

Impact Assessment Study under Holistic Rural Development Programme (HRDP)

Bihar- P0248



आगा खान ग्राम समर्थन कार्यक्रम (भारत)
आगा खान डेवलपमेन्ट नेटवर्क का कार्यक्रम

कलावती देवी सामुहिक सिंचाई विकास समिति
ग्राम-पचई जगदीश, पोस्ट-बसरा, प्रखण्ड-राजायाकर (वैशाली)

❀ **नियमावली** ❀

1. किसानों को अपनी खेती के सिंचाई के लिए अनुरोध सिंचाई के 4 दिन पूर्व ऑपरेटर के पास ऑउटलेट नं. सहित दर्ज कराना होगा /
2. सिंचाई सुविधा शुल्क सदस्य के लिए 50 रु. | अन्य के लिए 100 रु. प्रति घंटा देय होगा /
3. ऑपरेटर शुल्क 25 रु. प्रति घंटा
4. सिंचाई सुविधा शुल्क में वार्षिक या अर्धवार्षिक बंदोबंदी कार्यकारिणी समिति द्वारा की जा सकती है /
5. पिछले सिंचाई शुल्क वकालत या जमा करने के बाद ही सिंचाई की सुविधा उपलब्ध होगी /
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8. ऑपरेटर के साथ दुरुव्यवहार करने पर या बकाया नहीं जमा करने पर समिति द्वारा उस किसान की सेवा रोकी जा सकती है /
9. सिंचाई समितिको अध्यक्ष, सचिव तथा कोषाध्यक्ष का चुनाव वार्षिक होगा /
10. किसी भी स्थिति में पदासिन सदस्यों का लगातार दो साल का कार्यकाल ही होगा /
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13. सिंचाई सुविधा के बेहतर के लिए आवश्यक सुझाव व शिकायत कार्यकारिणी समिति के पास बैठक में दी जा सकती है /
14. आगा खान ग्राम समर्थन कार्यक्रम (भारत), संरक्षण तथा मार्गदर्शक की भूमिका में रहेगी /

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Executive Summary

The HDFC Bank had supported the Aga Khan Rural Support Programme (AKRSP), India for implementing HRDP in Vaishali district of Bihar. NRMC conducted the third-party impact assessment of this project. The project was implemented in 15 villages in the Vaishali district of Bihar. This study largely focused on understanding the overall process that the HDFC Bank and the implementing organisation undertook in carrying out the programme activities, the key milestones achieved, the impact created by these activities, and the challenges faced. The key focus areas of the intervention were Natural Resource Management (NRM), Skill Training & Livelihood Enhancement (ST&LE), Health and Sanitation (H&S) and Promotion of Education (PoE). The framework used for the impact assessment was an adaptive version of the DAC criteria - Relevance, Effectiveness, and Sustainability.

The assessment strategy and methodology for the study were created to thoroughly assess the performance and implementation of the project. The study's goals were to evaluate the impact of project activities, the program's efficacy and success, and the socioeconomic changes in beneficiaries' lives and community-based institutions with regard to income augmentation. A mixed-methods strategy combining qualitative and quantitative data was used to accomplish these objectives. The pre- and post-levels of programme outcomes were recorded using retrospective recall, which offered insights into changes over time. The samples for the study were chosen using step-wise random sampling and the PPS (Probability Proportional to Size) method. The assessment covered 10 villages and 450 households. Further, 8 In-Depth Interviews (IDIs) and 8 Focus Group Discussions (FGDs) were conducted. This comprehensive research design enabled a thorough evaluation of the project's impact on the community, learnings, and recommendations for future interventions.

Natural Resources Management (NRM)

Increasing agriculture productivity and farmers' income was one of the major objectives of the project as it targeted small and marginal farmers, with limited access to modern agricultural technology and irrigation measures. As a result of the project support in providing high yielding seeds and other farm inputs, **the net median income from agriculture increased from INR 15000 to INR 31000, a 107% increase after the project interventions. 61% of the respondents** accredited this income increase to project support in irrigation such as solar pump installation, **51%** accredited it to improved farming techniques such as SRI and IVC and **49% to organic farming** practices such as construction of vermi-compost pits. Furthermore, **83% of the respondents** quoted favourable weather conditions such as better monsoons and **67% quoted good market prices** for higher-quality and higher-yield crops, to have aided the HDFC's project interventions. The average productivity of three major crops, paddy, wheat and maize, increased from **483 Kg/acre to 583 Kg/acre, a 21% increase** after the project interventions. Further, there has been a **20% increase** in the proportion of households having irrigated land. The solar street lights installed in the project villages have benefited the community and **96%** of the beneficiaries reported the solar street lights being functional and being used even after the end of the project.

Skill Training and Livelihood Enhancement

To address the problem of low crop productivity and limited returns, the project trained farmers on improved and sustainable packages of farming practices. Through the HDFC intervention, **77% of the respondents reported that they have received training in farm techniques whereas 69% of them reported being trained in nature farming. 56% of the farmers have received training in SRI method of cultivation for paddy, 14% on demo plots preparation, 3% in FFS and 2% participated in farm exposure visits.** Farm exposure visits were only provided to leading farmers. Around **84% of farmers** reported an increase in their income after adopting these techniques while **80% experienced higher productivity** in their farming activities. Average income increase is **INR 26000 per annum** due to the skills learnt since the project started. Respondents who were a part of entrepreneurship development programmes were provided support in terms of training in bee keeping, tailoring and handicrafts products making unit with joint ownership. **9% of the total households** received support in skill and enterprise training and 32% in livestock management. The median monthly income from livestock increased from **INR 1900 to INR 3000, a 58% increase** after the project interventions.

Promotion of Education

A combination of multitude of activities targeted towards improving enrolment, attendance, and learning outcomes were undertaken in the project area. The project heavily focused on equipping schools with infrastructure facilities. **47% of the respondents have reported that their child has benefitted** from the interventions in schools, however interventions in education have significantly impacted the students and teachers; these interventions included significant activities such as **renovating school buildings and AWCs (78%)** that were previously in critical condition. Other interventions involved constructing separate washrooms for boys and girls (61%), installing drinking water posts (58%), providing classroom furniture (58%), and conducting BaLA painting (57%), among other activities. The project also emphasised the overall development of children, including attention to sports activities (42%). **5% of all teachers** interviewed stated they use smart class every day and another **65% on most days. 33% of all teachers** interviewed stated that they are using library in their school occasionally with **56% stating that they are using it most of the days.** Even though there have been significant interventions in infrastructure development, the project has lagged in providing teacher training.

Health and Sanitation

The project identified some of the major challenges faced by the community in terms of accessing safe drinking water, household toilets, awareness regarding health and hygiene management and waste water management. The project had a component to create health awareness among the people, and **93% of the respondents have received health services.** Of this, **73% have attended** a hygiene related health session and **73% have availed of health services** in the form of health sessions, and **28% got help attending menstrual health awareness session. 83% of respondents surveyed stated improvement in dietary habits** as the prime benefit from the health sessions, **75% quoted improvement in physical activity, 61%** mentioned about reduction in tobacco/alcohol/drugs, **54%** stated improvement in the health status of household members, **41% reported easy access to health services** to women and **19%** reported the perceived benefit to be less spread of diseases. A majority of the respondents were found using the produce from their kitchen gardens/landless gardens for self-consumption (75%), and few were using it for both

consumption and selling the produce (24%). **Median monthly income of INR 800** is reported to have been generated by the households due to kitchen gardens/landless gardens. Repairs of community handpumps/ponds/wells and setting up of water tanks/Jal minar wherever necessary was done as per the need. The drinking water intervention has brought about a change in the household with 63% of households reporting low instances of water borne diseases. The drinking water interventions have greatly benefitted women, as the majority (**81%**) households reported that it saves times for fetching water and **25% said that it reduced physical strain and fatigue.**

Table 1: Summary of Key Impact Indicators

Indicators (based on median)	Before	After	% Change
Increase in average productivity (of three major crops)(Paddy, Wheat and Maize) (kg/acre)	483	583	21%
Increase in net income from agriculture	INR 15000	INR 31000	107%
Monthly income from livestock	INR 1900	INR 3000	58%

Conclusion and Recommendations

Respondents believe that continued adoption of sustainable farming solutions will result in notable improvements in productivity and agricultural income. The tools and machines have been handed over to the farmer groups. Most enterprises established with the help of group mobilisation, technical training, and monetary assistance continue to function, for example, establishment of group irrigation system through solar pump installation. However, market linkages should be strengthened and capacity-building training need to be provided to the beneficiaries as and when needed, so that the benefits are sustained. Infrastructure development for schools and AWCs have increased the attendance. Digital classrooms are a welcome change, however, teachers need to be provided adequate training to manage such facilities. Smart classrooms though effective and efficient, have their limitations such as insufficient devices and expiry of learning material subscription and these needs to be catered regularly to avoid break in teaching.

Key Recommendations:

- Flood resistant variety of paddy and irrigation services support is needed during kharif (monsoon) season.
- Support for large agri tools or machinery would be helpful.
- Handholding support to enterprises so they have marketing tie-up, linkages with government schemes, etc.

The project interventions have been effective in bringing clear changes in the income of farmers through improved productivity, reduced input cost, and farming techniques and assistance. Skill and livelihood enhancement activities also have opened up economic opportunities not just for farmers, but for women in the community. More effort is required in promoting personal hygiene, maintaining surroundings and tobacco related awareness. Improved educational facilities have helped students.

HRDI Indicators

The impact of the project was assessed on Holistic Rural Development Index, which is a weighted index that gives an index value for each focus area and for the entire project.

The thematic-wise indicators were assigned weights to arrive at the composite HRDI score of **0.81** indicating a **notable positive change of 107% toward the desired impact** from the baseline score of **0.39**. **Interventions in education and skills and livelihood also led to a positive change in the respective HRDI values by over 100%.**

Findings showed an improvement in all focus areas as well as the project, as shown below:

Table 2: Summary of P0248 HRDI Score

Domain	NRM		ST&LE		H&S		PoE		Total	
HRDI Score	Base line	End line	Base line	End line	Base line	End line	Baseline	Endline	Baseline	Endline
	0.12	0.19	0.04	0.15	0.12	0.23	0.11	0.24	0.39	0.81
	58.3%		275%		91.6%		118%		107%	

1. Introduction

As per Census of India 2011, approximately 66% of India's population resides in rural areas. This section of the population is largely agrarian and plays a crucial role in the socio-economic development of the country, contributing of 17-18% in the GDP through the agriculture sector.

However, rural India encounters a multitude of challenges that impede its overall development and well-being. Limited infrastructure including inadequate road networks, electricity supply, sanitation facilities and clean drinking water, hinders progress and economic growth. Lack of medical professionals, insufficient healthcare infrastructure, and restricted access to quality services, result in poor health outcomes and heightened vulnerability during emergencies. Educational discrepancies arise from a lack of educational facilities, qualified teachers, and limited access to quality education, leading to lower literacy rates and limited skill development opportunities. Literacy rate in rural India is 69% as per NSO, 2017-18. Unemployment and underemployment prevail, perpetuating poverty and economic disparities. Agriculture-related challenges, such as land fragmentation, lack of credit access, outdated farming techniques, price volatility, and restricted market access, impact agricultural productivity and income generation. Bridging the digital divide and addressing social issues like gender inequality, caste-based discrimination, and inadequate social security schemes are also crucial. Holistic strategies encompassing infrastructure development, healthcare and education reforms, skill enhancement, agricultural modernisation, employment generation, and digital inclusion are pivotal for fostering inclusive and sustainable development in rural India.

1.1 About HRDP

Under the aegis of *Parivartan*, the Holistic Rural Development Programme (HRDP) is HDFC Bank's flagship CSR programme in which non-governmental organisations (NGOs) across the country are supported to undertake development interventions in four thematic areas:

- a) Natural Resource Management (NRM)
- b) Skill Training & Livelihood Enhancement (ST&LE)
- c) Health and Sanitation (H&S)
- d) Promotion of Education (PoE)

The World Bank defines rural development as the improvement in the social and economic environment of the rural population. The fundamental aims of rural development include planning, creating, and using the resources such as land, water, and manpower to promote equal opportunity for the population reliant on them. Given this context, HRDP strives to enhance the lives of people in rural communities by primarily bringing about sustainable socio-economic transformation and ecological development. Its holistic approach caters to their various needs by addressing development of human capital, effective management of natural resources, economic independence through skilling and livelihood opportunities, basic infrastructure development, and enhancement of living conditions.

1.2 Objectives of Impact Assessment

The impact assessment 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.

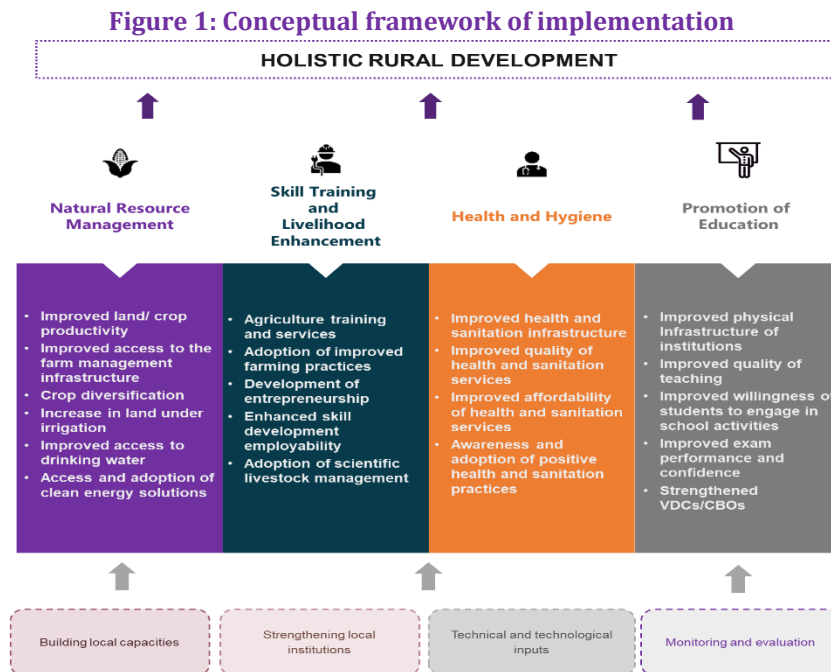
The study seeks to:

- Critically and objectively evaluate implementation and performance
- 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 program.

1.3 Conceptual Framework Adopted

The conceptual framework and the areas covered under the assessment are depicted below (see **Error! Reference source not found.**). 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.

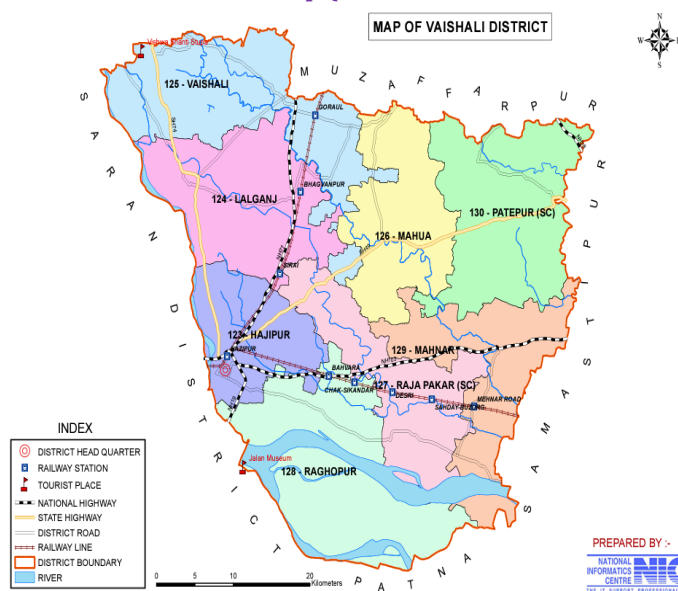


1.4 About the Project Area

Vaishali district is situated in the Gangetic plains of Bihar. The district is known for its agricultural land and comprises a mix of rural and urban population. As per the Census of India 2011, Vaishali district has a total population of approximately 3.96 million people. The district's gender ratio is marked with males constituting around 51% of the population and females comprising around 49%.

Vaishali district experiences a subtropical climate with distinct seasonal variations. Summers are typically hot and dry, with temperatures ranging from 35°C to 45°C. The monsoon season, from June to September, brings heavy rainfall, which is crucial for agricultural activities. The average rainfall is around 1200 mm. Winters are cool and dry, with temperatures ranging from 5°C to 20°C.

Figure 2: Vaishali district map (district covered under the study)



1.5 About the Implementing Partner

AKRSP began its field operations in 1985 and has since become one of the larger grassroots NGOs in India with more than 400 employees and an annual budget of more than INR 40 crore. Currently AKRSP is active in over 200,000 households in 2032 villages in Gujarat, Madhya Pradesh and Bihar. The key focus areas have been watershed development, participatory irrigation management, micro enterprise development and implementing the Community-based Technology Learning Centres.

AKRSP initiated its activities in Bihar in 2007 in the districts of Samastipur and Muzaffarpur. Bihar is among the backward states in India with more than 45 million people living on less than a dollar a day and the highest infant mortality and lowest literacy rates in the country. Since mid-2008, a range of interventions in the domain of economic development, community institutions, education and health have been piloted in Bihar.

2. Research Design and Methodology

The assessment used both qualitative and quantitative methods. For each thematic area, activities completed in the study area were identified. The evaluation process was carried out in a consultative manner involving interactions with both HDFC Bank and AKRSP team at key junctures.

2.1 Criteria for Assessment

For each thematic area, activities completed by AKRSP were identified. The impact of these activities was assessed using the following criteria:

- Relevance and Convergence
- Impact and Effectiveness
- 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.

To assess the impact and effectiveness of the programme, the team established the values of outcome indicators of all thematic interventions. The findings were assessed against the outcome indicators finalised during the outcome harvesting stage. Through qualitative evidence and analysis of programme outcomes (in light of variables identified in consultation with HDFC Bank), the team tried to understand whether and how the programme impacted the lives of community members in the programme areas. The findings from primary quantitative data were substantiated by the information gathered from discussions with the communities/beneficiaries, teachers, students, entrepreneurs, and local village-level institutions.

For the criteria of sustainability, the team studied the primary data to understand if the programme has worked on strengthening the community's capacity to ensure sustainability, and if any of the activities or strategies adopted have been or could be replicated.

2.2 Primary and Secondary Data Sources

Primary research included a quantitative household survey that was conducted by the survey team consisting of 6 enumerators and 1 supervisor. With backstopping by one field coordinator. The primary quantitative data was collected using Computer Assisted Personal Interview (CAPI) method where we developed a mobile application to collect data. The qualitative research included in-depth interviews (IDIs), Key Informant Interviews (KIIs) and Focused Group Discussions (FGDs) with project beneficiaries and secondary stakeholders such as the team members of AKRSP, the HDFC Bank programme team, local leaders from the project area etc. IDIs were conducted with the specific individuals who were recipients of the project. The qualitative data was conducted by our research coordinator.

Secondary data sources included HDFC's 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 project.

The outcome mapping and result chain development was undertaken in consultation with the HDFC Bank team. Standardized key outcomes and indicators were identified for each thematic area (NRM, ST&LE, H&S and PoE). Based on the standardized list of outcomes and outputs, the questionnaire was developed.

Image 1: Training provided to the field team



2.3 Sample Size and Distribution

From the project area, 10 villages of Bidupur and Rajapakar blocks were selected for the study based on the intensity of interventions implemented by the partner NGO through a consultative process. Sample from each village was selected by using Probability Proportionate to Size (PPS) sampling method. Care was taken to cover the maximum sample from the villages that have received a maximum number of interventions in order to get appropriate coverage of all components of the project.

Since beneficiary selection was undertaken independently for each thematic area, the selection of more than one beneficiary from a single household was probable. Also, there have been instances where a single beneficiary received multiple support for the intervention. Care was taken to include all focus areas of intervention. The sample size of 450 was covered, across all sample villages and thematic areas. 8 FGDs and 8 IDIs were conducted across the selected sample.

Table 3: Quantitative Sample Covered

District	Total Households	NRM	Skill Training and Livelihood Enhancement	Health and Sanitation	Promotion of Education	Financial Literacy
Vaishali	450	450	397	447	213	17

Table 4: Qualitative Sample Size Covered

District	FGDs					IDIs		
	Students	Farmers & Community	Beekeeping beneficiaries and Pragatisheel SHG	Jal minar beneficiaries	Durga Enterprise members, SHG+ group	Pashu Sakhi, beneficiary of toilet VC	AWW Kitchen garden, Teacher	Student Grocery shop beneficiary
Vaishali	1	2	2	1	2	3	3	2
Total	8					8		
Planned	8					8		

Proportion of female respondents was higher than male respondents at 57%. The youth population (18-45 years) constituted the majority of beneficiaries (63%), The more older age group (45 to more than 55 years of age) constituted about 37 percent of the respondents

Figure 3: Gender distribution of respondents

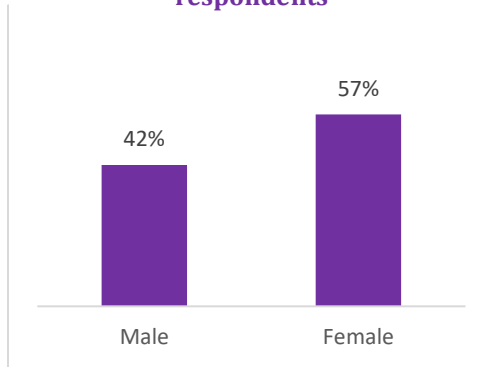
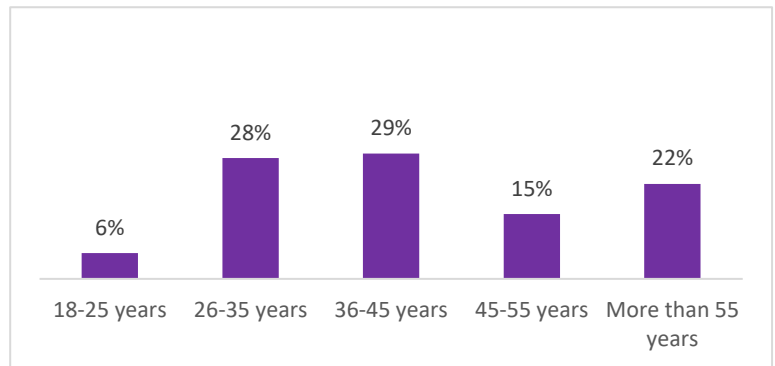


Figure 4: Age distribution of respondents



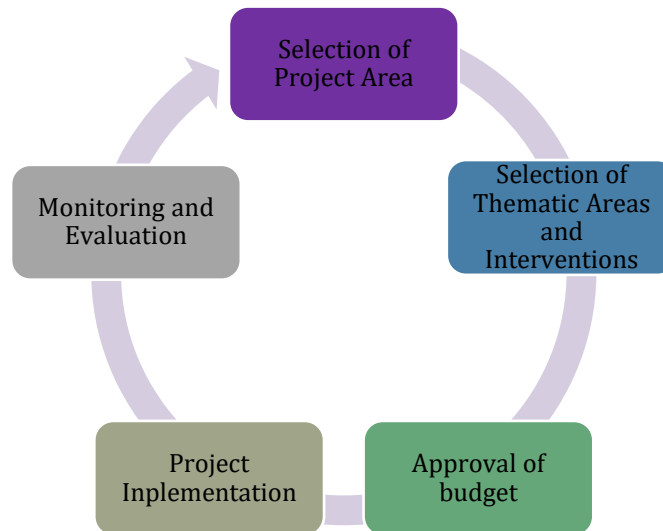
Training of Enumerators

A gender balanced survey team consisting of 6 local enumerators and 1 supervisor recruited with requisite education and experience, for data collection. Two days of training were provided to enumerators and supervisors by the field coordinator and the research coordinator. During the training the survey team was explained about the project, data collection tools, how to use CAPI, data collection protocols, data quality control etc. The training included both classroom teaching and mock practice of the survey tool.

3. Program Review

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

Figure 5: Planning and Implementation Process



3.1 Selection of Project Area

Vaishali district, located in the state of Bihar, India, with a rural population constituting 98% of the total population. The demographic details reveal the predominantly rural nature of the district, highlighting the need for holistic rural development initiatives. It faces challenges that hinder its progress and development such as limited access to basic amenities, inadequate infrastructure, and a high prevalence of poverty. According to government reports, the district has been grappling with issues like low literacy rates, lack of clean drinking water, insufficient healthcare facilities, and limited livelihood opportunities. The census data from 2011 indicates that the literacy rate in the district is below the national average, highlighting the urgent need for interventions to address these challenges.

Image 2: HDFC Bank's HRDP project board at Pokhraira Chausaj village



3.2 Selection of Thematic Areas and Interventions

To address the pressing needs of Vaishali district, the Aga Khan Rural Support Programme (India) implemented the Holistic Rural Development Project (HRDP) between April 2018 and March 2022. The HRDP aimed to provide comprehensive and sustainable development to the communities residing in Bidupur and Rajapakar blocks. HRDP was designed to complement the requirements and challenges specific to the Vaishali district. It recognised the need for integrated approaches that encompassed various thematic areas to ensure holistic development. By addressing challenges related to Natural Resources Management (NRM), Clean Energy, Health & Sanitation, Skill and Enterprise Development, Drinking Water Management, and Promotion of Education, HRDP aimed to create a positive and lasting impact on the lives of the rural population.

Under 'Natural Resources Management', activities under water management, farm management and clean energy were promoted. To influence the status of women in the villages and provide them with sustained sources of income, under the theme 'Skill Training and Livelihood Enhancement', women SHG members and SHG+ groups were supported with micro-enterprises such as tailoring units established to promote entrepreneurship and livelihood diversification. The food insecurity was addressed under 'Healthcare and Hygiene' theme mainly through promotion of kitchen garden (KG), landless garden (LG) and promotion of vegetable cluster. The seeds of everyday use vegetables were distributed and training was given on how to grow a kitchen garden and landless garden at home to ensure consumption of adequate nutrients. There were health sessions and camps conducted and toilets were constructed in the village for overall health awareness and sanitation. Education was promoted by renovating schools with BaLA paintings, and organising smart classes in addition to the construction of washrooms for girls and set up of library. Upon completion of the project, the implementation partner is continuing its operation with the support of the community and other stakeholders.

The activities specific to each village under the programme were decided after In-depth consultation with the respective Village Development Committees (VDCs), which were constituted during the beginning of the project implementation. Activities under each of the four thematic areas are as follows.

Table 5: Activities under Four Thematic Areas in Vaishali district

Activity Category	Activities	Output Indicators
NRM		
Water management-agriculture	Group irrigation (GI) with installation of Solar water pump, Jal minar construction, handpumps repair	Income from Agriculture
Farm Management	Intensified Vegetable Cultivation (IVC), Vermi-compost production, improved farming techniques, farm tool bank, bee keeping	
Clean Energy	solar street lights	Clean energy
ST&LE		
Agriculture Training and Support	Exposure visits of farmers, establishment of farm field schools (FFS), demo plots and trainings on better farm techniques, goat rearing and poultry	Access to Agriculture Training and Services
Entrepreneurship Development	Tailoring units	Increase in Income
Livestock management	Support in goat rearing and poultry	Livestock Management
H&S		
Health	Health clinic, health camps	Health Infrastructure and Services
Sanitation	sanitation units (toilets/bathing enclosures)	Sanitation Infrastructure and Services
Kitchen Garden	Seeds of everyday vegetables, kitchen garden (KG), landless garden (LG) and promotion of vegetable cluster	Kitchen Garden
PoE		
Educational Institutions Development	BaLA, construction/ repair of separate washrooms for girls and boys, library, Smart class	Infrastructure in Educational Institutions

Each category has been further broken down into sub-categories and activities, along with the focus beneficiary types.

3.3 Project Implementation

The interventions comprised a combination of providing direct materials and services such as seeds and other agricultural input and implements, along with raising awareness about new agricultural techniques. The field team has had extensive conversations with the village committees to study the issues and limitations in the communities based on our interactions with the partner team. Activities and interventions were developed and put together based on the need of the community.

The Holistic Rural Development Programme (HRDP) started with the hiring of personnel and Community Resource Persons (CRPs) and the delivery of capacity-building trainings on a variety of topics, including HRDP's goals, roles, and responsibilities. To spread knowledge of HRDP in the

villages and to foster relationships with and support from the locals, the initiative hosted community gatherings.

Beneficiaries, project staff and other stakeholders were all given regular meetings and trainings. To increase awareness of health, sanitation, education, employment opportunities, and skill development, information, education, and communication (IEC) products were developed and disseminated. Stakeholders and project partners were shown case studies and images of interventions. To ensure efficient use of resources, monthly financial reviews were carried out to examine fund usage and community contributions.

3.4 Monitoring and Evaluation

The HRDP has a standard monitoring & evaluation approach that was adopted by the implementing partners. These includes reporting of project implementation progress in periodically to the HDFC Bank. In addition, the program implementation team of HRFC bank visits to the project villages at regular intervals to review the project work sites. Participate in the training programs, awareness camps and interact with project beneficiaries.

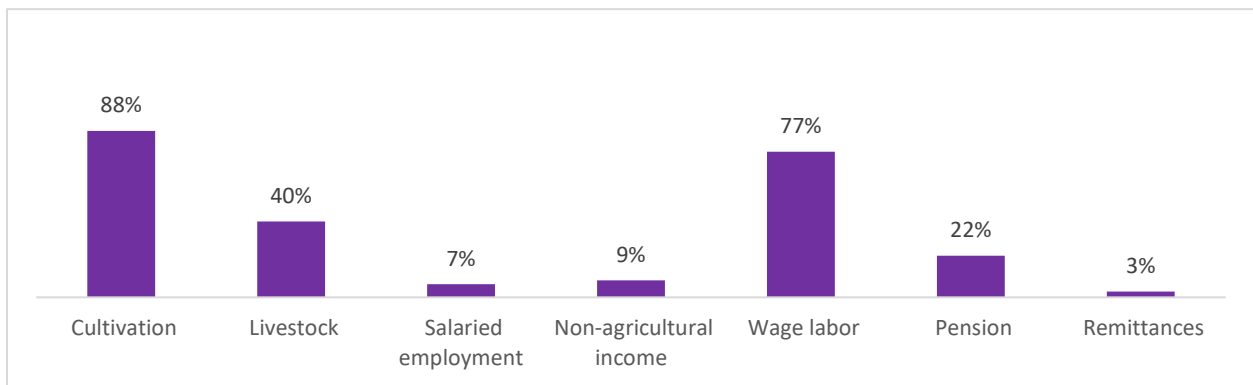
HDFC Bank has specific ask as regards to the project information concerned from the implementing partner. The project data are primarily managed by the implementing partner in spreadsheets that include details of the village wise activities implemented, beneficiaries mapped against each of the project activities, expenditures etc. In addition, the implementing partner submits an annual progress report on the project activities to HDFC Bank along with the plan for the next year. This document serves as the major source of the information that provides a summary of the activities implemented, outputs delivered, and outcomes achieved.

In addition, the HDFC Bank hired NRMC as an external agency to conduct impact assessment of the project after one year of the completion of the project. This is an independent assessment that evaluated using four criteria: relevance and convergence, impact and effectiveness, sustainability, and replicability. This is backed up by the creation of a Holistic Rural Development Index based on selected outcome indicators. The impact 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

The impact evaluation study was undertaken in 10 villages of 2 blocks i.e., Bidupur and Rajapakar of Vaishali district. All respondents have more than one source of income. Over 88% of respondents quoted cultivation as their major source of income, followed by 40% reporting income from livestock. 77% are wage labourers and 9% of respondents quoted non-agricultural activities such as business or income from rent as sources of income, 7% of the respondents are salaried employees. 22% of the respondents are pensioners (mostly ex-defence personnel).

Figure 6: Occupation wise distribution of respondents



38% of the respondents are illiterate and 60% of the respondents have attended schooling till different grades. 13% have had primary education while 10% of them are educated till senior secondary. 7% of the respondents have a graduate degree.

Figure 7: Education status of respondents

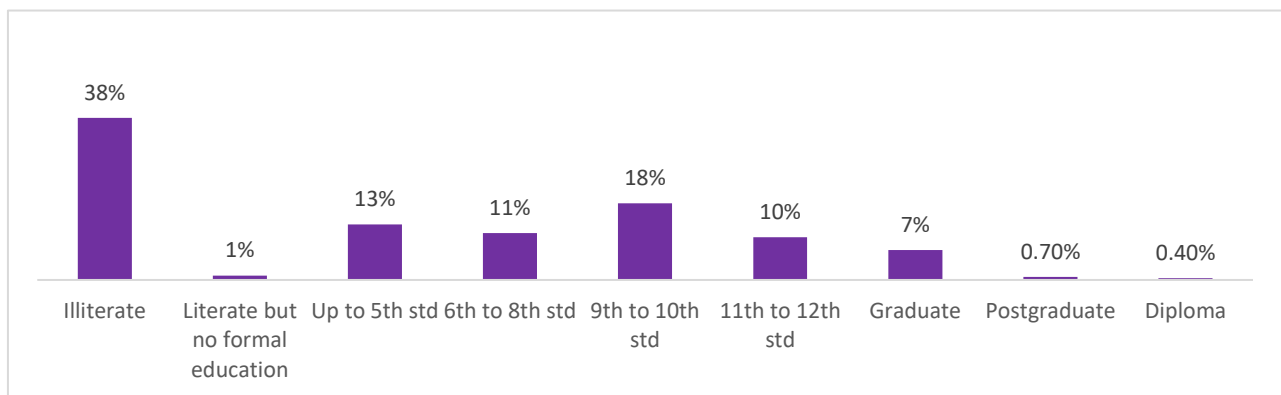
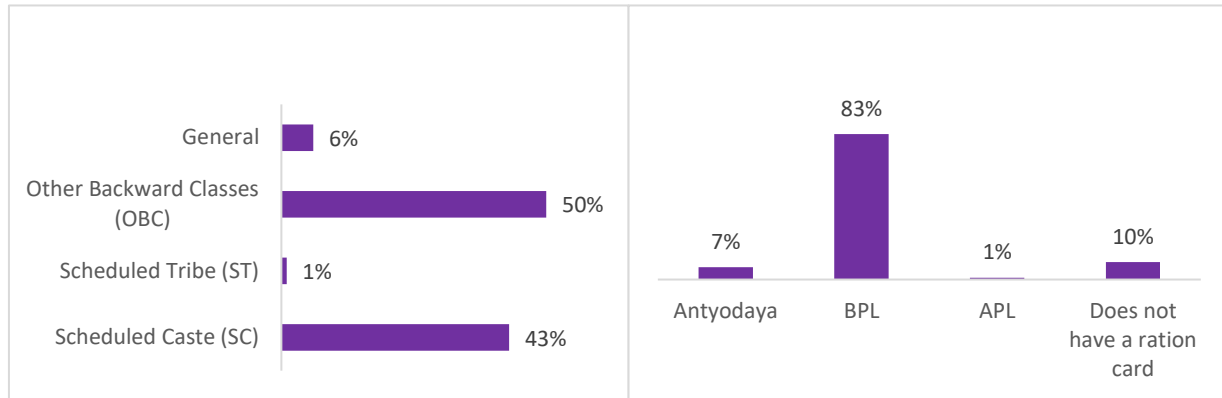


Figure 8: Economic and Social distribution of Respondents



50% of the respondents are from OBC category and 43% from scheduled caste. 83% of the respondents hold a BPL card. 10% of them did not have any ration card.

This following section highlights the key findings from the field survey conducted to assess the impact of the programme after its completion.

4.1 Natural Resource Management

Natural Resources Management (NRM) is one of the most important pillars of HRDP. The project consisted of interventions under various activity categories such as installation of solar street lights, construction of vermi-compost pits, distribution of farm inputs (seeds, fertiliser etc.), training on various farm techniques (IVC), irrigation management (GI), and drinking water interventions. Since the focused region has poor water availability, especially in summer season, intervention in irrigation is expected to ease the Irrigation-related issues for agricultural purposes. The other expected outcomes of the interventions include increase in farm income, farm productivity, awareness, adoption of improved farm practices and conservation of natural resources such as land, soil and clean energy.

Table 6: Activities under NRM in Vaishali district

Activity Category	Activities
Irrigation Management	Group irrigation through solar pump installation
Water management-agriculture	Hand-pump repairs, Jal minar construction
Farm Management	Seeds distribution, promotion of intensified vegetable cultivation (IVC), Crop diversification, organic manure/vermi-compost pits preparation, agri tool bank, FFS establishment, promotion of vegetable clusters, farm exposure visits
Clean Energy	Solar street light installation

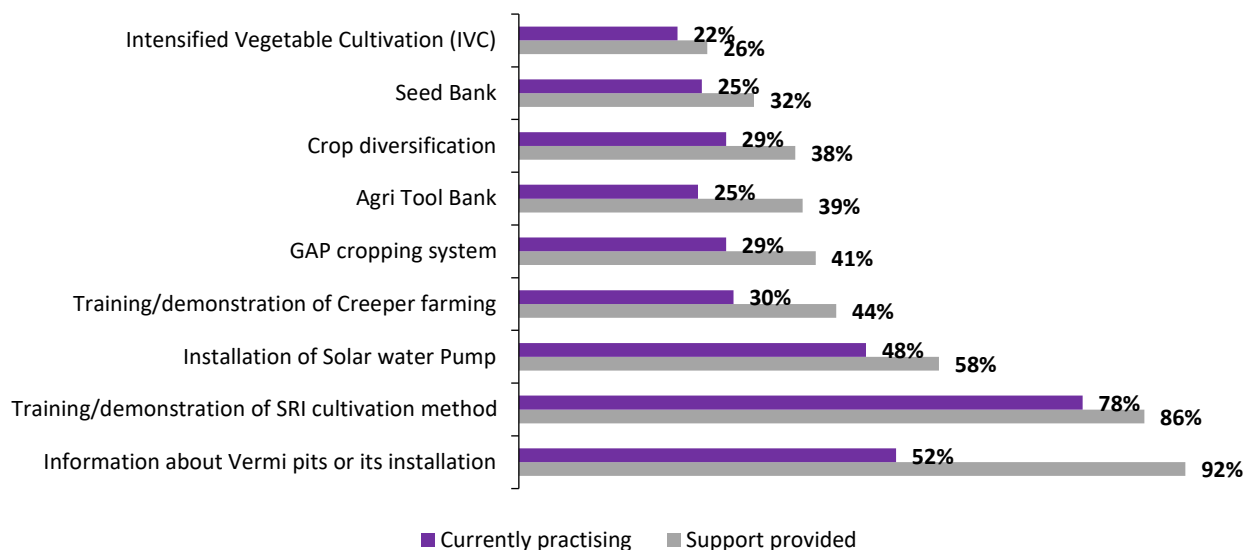
Image 3: A vermi-compost pit



Support was provided in a number of activities by the implementing partner AKRSP during the entire intervention period, only the major activities adopted by farmers and currently practiced by them have been highlighted. 86% of the respondents availed the project interventions for their agricultural activities. 92% of these respondents availed project's support for vermi pits installation, and 52% of them have been found to be using after the culmination of project. 78% of respondents continue to adopt System of Rice Intensification (SRI) farm technique, while 22% are growing vegetables with

the IVC technique. 25% are still using the services of agri tool bank supported by the project for agricultural tools and input.

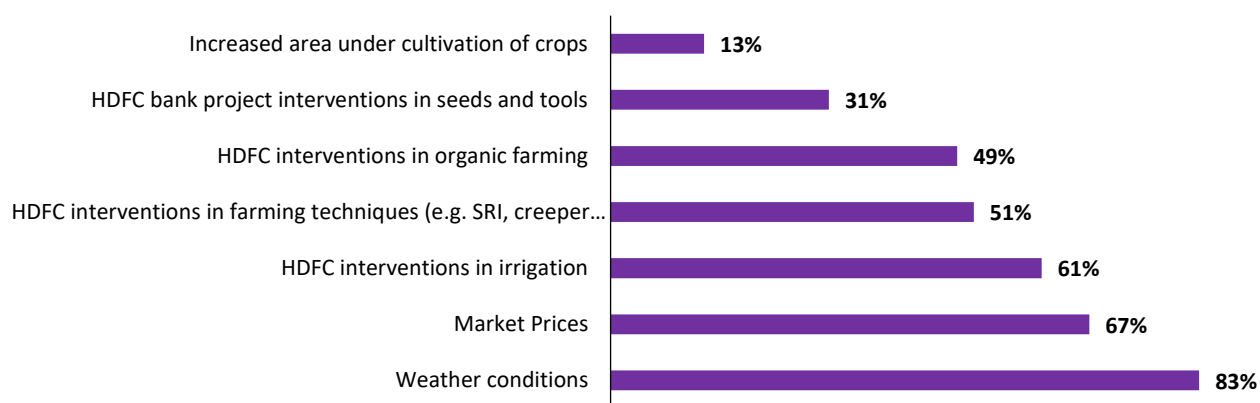
Figure 9: Agriculture support activities provided under HRDP(n=389)



4.1.1 Income from Agriculture

In the survey sample, **the benefits from agricultural activities were availed by about 86% of the total households**. A little over 99% of the households who have received support in agricultural activities, reported an **increase** in income.

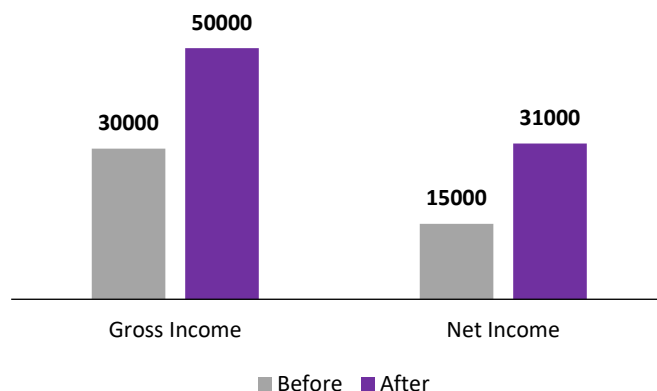
Figure 10: Factors contributing to increase in farm income (n=387)



49% of the respondents quoted project support in organic farming as one of the factors for the increase in their agricultural income. 67% mentioned that they are now getting better market prices for their produce. Interventions to provide assured irrigation facilities has been mentioned by 61% as the key factor affecting the produce and hence the income. Improved farming techniques such as SRI, IVC, nature farming, high yielding seeds and better tools are some of the other factors quoted by

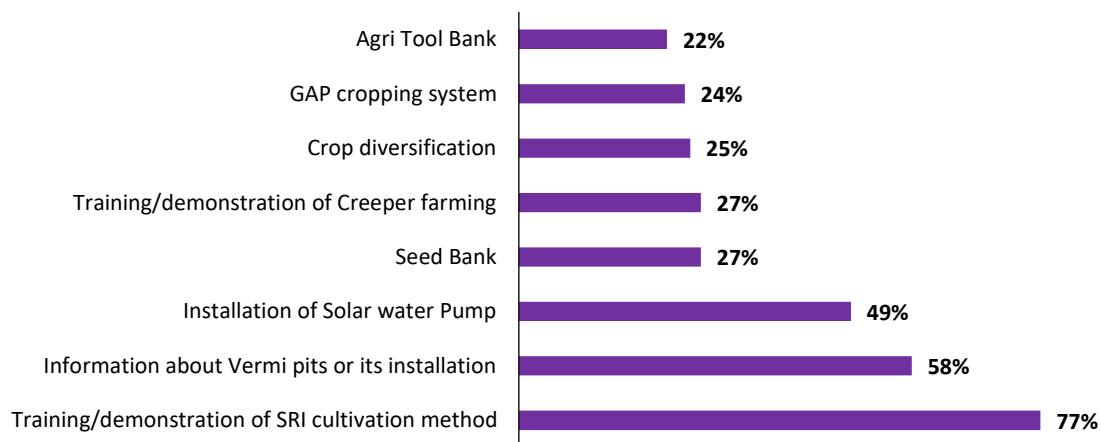
the respondents. In addition, favourable weather conditions in the form of better monsoons was quoted by a majority of 83% as a key factor for increased agricultural income. The timely availability of quality seeds, fertilisers, and farm tools, along with crop diversification in horticulture, has also enhanced farmers' income-generating capabilities.

Figure 11: Increase in agricultural income (Based on median in INR)(n=387)



The gross income of the respondents increased from INR 30,000 to INR 50,000, an increment of 67% and net income increased from INR 15,000 to INR 31,000, an increment of 107%. The median input cost has also decreased by 20%, complementing the effect of rise in the net income trends.

Figure 12: HRDP interventions that contributed to profit in agri income (n=380)



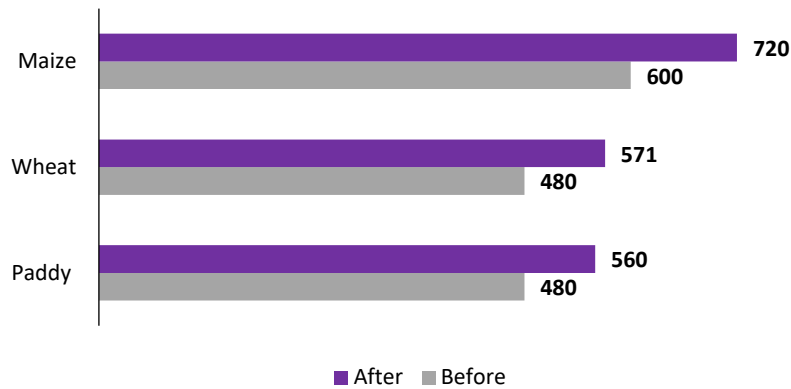
Key project interventions such as installation of vermi compost pits (58%), training in the System of Rice Intensification (SRI) technique (77%), installation of solar water pump through group Irrigation (49%), support in seeds (27%), creeper farming (27%), adoption of crop diversification (25%), implementation of Good Agricultural Practices (GAP) cropping system (24%), and provision of agricultural tools through the tool bank (22%) have aided in net increase in profit from agricultural income. Overall crop productivity has increased thereby increasing the sale. Adoption of crop diversification or horticulture in regular farming practice and that too in organic way has yielded great results for both farmer and the farms. It has enhanced fertility of the soil and quantity and

quality of the yield. Additionally, it has provided farmers with a variety of vegetables (lady finger, bitter gourd, pointed gourd (*parval*) etc.) and fruits to be available in the market in every season throughout the year ensuring continuous cash flow in the farmer's household.

4.1.2 Crop Productivity

13% of the households also reported increase in land area under cultivation after the HRDP project by HDFC. Respondents have reported an increase in the median productivity of the major crops grown in the area which are paddy, wheat and maize. The reason for this could be attributed to interventions such as improved irrigation, support in farming techniques and organic farming. The interventions such as distribution of better yielding seeds and improvement in irrigation through installation of solar water pump enhanced soil productivity.

Figure 13: Productivity per acre of major crops in kg((P,375)(W,380)(M,129))



Productivity of the three major crops have increased after the project intervention. **For paddy, the productivity per acre at the end of the project is 560kg, for wheat, it is 571kg and for maize, it rose from 600kg to 720kg.**

Figure 14: Key reasons reported by farm beneficiaries for increase in crop productivity in three major crops ((P,375)(W,380)(M,129))

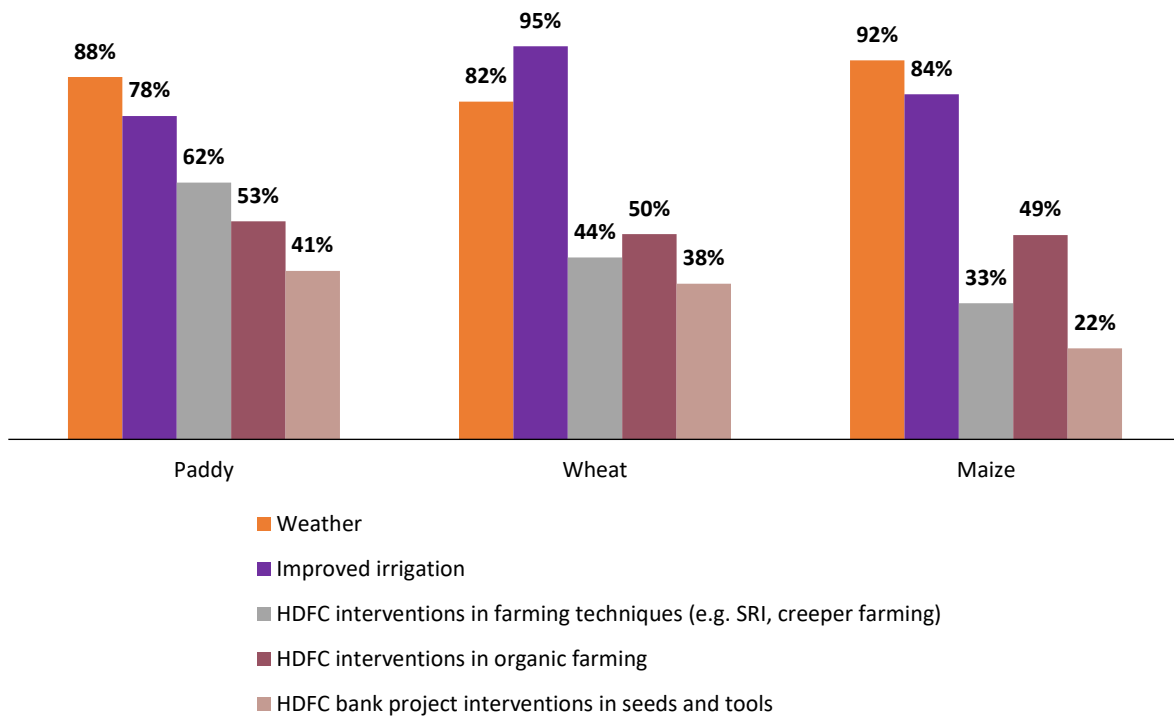
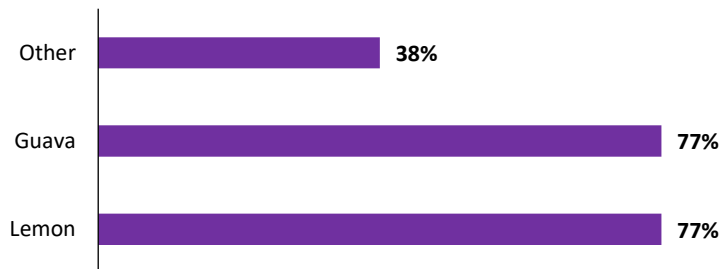


Figure 15: Types of crops grown by crop diversification beneficiaries under HRDP intervention (n=111)

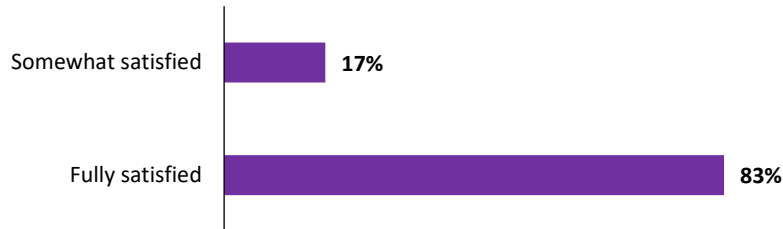


38% of the respondents who availed agricultural support facilities, learned about crop diversification and 28% are currently practising it. 77% of these respondents grow lemon and guava. 38% quoted growing other vegetables, chillies, onion etc.

Presently, **90% of households use a combination of natural and chemical fertilisers**. During the project’s interventions, **87% of respondents witnessed an increase in the use of natural fertilisers, while 41% reported a decrease in the use of chemical fertilisers**. This shift can be attributed to the project’s promotion of organic agriculture, specifically in vermi composting. The survey found that out of 62% farmers who received support in vermi compost development, 61% received training and 6% received financial aid regarding vermi-pits set up. Additionally, **63% of respondents are using vermi-pits to produce natural fertilisers. The increased use of natural**

fertilisers has resulted in improved production, better quality, and enhanced soil health as reported by 82%, 61% and 29% of farmers along with other benefits.

Figure 16: Satisfaction level of farmers on vermicompost intervention (n=202)

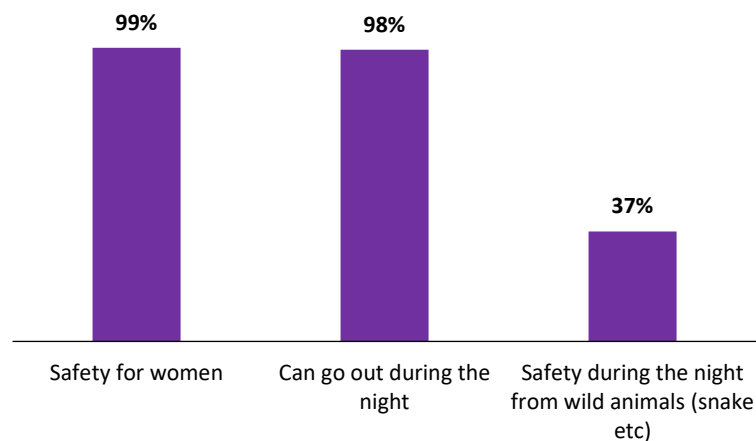


83% of the vermi pits beneficiaries are fully satisfied with the support services provided on vermi composting.

4.1.3 Clean Energy Solutions

Through the HDFC project, solar street lights were installed at community places throughout the village ensuring access to all the villages. More than 97% of the households were covered in this intervention. **19% of these respondents were provided with solar home lights, while 81% benefitted from solar street lights. 82% of these respondents reported that solar street lights are adjacent to their houses.** The qualitative understanding shows that the villagers found the solar street lights highly beneficial because they provide light during the night and require minimal maintenance once installed. Being a reliable source of power, students are finding it convenient to study at night as **60% of the respondents do not have power for more than 10-15 hours a day.** It has made it easier for the respondents to commute in evening hours.

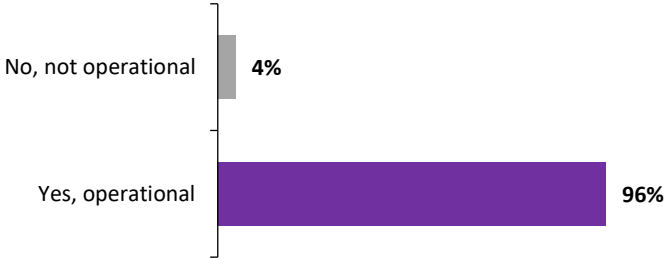
Figure 17: Perceived benefits of solar street lights (n=437)



98% of the respondents said that it has enabled them to venture out during the night and 99% reported that solar street light has ensured the safety for women along with this. Out of the 82%

households who reported that solar street lights are near their house, **96% of the respondents said these are operational and working fine and rest 4% reported that these are not operational as of now due to some technical or other reasons.**

Figure 18: Operational Status of solar street lights after intervention



Respondents who received solar home lights use it for general lighting in the house, reading and finishing up household chores during night time.

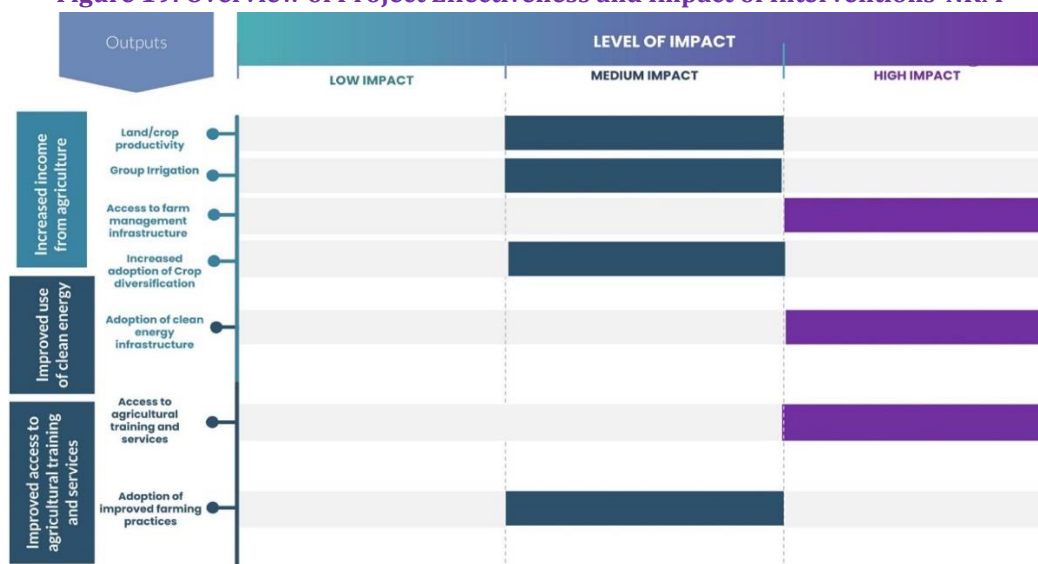
Image 4: A solar street light



4.1.4 Impact Observations

Most of the NRM interventions have had medium to high impact on the beneficiaries. There has been a medium impact on land/crop productivity but a high impact on access to farm management infrastructure. Similarly, there has been a high impact of adoption of clean energy infrastructure and agricultural training provided to the beneficiaries.

Figure 19: Overview of Project Effectiveness and Impact of Interventions-NRM



4.2 Skill Training and Livelihood Enhancement

HDFC in coordination with the implementing agency, AKRSP has done a significant work on improving skills and thus enhancing livelihoods of different stakeholders in the intervention area with the expected outcomes of creating additional source(s) of income per household and skill development to make them self-capable and independent. **77% of the total households surveyed have received training and support in agriculture from HDFC**, similarly, **28% of the households received support in SHG development, 9% in skill and enterprise training and 32% in livestock management.**

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

Activity Category	Activities
Agriculture Training and Support	Exposure visits, training and demos in SRI, IVC & creeper farming techniques, horticulture promotion
Skill & Enterprise Training	Reviving existing SHGs, establishing of SHG+ groups, exposure visits, financial literacy training. Bee keeping, sewing & handicrafts products enterprises
Livestock Management	Goat rearing and poultry support

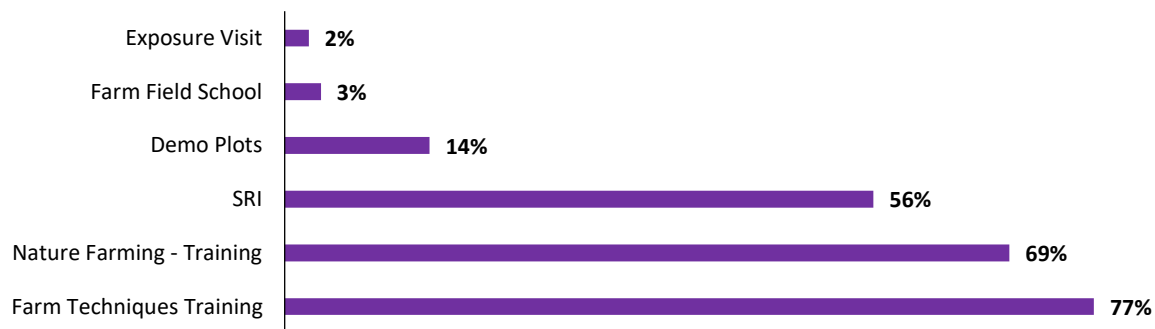
Under the skill training and livelihood enhancement component, the project successfully trained farmers in better farming techniques. They were given opportunities to visit and learn from successful farms. Also, training and support in practices like creeper farming, system of rice intensification (SRI), and intensified vegetable cultivation (IVC) was provided during the HRDP. Additionally, the project focused on empowering women by providing them with training in financial literacy. This was done by reviving existing Self-Help Groups (SHGs), creating new SHG+ groups, and forming women’s enterprise groups involved in sewing and handicrafts. The project also emphasised on the scientific management of livestock i.e., goats, poultry and bee keeping. Overall, these initiatives

aimed to improve the skills and livelihoods of farmers and empower women in various income-generating activities.

4.2.1 Agriculture Training and Support services

77% of the total households surveyed has received training and support in agriculture from HDFC. From the households who benefitted, all households have received support in terms of agricultural training practices; **10% of the respondents got support to form farmer's associations/groups**. However, qualitative understanding reveals that only agriculture training and support services in different farm practices was provided as major intervention during the project.

Figure 20: Major agricultural training and supported services availed/practiced by farmers (n=348)

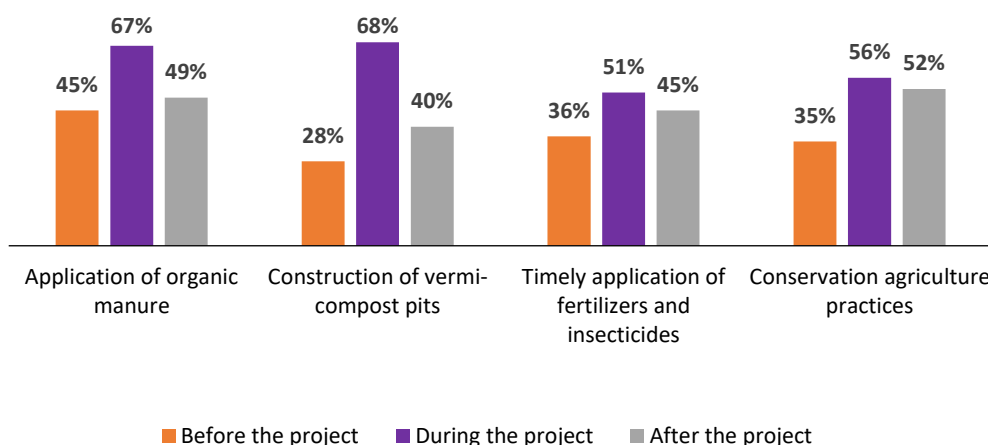


Of the beneficiaries who received agriculture training and support services, 77% reported that they have received training in various farm techniques whereas 69% of the farmers reported training in nature farming, which is economical for the producers in terms of low input cost and is environmentally beneficial. 56% of the farmers have received training in SRI method of cultivation for paddy, 14% on demo plots preparation, 3% in Farm Field School (FFS) and 2% were provided with farm exposure visits. Farm exposure visits were only provided to leading farmers. FFS helps in bringing together the small scale farmers to practice sustainable agriculture. It consists of 20-30 members.

Image 5: A farm field

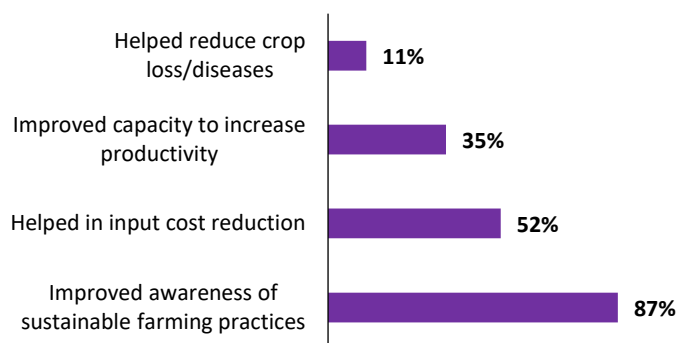


Figure 21: Agriculture practices prevalent before the project, those learnt through HDFC trainings and those currently being practiced by the farmers (n=348)



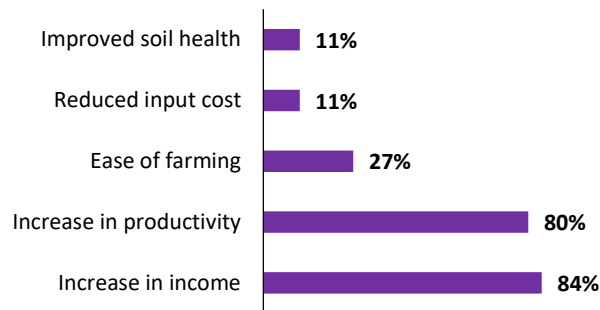
Application of organic manure, vermi-compost pits and conservation agriculture were practiced by a section of the respondents before the project interventions as well, however, substantial increase has been observed in the participants during the project training and post project completion. This includes a significant rise in construction and utilisation of vermi-compost pits (40%), improvement in the application of organic manure (49%), timely use of fertilisers/pesticides (45%), and adherence to good agricultural practices (52%).

Figure 22: Perceived benefits of learning agricultural practices (n=348)



87% of farmers who have received training and support services from HDFC, reported that their understanding and awareness on sustainable farming practices have been improved since the project started, 52% reported that project interventions helped in reducing the input cost. Nature farming, use of organic manure, crop diversification etc are some of the practices that aid in increased production without raising the investment. Over time, the input cost starts to come down. 35% reported improved capacity to increase productivity and 11% experienced reduced crop losses.

Figure 23: Perceived improvements in farming due to adoption of agricultural practices (n=348)



Around 84% of farmers reported an increase in their income, while 80% experienced higher productivity. Paddy, maize and wheat are the three major crops and the average productivity has increased noticeably during the duration of the project. Another 11% reported a reduction in input costs, and an equal percentage found that the training contributed to improving soil health. Use of organic manure, nature farming where soil health is considered paramount and no chemicals are used in the production help the soil over time thereby enhancing its productivity.

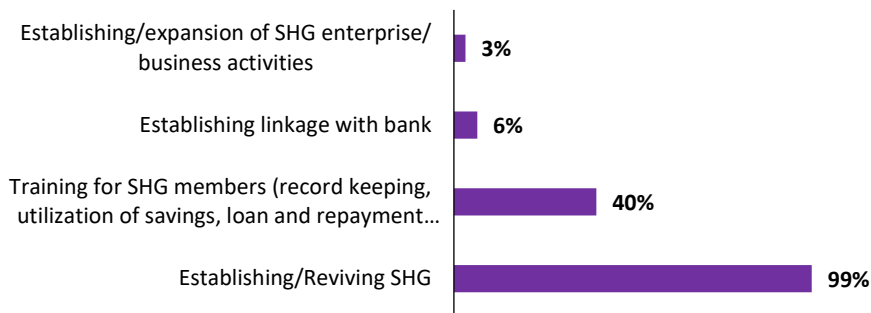
The project interventions in agricultural training and skill building helped the farmers increase their annual income by INR 26,000 (median) and INR 32,368 (mean).

4.2.2 SHG Development

28% of the total households surveyed received support in SHG development during HRDP. The project focused on empowering women by reviving existing Self-Help Groups (SHGs) and creating new SHG+ groups. These groups aimed to enhance women’s capabilities and independence. To achieve this, the project provided financial literacy training, established systems for record keeping and managing loans within the SHGs.

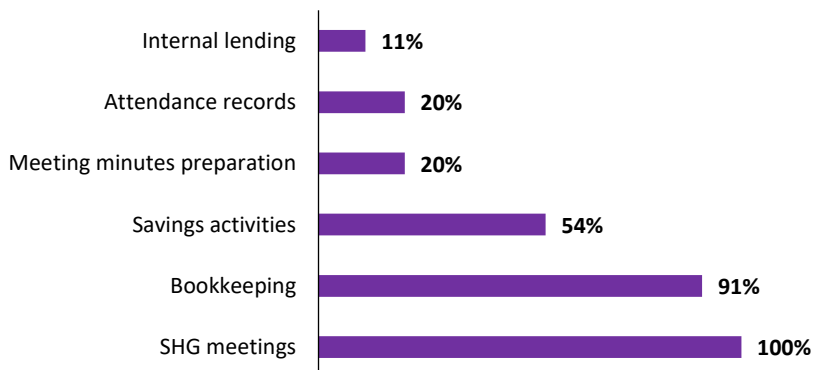
The purpose of forming SHGs is to create a platform where women can come together, support each other, and collectively work towards their economic and social empowerment. SHGs provide opportunities for women to save money, access credit facilities, acquire financial knowledge, and develop skills. Additionally, through SHGs, women gain a stronger voice in decision-making at home or in the community, gain confidence and become more self-reliant.

Figure 24: Support services received in SHG development through HRDP (n=124)



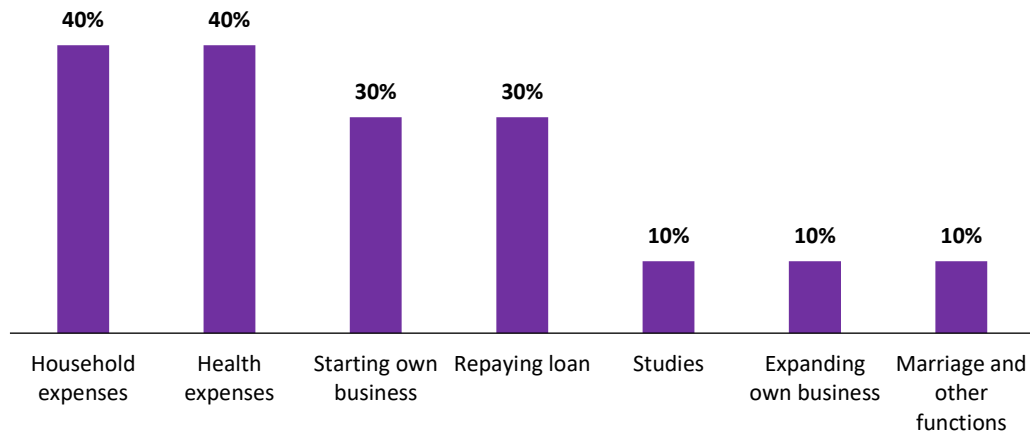
99% of the beneficiaries reported that they received support in establishing/reviving of existing SHGs. 44% of these beneficiaries are a part of a functional SHG at present. The support training provided by the project are record keeping, savings, accessing loans and repayment of older loans etc. 6% of the beneficiaries received support in establishing bank linkages to make their group a self sustaining unit. These bank linkages come handy in expansion of the group as well as starting any entrepreneurial activity.

Figure 25: Activities regularly undertaken by SHGs (n=54)



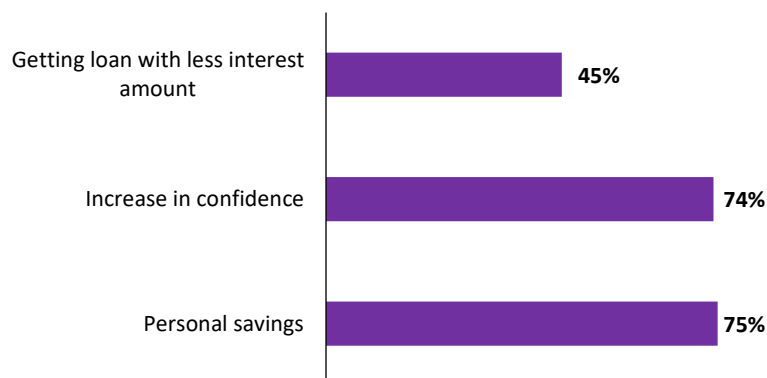
Currently, only 54 members said they are a part of a fully functional SHG. All of them have regular meetings and book keeping is concurrent. Attendance records and meeting minutes are maintained as well. Half of them engage in regular savings. **11% of the members mentioned that their SHGs lends internally in case of any requirement.**

Figure 26: Different purposes of taking loan within the SHG (n=10)



The average loan amount taken by members of the SHG since the project started is **INR 15,900**, and a median value of **INR 5500**. Among the participants, around 40% each, reported taking loans to cater to their household and health expenses. Another 30% each mentioned using loans to repay existing debts or start their own businesses. Additionally, 10% of the respondents took loans for purposes such as education, expanding their business, or funding marriages and other functions.

Figure 27: Perceived benefits of being an SHG member (n=124)



Majority of the members reported that they are **able to save regularly (75%)** and **their self-confidence has increased (74%)**. 45% members reported that they now get a loan with low interest amount which earlier was not possible prior to the HRDP intervention.

4.2.3 Skill and Entrepreneurship Development

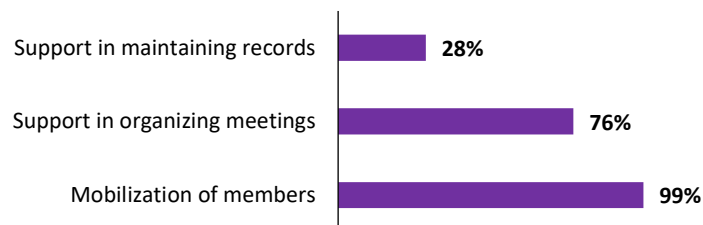
In collaboration with AKRSP, HDFC Bank designed and implemented initiatives to enhance skills and promote entrepreneurship, with a special focus on women. These initiatives included the establishment of Self-Help Group Plus (SHG+) groups that engaged in activities like bee keeping, sewing and handicrafts product making through input and training support from HDFC under HRDP. The main objectives were to develop the skills of the beneficiaries in these areas and, on a broader scale, make them independent, confident, and self-capable. However, according to the data collected

through a sample survey, it was found that only 9% of households actually benefited from the skill training and entrepreneurship development projects. The enterprises are based on joint ownership. **Average monthly income from enterprises is INR 3325, significant increase from INR 600 per month before the project. Bee keeping and tailoring/handicraft's products enterprises are the prominent initiatives.**

Image 6: A bee box owned by women enterprise involved in bee keeping

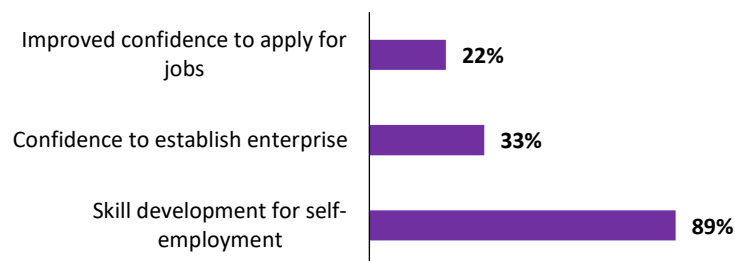


Figure 28: Support received in formation of SHG+ group (n=9)



99% beneficiaries received assistance in mobilisation of members followed by 76% reporting support in organising meetings and 28% reported support in maintain records

Figure 29: Perceived benefits of skill development training (n=9)



Apart from increase in income, other benefits reported by the beneficiaries are skill development for self-employment (89%), and confidence to establish enterprise (33%), among others. The qualitative understanding revealed that skill development training along with the inputs were given to women; however, improving market linkages for long terms sales and continuous revenue generation could have been highly beneficial.

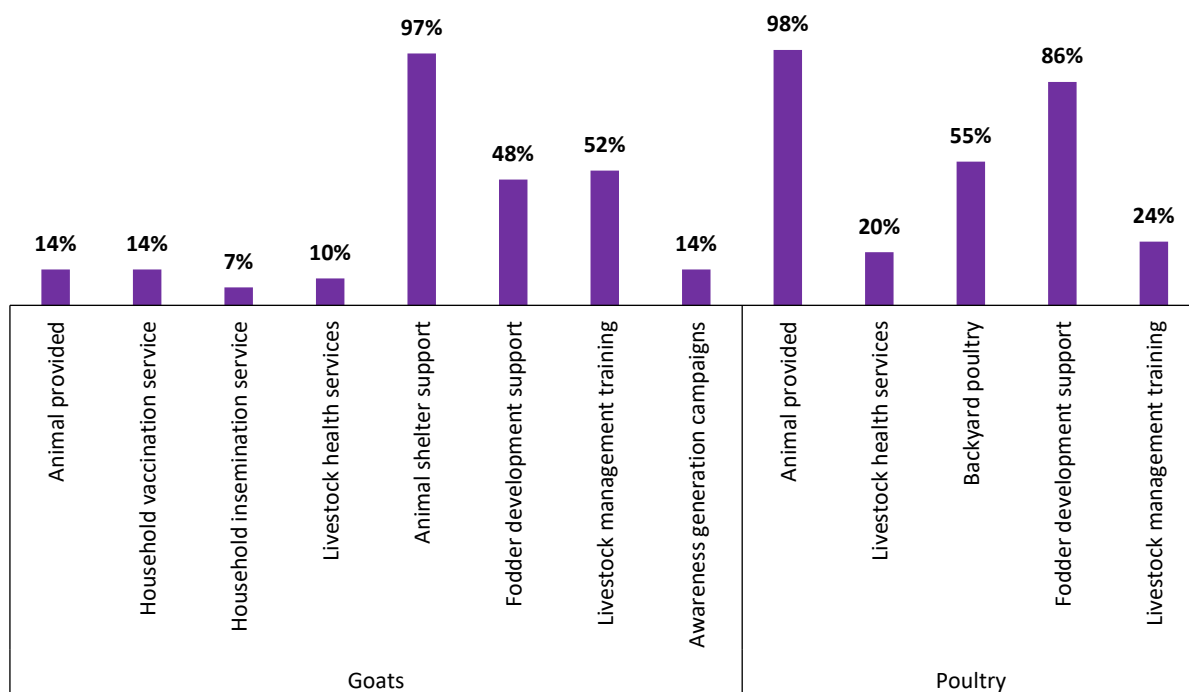
4.2.4 Livestock Management

As part of the HDFC interventions, 32% of the households surveyed received support in livestock management. Out of these, 30% own cow, buffalo and goats each. The project support provided to them included training in poultry and goat rearing, focusing on aspects like fodder management, disease control, and shelter. The interventions were provided to interested households based on their capability to keep and manage livestock. The expected outcomes were to provide an alternative source of income and meet household consumption needs.

Following are the major benefits observed by the beneficiaries with the implementation of livestock management intervention;

- Immediate cash availability by selling livestock in case of emergency,
- Low fatality rate and keeping costs by adoption of improved and scientific practices,
- Increased self-confidence of women,
- Alternate source of income,
- Improved nutrition levels due to consumption

Figure 30: Different type of project services received for different livestock (n=78)



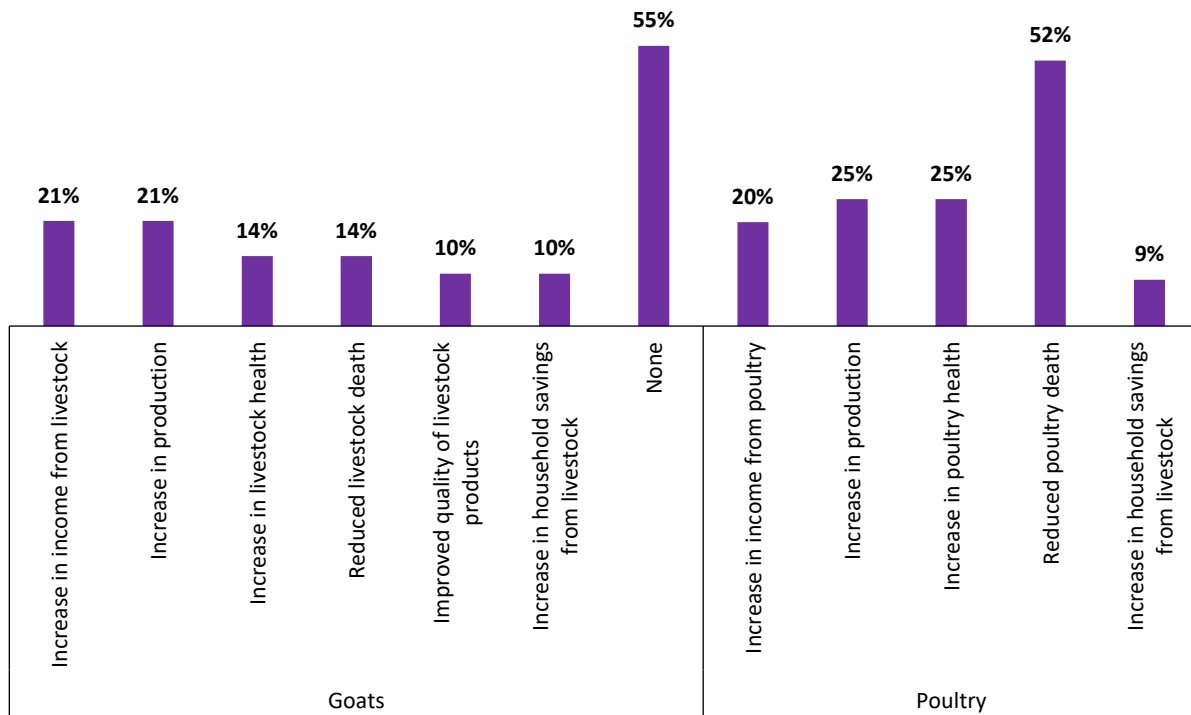
Beneficiaries received project services in goat rearing and poultry as part of livestock management. In goat rearing, 97% beneficiaries reported goat shelter support as major intervention, 52% reported overall livestock management training was provided by HDFC among other interventions as highlighted in the figure. Similarly, in poultry, 98% reported animals were provided to them and 86% reported they received fodder development support under HRDP among other interventions.

Figure 31: Increase in income due to livestock management (n=146)



Beneficiaries who have received support services in livestock management under HRDP, their **median monthly income increased from INR 1900 to INR 3000, while mean monthly income increased from INR 2090 to INR 3607.**

Figure 32: Benefits of livestock management services availed through HRDP (n=78)



20% of the respondents who availed support for poultry saw an increase in income. Similar responses were seen by goat owners as well. Additionally, beneficiaries have gained confidence, independence, financial stability, and enhanced skills for business-related activities through group efforts. These interventions have also provided them with an alternate source of income, offering a safety net during emergencies

4.2.5 Case Study

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Reena Devi, residing in Hasanpur Bakhri village, faced numerous challenges in her life. As a widow, she not only experienced the emotional loss of her husband but also encountered difficulties in the form of stigmatisation and marginalisation from her community. With no source of income, she relied on her family members and her own hard work to survive. Lack of self-confidence and the tough circumstances made her life incredibly challenging.

However, a turning point came when Reena Devi had the opportunity to receive training on scientific goat rearing and treatment. Through the Aga Khan Rural Support Programme (AKRSP) under the Holistic Rural Development Project (HRDP), she became a *PashuSakhi*, or a knowledgeable resource person in livestock management.

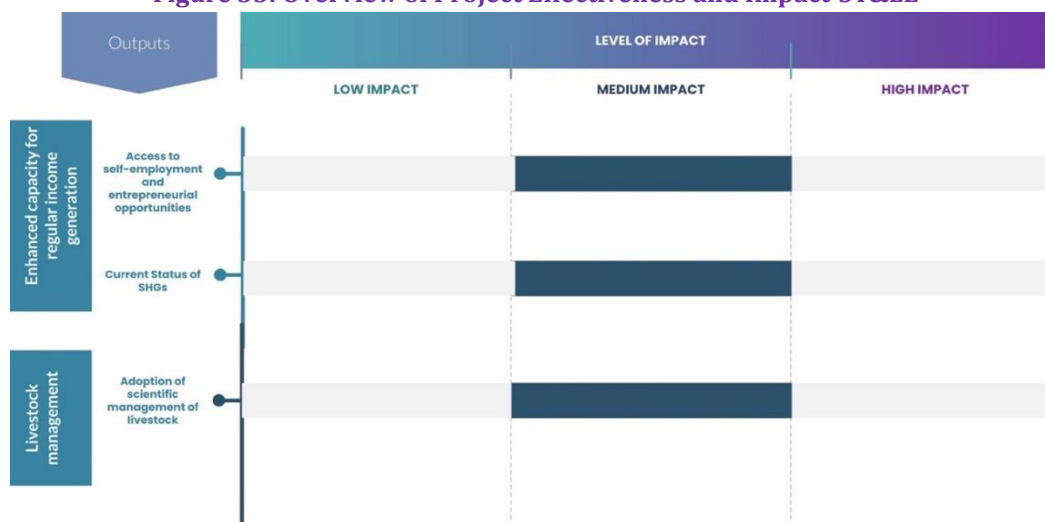
The training provided Reena Devi with essential skills and knowledge to effectively manage goats. She learned about proper feeding, housing, breeding, and healthcare practices. With newfound expertise, Reena Devi ventured into goat rearing as an alternate source of income.

As she applied the acquired knowledge, Reena Devi's life took a remarkable turn. She transformed from a dependent and hesitant woman to a self-reliant and confident individual. The additional income generated from goat rearing allowed her to meet her financial needs independently. Moreover, her success in goat rearing made her widely accepted and respected within her village.

4.2.6 Impact Observations

Interventions in entrepreneurship and agriculture training services such as self-employment and entrepreneurial opportunities, SHGs and scientific livestock management, has had a medium impact on the beneficiaries.

Figure 33: Overview of Project Effectiveness and Impact-ST&LE



4.3. Health & Sanitation

Several interventions have been undertaken under health, sanitation, drinking water and kitchen garden areas during the project. Construction of toilets and regular health awareness sessions, camps and clinics were organised for beneficiaries in which knowledge regarding nutrition management, primary healthcare, sanitation, first aid etc. was provided. As an outcome, villagers were now more concerned about nutrition and healthy eating practices. Due to kitchen garden and landless garden intervention, availability of wide range of local seasonal vegetables is now ensured which was earlier not there.

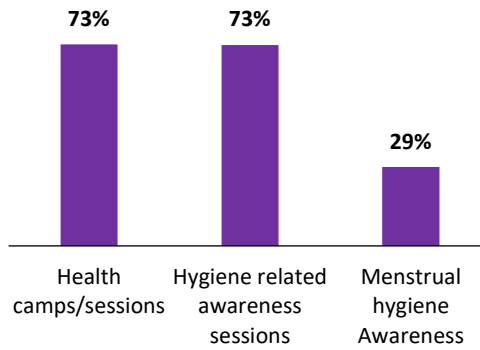
Table 8: Activities under health and sanitation in Bihar

Activity Category	Activities
Health	Health and hygiene awareness sessions & camps
Sanitation	Toilet, soak pits, drainage construction, MHM sessions
Drinking Water Management	Handpump and taps repairs, jal minar construction
Kitchen Garden	Seeds and manure distribution along with training for landless garden & kitchen garden, nutritional management training

4.3.1. Health infrastructure and services

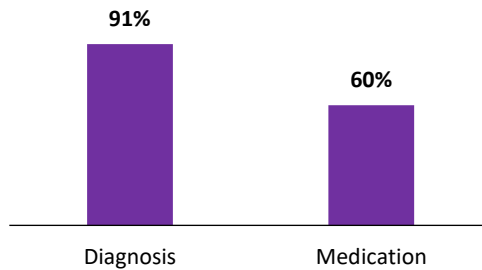
93% of the sample respondents surveyed have received health services from HDFC. Major interventions carried under health were awareness sessions and organisation of health camps.

Figure 34: Interventions in health service availed by beneficiaries (n=418)



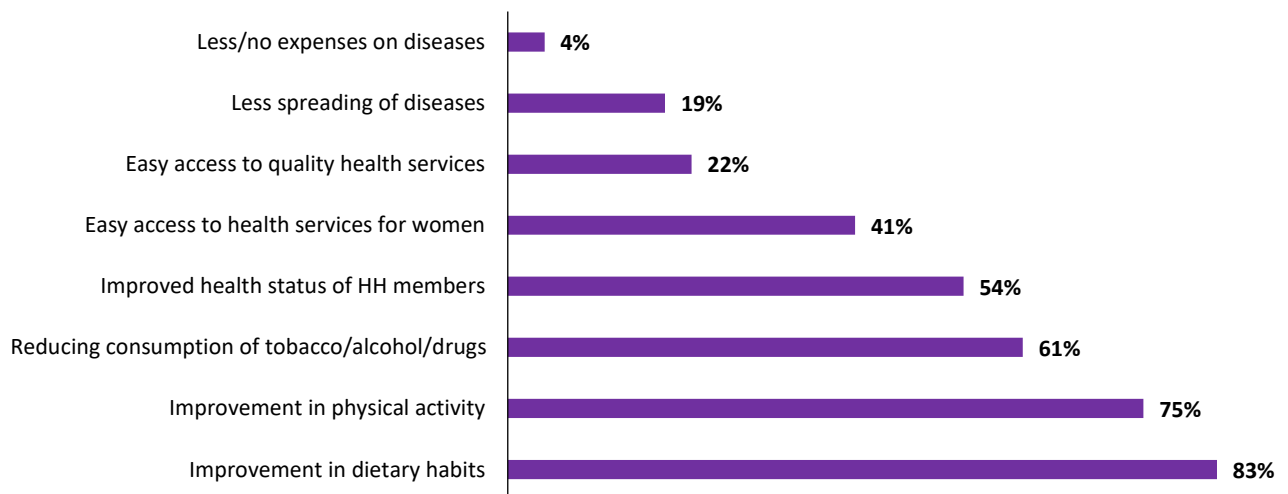
93% of the households who have received health services, **73% each have attended hygiene related health awareness sessions and health services in the form of health camps/sessions**, and 29% received help in Menstrual Health Management (MHM) sessions.

Figure 35: Services availed at HDFC supported camps/clinics (n=309)



91% of the beneficiaries who attended health camps & clinics under HRDP, received diagnosis service and 60% received medication services

Figure 36: Perceived benefits of HDFC bank supported health camps/clinics (n=416)

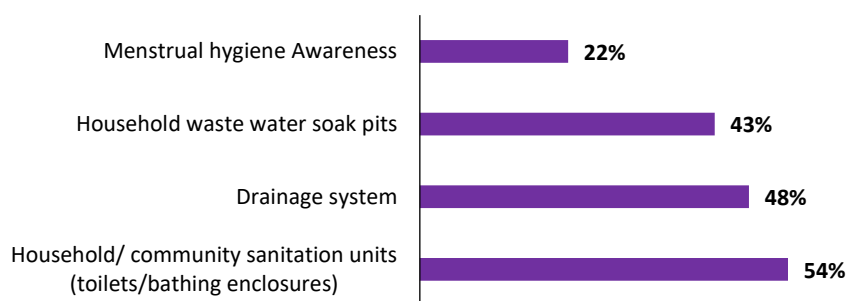


83% of respondents surveyed stated improvement in dietary habits as the prime benefit from the health interventions, 75% reported improvement in physical activity, 61% reduced consumption of alcohol/tobacco, 54% stated improvement in health status of household member, 41% reported easy access to health services for women and 19% reported there is less spreading of diseases now due to better health awareness since the project started. However, the ease in access to quality health services and reduced expense on diseases is reported by 22% and 4% only respectively.

4.3.2. Sanitation infrastructure and services

From the sample study, 97% of the respondents are reported to have been benefitted from sanitation services. Activities carried out were construction of toilets, soak pits, drainage renovation and menstrual health management (MHM) sessions with the expected outcome to control disease/infections and healthy lifestyle.

Figure 37: Households who benefitted from different interventions under sanitation (n=437)



The two main interventions supported by the project are **construction of toilets (54%) and drainage (48%)**. However, 4% of the beneficiaries are still practicing open defecation which leaves room for further improvement. **96% reported that they now have access to individual toilets & regularly use it.**

Figure 38: Change in open defecation practice before and after the intervention (n=437)

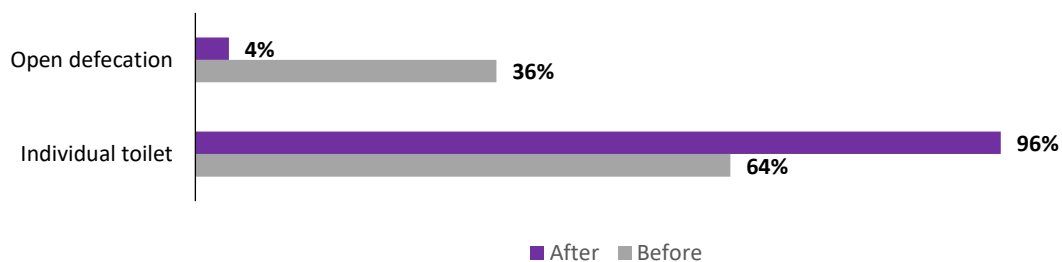
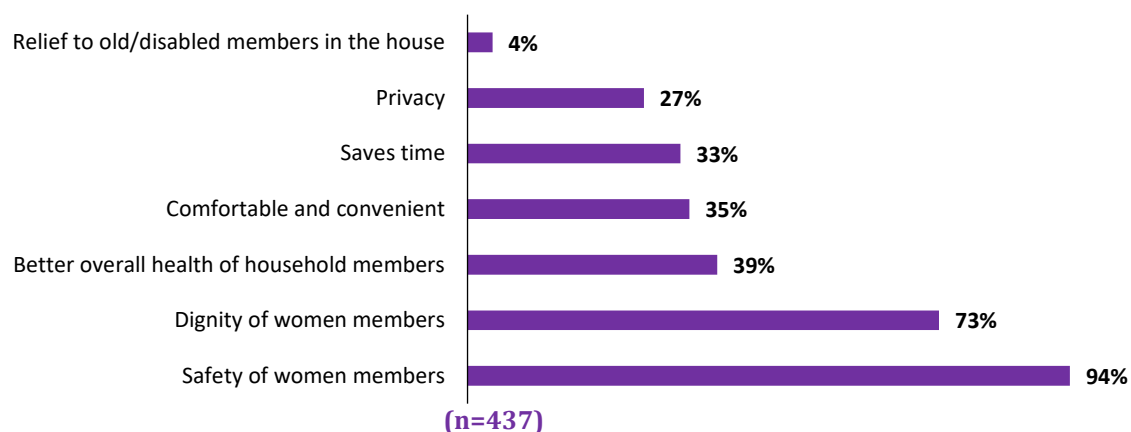


Figure 39: Perceived benefits of toilet (n=437)

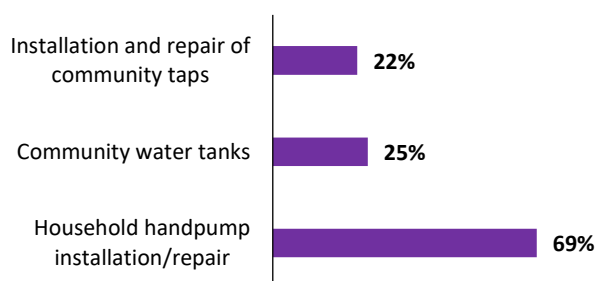


The table above shows different benefits experienced by beneficiaries after a toilet have been constructed by HRDP in their household. **94% reported that it ensured women safety while 73% reported it protected dignity of women while 39% observed overall better health of household members** along with other benefits as represented in the figure.

4.3.3. Availability and Management of Drinking Water

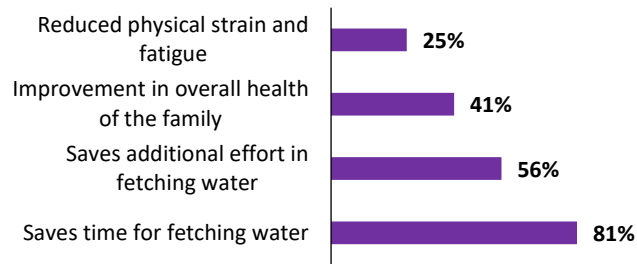
Only **8% of the total households** received support from drinking water interventions by HDFC. Repairing of community handpumps, community taps and establishment of community water tanks/Jal minar has been done to ensure accessibility of clean and safe drinking water wherever required. Awareness regarding importance of clean drinking water was also provided during various health, sanitation and nutrition management awareness camps.

Figure 40: Drinking water management services availed through HRDP (n=36)



The intervention primarily focused on improving the water supply infrastructure, with 69% of the efforts directed towards installing and repairing community taps, and handpumps. Among the households that received support for drinking water, 8% in total, a significant 89% reported a change in their water source due to the project. Prior to the project, the majority relied on tube wells or bore hole (66%) and public taps (28%) for drinking water.

Figure 41: Different benefits to women due to drinking water availability (n=32)

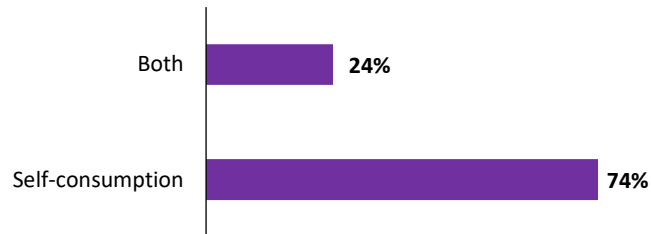


Out of the 89% households who reported change in their drinking water source, the majority (81%) reported that it saves times for fetching water for women and 56% said that it saves additional effort in fetching water along with reducing physical strain and improving the health of the family.

4.3.4. Landless Garden (LG) & Kitchen Garden (KG)

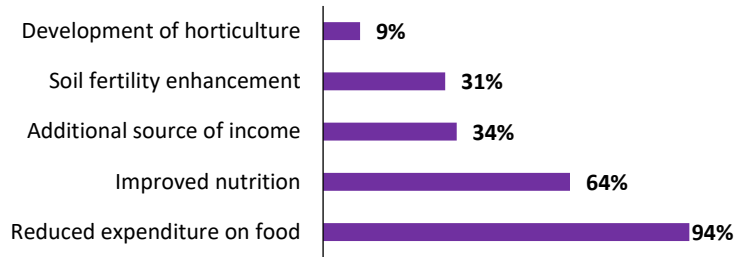
30% of the total households surveyed were provided support in the development of backyard kitchen garden as well as inhouse landless garden. Inputs for development of kitchen garden and landless garden such as seeds, organic manure etc. has been provided to the household women along with the necessary training to improve the capability of the women in this skill with the expected outcomes to decrease malnutrition levels, diversity in food and alternate source of income. Of the households that received kitchen garden and landless garden benefits, 98% received seeds, 80% training and 56% manure and fertilisers under the intervention. They received support for a variety of seasonal vegetables such as beans, brinjal, tomato, lady finger, pumpkin, etc

Figure 42: Use of kitchen garden and landless garden produce by households (n=137)



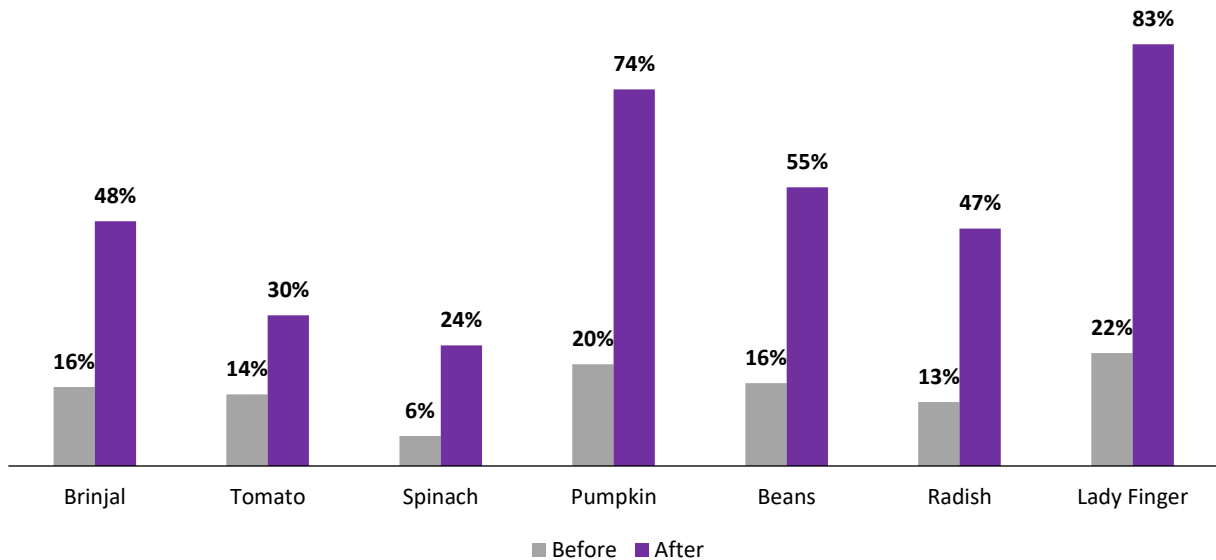
A majority of the respondents were found using the produce from their garden for self- consumption (74%), and few were using the produce for both selling as well as self-consumption (24%). The ones involved in selling the produce also, reported a median monthly income of INR 800 per month.

Figure 43: Perceived benefits of HRDP supported kitchen gardens and landless gardens (n=137)



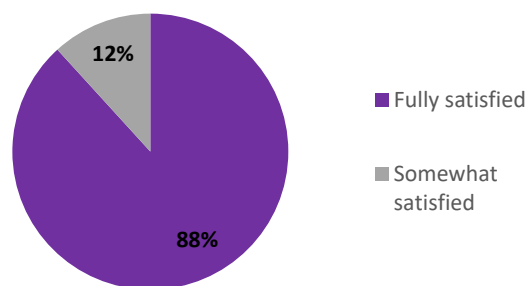
While **94% of the beneficiaries observed a decrease in the amount, they spent on buying fruits/vegetables from the market, 64% of the beneficiaries observed an improvement in nutrition** from the kitchen garden since the project started along with other benefits as shown in figure. The data shows that a median monthly amount of INR 250 is reported to have been saved by the households due to development of kitchen garden.

Figure 44: Change in major vegetables grown after HRDP intervention in kitchen garden (n=137)



The implementation of kitchen garden and landless garden has led to significant improvements in vegetable production. For example, the percentage of **brinjal cultivation increased from 16% to 48%**. Similarly, **ladyfinger cultivation saw a rise from 22% to 83%**, and the cultivation of **beans increased from 16% to 55%**. Project interventions have resulted in substantial growth in vegetable yields, providing the community with a diverse and abundant supply of nutritious produce.

Figure 45: Satisfaction level of kitchen garden and landless garden beneficiaries (n=137)



A large majority of beneficiaries, around 88%, expressed full satisfaction with the support received for kitchen gardens and landless gardens. The remaining 12% reported being somewhat satisfied.

These findings indicate the success of the Holistic Rural Development Project (HRDP) in this specific area. The high satisfaction rate reflects the positive impact of the project's interventions, demonstrating that the support provided for kitchen gardens and landless gardens has been effective and well-received by the beneficiaries.

4.3.5. Case Study

Umesh Roy's Journey from Urban Employment to a Successful Farmer

Umesh Roy, a resident of the village Khajbatta, had previously worked in cities like Calcutta instead of engaging in agriculture. In 2020, he decided to return to his village and reconnect with his agricultural roots. It was during this time that he came into contact with the Aga Khan Rural Support Programme (AKRSP) through village coordinator. The AKRSP team motivated Umesh to pursue farming as a profession.

Initially, Umesh had hesitations due to his lack of knowledge and experience in farming practices. However, with the support of AKRSP under the Holistic Rural Development Project (HRDP), he received essential inputs like seeds, fertilizers, access to Agri tools etc. along with the training on improved farming techniques. Over time, Umesh gained confidence and gradually transformed himself into a leading farmer within the village. He is now growing various types of seasonal vegetables along with Paddy and wheat. His earnings have increased at least by 3 times and also he has the satisfaction that he is continuing the legacy of his ancestors.

4.3.6. Impact Observations

High impact has been seen when it comes to interventions in health and sanitation such as health infrastructure and services, kitchen garden and awareness regarding sanitation practices. Improved access to drinking water at household and community level had a medium impact. **Contributing to sanitation infrastructure such as community and individual toilets and bringing down open defecation to 4% at present is a success story in itself.**

Figure 46: Overview of Project effectiveness and impact- H&S



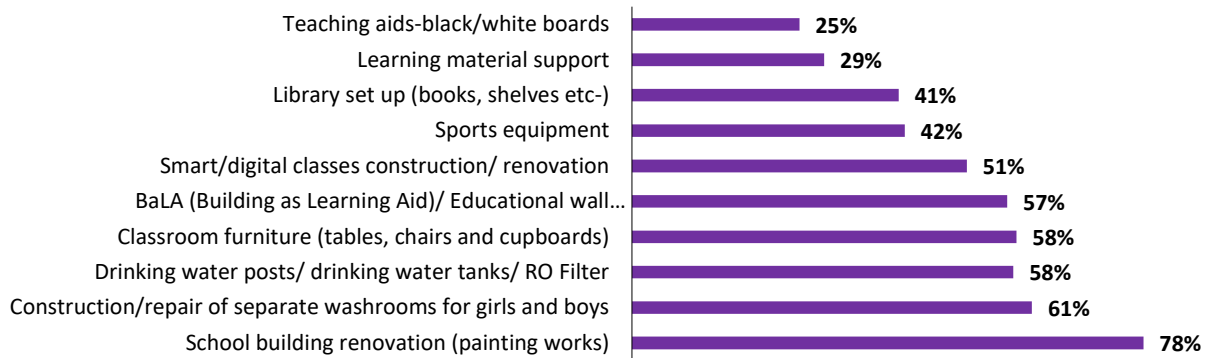
4.4. Promotion of Education

The focus of HRDP was on creating a conducive learning environment and providing necessary infrastructure to ensure quality education for the children. Through the following mentioned interventions, the project aimed to improve the educational facilities, enhance the learning experience, and promote the holistic development of children in the area.

Table 9: Activities under education in Bihar

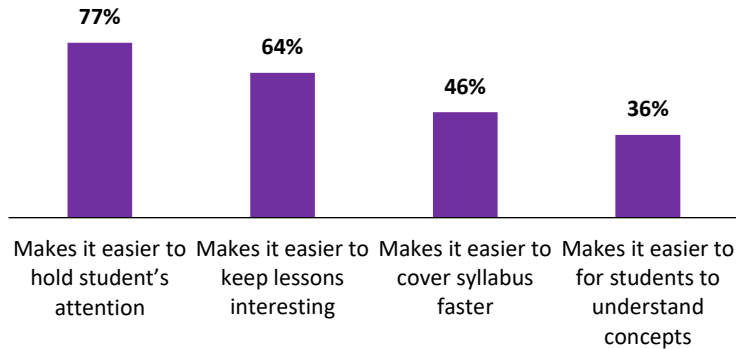
Activity Category	Activities
Educational Institutions Development	Set-up of library, smart class and overall school renovation, BaLA paintings, separate toilets, water tank, furniture support
Education Support	Distribution of solar lamps as learning aid, training & learning material (TLM) distribution
Awareness Generation	Celebration of important days, seminars and rallies
SMC Strengthening	Revival/support to SMCs
Sports	Indoor gaming support

Figure 47: Households reporting support received by their children under education in their school (n=212)



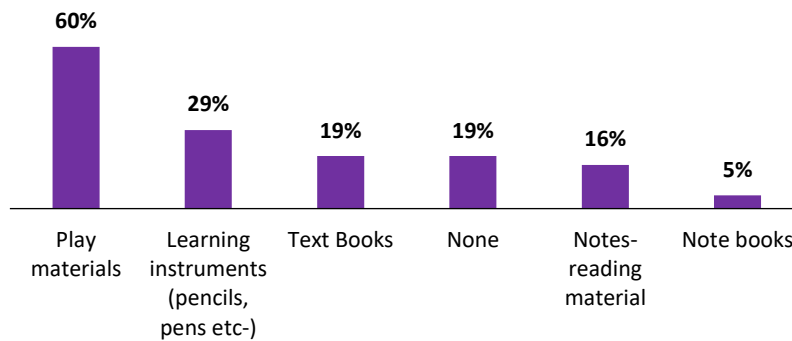
According to the survey conducted, **47% of the households reported that their children received facilities and support in education either at school or at Anganwadi Centres (AWCs)**. The interventions implemented in the education sector covered both primary (AWCs) and secondary education (schools). These interventions included significant activities such as renovating school buildings and AWCs (78%) that were previously in critical condition. Other interventions involved constructing **separate washrooms for boys and girls (61%)**, installing drinking water posts (58%), providing **classroom furniture (58%)**, and conducting **BaLA painting (57%)**, among other activities as shown in Figure 47. The project also emphasised the overall development of children, including attention to sports activities (42%).

Figure 48: Households reporting benefits of BaLA/ Educational wall paintings/messages (n=121)



77% households consider that wall paintings or BaLA done at school under HRDP makes it easier to hold student's attention followed by 64% who reported that it makes easier to keep lessons interesting, other 46% mentioned that it helps the teacher to **cover the syllabus faster** and **36% said that it makes easier to understand the concepts** for students.

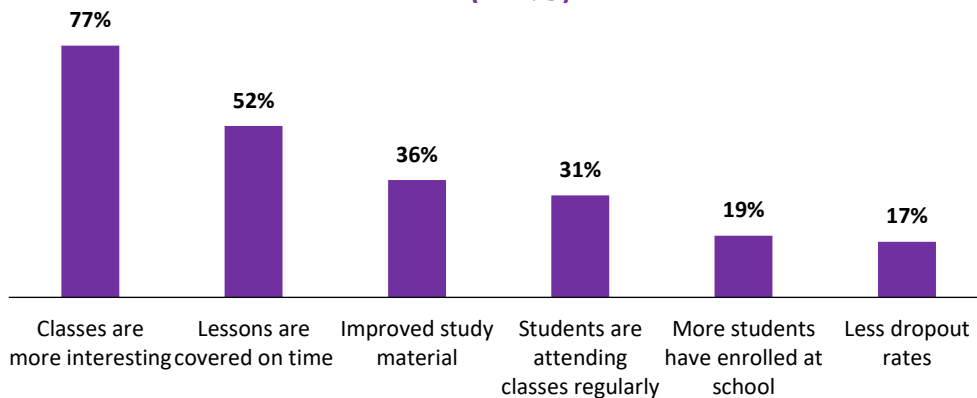
Figure 49: Types of learning material(s) received by students during HRDP (n=62)



60% of the students have received play materials. Additionally, 29% of the students received learning instruments such as pens and pencils, while 19% reported receiving textbooks. It is worth noting that 19% of the students also stated that they did not receive any learning materials during the HRDP.

The above findings indicate that the project has made a significant impact by providing play materials, learning instruments, and textbooks to a majority of students, thereby supporting their educational journey.

Figure 50: Improvements in school activities noticed by households in last 3-4 years (n=193)



A significant percentage of households (77%), reported that their students have developed an increased interest in attending classes. Additionally, 52% of households mentioned that students are now able to cover their lessons within the allocated time. Furthermore, 31% of households stated that students are attending school regularly and not missing classes, which is a positive outcome of the HRDP intervention in promoting education. Another benefit mentioned by 17% of households is the reduction in dropout rates among students.

These findings highlight the positive impact of the HRDP intervention in promoting education. The increased interest and engagement of students, improved timeliness in covering lessons, regular school attendance, and reduced dropout rates signify the success of the project in enhancing the educational experience and encouraging students' commitment to learning.

Image 7: Village children at a school supported by HDFC



4.4.1. Case Study

Empowerment through Poultry Farming

Reena Devi, a resident of Sultanpur Pachkatia 2 village, had always been involved in poultry farming, but on a limited scale for household consumption. However, when the Holistic Rural Development Project (HRDP) intervened and provided support in poultry management, Reena saw an opportunity to scale up her operations and transform her life. What followed was a remarkable journey from an ordinary woman to becoming the owner of a 500-poultry-chick farm, earning a substantial income, and becoming a role model for others in her village.

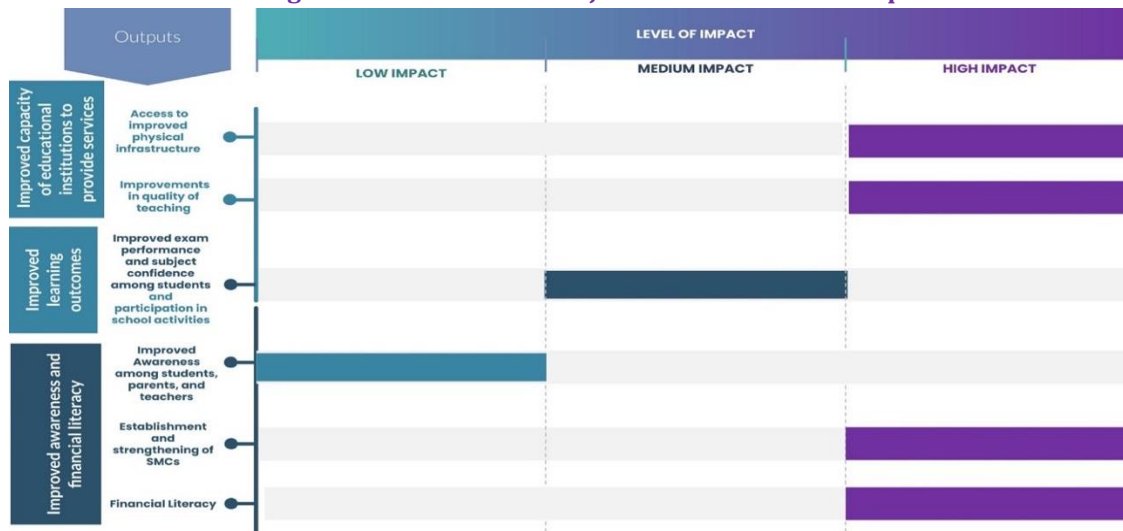
The path to success was not without its challenges. Reena faced numerous hurdles along the way. The initial transition from a household-level operation to a larger-scale farm required significant effort and investment. She had to learn about poultry management techniques, improve infrastructure, and overcome financial constraints. Reena's determination, coupled with the support and training provided by HRDP, enabled her to overcome these challenges.

With the support received through HRDP, Reena acquired the necessary knowledge and skills in poultry management. She learned about proper feeding practices, disease control measures, and efficient farm management techniques. Armed with this knowledge, she expanded her farm to accommodate 500 poultry chicks. This expansion not only increased her production capacity but also opened doors to greater income opportunities.

4.4.2. Impact Observations

Although the interventions in education were fewer, it had high impact on the school students and their learning.

Figure 51: Overview of Project effectiveness and impact- PoE



4.5. Holistic Rural Development Index (HRDI)

There are multiple dimensions involved in achieving the goals HRDP that includes agricultural production, generates new jobs, enhances health, increases communication, and provides better living infrastructure.

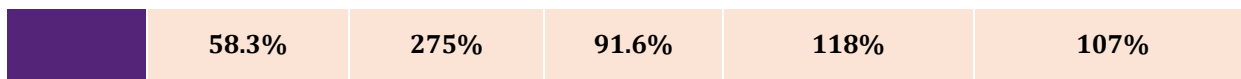
Based on the design of the HRDP program supported by HDFC Bank, a composite index has been developed called Holistic Rural Development Index (HRDI) that indicates the achievements of the HRDP interventions leading to overall improvements of the results indicators. As, the program interventions varies across projects and geographies, it was not possible to ascribe a single impact indicator that might be able to accurately capture the overall performance of HRDP. Thus, HRDI serves the purpose of quantifying the impact through blending of results of various indicators grouped into four thematic areas.

For calculation of HRDI, the values of the impact indicators at baseline and endline were selected and assigned weights based on their relative contribution to the final expected outcome across four themes. Depending upon the variations in the interventions made in each project, the HRDI customised to accommodate the most significant results that attributes to the goal of the HRDP program. The detailed methodology and indicators are explained in detail (see Annexure).

The HRDI calculation for project P0248 Implemented In Vaishali has been given in the following table.

Table 10: HRDI Calculation for P0248

Domain	NRM		ST&LE		H&S		PoE		Total	
	Base line	End line	Base line	End line	Base line	End line	Baseline	Endline	Baseline	Endline
HRDI Score	0.12	0.19	0.04	0.15	0.12	0.23	0.11	0.24	0.39	0.81



Since the project did not have an available baseline, the baseline was captured through the recall method. The indicators were selected and assigned weights based on their relative contribution to the final expected outcome across all domain-wise interventions. While most of the indicators were found to be relevant for the study in Bihar, some needed modifications in accordance with the project were done and in accordance with the study design, the information was collected. **The detailed methodology and indicators selected can be accessed in Annexure.** Further, the thematic-wise indicators were assigned weights to arrive at the composite HRDI score of **0.81** indicating a **notable positive change of 107% toward the desired impact** from the baseline score of **0.39**.

5. Analysis of Assessment Criteria

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

- Relevance and Convergence
- Impact and Effectiveness¹
- 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 interventions in agriculture have yielded results in terms of output increase and increase in income. **Most of the beneficiary farmers are currently practising the services and practices accessed through the project under farm management.** The **group irrigation system by installation of solar powered motor has given a sustained impact on income** as it greatly helped the farmers in decreasing irrigation costs along with other benefits even after the completion of the project. The beneficiaries have continued utilising the inputs provided through the project. The tools and machines that have been handed over to the farmer groups are being actively used. The vermicompost training have largely been successful and most farmers continue to practice it. However, many farmers reported the amount of compost produced from the vermipits to be inadequate for the crops they grow. **The adoption of clean energy solutions has been taken up in large numbers.** Respondents have reported positively regarding adoption of solar lights. Training of community members on operating and fixing the solar lights, when necessary has ensured that the solar street lights remain operational in the long run.

5.2 Sustainability

Formation of SHG+ groups and skill development for self-employment has benefitted women in terms of undertaking joint and individual business activities. The active enterprises in the area were of bee keeping, tailoring and handicraft products. The continued functioning of the SHG+ and enterprises indicates that these interventions of the project has been sustainable. The main challenges for these enterprises while functioning are the **rising input costs and market linkages.** Addressing these challenges would enable these enterprises to function more efficiently and profitably.

Another successful initiative in terms of sustainable impact have been in the kitchen garden and landless garden interventions which was adopted by many beneficiaries. The support provided for **kitchen garden has resulted in the decreased malnutrition levels in the villages and alternate**

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

source of income however, a large number of beneficiaries have been utilising it for consumption only.

Livestock management support played a crucial role in ensuring the sustainability of this intervention. Livestock provided **immediate cash support during emergencies** and improved the nutritional status of households through its consumption. It has brought income benefits to the beneficiaries. The health awareness sessions, although part of the project, would have been even more beneficial if they were conducted more frequently.

With regard to education, **assets like the library, smart class, furniture, learning material and sports equipment provided to the school have been handed over to the schools**. The drinking water intervention and construction of separate toilets for girls and boys have certainly benefitted the students. However, the scale could be improved in the project area and more students could have benefitted from the same. The interventions in **financial literacy** have also been found to have a sustained impact on ground as SHGs are involved in contribution and **savings** of money while keeping record. SHG members are also taking the benefit of **internal loan facility** which is proved to be of great benefit for them.

While assessing the sustainability of this project, it is crucial to keep in mind that the **project has been adversely affected by the COVID-19 pandemic that hit in the middle of the implementation period**. Hence the scale of the project and continuous follow up got limited. Even with this huge challenge, the project has still managed to gain on-ground results.

6. Conclusion

6.1 Summary of Findings

The HRDP project is aimed to support the lives of poor and vulnerable communities by adopting a holistic approach toward development. This involved providing necessary inputs on issues like shaping economic independence through skilling, providing basic infrastructural development, and entrepreneurship support. The development of human capital, natural resources, and infrastructure in poor and backward villages was expected to bring about their socioeconomic transformation. In **the assessed HRD project in the Vaishali district, Bihar**, the major focus areas for intervention were Natural Resource Management (NRM), Skill Development & Livelihood Enhancement, Healthcare & Hygiene and Promotion of Education.

The project interventions have been **effective in bringing about some changes in the income of farmers through improved production, provision of seeds and irrigation facilities, and improved agricultural practices**. However, income has also increased because of a change in market prices. The **lack of farm tools availability in some villages** continues to be a challenge for farmers. The adoption of organic farming has been largely successful, with awareness generation and **training for vermicompost production and other natural fertilisers**. Training and demonstration to grow more seasonal vegetables through Intensified Vegetable Cultivation (IVC) technique has brought a positive change and farmers are adopting it. The project has positively influenced awareness generation on improved agricultural practices such as SRI method of paddy cultivation. The project also brought about changes in **facilitating access to clean energy solutions**, especially solar lights.

The project had enabled **women to take up business enterprises** in bee-keeping and tailoring/making of handicrafts products. However, the support for these enterprises needs to be more for them to earn sustained income from it. The drinking water interventions have solved the water woes of the villages to a large extent. **The water supply is available in the households** and people are satisfied with its quality. The **health interventions** aimed at facilitating access to health and sanitation services have been effective in terms of improving household health status and bringing about positive lifestyle changes. Though the quantitative data shows changes, the qualitative study finds that people are unable to recall the awareness sessions.

The project has also contributed towards improving and enhancing **the infrastructural and learning environment at schools**. To facilitate the same, several project interventions were undertaken in schools including the construction and renovation of physical infrastructural facilities such as **drinking water posts**, and **separate toilets for boys and girls**, which has **increased the capacity as well as attendance of the** students due to which they are now spending more time in studies as compared to earlier when they were not coming to school. Furthermore, to improve the learning environment, project support was also provided in terms of smart class and the upgradation of libraries. Most of these interventions are functioning well.

Financial literacy training was also provided to women SHG groups to inculcate the habit of savings between them. It is found that SHGs are doing it regularly and are also keeping record of it with no issues.

Nevertheless, to bridge the gaps in implementation and address the challenges, some of the recommendations are discussed in the following section.

6.2 Recommendations

AKRSP and HDFC Bank together have worked tirelessly with the community to be able to provide them the necessary facilities to help lead their lives with dignity. However, to bridge the gaps in implementation and address the challenges, some recommendations are discussed. One of the more general recommendations is to extend the duration of the project as the community members felt that it was too short of a time period.

NRM

1. The intervention could have been more impactful if more investment in seed banks and other inputs have been provided which plays a critical role in increasing farmers' income.
2. There is a scope for scaling up the vermicompost production, even to commercial level, as farmers have adopted this initiative and are falling short of their own compost to use in their farms.
3. There is a demand for scaling up the farm tools intervention especially for the availability of big farm equipment's like tractors etc. as farmers are shifting to improved farming practices and are falling short of these equipment's which also require heavy capital.
4. Farmers have shown more interest in learning new agricultural practices, so there is a need to invest more in training of farmers in new age farming practices.

Skill Training, Livelihood Enhancement and Financial Literacy

1. Handholding support to enterprises so they have marketing tie-up, business plan development, linkages with government schemes, etc. is crucial.
2. More income-earning opportunities and business-related training for women and youth
3. More advanced training on production practices and the use of machines/tools for beneficiaries to keep pace with the demands of the market.
4. Investment in raw material as per the changing need of the market.
5. Even though satisfactory work has been done in goat rearing, there is a scope to scale-up poultry.
6. Investments could be made to promote fishery considering the water availability, capability and interests of the beneficiaries.

Health and Sanitation

1. The sensitisation interventions on health issues and menstrual hygiene should be conducted in periodic manner and not at one time.
2. Investment in quality monitoring of water supply could have been more beneficial.

3. Investment in rain water harvesting structures needed as it can help solve water availability problem in summers.

Promotion of Education

1. The scaling up of learning and digital support to schools is crucial.
2. Investment needed to ensure availability of science labs, arts & crafts room, music room and improved sports facilities are crucial for overall functioning of the schools and child development.

Annexures

A. List of Activities

Table 11: List of Activities undertaken in Vaishali district

S. No.	Focus area	Category	Sub-category	Activity	Beneficiary Type
1	Promotion of education	Educational Institutions Development	Infrastructure - Infrastructure renovation	Promotion of joyful learning through BaLA paintings, furniture support and TLM support in 3 AWCs	Anganwadi centers
2	Promotion of education	Educational Institutions Development	Infrastructure - Infrastructure renovation	Renovation of 4 government schools Building with Drinking water and sanitation structures	School
3	Promotion of education	Learning aid	Infrastructure and training for Archery and Hockey	Distribution of Solar lamps as learning aid.	Adolescent girls' students
4	Health and sanitation	Sanitation	Infrastructure - Infrastructure renovation	Construction of household toilets	Community
5	Health and sanitation	Sanitation	Menstrual hygiene awareness	Menstrual hygiene education of young women for awareness creation	Community
6	Health and sanitation	Health	Health Camps	Diagnosis, sensitization training and medication services were provided in targeted 15 villages	Community
7	Health and sanitation	Health	Nutrition Management	Promotion and development support (seeds, training etc.) for developing LG and KG at homes	Community
8	NRM	Farm Management	Crop Diversification	Promotion, demonstration and input support for Intercropping Model, Formation of vegetable clusters	Farmers
9	NRM	Farm Management	Farm Inputs	Distribution of high quality and variety seeds of vegetables, paddy, fertilizers etc. Training on preparation of organic fertilizers.	Farmers
10	NRM	Farm Management	Farm technique - IVC, SRI	Promotion and training of Paddy cultivation through SRI method, vegetables cultivation through IVC, Farm field school (FFS)	Farmers
11	NRM	Water Management - Agriculture	Irrigation method - GI through solar water pump	Installation of solar water pump system and managing it through farmer groups for improved irrigation	Farmers
12	NRM	Farm Management	Agri tools bank	Setting up of Agri tools Bank	Farmers

13	NRM	Clean Energy	Street Solar Lights installation	Promotion of renewable energy for small-scale entrepreneurs (Market places and common space)	Community
14	Skill development & livelihood enhancement	SHG Development	Revival of existing SHG groups	Existing SHG groups were trained in the aspects of financial literacy, record keeping and lending.	SHG members
15	Skill development & livelihood enhancement	SHG+ formation and skill development	Bee keeping, tailoring/handicrafts products	Formation of SHG+ groups and supporting them in business activities by skilling in Bee keeping, tailoring and handicrafts products	Women
16	Skill development & livelihood enhancement	Livestock management	Goat rearing	Training in scientific management of goat rearing like shelter support, disease control etc.	Community
17	Skill development & livelihood enhancement	Livestock management	Poultry	Promotion & distribution of inputs for Poultry	Community
18	Drinking water management	Infrastructure	Hand pumps and Water tanks/Jal minars	Repair of hand pumps in households and establishment of water tanks/Jal minars	Community

B. Sampling Methodology

The quantitative household survey was administered for 5 thematic areas in each village of Bidupur and Rajapakar blocks of Vaishali district in Bihar.

B.1 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 450.

B.1.1 Quantitative Sampling Methodology

10 project villages with the highest number of beneficiaries were selected for the study. The stages of sampling are explained as follows:

Stage 1 – Selection of villages

The list of beneficiaries in the major components from all villages acted as the sampling frame for the project. This list was obtained from the implementing partner – AKRSP. Simple random sampling was done to select the required number of households from within the list. Since beneficiary selection was undertaken independently for each intervention, 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. 5 villages with the lowest sample size were merged with other villages to make a total of 10 villages to be covered under the survey.

Stage 3- Sampling for activities:

The total sample of 450 was then distributed amongst various themes depending on the significance of activities done.

B.2 Qualitative Sample Size Calculation

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

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

C. HRDI Methodology

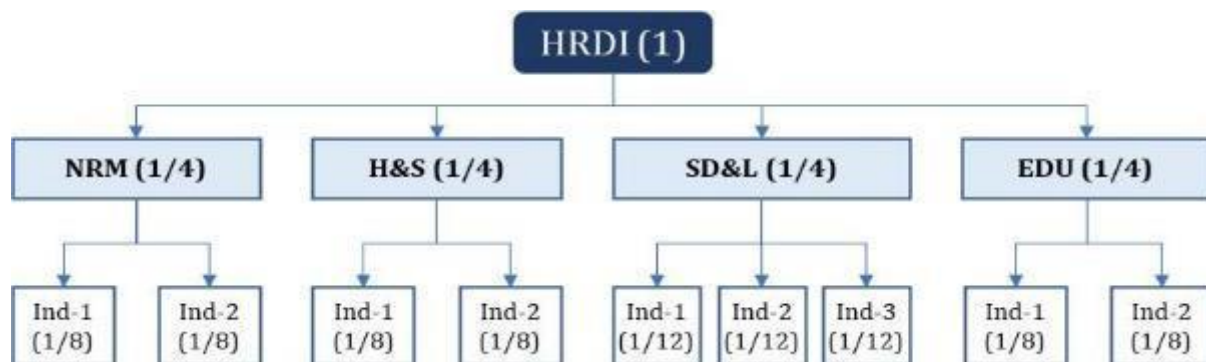
The outcome indicators included in the HRDI were obtained from different domains and are consequently measured on different scales. Therefore, to ensure the comparability of these indicators, all the indicators were converted into discrete variables such that the indicators could be measured between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

C.1 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.

Domain and indicator weights²



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 12: Weights allotted to various indicators

Indicator		Weight
Project X		
Natural Resource Management	Average net income from farming	$(1/4) \times (1/3) = 0.083$
	Percentage of farmers reporting access to irrigation	$(1/4) \times (1/3) = 0.083$
	Area under irrigation (Ha)	$(1/4) \times (1/3) = 0.083$
Health and Sanitation	Average number of months with access to adequate drinking water	$(1/4) \times (1/3) = 0.083$
	Percentage of households with access to improved toilet facility	$(1/4) \times (1/3) = 0.083$
	Percentage of households utilizing soak pits	$(1/4) \times (1/3) = 0.083$
Livelihoods and Skill development	Average monthly income of household from Livestock (INR)	$(1/4) \times (1/3) = 0.083$

² NRM: Natural Resource Management | H&S: Health and Sanitation | SD&L: Skill Development and Livelihoods | EDU: Education

	Average monthly income from enterprises (INR)	$(1/4) \times (1/3) = 0.083$
	Average monthly income of SHG women from enterprise (INR)	$(1/4) \times (1/3) = 0.083$
Education	Percentage of students reporting increased access to functional school physical infrastructure (drinking water posts, separate washrooms, etc.)	$(1/4) \times (1/2) = 0.125$
	Percentage of students reporting increased access to functional learning infrastructure (library, science labs, learning aids, etc.)	$(1/4) \times (1/2) = 0.125$

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

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

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 13: HRDI calculation based on weights allocation

Domain	Indicators	Baseline score	Baseline HRDI	End line score	Baseline HRDI	% Change
NRM	Proportion of farmers with net income above median	0.15	0.12	0.24	0.25	58
	Proportion of farmers reporting increased productivity of three main crops above median (before and after)	0.09		0.18		
	Percentage of farmers reporting access to irrigation	0.24		0.32		
ST&LE	Percentage of households who are getting skill training & reporting increase in income from job/enterprise/self-employment	0.03	0.04	0.25	0.15	275
	Percentage of SHG members reporting income above median from rural enterprises	0.00		0.25		
	Percentage of HH reporting income above median from livestock	0.14		0.09		
H&S	Percentage of households reporting increase availability of drinking water facility	0.12	0.12	0.27	0.23	92
	Percentage of households with access to improved toilet facility	0.21		0.32		
	Percentage of households reporting increase in use of fruits/vegetables from the nutrition garden	0.12		0.33		
PoE	Percentage of respondents reporting increased access to functional school physical infrastructure (drinking water posts, separate washrooms, furniture etc.)	0.44	0.11	0.50	0.24	118
	Percentage of respondents reporting increased access to functional learning infrastructure (library, science labs, smart class, etc.)	0.01		0.48		
Total			0.39		0.81	108

D. Overview of Impact Methodology

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

Table 14: Output indicators

Outputs	Output Indicators		Output Avg	Impact Level
NA. Increased income from agriculture				
N.A1 Land/ crop productivity	NA1. (a) Proportion of farmers reporting an increase in production of crops that were supported under HRDP	98%	70%	Medium
	NA1. (b) Proportion of farmers reporting increased income from three major crops that were supported under HRDP.	99.50%		
	N.A1.I (c) Average increase in productivity from three major crops that were supported under HRDP (% change)	20%		
	N.A1.i(d) Decrease in input cost (% change)	64%		
N.A2. Access to the farm management infrastructure	N.A2(a) Proportion of beneficiaries fully satisfied with the quality of available services	72%	79.5%	High
	N.A2.(b) The proportion of farmers reporting an increase in the use of natural fertilizers?	87%		
NA.3 Increased adoption of crop diversification	NA3. (a) Proportion of farmers changed their crops with project support.	61%	53%	Medium
	NA3. (b) Proportion of farmers who report income increase due to crop diversification (base = farmers who adopted crop diversification)	45%		
NA4. (a) Group Irrigation	NA4. (a). The proportion of farmers who received support for group irrigation	58%	58%	Medium
NC. Increased use of clean energy solutions				
NC1.Adoption of clean energy infrastructure	NC1 (a) Proportion of HHs using clean energy infrastructure (Base=all)	98%	98.5%	High
	NC1. (b)Proportion of households reporting benefits from using clean energy infrastructure (Base=clean energy beneficiaries)	99%		
SA. Improved access to agricultural training and services				
S.A.1 Access to Agriculture training and services	SA.i(a) Proportion of farmers who reported project training services are useful	100%	100%	High
	SA.i(b) Proportion of farmers who became aware regarding sustainable farming practices after HRDP	100%		
S.A.2.Adoption of improved farming practices	SA.ii(a) Proportion of farmers currently practicing Conservation agriculture practices	52%	52%	Medium

SC. Enhanced capacity for regular income generation				
SC.1 Current status of SHGs	Proportion of members who reported that SHG currently working	44%	66.5%	Medium
SC.2 Access to self-employment and entrepreneurial opportunities	SC.2(a) Proportion of beneficiaries reporting skill development for self-employment	89%		
SD. Improved capacity to generate income through livestock management				
SD.1 Adoption of scientific management of livestock	SD.I (a) Proportion of beneficiaries who received support in livestock management services	32%	41%	Medium
	SD.i(b) Proportion of beneficiaries reporting an reduced livestock death from livestock management	33%		
	SD.i(c) Proportionate increase in average income from livestock	58%		
H.A. Improved health infrastructure and services				
H.A.1 Establishment/enhancement of health infrastructure and services	H.A.i(a) Proportion of beneficiaries who gained access to health services	93%	88%	High
	H.A.ii(b) Proportion of beneficiaries who observed Improvement in dietary habits after HRDP	83%		
H.B. Improved sanitation infrastructure and services				
HB.1 Establishment/enhancement of sanitation infrastructure.	H.B.i(a) Proportion of beneficiaries who gained access to sanitation services	97%	96.5%	High
	H.B.i(b) Increase in no of HHs with access to sanitation infrastructure/toilets	96%		
H.C. Development of Kitchen gardens and Landless gardens				
HC.1 Increased adoption of kitchen gardens and Landless gardens	HC.i(a) Proportion of HHs reporting income gains from KG and LG	24%	71%	High
	HC. i (b) No of HHs received seeds/training	98%		
	HC.i(c) No of HHs with improved vegetable/fruit consumption due to KG and LG	99%		
	HC.i(d) Proportion of HHs reporting improved nutrition	64%		
H.D Improved awareness and health-seeking behaviour				
H.D.1 Awareness regarding health and sanitation practices	H.D.i (a) Improved dietary practices/ reduced tobacco consumption/ improved physical exercise	72%	72%	High
H.E. Improved availability and management of water				
H.E.1. Access to drinking water at household and community	H.E1. (b)The proportion of households reporting decrease in instances of water borne diseases in the family	63%	63%	Medium

levels improved				
Outcome E.A. Improved capacity of educational institutions to provide services				
EA.1 Access to improved physical infrastructure	EA.i(a) Proportion of students/schools who report gaining access to functioning smart classrooms/ BaLA/science labs/libraries/learning aid/furniture/sports equipment	85%	85%	High
	EA.i(b) Proportion of schools who gained access to clean and functioning sanitation units/drinking water posts at education institutions	85%		
EA.2 Improvements in quality of teaching	EA.ii(a) Proportion of teachers utilizing library everyday and on most days	61%	80.5%	High
	EA.ii(b) Proportion of students who prefer smart class for learning	100%		
EA.3. Improved willingness to engage in school activities	EA.iii(a) Teachers reporting improvements in attendance due to improved infrastructure	96%	64%	Medium
	EA.iii(b) Proportion of teachers reporting an increase in enrolment post infrastructure development	32%		
	EA.iii(c) Proportion of teachers reporting a decrease in dropout rates	64%		
Outcome E.B. Improved learning outcomes				
EB.1 Improved exam performance and subject confidence among students	EB.i(a) Proportion of households reporting access to reference material for exam preparation	65%	70%	Medium
	EB.i(b) Proportion of teachers reporting improvements in learning outcomes due to smart class at institutions (concept retention, syllabus coverage, and interesting)	75%		
Outcome E.C. Improved Awareness				
EC.1 Improved Awareness among students, parents, and teachers	EC.i(a) Awareness activities conducted	31%	31%	Low
Outcome F.A. Financial literacy				
F.A. Financial literacy	FA.i(a). Beneficiaries receiving any training on financial literacy/ management	82%	87.5%	High
	FA.i(b) Proportion of beneficiaries who developed saving habits	93%		

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

E. Sustainability Thematic Wise Matrix

The project support provided demonstrated the capability to continue even after the project ended. The project's support to sustain improved outcomes are demonstrated below:

Table 15: Sustainability matrix of activities

Support provided	Structures established	Technical Know-how	Usage	Maintenance
NRM				
Farm Management - Irrigation	✓	✓	✓	✓
Farm Management - Inputs	✓	✓	✓	✓
Farm Management - Training	✓	✓	✓	✓
Farm Management - Capacity building	X	X	X	X
Clean energy	✓	✓	✓	✓
Drinking water management	✓	✓	✓	✓
Skill Training and Livelihood Enhancement				
Enterprise creation	✓	✓	✓	✓
Capacity building	✓	✓	✓	✓
Livestock management	✓	✓	✓	✓
Health and Sanitation				
Health	X	✓	✓	✓
Sanitation	✓	✓	✓	✓
Kitchen garden and Landless Garden	X	✓	✓	✓
Promotion of Education & Sports				
Education	✓	✓	✓	✓
Sports	X	X	✓	✓
Financial literacy				
Financial literacy	X	✓	✓	✓