0%
Weather	83%	100%	81%	93%	92%	86%	100%

The data in the following Figure 11 illustrates the average crop production before and after the intervention across the study villages. Post-intervention, there was an **increase in the production of paddy from 2500 to 3500 kgs, wheat from 800 to 1000 kgs and maize from 200 to 250 kgs** among the other crops. It was reported during the FGDs that for vegetable like chillies, the disparity between comparative figures was due to poor weather conditions and decreased area that was under cultivation.

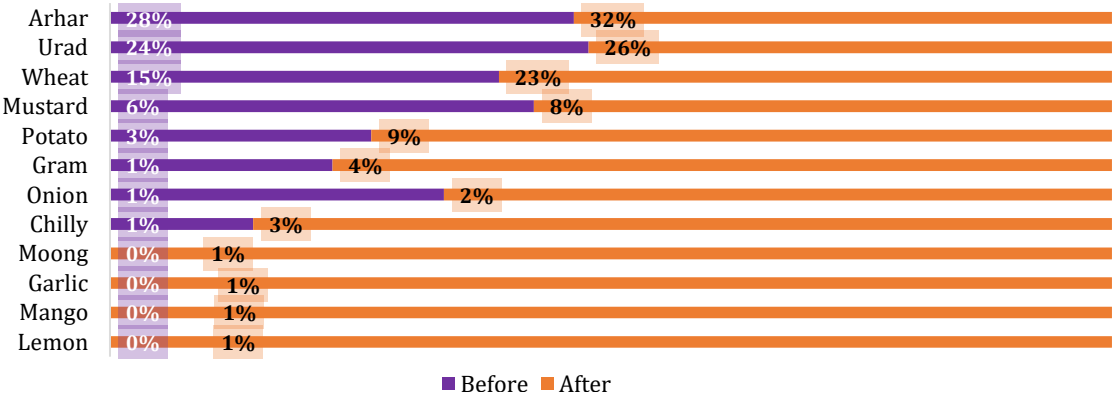
Figure 11: Avg production before and after intervention (median value, in Kgs) (n=179)



4.2.3 Crop Diversification

Crop diversification was a beneficial farming practice that helped overcome crop production challenges such as high land values, increased input costs, and varying weather factors. By growing more than one crop in an area, farmers could generate more revenue per acre and reduce the risk associated with unfavourable weather or market shocks. Additionally, crop diversification promoted sustainability, minimized soil degradation, pest problems, and nutrient imbalance, and helped in mitigating the impact of climate change. In the HRD programme for Koriya, it was evident that five types of crops such as arhar, urad, wheat, mustard and potato had shown an uptake among the beneficiaries. Few options such as moong, garlic and mango were reportedly initiated by the community after the farm management interventions showed results. In addition to this, a major proportion of households reported an increase in the production status of the crops after efforts in diversifying. Some of the examples include arhar (63 percent), urad (66 percent), mustard (78 percent) and, potato (40 percent). Due to crop diversification, 7 percent of the respondents experienced increase in productivity and 86 percent of them noticed an increase in income.

Figure 12: Households Practicing Crop Diversification Before and After HRDP Intervention (n=179)



Almost 87 percent of the respondents reported that they increased the usage of natural fertilizers by following methods of compost such as vermi pits (31 percent) or NADEP pits (11 percent). Integrating organic farming practices not only decreased the use of chemical fertilizers and pesticides (49 percent and 38 percent respectively) but aided in efficient usage of water (11 percent decreased need for water) and improved soil health (57 percent improved soil health). Improved status and quality of production were major areas of impact as reported by 89 and 79 percent of the respondents respectively. During discussions with beneficiaries about the adoption or utilization of farm management services, they commonly cited a lack of adequate or current information, along with concerns about the cost of maintenance. Many participants observed that more scope of follow up support could be accommodated within the project activities.

Figure 13: Change in the use of fertilizer pre and post project implementation

	Natural fertilizer (n=149)	*Chemical fertilizer (n=155)*
Increased	87%	55%
Decreased	5%	34%
Remained the same	7%	12%
Did not use before the project	1%	0%

4.2.4 Use of Clean Energy Solutions

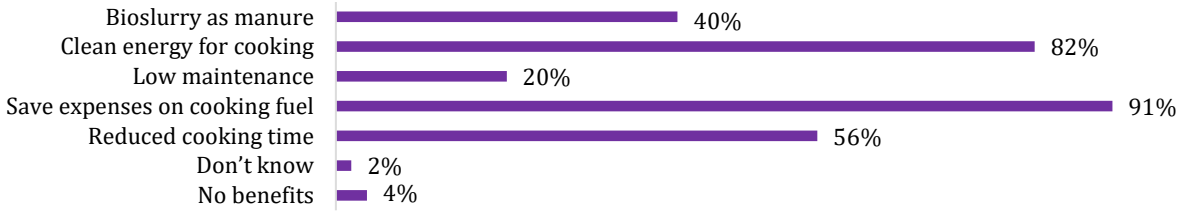
Solar street lights and biogas cooking stoves provide rural communities with clean and sustainable energy, reducing reliance on traditional, environmentally harmful sources like kerosene, wood, and charcoal. Biogas aids in organic waste management and lessens deforestation for fuel wood, while solar street lights enhance safety and security in rural areas by providing nighttime illumination. In the villages of Koriya, beneficiary households were supported with biogas units (15 percent from the sample households) and 98 percent availed the benefits of solar street lights.

Most users use the biogas unit almost every day, constituting 47 percent of respondents. A smaller percentage (5 percent) use it once a fortnight. A minority of 9 percent have discontinued the usage of the unit after the project was concluded. This could be linked to some of the challenges wherein 45 percent of the respondents noted slow cooking time, 22 percent faced repair issues, and 13 percent experienced the unit working only for a short time.

Image 2: Bio-gas Unit at beneficiary HH

Over 60 percent respondents use the biogas unit solely for meal preparation, while an average of 50 percent utilize it for tasks beyond meals, such as making tea or heating food. **Qualitative discussions also revealed that the units are being preferred for peripheral cooking and not for bulk of the cooking.** Households reported various benefits of biogas usage such as clean energy for cooking, savings on cooking fuel expenses, and usage of residual bio-slurry as manure. Additionally, 20 percent appreciated that the unit was low maintenance. The savings per month from the use of biogas was approximately INR 500 as reported by the beneficiaries during IDIs.

Figure 14: Perceived benefits of bio-gas (n=55)



The bio gas units come with an added advantage of generating the bio-slurry that was being repurposed as natural fertilizer into the farmlands. Some of the benefits include improved soil health (reported by 75 percent), reduced expenses on fertilizers (42 percent), enhanced productivity (84 percent), and environmental viability (49 percent).

About 66 percent of solar streetlight beneficiaries reported that the solar lights are currently operational indicating a medium level sustainability of the intervention. **In qualitative discussions, recipients conveyed instances of solar lamps going defunct after some usage, and encountering difficulties in obtaining repairs. A subset also emphasized the necessity of replacing batteries, a task that mandates a trip to nearby districts.** This underscores the need for post-installation technical support that is available at a local level. A proportion of **98 percent streetlight beneficiaries reported improved safety for women due to the installation.**

4.2.5 Impact Observations

Figure 15: Overview of Project Effectiveness and Impact of Interventions (NRM)

The project witnessed a high impact from land and crop productivity as exemplified in previous sections. There was an evident shift in the **proportion of households having land under irrigation which increased from 74 percent to 83 percent.** The average production of the top three crops—paddy, wheat, and maize increased by 40 percent for paddy and 25 percent for both wheat and maize from the baseline median.

4.2.6 Case Study

Case Study 1: *Pushing Boundaries with Bunding—from fallow to fertile farmland*

Kaushal Singh from Mudhijhariya village is a beneficiary of the farm bunding activity, owning 12 acres of family land. Farm bunding is a technique used in agriculture to reduce soil erosion, retain soil moisture, and increase crop productivity. It involves constructing small ridges or embankments of earth or stone across the slope of the land, either in blocks or contours, to impound water and prevent it from running off the field. Farm bunding helps to conserve soil and water, reduce land degradation, and increase crop productivity, leading to higher incomes for farmers. Kaushal bunded 2 acres from this land after receiving training from WOTR as part of the HRD programme. The village is already challenged with water scarcity and most farmers rely primarily on rain-fed farming. The choice of crops to be sown is dictated by water availability. For Kaushal, farm bunding resulted in reduced topsoil loss and eliminated runoff. This increased the total yield from his farm. Despite being new to the process, the beneficiary actively shares knowledge with fellow villagers, encouraging them to adopt farm bunding. The produce that includes maize and arhar/toor (pigeon pea lentil), serves for both self-consumption and sale. The farmer was able to yield 5 to 6 quintals in the last harvest of maize which he sold at INR 18 per kg to the wholesaler. He is expecting to sell the toor at INR 100 per kg. Kaushal added that the current year's lentil harvest is estimated to be around 1 quintal due to lower rainfall. His entire farming practice is a direct flight from the time when he used to cultivate *kulthi* (horse gram lentil) on this land and got approximately 20-25kg of total output. For most part of the year when not cultivating paddy, Kaushal's farmland remained fallow. Presently, the situation witnessed a positive impact through the project interventions. Kaushal's commitment to his farms is reflected in his construction of a new house in close proximity to better oversee and manage the farming activities. He also affirms to the sole usage of natural fertilizers on his farm. In his own words, Kaushal said, "*the training, knowledge acquisition, and better utilization of my fallow land has improved family nutrition and has also created an avenue of steady income through market sales.*"

Case Study 2: *Creating Water Sovereignty with Community Well*

The community well construction activity benefited a group of five members in Mudhijhariya village. To inculcate a sense of ownership amongst the beneficiaries, the process of installing the water structure was shared between the WOTR NGO and the beneficiaries. The beneficiaries undertook the land digging and labour work, with structural equipment support being provided by the project. The potential

location of the well was carefully chosen after a thorough reconnaissance, ensuring year-round water availability. It has been close to a year that the families of these five beneficiaries are availing the benefits of the well and utilizing the water for vegetable farming and irrigation. There is a 24-hour motor attached to the well that usually powers through majority of the days. Despite the continuous usage, the well always provided water consistently throughout the year. The water from the community well serves both drinking and irrigation purposes.

Previously fallow land and rain-fed land during summer months, the same piece of land is now being used for the cultivation of crops such as potatoes, cauliflower, and other greens. The irrigated area expanded, with 1-1.5 acres benefiting directly from the well water, collectively totalling 4-5 acres for the five members.

The paddy harvest doubled from 5 quintals to approximately 10 quintals, fetching a government rate of INR 2500 per quintal. Vegetables harvested are used for consumption, resulting in monthly savings as the beneficiaries no longer need to purchase INR 400-500 worth of vegetables weekly, amounting to savings of INR 1600-2000 per month over the past 8-9 months. The beneficiaries also plan to sell the harvested potatoes moving forward.

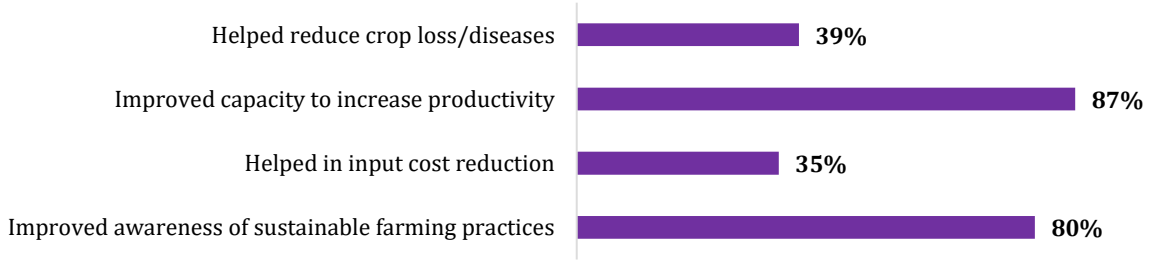
4.3 Skill Training and Livelihood Enhancement

The integration of skill training with livelihood enhancement is pivotal for boosting the economy and empowering underprivileged communities. In numerous job markets, the existing opportunities remain unfulfilled primarily because of a scarcity of skilled workers. To address this issue, the HRDP undertook various initiatives aimed at uplifting the women and farming communities. These involve the application of advanced technology and resources in activities like bio-flock fish farming, crop demonstration, and visits to demo plots, among others.

4.3.1 Agriculture Training and Services

The key activities taken up by the community was the construction of vermi-compost pits, the judicious application of fertilizers, and the adoption of conservation agriculture[6] practices. Training for the use of organic manure was also conducted. Sustainability of these practices were demonstrated by the beneficiaries as they have continued using organic manure and, planned their fertilizer and insecticide application on the farms. The findings indicate that more than 74 percent of the beneficiary farmers reported an improvement in soil health and farming efficiency. Another **79 percent of the beneficiaries expressed that their agricultural productivity had increased since adopting the practices**. Approximately 93 percent of the respondents reported that their income increased due to the change in farming practices.

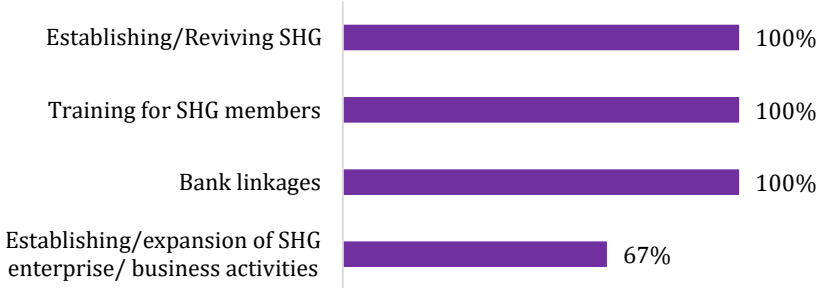
Figure 16: Perceived Improvements Due to Adoption of Agricultural Practices (n=85)



4.3.2 Economic Empowerment through Collectivization

Within the HRD programme, support was provided to enhance SHG management, lending and savings practices, bank linkages and enterprise management. The project also facilitated member mobilization, efficient record-keeping, and well-organized meetings. **All the training recipients acknowledged income generation as one of the benefits of being a SHG member.** In addition, all the beneficiaries viewed SHGs as an instrument of personal savings and practiced so.

Figure 17: Support Provided for Groups through HRDP (n=3)



[6] As defined by FAO, 'a farming system that promotes maintenance of a permanent soil cover, minimum soil disturbance, and diversification of plant species. It enhances biodiversity and natural biological processes above and below the ground surface, which contribute to increased water and nutrient use efficiency and to improved and sustained crop production'.

4.3.3 Skill and Entrepreneurship Development

The skill and entrepreneurship development initiatives instilled a sense of innovation and self-reliance among the community members. The beneficiaries were supported with training such as goat farming, fishery management among others. Data shows that all of the participants underwent skill development for self-employment and were supported for enterprise development. This led to 35 percent of the recipients reporting renewed confidence to establish an enterprise.

Figure 18: Proportion of HHs supported in enterprise development (n=13)

4.3.4 Impact Observations

Figure 19: Overview of Project Effectiveness and Impact of Interventions (ST&LE)

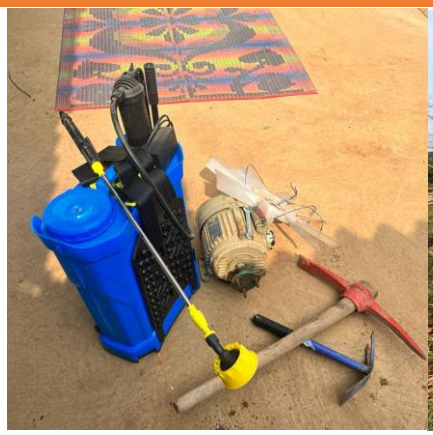
The data highlights positive trends in various areas, such as increased farmer awareness, and adoption of sustainable practices. The farmers adopted improved agricultural practices, highlighting that the training contributed to reducing their input costs. However, the data identified the need for sustaining entrepreneurial activities.

4.3.5 Case Study

Case Study: *Milling into an Income Stability—quintal by quintal*

The Jayshiva Rice and Flour Mill was established with project support and had resulted from discussions among its members and the implementing partner. The members contributed INR 32,000 collectively, covering 50 percent of the INR 65,000 worth of machinery cost. The mill is specialized for both wheat and paddy milling, with members learning operations through self-guided efforts and online videos. The pre-requisites to establishing the rice mill included setting up an electric line which came with an additional cost of INR 35,000 and was borne by the beneficiary members. Monthly operational expenses of this rice mill include around INR 800 for electricity and INR 400 for mesh filters. The mill processes common crops such as paddy, wheat, and chickpea. The rice mill has been running actively and has an average monthly milling output of approximately 1 to 1.5 quintals. Paddy husking is done at a much larger scale at the mill and goes up to 10-12 quintals each month. Village members from the nearby villages have been availing the service of the mill on a regular basis. Charges for husking are set at INR 40 for a larger sized gunny sack (weighing 60-70 kgs) and INR 30 for a smaller gunny sack (weighing 50 kgs). The group charges INR 4 per kg for milling wheat. Establishment of the rice and flour mill eliminated the need for migration for the members of the group, who have transitioned into running the mill as a full-time work.

Case Study: *Adding Acres with Agri-tool Set*



Santkumar, a beneficiary of the agricultural tool set, shares his experience with the programme, highlighting the impactful changes in his agricultural practices. The agri-tool set that was valued at 15,000 INR, was made accessible to him for a nominal contribution of 2,000 INR. The seamless paperwork process added to the convenience and helped in instilling a sense of ownership among the user.

Having utilized the agri-tool set for the past year, Santkumar attests to its durability and effectiveness and experienced no issues with the equipment. The inclusion of a spray machine in the tool set improved pest management and reduced the quantity of fertilizer required. These minor yet long-lasting changes

not only enhance the efficiency of farming practices but also contribute to sustainable and cost-effective agriculture.

The overall savings accrued over time with the diligent usage of the tool set enabled Santkumar to make strategic investments in his agricultural land. He utilized the saved funds to employ a JCB machine and reclaimed a fallow homestead land. This step allowed him to sow paddy on the additional piece of land which is approximately an acre in size. The beneficiary estimates a paddy yield of 8-10 quintals from the newly cultivated area. This outcome reflects the integration of modern agricultural tools and techniques that lead to tangible economic benefits and increased productivity.

4.4 Health and Sanitation

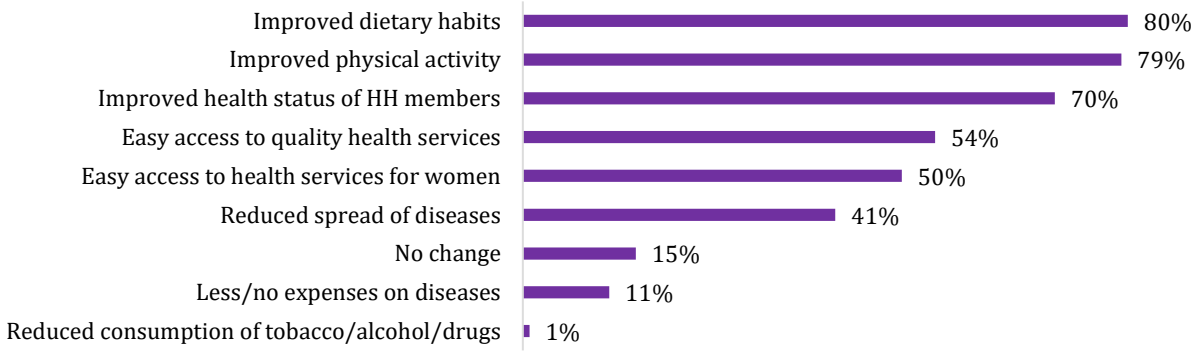
The project focused on improving the well-being of community members with awareness generation activities and sanitation infrastructure. A proportion of 27 percent households received hygiene related awareness sessions. Waste water soak pits were availed by 2 percent of the sample, whereas mobile van awareness campaign benefitted a proportion of 29 percent of the households. The project also took initiatives for access to safe drinking water by repairing handpumps, and by installing community water taps. The project organized vermi-compost training and enabled households to access a nutritious diet via kitchen gardens. This motivated other households that were not involved directly in the project to adopt organic farming methods.

4.4.1 Health Infrastructure and Services

Beneficiaries **of health initiatives were a part of awareness sessions on hygiene practices.** A proportion of 80 percent of the beneficiaries perceived an improvement in dietary habits after the awareness sessions. The camps prioritized disease prevention and awareness generation. This prompted communities to take measures to monitor disease transmission in the locality.

Health camps made it easier for women in the village community to access healthcare services. They used it as a platform to enhance their awareness about common communicable diseases and day to day hygiene It was corroborated during discussions with various women community members.

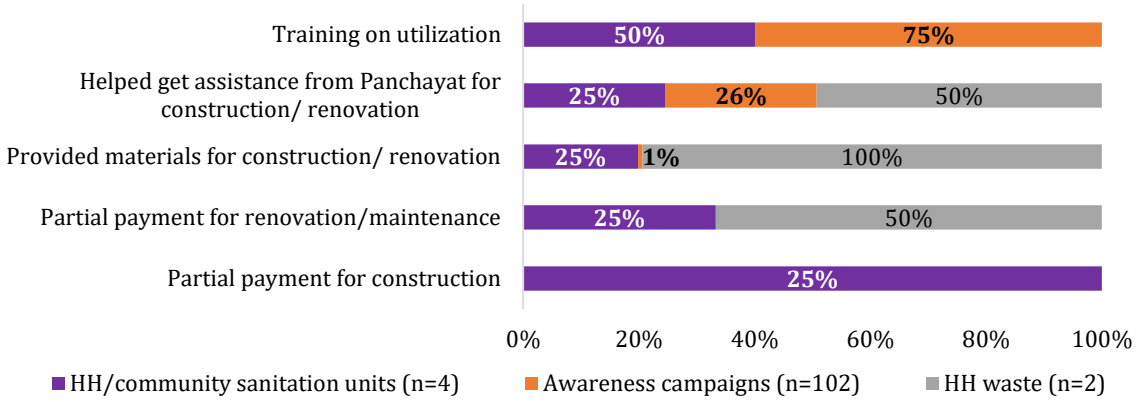
Figure 20: Perceived benefits of HDFC bank supported health camps/clinics (n=114)



4.4.2 Sanitation Infrastructure and Services

Soak pits were constructed to dispose household waste water and waste management awareness campaigns were conducted to promote proper treatment and disposal of waste. One of the key learnings was the adoption of toilet usage instead of open defecation. Another important learning reported by the respondents was the practice of washing hands using soap after using toilets.

Figure 21: Proportion of HHs reporting support for sanitation services

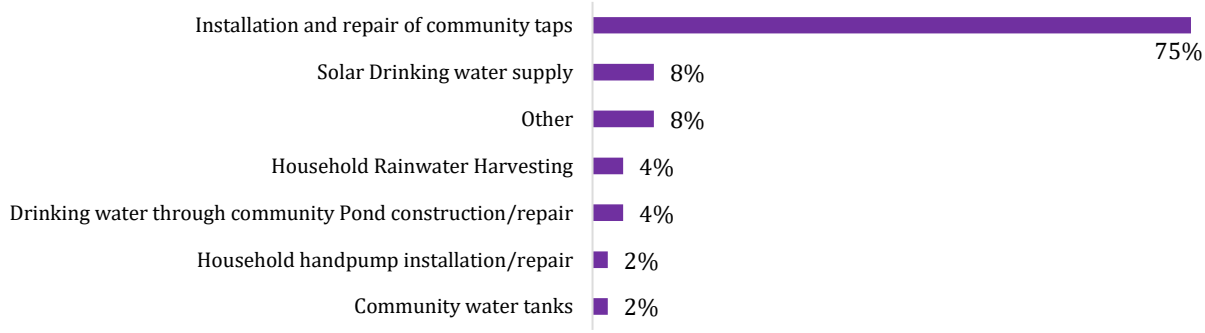


4.4.3 Availability and Management of Drinking Water

The community availed various drinking water management services under HRDP. Community ponds were constructed or repaired to enhance community water resources. **Seventy-five percent of the respondents benefitted from the establishment of community water taps.**

Approximately 79 percent of the respondents reported consistent usage of water for more than two years from the water sources supported by HDFC Bank. The interventions also ensured year-round water availability, representing a shift from the previous record of water being available for ten months a year.

Figure 22: Drinking water activities under project (n=52)



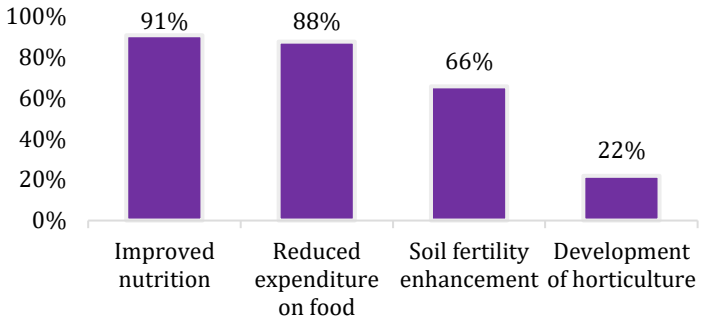
A proportion of the beneficiaries noticed a decrease in cases of water borne diseases after the intervention (30 percent) and similarly, 37 percent of the responses pointed towards a decrease in stomach relates issues.

The availability of drinking water benefitted the women of the household in multiple ways. Firstly, 74 percent of the women reported that having access to clean water saved them time that would otherwise be spent fetching water from distant sources. With improved water availability within or near their homes, they could dedicate more time engaging in income-generating activities. Additionally, **88 percent of the respondents indicated that availability of drinking water in the vicinity benefitted the women as it reduced the physical strain of fetching water.**

4.4.4 Kitchen Gardens

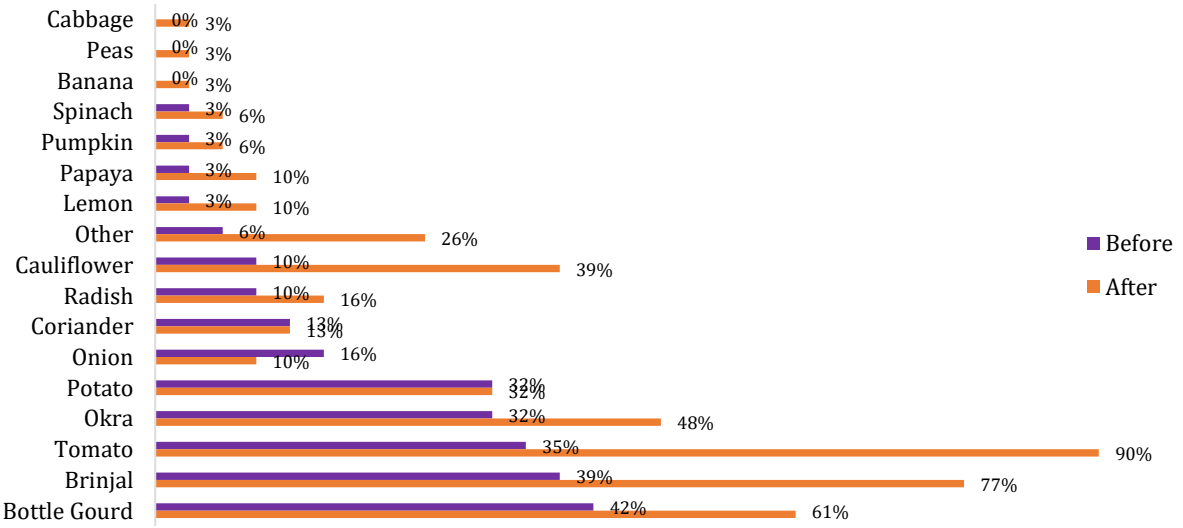
The kitchen garden beneficiaries received support, including seeds, efficient farming training, and fertilizers. As a result of the project intervention, **97 percent of these beneficiaries reported a noticeable increase in the consumption of fruits and vegetables grown in their gardens.** In other words, 47 percent of the respondent households used to consume the yield from their kitchen garden, which has now increased to 72 percent. Kitchen gardens played a role in household savings wherein recipients were able to save an approximate amount of INR 200 per week, given that their requirement was getting fulfilled by the yield from gardens. The produce from these gardens predominantly served for self-consumption, with 88 percent of the respondents using the harvest for their own household needs. Interaction with the beneficiaries revealed that the average area used for kitchen gardens expanded from 250 to 300 square feet after the intervention. This signifies the tangible impact of the kitchen garden initiative in promoting self-sufficiency and reducing household expenditure on fresh produce. The utilization of organic fertilizers played a crucial role in enhancing the quality of the soil. The improved soil quality is expected to lead to higher productivity in the kitchen gardens and agricultural areas.

Figure 23: Perceived Benefits of HRDP Supported Kitchen Gardens



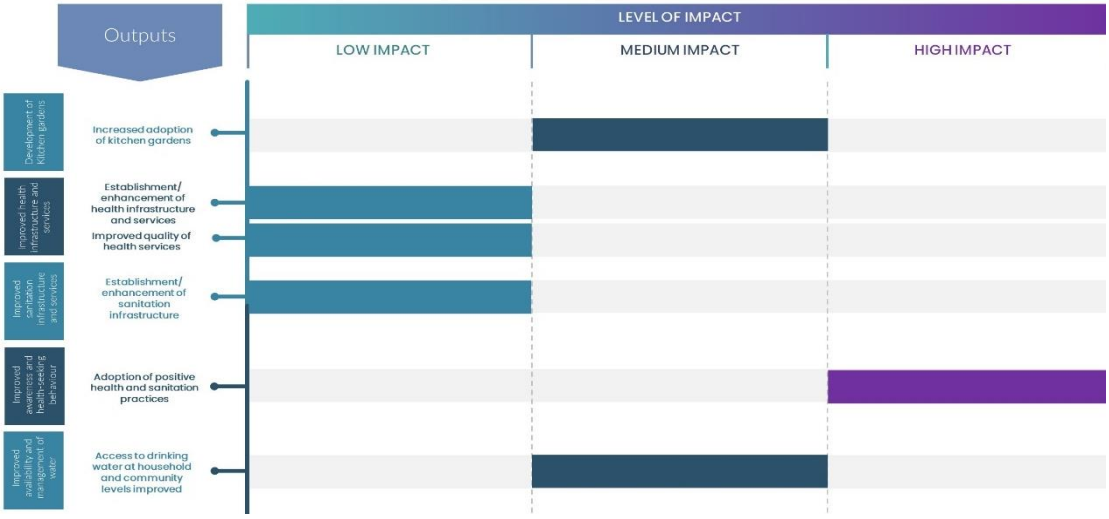
The impact of the kitchen gardens was also reflected in the consumption patterns of fruits and vegetables. Before the intervention, spinach, pumpkin, papaya, lemon, cauliflower, radish, potato, and okra comprised modest percentages in the diet, ranging from 3 percent to 32 percent. However, post-intervention a shift was observed in all of these varieties as indicated in the Figure 24. The consumption of several vegetables had more than doubled, with increase in the usage of tomato (35 to 90 percent), brinjal (39 to 77 percent), and bottle gourd (42 to 61percent). With a readily available source of nutritious food in the backyard, the beneficiary's recurring need to purchase vegetables was reduced.

Figure 24: Change in consumption of fruits/vegetables before and after intervention (n=31)



4.4.5 Impact Observations

Figure 25: Overview of Project Effectiveness and Impact of Interventions (H&S)



Access to drinking water was made easy with the programme. This was attested by the proportion of 88 percent respondents who reported physical strain on women reduced with the easier access to drinking water. Kitchen gardens contributed to household savings and recipients saved INR 200 per week as their needs were met by the yield from the gardens.

4.5 Promotion of Education

The HRD programme focussed on installing class projectors as part of the smart classroom, repairing school washrooms and providing sports equipment to schools.

4.5.1 Infrastructure in Educational Institutions

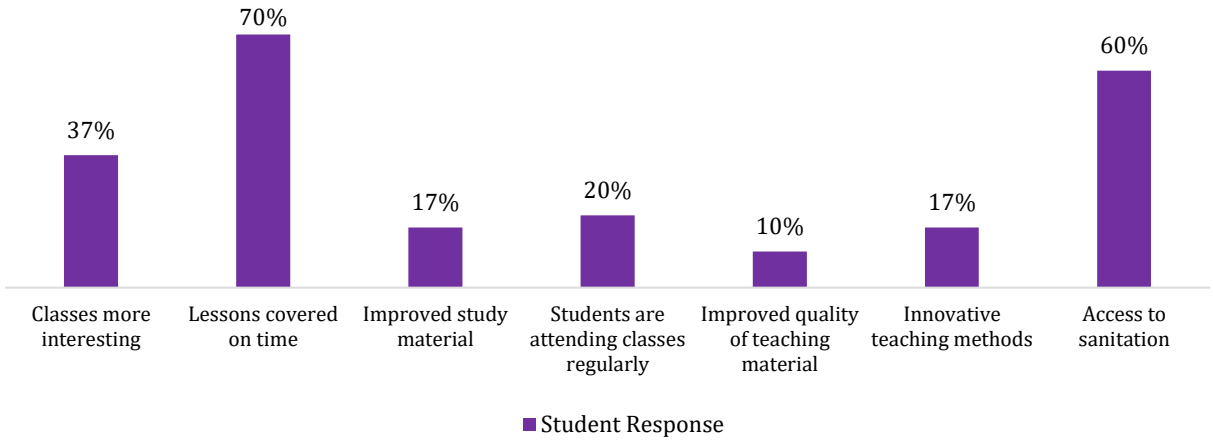
Smart classrooms played a vital role in enhancing the teaching process, as supported by the data generated in this study. **The responding teachers agreed that visual aids made it easier to capture and maintain students' attention**. They also acknowledged that visual aids kept lessons interesting, prevented monotony and boosted enthusiasm for learning. The teachers reported that students found it easier to grasp complex concepts when these were presented visually through projector screens. **As a result, teachers could plan their lessons more efficiently, enabling them to cover syllabus on time**.

Table 6: Changes observed in students post project infrastructure development

	Improved attendance	Concept retention	Increased enrolment	Decreased dropout rates	Improved exam performance	Improved attention span
Classes are more interesting	78%	100%	75%	50%	0%	100%
Lessons are covered on time	78%	100%	50%	75%	50%	100%
Improved study material	22%	20%	25%	25%	0%	0%
Students are attending classes regularly	22%	60%	50%	25%	50%	0%
Improved quality of teaching material	0%	0%	25%	0%	50%	0%
Innovative teaching methods	0%	20%	0%	25%	0%	0%
Access to sanitation	89%	60%	75%	50%	100%	100%

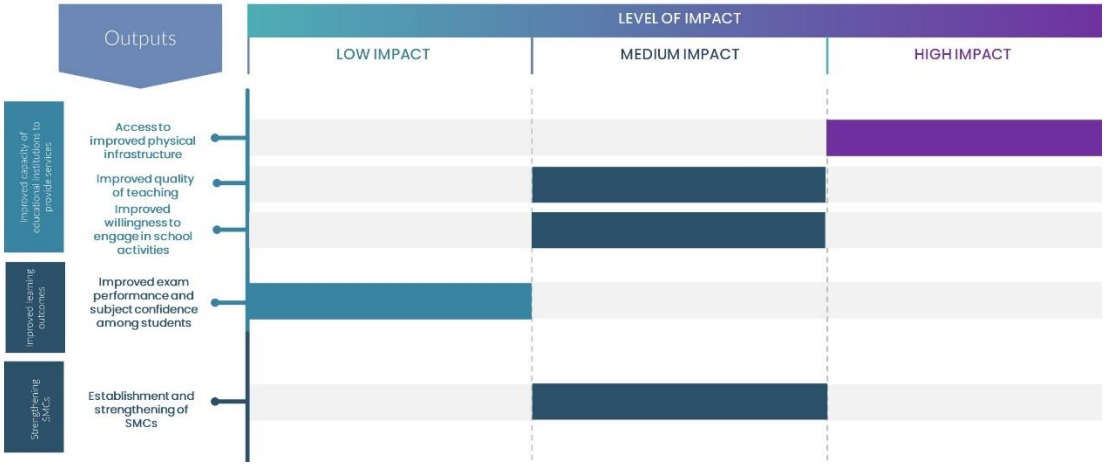
The schools were also provided with sports kits to promote physical activities among the students. All responding teachers reported the success of these kits in generating interest in sports. 71 percent of the responses indicated that the sports kits made students eager to participate in sports competitions.

Figure 26: Improvements in school activities noticed in last 3-4 yrs (n=30)



4.5.2 Impact Observations

Figure 27: Overview of Project Effectiveness and Impact of Interventions (PoE)



The project showcased results in augmenting the quality of learning at school. In addition to developing smart classrooms with screen projectors, there was equal emphasis on motivating students to attend school regularly.

4.5.3 Case Study

Case Study: *Learning Visually—effective methods for holistic outputs*

The Government primary school of Pipardand village for Classes 1 to 5, witnessed the impact of the HRDP interventions through introduction of a screen projector and a sports kit. The projector and sports kit improved the learning experience at the school. While the football from the sports kit remains unused due to the absence of a playground, the projector has become an integral part of the teaching methodology. The projector is fully functional and is regularly used in the classrooms on Saturdays. The introduction of visual aids has made classes more engaging, resulting in heightened student attentiveness and improved information retention. Student feedback underscores the lasting influence of the projector where they say lessons are now more interesting and easier to understand. As their teacher also acknowledged, students do not skip school on Saturdays and look forward to the projector sessions where new lessons are featured each week. However, the use of the projector has not been without challenges. During the summer months, playing the projector requires closing all windows, leading to a closed-off environment in the classroom. This has affected the students occasionally, causing some to feel discomfort in the confined space. Addressing this issue by exploring ventilation solutions could further optimize the projector's use.

In addition to the infrastructure upgrades, the school teacher indicated that the School Management Committee is active and attends the monthly meetings organized by the school. These meetings cover a range of topics, including addressing irregular attendance issues and discussing school improvement-related matters.

4.6 Holistic Rural Development Index

In its official Human Resource Development Index (HRDI), HDFC Bank underscored the overarching goal of accomplishing comprehensive rural development through a diverse range of interventions. These interventions aim to bring about improvements across various interrelated dimensions, presenting a challenge in identifying a singular impact indicator that can accurately gauge the overall efficacy of the HRD programme. To ensure uniformity across diverse clusters, analogous indicators were used in the computation of the HRDI. Based on our calculation, the HRDI scores for the examined villages are presented in the table below.

Due to the unavailability of an initial baseline, the programme utilized the recall method to capture the baseline data. Relevant indicators were selected and assigned appropriate weights to determine the significance of each indicator in achieving the desired outcomes across all domain-specific interventions. While a majority of the indicators were suitable for the study in Chhattisgarh, certain modifications were necessary to align them with the programme objectives and the data collected. Based on our calculation, the HRDI scores for the examined villages are presented in the table below. A comprehensive explanation of the methodology can be found in Annexure B.

Further, the thematic-wise indicators were assigned weights, to arrive at the composite HRDI score of **0.60 indicating a positive change toward impact, from the baseline score of 0.28**. Natural Resource Management has shown a positive change of 44 percent which was compounded by the array of activities undertaken for farm and water management.

NRM planning focused on water resource management as the landscape faced water scarcity and surface runoff on a regular basis. As a result, farmer access to irrigation increased from 32 percent to 43 percent. This facilitated crop diversification with cultivation of arhar/toor, urad, and wheat. The percentage change for ST&LE has been left blank because the activities undertaken did not have a preceding baseline and were organized for the first time in the villages. The thematic area executed skill development trainings (such as bio-flock fisheries) and supported enterprise development. H&S showed a notable one hundred percentage change in HRDI score over baseline which is primarily due to better awareness, knowledge, and adoption of health and hygiene practices among women members. Educational initiatives led to a 167 percent change in HRDI scope is because of introduction of smart classroom and use of audio-visual teaching equipment and sports facilities.

Figure 28: HRDI calculation for Koriya, Chhattisgarh

Domain	NRM		ST&LE		H&S		PoE		Total	
HRDI Score	Base line	End line	Base line	End line	Base line	End line	Base line	End line	Base line	End line
	0.09	**0.13**	**0**	**0.04**	**0.10**	**0.20**	**0.09**	**0.24**	**0.28**	**0.60**
% Change	**44%**		**-**		**100%**		**167%**		**114%**	

5 Analysis of Assessment Criteria

As outlined earlier in 2.1, for each thematic area, activities completed by WOTR were identified and assessed using the following criteria:

- Relevance and Convergence
- Impact and Effectiveness[7]
- Sustainability

The following sub-sections provide an analysis of the HRDP programme with respect to each of these criteria.

5.1 Relevance and Convergence

The Koriya district faces disparities in human development compared to other districts in Chhattisgarh, with a need for improvement in various aspects such as education, healthcare, and overall socio-economic development. Growth rate of the district is relatively low and there is a need for focused efforts to address agricultural and economic development challenges. Better living conditions for local and tribal communities hinge on the development and proficient management of existing land, water, and human resources. This project focussed on sustainable income growth in the targeted areas by bolstering agricultural production, harnessing water resources, fostering entrepreneurial opportunities, and building capacity among villagers. The HRD programme integrated these sectors in its planning, utilizing institutional mechanisms to promote efficient farm management practices for income generation. Furthermore, the project prioritized scalable skill-building initiatives.

The provision of water (including community wells, check dam systems, and micro-drip) for irrigation during the second crop season improved agricultural yields and also increased household incomes. Training and exposure sessions emphasizing the significance of organic farming and sustainable agricultural practices served to promote the judicious utilization of locally available resources. Educational technology tools in schools, such as screen projectors, facilitated an enhanced understanding of classroom lessons among students. The modes of clean energy, like biogas chulha, not only curtailed greenhouse gas emissions but also alleviated the burden of fuelwood collection for women.

The project outcomes align closely with Sustainable Development Goals (SDGs). In pursuit of SDG 4: Quality Education, the project interventions equipped seven government schools with screen projectors and enhanced knowledge retention among children. It also addressed SDG 7: Affordable and Clean Energy, by installation of 72 solar street lights that enhanced safety on commonly used pathways and near residences. Additionally, 80 farmers benefited from biogas chulhas that served as a renewable energy source.

5.2 Sustainability

In Koriya, Chhattisgarh, an amalgamation of local and modern approaches was devised and this remained operational with continued effectiveness post-project completion. Beneficiaries of kitchen garden were able to save INR 800 per month approximately. For the various agricultural and farm management support received, vermi-pits, agri-tool set, drip irrigation were still being effectively practiced. The bio-flock beneficiaries continued the practice and have sold a cumulative 2.25 quintals of harvested fish at INR 100 per kg (total income of INR 22,500 thus far).

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

The project focused on ensuring income sustainability, with agricultural interventions in organic farming, SRI techniques, land treatment and soil testing playing a pivotal role. The interventions showcased tangible results such as a 31 percent of the farmers reporting an increase in agricultural productivity of three main crops (paddy, arhar, urad).

The solar street lighting proved advantageous for the community by facilitating movement after sunset, particularly for women. Adding to this, the Panchayat Samiti had been quite active in taking up responsibility for repairing a few non-functional lights.

The COVID-19 epidemic emerged in the midst of the project implementation period, leading to limitations in the capacity for follow-up. Despite this, the project was able to utilise this period by providing employment to the beneficiaries. The beneficiaries were engaged in the construction of various water structures such as the gabion structure, the loose bolder structure, and check dam repair/construction.

6 Recommendations

The design and implementation of HRDP in the eight villages of Koriya, had lasting impact as depicted through the data results, both qualitative and quantitative. In order to continue with the developments in the area, some of the recommendations that the programme have been discussed here. These have been categorised into three parts, namely:

a) Recommendations to sustain project initiatives
b) Recommendations to build project efficiency
c) Recommendations to strengthen project design

6.1 Recommendations to Sustain Project Initiatives

6.1.1 Natural Resource Management

- Biogas produced is not adequate to meet the energy needs of the households. This is due to lack of availability of cow dung and other input materials. Such activities may only be promoted after carefully reviewing the feasibility of input availability.
- Regular operations and maintenance of the farm ponds and irrigation structures need to be done by the beneficiaries to ensure continued benefits from these assets. With the support of implementation partner, the VDC may initiate collection of user fees from the beneficiaries to create a corpus for maintenance of these assets.

6.1.2 Promotion of Education

- Irregular and power fluctuating electricity supply is causing interruptions to operate the Smart Classroom equipment (such as screen projector) and damaging the equipment. Solar based power supply system may be provisioned along with the smart class equipment to ensure better longevity of these equipment and increased usage during the class hours.

6.2 Recommendations to Build Project Efficiency

6.2.1 Skill Training and Livelihood Enhancement

- There is a need for continued credit support to the rural enterprise beneficiaries to meet their working capital need and capital for expansion of the enterprise. The implementing partner may connect them with financial institutions to access credit from various government schemes such as PM Mudra Yojna or any other bank finance schemes.

6.3 Recommendations to Strengthen Project Design

6.3.1 Natural Resource Management

- Introduce climate-resilient farming techniques and crops that aligns with the climactic conditions of the landscape.
- Promote the use of weather forecasting services to make informed decisions and to adapt to changing conditions.

6.3.2 Health and Sanitation

- Kitchen gardens promoted under the project have been accepted by the communities and now they have access to nutritious vegetables in addition to supplementary income. Similar initiatives may be promoted in schools where children can learn kitchen gardening and it will reach out to more households through them.

Annexures

A Sampling Methodology

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

Quantitative Sample Size Calculation

For this study, the formula for calculation of finite sample size for 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

Sampling methodology to be added

Stage 1 – Selection of villages:

The list of beneficiaries from all the eight villages acted as the sampling frame for the programme. This list was obtained from the implementing partner—WOTR. Simple random sampling was done to select the required number of households from within the list. Since beneficiary selection was undertaken independently for each programme, the selection of more than one beneficiary from a single household was probable.

Stage 2 – Selection of beneficiaries:

Sampling for each village was done using the Probability Proportionate to Size (PPS) method. The percentage of the total number of beneficiaries in a village was taken out from the total beneficiaries. This percentage was then converted into a sample per village. A total of eight villages were covered under the survey.

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 programme.

B HRDI Methodology

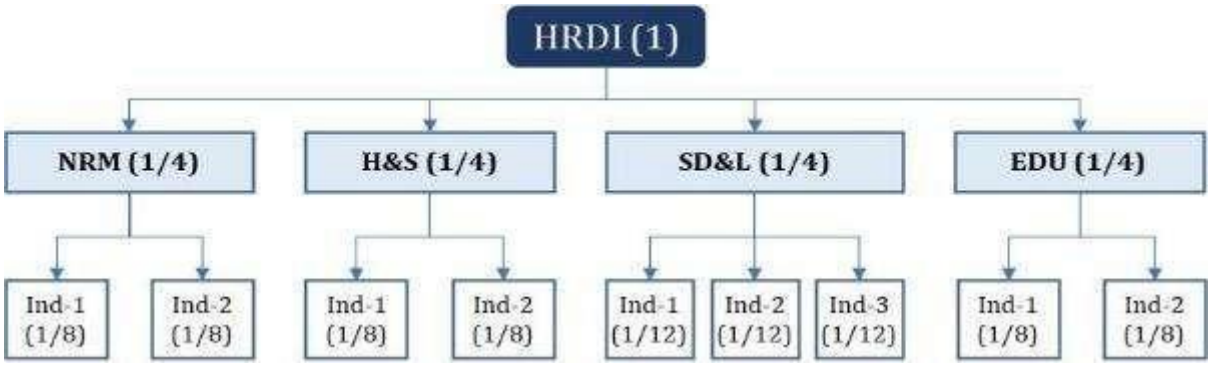
The outcome indicators included in the HRDI were obtained from different domains and are consequently measured on different scales. Therefore, to ensure the comparability of these indicators, all the indicators were converted into discrete variables such that the indicators could be measured between 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, in similar lines with the HRDI calculation. Attribution of equal weights to all the domains were 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.

Figure 29: Domain and Indicator Weights[8]



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.

Table 7: Example of HRDI Calculation

Project X		
Natural Resource Management	The proportion of farmers with net income above median	(1/4) x (1/2) = 0.125
	Percentage of farmers reporting access to irrigation	(1/4) x (1/2) = 0.125
Health and Sanitation	Percentage of households with access to improved drinking water facility	(1/4) x (1/3) = 0.083
	Percentage of households with access to improved toilet facility	(1/4) x (1/3) = 0.083
	Percentage of households with individual bathing unit	(1/4) x (1/3) = 0.083
	Percentage of SHG members reporting their groups having savings	(1/4) x (1/2) = 0.125
	Percentage of households with improved skills in Agriculture	(1/4) x (1/2) = 0.125

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

Livelihoods and Skill development	Percentage of students reporting increased access to functional learning infrastructure (library, smart class, BaLA, etc.)	(1/4) x (1/2) = 0.125
Education	Percentage of students reporting increased access to functional school physical infrastructure (handwash station, separate washrooms, etc.)	(1/4) x (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. Once all the indicators were standardized and weighted, a sum of these weighted indicators was utilized to calculate the value of HRDI.

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.

Table 8: HRDI Calculation for Koriya

Domain	Indicators	Baseline	HRDI	End line	HRDI
NRM	Proportion of farmers with net income above median	0.16	0.09	0.26	0.13
	Proportion of farmers reporting increased productivity of three main crops above median (before and after)	0.10		0.10	

Domain	Indicators	Baseline	HRDI	End line	HRDI
	Percentage of farmers reporting access to irrigation	0.11		0.14	
ST&LE	Percentage of SHG members reporting income above median from rural enterprises	0.00	0.00	0.00	0.04
	Percentage of households who getting skill training and reporting increase in income from job/enterprise/self-employment	0.00		0.16	
	Percentage of HH reporting income above median from livestock	0.00		0.00	
H&S	Percentage of households reporting increase in use of fruits/vegetables from the nutrition garden	0.14	0.10	0.24	0.20
	Percentage of households reporting increase availability of drinking water facility	0.09		0.27	
	Percentage of households with access to improved toilet facility	0.17		0.27	
EDU	Percentage of respondents reporting increased access to functional school physical infrastructure (drinking water posts, separate washrooms, furniture etc.)	0.38	0.09	0.44	0.24
	Percentage of respondents reporting increased access to functional learning infrastructure (library, science labs, smart class, etc.)	0.00		0.50	
	Total		0.28		0.60

C Overview of Impact Calculation

The impact assessment process of WOTR involves evaluating the effects of various activities. This evaluation is centred around quantifiable output indicators. Impact of each indicator is gauged by calculating the average proportion of beneficiaries associated with it. The overall impact level of an activity on beneficiaries is then determined by the degree of change in these output indicators. The impact levels are categorized into three tiers according to a predetermined scale:

Low: 0% - 40% change

Medium: >40% - 70% change

High: >70% - 100% change

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 increase in production of crops that were supported under HRDP	30%	72%	**High**
	Proportion of farmers reporting increased input efficiency after the intervention	93%		
	Proportion of farmers reporting increased income from crops that were supported under HRDP.	94%		
	Average increase in income from crops that were supported under HRDP.	70%		
Access to farm management infrastructure	Proportion of beneficiaries satisfied with quality of available services	33%	15%	**Low**
	Proportion of farmers that are able to access farm machinery	4%		
	Proportion of farmers that accessed input support	9%		
Increased adoption of crop diversification	Proportion of farmers diversified their crops?	49%	30%	**Low**
	Proportion of farmers who adopted horticulture	11%		
Land under irrigation	Increased area under irrigation	25%	25%	**Low**
Improved availability and management of water				
Access to drinking water at household and community level improved	Proportion of households having access to clean drinking water	37%	43%	**Medium**
	Proportion of households reporting improved well-being due to availability of clean drinking water.	48%		
Increased use of clean energy solutions				
Adoption of clean energy infrastructure	Proportion of HHs using clean energy infrastructure	57%	58%	**Medium**
	Proportion of households reporting benefits from using clean energy infrastructure	59%		
Improved access to agricultural training and services				
Access to Agriculture training and services	Proportion of farmers who accessed project training services	20%	49%	**Medium**

Outputs	Output Indicators	Output Avg.	Impact Level	
	Proportion of farmers who demonstrate awareness regarding sustainable farming practices	77%		
Adoption of improved farming practices	Proportion of farmers who adopt scientific agricultural practices	66%	79%	High
	Proportion of beneficiaries reporting increase in productivity due to better farm management	79%		
	Proportion of farmers reporting increased income	93%		
Economic empowerment through collectivization (Only for SHG members)				
Formation/ revival of SHG based Enterprises	Proportion of members who received support with establishing/reviving SHGs	100%	89%	High
	Proportion of members who received support with establishing/reviving SHG enterprises	67%		
	Proportion of members whose SHGs are currently functioning	100%		
Development of entrepreneurship	Proportion of SHG members who received training	100%	30%	Low
	Proportion of SHGs undertaking entrepreneurial activities	0%		
	Proportion of SHGs continuing SHG enterprise activities post project	50%		
	Proportion of SHGs with increased savings	0%		
	Proportion of SHG members reporting improved income	0%		
Enhanced capacity for regular income generation				
Enhanced employable skill development	Percentage of youth who accessed skill development training	37%	28%	Low
	Percentage of youth who report improved employability	18%		
Access to self-employment and entrepreneurial opportunities	Proportion of beneficiaries who established/ expanded entrepreneurial activities	42%	56%	Medium
	Proportion of beneficiaries reporting improved capacity to undertake entrepreneurial activities	94%		
	Proportion of beneficiary HHs reporting increase in income	31%		
Improved health infrastructure and services				
Establishment/ enhancement of health infrastructure and services	Proportion of beneficiaries who gained access to health services	27%	36%	Low
	Proportion of beneficiaries reporting lifestyle changes due to improved access	45%		
Improved quality of health services	Increase in no. of beneficiaries satisfied with quality of available services	..		
Access to affordable health services	Decrease in average annual HH health expenditure due to better health condition	26%	26%	Low
Improved sanitation infrastructure and services				
Establishment/ enhancement of sanitation infrastructure.	Proportion of beneficiaries who gained access to sanitation services	31%	38%	Low
	Increase in no of HHs with access to community sanitation infrastructure facilities at	5%		

Outputs	Output Indicators	Output Avg.	Impact Level	
	Proportion of beneficiaries reporting benefits due to improved access	67%		
	Increase in no of sanitation services available-	50%		
Development of Kitchen gardens				
Increased adoption of kitchen gardens	Increase in no of HHs with functional kitchen gardens	7%	41%	**Medium**
	No of HHs received training in kitchen garden	64%		
	No of HHs with improved dietary diversity due to kitchen gardens	72%		
	Average income from kitchen gardens	..		
	Increase in area under kitchen garden	20%		
Improved awareness and health seeking behaviour				
Awareness regarding health and sanitation practices	Improved dietary practices/ reduced tobacco consumption/ improved physical exercise	..		
	Improved awareness regarding sanitation practices			
	Improved awareness regarding waste management			
Adoption of positive health and sanitation practices	Increase in no of HHs demonstrating adoption of WASH practices	..		**High**
	Increase in no. of HHs adopting proper solid waste management practices	..		
	Increase in no of HHs adopting proper liquid waste management practices	100%	100%	
Improved capacity of educational institutions to provide services				
Access to improved physical infrastructure	Proportion of students/schools who gained access to functioning smart class rooms/ BaLA/science labs/libraries/learning aid/furniture/sports equipment	60%	70%	**High**
	Proportion of schools who gained access to clean and functioning sanitation units/drinking water posts at education institutions	80%		
Improvements in quality of teaching	Proportion of teachers regularly utilising smart class rooms and other learning aids (including BaLA)	20%	51%	**Medium**
	Proportion of students who prefer smart class rooms for lessons	100%		
	Proportion of parents/students/teachers who report improvements in teaching quality	28%		
	Proportion of students/teachers who regularly utilize science labs/ libraries/other infra	86%		
	Proportion of teachers reporting improved capacity to adopt innovative teaching methods	50%		
	Awareness among teachers regarding child development	20%		
	Improvements in attendance due to improved infrastructure	90%	43%	**Medium**

Outputs	Output Indicators	Output Avg.	Impact Level	
Improved willingness to engage in school activities	Proportion of institutions reporting increase in enrolment post infrastructure development	40%		
	Proportion of institutions reporting improved interest of students to engage in classroom activities	0%		
Improved learning outcomes				
Improved exam performance and subject confidence among students	Proportion of students who gained access to coaching classes	..	32%	**Low**
	Proportion of students who report improvements in exam performance for various subjects	20%		
	Proportion of students reporting increase in confidence in various subjects	..		
	Proportion of students who received scholarships	..		
	Proportion of teachers reporting improvements in learning outcomes due to infrastructural facilities at institutions (concept retention, attention span, and exam performance)	43%		
Strengthening SMCs				
Establishment and strengthening of VDCs/ CBOs/SMCs	No of schools with SMC that are functioning regularly	74%	50%	**Medium**
	Proportion of beneficiaries who actively engage in SMCs	24%		
	Perceived benefits of SMC	52%		

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

D Two Sample Proportions Z Test

The two-sample proportions z-test is a statistical hypothesis test used to determine whether two proportions are different from each other. The null hypothesis of the test is that the two proportions are equal, while the alternative hypothesis is that the two proportions are not equal.

The test statistic for the two-sample proportions z-test is given by the following formula:

z = (p1 - p2) / sqrt(p*(1-p)/ (n1 + n2))
where:

p1 is the proportion in the first sample
p2 is the proportion in the second sample
p is the pooled proportion, calculated as (p1n1 + p2n2)/ (n1 + n2)
n1 is the sample size of the first sample
n2 is the sample size of the second sample
The z-statistic is then compared to the standard normal distribution to determine the p-value of the test. A p-value less than alpha (typically 0.05) indicates that the null hypothesis can be rejected, and there is evidence to suggest that the two proportions are different.

The two-sample proportions z-test can be used to test for a difference in proportions between two groups of people, such as men and women, or two different brands of products. The test can also be used to compare the proportions of two different populations, such as the population of a city and the population of a state.

Here are some of the assumptions of the two-sample proportions z-test:

- The two samples are independent.
- The two populations are normally distributed.
- The sample sizes are large enough (n1p1n2*p2 > 10) (Basically the Central Limit theorem should apply for the sampling distribution of the z-statistic can be approximated by the standard normal distribution.)

If these assumptions are not met, the results of the test may not be reliable.

The two-sample proportions z-test is a powerful tool for comparing two proportions. However, it is important to be aware of the assumptions of the test and to ensure that the data meets these assumptions before using the test.

Assumptions:

- Independence: The two samples must be independent of each other.
- Normality: The two populations must be normally distributed, or the sample sizes must be large enough (n1p1n2*p2 > 10).
- Binomial distribution: The population does not need to follow a binomial distribution, but the test is more powerful if it does.

The z-test conducted for one indicator- Proportion of farmers with average productivity of bajra above baseline median-is shown below.

Table 9: Z-test Conducted for P0300

Indicator	Proportion of farmers with income from agriculture above baseline median
p1 (proportion of first sample-endline)	141
n1 (sample size of p1)	179

p2 (proportion of second sample-baseline)	86
n2 (sample size of p2)	179
p	0.634078212
Calculation	0.050915971
z statistic	10.80211153
	Statistically significant at 95% confidence level
p-value for the z statistic	0.00001

E Theme-wise Sustainability Matrix

The project support provided demonstrated the capability to continue even after the programme ended. Support of the project to sustain improved outcomes are demonstrated below:

Support provided (Enter relevant activity categories)	Structures established	Technical Know-how	Usage	Maintenance
NRM				
Farm Management	✓	✓	✓	✓
Clean Energy	✓	✓	✓	
Skill Training and Livelihood Enhancement				
Agriculture Training and Support	✓	✓	✓	✓
SHG-Based Women Empowerment		✓	✓	✓
Skill Training		✓	✓	✓
Health and Sanitation				
Health		✓		
Sanitation		✓	✓	
Kitchen Garden	✓	✓	✓	✓
Promotion of Education				
Educational Institutions Development	✓		✓	✓

F Details of Water Structures in Koriya

S. No	Type of Water Storage Structure	Village name	Total Number	Length (m)	Width (m)	Hight(m)	Water Harvesting Potential in Cum	Water Harvesting Potential in Core Liter	Type of Beneficiaries
1	Check Dam	Champajhar	1	8	2.9	1.2	10440	1.04	Community
2	Check Dam	Champajhar	2	10	3	1	11250	1.13	
3	Check Dam	Piperdand	1	7.5	2.8	1.2	12600	1.26	Community
4	Check Dam	Piperdand	2	8	3	1	9000	0.90	
5	Check Dam	Jampani	1	8.5	2.9	1.5	14790	1.48	Community
6	Check Dam	Jampani	2	10	3.2	1	12000	1.20	
7	Check Dam	Jampani	3	10	3	2	22500	2.25	
8	Check Dam	Mudijhariya	1	9.5	3	1.5	16031	1.60	Community
9	Check Dam	Mudijhariya	2	10	3	1.5	16875	1.69	
10	Check Dam	Mudijhariya	3	7	3	2	15750	1.58	
11	Check Dam	Chilka	1	7.5	2.8	1.2	9450	0.95	Community
12	Check Dam	Chilka	2	10	3	1.2	13500	1.35	
13	Check Dam	Mansukh	1	8	2.9	1.2	10440	1.04	Community
14	Check Dam	Mansukh	2	8.3	3	1	9338	0.93	
15	Check Dam	Mansukh	3	10	3	1	11250	1.13	
16	Loose Bolder Structure (LBS)	Mudijhariya	14	6.5	2.4	0.8	624	0.06	Community
17	LBS	Mudijhariya		4.8	1.8	0.75	324	0.03	Community
18	LBS	Mudijhariya		5.8	2.1	0.8	487.2	0.05	Community
19	LBS	Mudijhariya		7	1.9	0.9	598.5	0.06	Community
20	LBS	Mudijhariya		8	1.8	0.7	504	0.05	Community
21	LBS	Mudijhariya		6	1.5	0.8	360	0.04	Community
22	LBS	Mudijhariya		9	2.2	1.1	1089	0.11	Community
23	LBS	Mudijhariya		6.5	1.8	0.9	526.5	0.05	Community
24	LBS	Mudijhariya		7.5	1.8	1	675	0.07	Community
25	LBS	Mudijhariya		6.5	1.5	0.8	390	0.04	Community
26	LBS	Mudijhariya		5.8	2.1	1.1	669.9	0.07	Community
27	LBS	Mudijhariya		7.4	2	1	740	0.07	Community
28	LBS	Mudijhariya		6.8	1.5	0.8	408	0.04	Community
29	LBS	Mudijhariya		9	1.6	0.9	648	0.06	Community
30	LBS	Jampani	9	9.5	2.2	1.2	1254	0.13	Community
31	LBS	Jampani		10.5	2.5	1.2	1575	0.16	Community
32	LBS	Jampani		8	2	1.1	880	0.09	Community
33	LBS	Jampani		8.5	2.1	1	892.5	0.09	Community
34	LBS	Jampani		7.5	2.1	1.1	866.25	0.09	Community
35	LBS	Jampani		6.8	1.8	0.8	489.6	0.05	Community
36	LBS	Jampani		9.5	2.5	1.2	1425	0.14	Community
37	LBS	Jampani		7.5	1.9	1	712.5	0.07	Community
38	LBS	Jampani		8.4	2.2	1.1	1016.4	0.10	Community
39	LBS	Champajhar	5	10.5	3.2	2.1	3528	0.35	Community
40	LBS	Champajhar		11.5	3.5	2.5	5031.25	0.50	Community
41	LBS	Champajhar		8.5	2.8	2.3	2737	0.27	Community
42	LBS	Champajhar		9	2.5	2.5	2812.5	0.28	Community
43	LBS	Champajhar		9.5	2.8	2.1	2793	0.28	Community
44	LBS	Mansukh	5	10.5	3.1	2.4	3906	0.39	Community
45	LBS	Mansukh		8.5	2.5	2.1	2231.25	0.22	Community
46	LBS	Mansukh		9.1	2.8	1.9	2420.6	0.24	Community
47	LBS	Mansukh		8.6	2.4	2.5	2580	0.26	Community
48	LBS	Mansukh		9.5	2.8	2.8	3724	0.37	Community
49	Gabion	Jampani	6	7.4	2.4	2.5	4440	0.44	Community
50	Gabion	Jampani		7.5	2.5	2.1	3937.5	0.39	Community
51	Gabion	Jampani		6.5	2.1	2.2	3003	0.30	Community
52	Gabion	Jampani		6.8	2.5	2.1	3570	0.36	Community
53	Gabion	Jampani		5.9	2.4	2.4	3398.4	0.34	Community

54	Gabion	Jampani		7.5	2.8	2.3	4830	0.48	Community
55	Gabion	Mudijhariya	12	8.5	3.1	2.4	6324	0.63	Community
56	Gabion	Mudijhariya		6.4	2.95	1.95	3681.6	0.37	Community
57	Gabion	Mudijhariya		8.5	2.8	1.8	4284	0.43	Community
58	Gabion	Mudijhariya		9.5	3.1	2.5	7362.5	0.74	Community
59	Gabion	Mudijhariya		6.4	2.5	1.5	2400	0.24	Community
60	Gabion	Mudijhariya		8.5	3.1	1.5	3952.5	0.40	Community
61	Gabion	Mudijhariya		9.4	3.5	1.4	4606	0.46	Community
62	Gabion	Mudijhariya		12.1	3.6	2.2	9583.2	0.96	Community
63	Gabion	Mudijhariya		10.5	3.2	2.1	7056	0.71	Community
64	Gabion	Mudijhariya		9.8	3.1	1.9	5772.2	0.58	Community
65	Gabion	Mudijhariya		9.5	3.1	1.9	5595.5	0.56	Community
66	Gabion	Mudijhariya		10.5	3.2	2.1	7056	0.71	Community
67	Gabion	Mansukh	10	7.8	2.5	1.8	3510	0.35	Community
68	Gabion	Mansukh		10.2	2.9	1.6	4732.8	0.47	Community
69	Gabion	Mansukh		8.5	2.6	1.5	3315	0.33	Community
70	Gabion	Mansukh		8.6	2.5	1.4	3010	0.30	Community
71	Gabion	Mansukh		10.5	3.1	1.5	4882.5	0.49	Community
72	Gabion	Mansukh		11.5	2.1	2.5	6037.5	0.60	Community
73	Gabion	Mansukh		8.5	2.2	2.1	3927	0.39	Community
74	Gabion	Mansukh		6.5	1.8	2.1	2457	0.25	Community
75	Gabion	Mansukh		7.8	2.4	2	3744	0.37	Community
76	Gabion	Mansukh		6.5	1.8	1.8	2106	0.21	Community
77	Gabion	Champajhar	5	7.5	2.2	1.8	2970	0.30	Community
78	Gabion	Champajhar		9.5	2.8	1.9	5054	0.51	Community
79	Gabion	Champajhar		8.5	2.2	1.6	2992	0.30	Community
80	Gabion	Champajhar		6.5	1.9	1.5	1852.5	0.19	Community
81	Gabion	Champajhar		7.1	1.8	1.2	1533.6	0.15	Community
82	Farm Pond	Champajhar	1	25	30	2.4	7200	0.72	Household
83	Farm Pond	Piperdand	1	15	15	2.9	2610	0.26	Household
84	Farm Pond	Jampani	1	15	15	2.8	2520	0.25	Household
85	Farm Pond	Mudijhariya	1	15	15	2.9	2610	0.26	Household
86	Farm Pond	Chilka	1	25	30	2.2	6600	0.66	Household
87	Farm Pond	Chilka	1	2.5	30	2.1	630	0.06	Household
88	Farm Pond	Surmi	1	25	30	2.4	7200	0.72	Household
89	Farm Pond	Mansukh	1	25	30	2.2	6600	0.66	Household
90	Farm Pond	Mansukh	1	25	30	2.3	6900	0.69	Household